

The implementation of sustainability targets in housing programmes

A case study research on the implementation process of policies regarding sustainability



Photo by Martijn Blankestijn

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I hope you will enjoy reading about the realisation of sustainability targets in Rotterdam throughout this thesis.

Abstract

Municipal Environmental Visions in the Netherlands often include targets for sustainable housing construction. Often, those targets are very ambitious and reached towards 2030 or 2050, but lack concrete measures for the construction and development of housing. One of the municipalities with ambitious sustainability targets is the city of Rotterdam. This research focuses on how the municipality can implement the complex sustainability targets into housing programmes by examining the case of the Motorstraatgebied, an area where the implementation of sustainability targets is an important part of realising housing construction programmes. Document analysis on relevant policies, together with in-depth interviews with stakeholders as well as experts and participatory observations during two stakeholder sessions in the Motorstraatgebied, resulted in recommendations for policy and planning practice. The results of this study demonstrate the importance of the involvement of actors in an early stage of the (re)development process. By building a relationship, trust between actors can grow. When the actors, municipality and others, trust each other, sustainability targets can be met through housing programmes without having to write them down in legal contracts. One of the most important indicators for the implementation of sustainability targets in the municipality of Rotterdam is therefore the trust relationship.

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1. Introduction

In the policy documents of the municipality of Rotterdam there is a clear task for the city: in the upcoming years there is a need for a drastic change in prevention of, as well as adaptation to climate change. Policies like 'Duurzaamheidskompas', 'Rotterdams Weerwoord' and 'Rotterdams Klimaatakkoord' are clear: Rotterdam needs to be climate adaptive and circular and have a lower impact on climate change by 2050 (Gemeente Rotterdam, 2018,2019,2020). Unclear however is how those ambitious targets will be reached.

Climate change is a complex problem with many consequences as well as solutions. It may therefore also be seen as a 'wicked problem', a concern that has many interdependencies and casualties; unforeseen outcomes and unintended consequences to the solutions; moving and unstable targets; distributed power and is socially complex; rarely the responsibility of one single person or organisation; and a problem that involves changing people's behaviour (Rittel & Webber, 1973). Rittel and Webber argue that wicked problems can only be understood and solved if the context is considered. Therefore, a choice was made to focus on the realisation of these sustainability targets in only one city.

One way of governing the complexity of climate change is by designing and developing sustainable cities (Martos, Pacheco-Torres, Ordóñez, & Jadraque-Gago, 2016). Designing a sustainable city can have two focuses: mitigation or adaptation (VijayaVenkataRaman, Iniyan, & Goic, 2012). Mitigation has the aim to lower effects on climate change and adaptation has the aim to adapt to the climate changes that are already irreversible (IPCC, 2022). Future cities are ideally designed in a way that the emission of greenhouse gases is lowered through designing a city where, for example, lowering the usage of cars, the use of raw and renewable materials is encouraged, energy is produced and used through sustainable mechanisms and the city is resilient to climate change. As designing cities in an optimal sustainable way is an aim for the collective of all residents in the city, it can be seen as a collective affair. Managing collective affairs is called governance (Healey, 1997:206). Within the context of urban planning, this is seen as the process through which cities are developed.

1.1. Academic relevance

In order to be able to develop sustainable housing and urban areas, the need for clarity on how to design such governance processes and implement targets regarding sustainability is high. In housing construction, constructors are prominent players. Therefore, in former research the focus mainly was on the role of constructors in the process of making housing more sustainable (Chong & Low, 2006). However, constructors are mostly active in the last phase of realising housing where the designing and creating of housing programmes is already completed (Bunz et al. 2006). These early phases are important when it comes to designing the housing and implementing the sustainability targets. There has been an implicit assumption that designers hold the key to sustainable development (Son, Kim, Chong & Chou, 2011). Therefore, attention must be paid to the designing phase, where the municipality can play a large role in implementing the sustainability targets. Researching the role of the municipality in this process can contribute to the success of sustainable projects, since earlier studies have already examined the influence of constructors' roles on sustainability (Son et al., 2011).

Policy implementation is a complex concept on which much has been written in academic literature. One of many definitions of policy implementation is the following; "*policy implementation encompasses those actions by public and private individuals (or groups) that are directed at the*

achievement of objectives set forth in prior policy decisions” (Van Meter & Van Horn, 1975:447). In their words, the study of implementation examines those factors that contribute to the realisation or non-realisation of policy objectives (Van Meter & Van Horn, 1975). The definition of implementation is clear, yet there is no agreement on how to design the process of implementing targets regarding sustainable housing. As sustainability targets are often vague, long term and area specific, the context of the implementation is important. Van Meter and Van Horn's framework on policy implementation focuses on three pillars; organisation, judicial decisions and relations.

In the process of implementing sustainability targets, there are several actors at stake. The organisation of involving actors in the implementation process and the instruments that come with this organisation is the focus of this research. In order to come up with the answers to these aspects of implementation, the government's role must be defined. This research will focus on what tools and instruments a municipality can use to make sustainable decisions in the development phase in the construction of housing and how the municipality can design the process of implementing the targets regarding sustainable housing.

1.2. Research objective

The municipality of Rotterdam has ambitious sustainability targets. The city is planning towards a gas free, climate adaptive and healthy city centre in 2050. In their 'Duurzaamheidskompas' they set their targets for the future city. Rotterdam aims, by 2030, for CO₂ emissions to be 49 percent lower than they were in 1990 and to cut consumption of primary resources by half. The target for 2025 is to be fully climate adaptive and to meet the EU standards when it comes to a healthy living environment (Duurzaamheidskompas, 2020).

One area in Rotterdam where urban development is going on and meeting sustainability targets is high on the political agenda, is the Motorstraatgebied in Rotterdam South. In the Development Vision the targets for reaching a sustainable area are high. Sustainability targets are aimed at creating circular, climate adaptive, nature inclusive, and energyneutral structures (Ontwikkelvisie, 2021). Additionally, landownership in the Motorstraatgebied is fairly fragmented. A large share of plots is owned by private parties. The municipality intends to encourage project developers to go above and beyond the norm in sustainability measures (Ontwikkelvisie, 2021). This makes this case complex as the municipality is not always the party that decides what the housing programs look like. Two components that make this case especially interesting are the fragmentation in landownership and the high sustainability targets.

As mentioned, in planning practice there is an increasing call for greater policy implementation, specifically for sustainable policy-making where implementation is seen as crucial for sustainable spatial development. This call has been acknowledged and met in the scientific literature by the creation of multiple theories on policy implementation. However, as the theoretical framework will reveal, policy implementation of sustainability targets remains an uncertain topic in the literature. As policy implementation is a rather complex phenomenon, it is necessary to research this within a specific context. Therefore, doing a case study can add to the debate on how to design the implementation process for meeting sustainability targets. The focus on the role of the municipality in particular can add by shedding light on a new angle in this search to understanding policy implementation. In addition to investigating the relationship between policy implementation theory and practice, this study aims to improve understanding of policy implementation practices in order to help detangle the concept's complexities, contribute to the ongoing scientific debate, and provide current spatial planners with useful insights in order to ensure long-term spatial planning.

1.3. Research questions

This research aims at understanding the implementation process of meeting sustainability targets through sustainable housing programmes. The process of implementing sustainability targets will be researched by diving deep into the role of the municipality in the case of the Motorstraatgebied. The research will do so by answering the following research question:

How can sustainable housing programmes achieve sustainability targets at a neighbourhood level?

Sub-questions that will guide the thesis to answering the research question, are:

1. *How is the implementation process of sustainability targets organised?*
2. *What instruments are useful in the implementation of sustainability targets?*
3. *How is the interaction between relevant actors shaped?*

1.4. Societal relevance

With the formation of the new coalition in 2022, it is evident that the Netherlands requires new housing. The Dutch government aims to build one million new residences by 2030. This means that at least 100,000 new residences must be built annually in the upcoming years (VVD, D66, CDA, ChristenUnie, 2022).

The housing shortage of affordable residences in the Netherlands is huge and will even grow further in the future. According to ABF Research Institute, the national housing shortage was up to 279 thousand houses in 2021. This equates to 3.5 percent of the total housing stock (ABF Research, 2022). The need to build houses is not the only challenge cities in the Netherlands face these days. At the same time, it is becoming clearer that climate change is reaching a tipping point. In October 2021, the Dutch Royal Meteorological Institute released a report on the impact of climate change. It contains strong messages on the changing urban environment. Cities will have to deal with more intense rainfall, droughts, and urban heat islands, according to this report (KNMI, 2021). Cities are particularly sensitive to the harmful consequences of climate change, so this means cities will have to adapt to this change while also doing everything possible to change the trajectory of climate change.

Because of the urgency and major spatial component of both subjects, the discussion on policy implementation of sustainability targets is relevant for everyday spatial planning practices. The Netherlands is facing a tough challenge in meeting both targets as to solving the housing shortage and at the same time meeting sustainability targets. This research will shed light on the process of implementing sustainability targets into sustainable housing.

2. Theoretical Framework

The two key concepts of policy implementation and a cohesive sustainability approach will be discussed in this theoretical framework. The most essential scientific literature related to this research about the distinct ideas and their relationships is presented in a literature review. First the topic of policy implementation will be elaborated upon and the indicators that help to detangle the ambiguous concept of policy implementation are defined.

Based on the debate and indicators presented in the literature, a conceptual framework is developed to address the complexity of the idea of policy implementation. Second, the scientific debates on the concepts of coherent sustainability, resilience, circularity, and a healthy city are outlined. This to create a better understanding of the evolution and implications of the concepts and the reasons as to why these are coherent.

2.1. Policy implementation

“Policy implementation encompasses those actions by public and private individuals (or groups) that are directed at the achievement of objectives set forth in prior policy decisions” (Van Meter & Van Horn, 1975:447).

Van Meter and Van Horn try to define the implementation process in their paper. For this, they adopt the following definition by Williams. *“In its most general form, an inquiry about implementation ... seeks to determine whether an organisation can bring together men and material in a cohesive organisational unit and motivate them in such a way as to carry out the organisation’s stated objectives” (1971:441).* Implementation, thus, is the actions undertaken by the municipality and other actors that are aimed at carrying out the policy objectives. Implementation takes place after the goals of the policy objects are identified. It refers to either the realisation or the non-realisation of policy objectives (Van Meter & Van Horn, 1975). In order to implement policy objectives successfully, it is necessary to have the objects clear. After all, a policy can be implemented perfectly, but it may not have a significant impact because it was poorly thought out or because of other factors.

Recent literature highlights the increasing calls for better policy implementation, particularly in the area of sustainability policy, where implementation is considered as critical for long-term spatial development. Sustainability targets in policies are often complex and interrelated. The process of implementing the targets is therefore also rather complex. In the definition of policy implementation, it is argued that implementation is characterised by actions by public and private individuals or groups. Therefore, this research will focus on how those actions are organised and how the relationship between actors is defined. In order to make the process clearer, the instruments that can be used by the government are also identified.

Three factors are important when studying implementation processes, according to Van Meter and Van Horn (1975): organisation, judicial decisions, intergovernmental relations. Inspired by this conceptual framework, the framework for this research was somewhat adapted and applied. In order to study the implementation process of sustainability targets in Rotterdam, this research will focus on the following three indicators:

- (1) The first aspect addresses the *organisation* of implementing sustainability targets on a municipal level. Here, the central question is how the implementation is actually organised. Issues of sustainable spatial development are often complex, interdisciplinary and therefore require a high level of cooperation. Are new organisational structures created to address the topics or are they taken care of by existing organisational units?
- (2) The second aspect addresses the modes of *interaction* between relevant actors. Since there are usually several external actors involved in the development and, more importantly, the implementation of sustainable spatial development, the participation of actors is decisive. How are these actors involved, and how is the participation and communication of planned measures organised?
- (3) The third aspect addresses the *instruments* used to implement sustainability targets. Particularly in these fields, various measures overlap from a content perspective, and a broad spectrum of instruments and tools is required to adequately support planning decisions. For instance, the development and use of integrated concepts for the implementation of urban planning measures is an important, repeatedly discussed element.

The next paragraphs will entail the indicators as they are formulated for each aspect of policy implementation. These aspects and indicators will be combined into a conceptual framework, which is presented at the end of this chapter.

2.1.1. Organisation

“there is little evidence that governments [...] know much about how to govern or manage networks” (Milward & Proven, 2000:361)

The organisation of the implementation process is defined by numerous aspects. As Van Meter and Van Horn point out, organisation can be structured by researching leadership, coordination, hierarchy, human relations, democracy, incentives, and compliance (1975). In this research, a choice was made to focus on a combination of these aspects, as the government, in this case the municipality, is the centre of the research, as opposed to prior research where constructors and developer was the focus. Together they will formulate what the role of the municipality can be in the implementation process of sustainability targets.

The role of the municipality in the organisation of the implementation process can be defined in four ways. Research by Kronsell & Mukhtar-Landgren (2018) suggests innovations in urban governance can lead to more sustainable cities. In their article they highlight the underrated position of formal decision-making institutions, e.g. (local) governments in terms of collaboration. They state that local governments can take on three potential roles as a (1) promoter, (2) enabler and (3) partner. Additionally, there is the non-role, when the municipality does not have a significant role in the spatial development. A municipality could potentially have multiple roles, as they are not exhaustive. These roles are especially important when researching urban experiments.

Indicators for promoter:	Indicator for partner:
<ul style="list-style-type: none"> i. Initiation, calling upon other actors to participate ii. Allocation of economic resources/taking active participation in raising funding iii. Municipal leadership iv. Related to perceived urban affairs or commitments (urban planning, education) 	<ul style="list-style-type: none"> i. Participating in partnership on fairly equal terms ii. Shared leadership iii. The importance of collaboration is emphasised iv. Municipality has a specific and explicit function that is unique for municipalities v. Partners are named
Indicators for enabler:	Indicator for non-role:
<ul style="list-style-type: none"> i. Opens up acting space for other actors ii. Opens up opportunities for collaboration iii. Municipalities participate but do not have an explicit leading role iv. Support via indirect provision of e.g. buildings 	<ul style="list-style-type: none"> i. No relation to municipal space, responsibilities or jurisdiction. ii. Strong non-governmental actor, including citizen groups and or business venture iii. Strong other government actor (region/federal or academia/research) iv. Recipient rather than participator

Figure 1: Indicators for roles of the municipality (Kronsell & Mukhtar-Landgren, 2018:991)

The role of promoter is explained as the role where the municipality is solely a top-down actor who finances, initiates and implements urban development. The promoter fits best in a type of governance where collaboration is central, but the role is to be strictly top-down. Collaboration can be seen as a policy instrument that is applied by municipalities. The initiation lies with the municipality and other actors can follow. This dominant role can be explained by the fact that the municipality has a formal decision-making role in spatial development (Kronsell & Mukhtar-Landgren, 2018).

The role of enabler is again more top-down with a certain degree of autonomy. Where the role of promoter the municipality takes more leadership, in the role of enabler, the municipality will leave more acting space to others. Municipalities can do so by creating a space or platform where collaboration can take place, or frameworks that can count as points of departure.

As opposed to the roles of promoter and enabler, the role of partner fits a more bottom-up strategy in which leadership is shared. The authority-centred approach is replaced by a more network-centred approach. The municipality is in this case just one of several collaborating parties and does not have a leadership role. All partners in the collaboration have specific input and are all equal to each other (Kronsell & Mukhtar-Landgren, 2018).

The role of the municipality is important in sustainable spatial development projects because it influences the decision-making process of sustainable choices (Kronsell & Mukhtar-Landgren, 2018). Additionally, it is important to keep in mind that the municipality has a more influential role than other actors can possibly have because of its position as a formal decision-making body.

From admission planning to invitation planning

The role of the municipality has changed throughout the past years. The following paragraph will elaborate upon the history of planning in the Netherlands and its relation to the role of the municipalities in the implementation process.

Before 2000, the municipality mostly created frameworks for spatial development. These frameworks were to be followed by constructors and developers could then follow. Spatial plans were referred to as “*blueprints for a society that experienced fast growth and realised the importance of careful planning of the little area available*” (Van der Cammen & De Klerk, 2003:230). Governments are the main actors in deciding the development of the physical world. This type of governing is called admission planning.

From the 21st century onwards, development planning was introduced. The Nota Ruimte was the basis of the development planning as opposed to admission planning. The publicly dominated plans gave way to public frames, which allowed public and private parties to participate in spatial development as well. Governments had to collaborate with other actors in the implementation of policies, as well as in the formulation of project plans (Groetelaers, 2004). Invitation planning is a sequel to development planning and, according to the literature, is somewhere between admission and development planning. In this type of planning, the government lays out the groundwork and makes an effort to invite private and public entities to invest in a given area (Buitelaar, Feenstra, Galle, Lekkerkerker, Sorel, & Tennekes, 2012). Governments broadly determine whether changes are needed with a view to long-term forecasting and protecting values in invitation planning, and they adopt an inviting and facilitating position within these framework initiators, both public and private (Van Rooy, 2012).

From government to governance

The previous paragraphs demonstrate that the movements in Dutch spatial planning from admission planning to development planning and then from development to invitation planning include a process reversal. The initiative for spatial development is increasingly being taken by private and private entities rather than the government, implying a power shift between various actors. Theories of governance can add to this discussion of problem solving in sustainable spatial development, because it brings together different actors and opinions to come up with potential solutions. Although in principle governance is a rather neutral term describing the “*processes through which collective affairs are managed*” (Healey, 1997:206), within the context of urban and regional studies it is often

invoked in a more specific sense to describe a shift towards forms of collective action in which the private sector and civil society play a greater role and where relationships between actors have become less hierarchical and joint decision making more usual (Evers & De Vries, 2013). Often, sustainability targets are aimed at a goal that necessitates the collaboration of multiple actors. Many various actors (e.g., multiple agencies and levels of government, business, communities, research, and financing) are involved, each with their own interests, goals, and stakes in the outcome (Bowen, Cradock-Henry, Koch, Patterson, Häyhä, Vogt & Barbi, 2017). The following paragraph will elaborate on the roles and relationships of important actors in spatial development.

Public and private actors

The municipality

Municipalities have an essential role in spatial planning and can be involved in urban development in a variety of ways. The municipality decides on what targets are set in municipal policies and is responsible for their execution (Buitelaar et al. 2008). Also, the municipality plays a significant role in balancing local interests, which is an important aspect in political decision-making. Within the last few years this aspect has become more important, because of the obligation to participation. The position of users and residents has become more important and the field of actors has therefore grown.

Project developers and housing corporations

Private developers often focus on the short term and on project-based developments, in which the production of qualitatively good integral areas, achieving a solid profit, and limiting financial risks take centre stage (Heurkens, 2012). Developers are often involved early on in the development process. They are the ones buying the land from the municipality or requesting the municipality for approval on their plans for the plot. The municipality and the developer can together form a frame for the desired outcomes for the development.

Social facilities

The role of social facilities is, due to the lack of funding, in the Netherlands mostly not very prominent and mostly bottom-up. Organisations such as foundations, citizen groups and social enterprises are involved in the placemaking of collective facilities and the local economy (Heurkens et al., 2020).

Users and residents

As stated before, the role of users and residents has become more central in Dutch spatial planning. The opinion of the residents should be involved in the implementation process more. With the new Environment and Planning Act, municipalities are obligated to involve citizens in every phase of the development process (Rijksoverheid, 2022).

2.1.2. Interaction

The goal of achieving sustainable targets in policy implementation is to accomplish this by generating desired outcomes in collaboration with various actors. It's ideal to have all of the important actors at the table (Emerson, Nabatchi & Balogh, 2012). Furthermore, research should not only focus on the actors themselves, but also on their relationship. Six indicators of interaction between actors in spatial development are defined by Boogers (2013):

- (1) *Equality of stakeholders in terms of power and resources*: if there is a high inequality in this area, weaker stakeholders cannot participate meaningfully in the decision-making process. This may frustrate support for its outcomes later on. It is therefore important to pay attention to the reinforcement and representation of weaker and less well-organised interests.
- (2) *Necessity to participate in the decision-making process*: because participation in a partnership in most cases is voluntary, it is important that stakeholders have sufficient reasons. Not being able to independently reach one's own goals is one reason. Feelings of interdependence or solidarity can also contribute to willingness to participate in a common decision-making process.
- (3) *Experiences with cooperation or conflict*: the history that stakeholders share has an important influence on the success of common decision-making processes. Long-term good experiences ensure that partners trust each other, which promotes cooperation, while a history of contradictions and conflict will fuel mistrust and thereby hinder collaborative decision-making. However, it is not true that their cooperation is impossible in conflict situations. If partners nevertheless need each other to achieve common goals (see 2) and are willing to invest in conflict-regulating mechanisms, joint decision-making can be successful.
- (4) *Supportive leadership*: leadership is an essential precondition for bringing different parties to the table and for them later to overcome the various hurdles and obstacles of the collaborative process. Especially if joint decision-making is not self-evident (see above), the functioning of leaders can make a difference. If partners are equal and willing to cooperate but do not trust each other, mediating leadership is sufficient. With a leader who is impartial and trusted by all partners, barriers for joint decision-making are cleared up. If the starting situation is more difficult – due to the inequality of those involved, a lack of willingness to cooperate, or due to mistrust and conflict – a stronger leader is needed. A leader who commands respect and knows how to gain the trust necessary to set aside reservations about cooperation.
- (5) *Openness and exclusivity of decision-making forums*: shared decision-making should be adopted. That is not only a question of definition, but also an important condition for its success: if all governments and organisations with an interest in the outcomes of the decision-making process contribute to this, its quality increases. This means that even 'difficult' stakeholders who can frustrate the process should still be invited to participate, not at least because they can still hinder the implementation of the decision later on. The decision-making platform in which the decision-making process takes place must be open as well as exclusive. That seems paradoxical, but it is not. With exclusivity meaning that there is only one decision-making platform, so that stakeholders cannot turn to alternative decision-making platforms to achieve their shared goals.
- (6) *Trust, involvement and outcomes process*: joint decision-making is a process of give and take and of fall and rise. Because progression is slow, frustrations and irritations are quickly lurking. That's why it is very important to invest in the quality of personal contacts. Furthermore, interim results, no matter how small, must be extensively put in the spotlight.

Only then will conflicts disappear into the background, while trust will grow and the collaboration will lose its noncommittal character

Figure 2: indicators for interaction (free translation of Boogers, 2013).

All of the indicators above will be research within this thesis, as they define how the interaction between actors is shaped. The interaction is part of the implementation process, as all of the actors that are explained in the previous sector are an important part of implementing sustainability targets at a neighbourhood level (Emerson, Nabatchi & Balogh, 2012).

Organisation and interaction are two of the three indicators that will be researched in this thesis. The third and last one is that of instruments. Instruments, just like organisation and interaction, play a big role in meeting the sustainability targets in the implementation process (Van Meter & Van Horn, 1975). Actors, of which the municipality is one, have several instruments to influence and determine sustainability measures for spatial development.

As shown in the previous paragraphs, there is a shift going on in the role of the government within spatial planning. Whether or not there is a need for hierarchy within the implementation of spatial plans, is an ongoing debate. The following paragraphs will dive deeper into the legal instruments and agreements the government can partake in.

2.1.3. Instruments

Municipalities have a wide range of legal and planning instruments, including zoning plans, environmental permits, expropriation law and the anterior agreements. A municipality will use these instruments to influence the pace of development, the social or financial return and the quality of the development. A municipality can employ both public and private law instruments to carry out her duties. This is how a zoning plan can be used to manage development by enforcing public law restrictions on the use of space. A municipality can also acquire land and, with it, its position in enlarging an area, for example, under the Municipalities Preferential Rights Act. Furthermore, private law instruments are utilised to enter into agreements and contracts with third parties (Buitelaar et al., 2008). When a municipality lacks a land position, it will be persuaded to deliver a zoning plan and preconditions in the form of, for example, a Note of Principles for the development. Finally, a municipality might (partially) subsidise area development by direct investment, grant funding, or the establishment of funds (Heurkens et al., 2020). Municipalities can sometimes use area developments as a source of revenue, with the municipality being able to collect earnings in a variety of ways.

Public-private cooperation

The question whether the government or private parties should be in charge of implementing spatial plans is being debated (Klijn & Van Twist, 2007). Some argue that the government should place a greater emphasis on policy design and leave the actual implementation to the market. This may improve the effectiveness and efficiency of government action. Privatisation, market forces, outsourcing, and corporatisation, as some say, should all be used to create a barrier between policy and implementation. After all, as the argument goes, the private sector can function much more effectively, and if multiple operations are integrated, economies of scale and innovation benefits can be realised. Others argue that there is an assumption that cooperation between public and private actors might result in better products or policies in case of complicated social issues. Collaboration and knowledge sharing can result in innovative products and the combining of useful insights. Here we see the concept of more horizontal types of collaboration, in which information, knowledge, and resources are pooled to improve coordination and production. These ideas are echoed across the literature on governance and networks. This (public administration) literature highlights the interdependencies of actors (especially public actors) in obtaining policy goals and services, as well as the importance of inter-organizational coordination (Klijn & Van Twist, 2007).

2.1.4. Concluding remarks

The role of the municipality and the type of interaction between actors determine what instrument can and will be used. All of the three aspects are therefore related. The conceptual framework, as it is set out on the next page, reveals the relationships between the aspects and indicators. After the presentation of the conceptual framework that will be used to examine the role of the different aspects of policy implementation, the theoretical framework will continue. The next paragraphs will entail the definition and status of the important concepts of sustainability and subtheme's that are used throughout this thesis.

2.1.5. Conceptual framework policy implementation

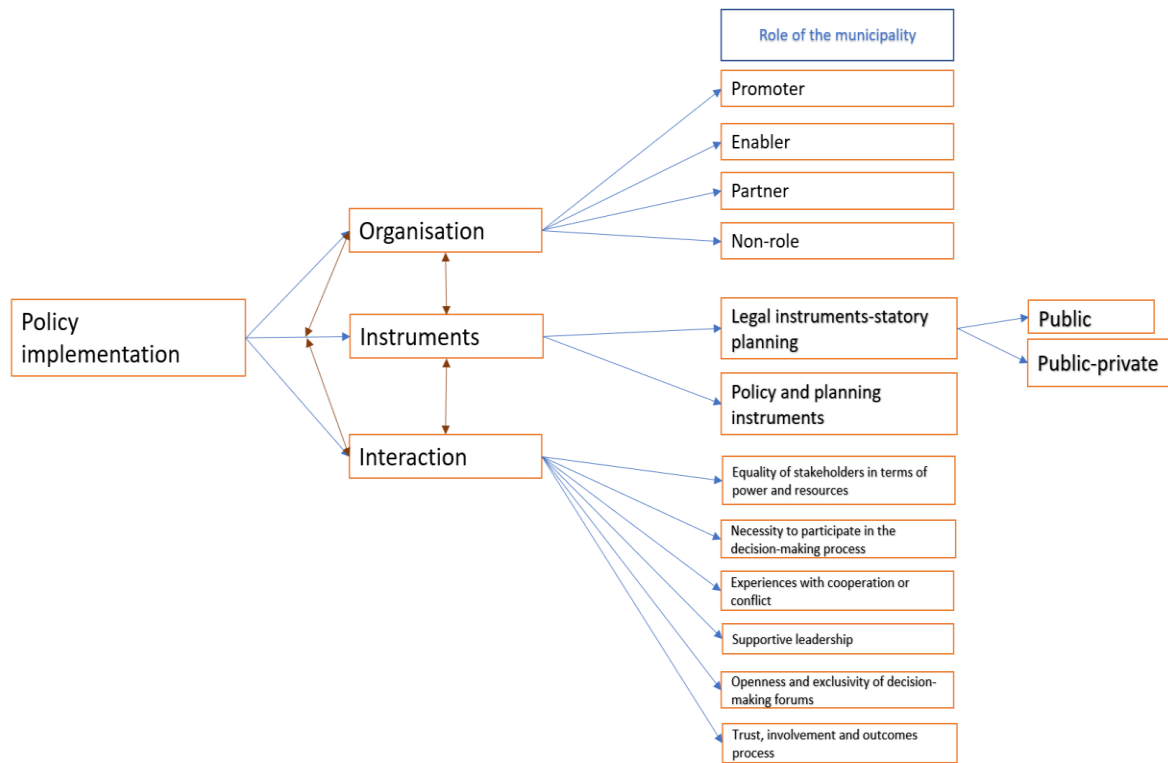


Table 1: overview of aspects and indicators, by the author

This table gives an overview of the presented aspects of policy implementation; organisation, instruments and interaction and their connections (all three interrelated). The indicators as they are presented in the previous paragraphs are linked to each aspect that they belong to. Together these aspects and indicators form the operationalisation for the following of this thesis in order to research the implementation of sustainability targets in housing programmes.

2.2. Sustainability

The next section will elaborate upon the role sustainability has in the construction of housing. Several theories will be presented to define what sustainability is and how it can be implemented into housing programmes.

“Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs” (WCED, 1987)

The term ‘sustainability’ was first mentioned in the Brundtland Report in 1987 and was defined in a very broad way. Although there is no universally accepted definition of sustainability, often definitions emphasise the importance of integrating three dimensions into the concept; social, economic and environmental dimensions.

For the following of this research, a framework of those three dimensions will be the basis. In 1994, John Elkington came up with the sustainability framework of the 3 P’s; People, Planet and Profit. The thought behind this division was that when attention is drawn to one of the three dimensions, the other dimensions will suffer from this. Sustainable development derives when all dimensions are considered. The social dimension, in this conceptual framework called People, can be met by making spatial plans that consider the liveability of a place for all users and residents. The economic dimension, Profit, aims to enhance self-sufficiency and economic wellbeing of the development through creating jobs and attracting investment (Elkington, 1994). With the term Planet, it is meant to consider the effects a spatial plan has on the environment. Because of their interconnectedness, the components cannot be seen on their own. Planning for sustainable cities would mean to include aspects of all three dimensions. However, finding this balance and making connections is often not easy to achieve and - at every scale level – comes with challenges. It is often the case that not all targets can be achieved at the same time and in the same project. This means that there are necessary choices that must be made. Consideration must be given to which sustainability aspects will have a focus and on which aspects not, or less. This so-called ‘exchange’ of possibilities and setting priorities is inherent in sustainability and entails dilemmas.

Sustainability as seen from the PPP interrelatedness. Ideally, people, planet and profit are all parts of the actual plans. But money, time and complexity make this impossible. The municipality of Rotterdam focuses on three different aspects of sustainable spatial development. In their policy, Rotterdam focuses on lowering energy use, making the city circular and resilient and creating a healthy living environment (Duurzaamheidskompas, 2020). Therefore, the following section will elaborate shortly on those particular ecological sustainability approaches.

2.2.1. Lowering energy use

One of the subthemes of sustainability that a city can focus on in its policies, is the use of smart and sustainable energy. A theory on sustainable energy use within cities is that of Smart Energy Cities. The definition of such a city is as follows:

“The Smart Energy City is highly energy and resource efficient, and is increasingly powered by renewable energy sources; it relies on integrated and resilient resource systems, as well as insight-driven and innovative approaches to strategic planning. The application of information, communication and technology are commonly a means to meet these objectives. The Smart Energy City, as a core to the concept of the Smart City, provides its users with a liveable, affordable, climate-

friendly and engaging environment that supports the needs and interests of its users and is based on a sustainable economy” (Nielsen, Ben Amer & Halsnæs, 2013:3).

Within a Smart Energy City, several measures to ensure the sustainability targets can be taken. Examples of such measures are; solar panels, isolation, green roofs, air/water pumps etc.

2.2.2. Circular city

In a linear city, all materials run in one direction, this means that they enter an economic system as inputs and leave this system as waste or residuals. Within a circular city, all raw materials are recycled and reused. Society in this way is much more cyclical (Kennedy, Pincetl & Bunje, 2011). This approach can be used for urban sustainability, because for a city to be sustainable, everything exported from the city (e.g. sewage, greenhouse gases, and waste) can be used in order to generate new plant nutrients, as well as energy to be imported into the city (Girardet, 1992).

2.2.3. Climate adaptation

“the capacity of a city’s systems, businesses, institutions, communities, and individuals to survive, adapt and thrive, no matter what chronic stresses and acute shocks they experience” (Spaans & Waterhout, 2017:110).

Research has shown that cities in particular are vulnerable to climate change. In order to adapt to the new climate, which comes with heat waves, heavy rainfall, floods and even more extreme shocks such as earthquakes. Chronic stresses are for example high unemployment; unbalanced composition of the population; chronic food and water shortages; and inefficient public transportation systems. The resilience approach stresses the importance of a city being able to adapt, anticipate, plan for, and mitigate the risks associated with economic, environmental, and social change. It needs to “bounce forward,” not just bounce back (Newman, Beatley & Boyer, 2017). In order to do so, cities need governance systems with built in capacities to deal with the complexity of urban sustainability.

2.2.4. Healthy city

Research shows that the neighbourhood where you live is related to how healthy you are and whether you maintain a healthy lifestyle. The demographic composition and physical environment of neighbourhoods determines whether or not you are in a healthy living environment (Kamphuis, Deelen, Van Dooleweerd, Jansen, Dessing, & Poelman, 2016). ‘The healthy city’ has a different meaning in every phase of life. Children, youth, students, adults and seniors each use the city in their own way. There are many ways of looking at the relation between a city and health. In this research there will be a focus on two different ways. On the one hand, the influence that the living environment has on health or on stimulation of healthy behaviour (healthy food, sufficient exercise and sports). On the other hand, the degree of exposure to substances, emissions, or radiations that are bad for one’s health. It has also been proven that people with a low socio-economic status (SES), on average, show more unhealthy eating and exercise behaviour than people with a high SES (Pampel, Krueger, & Denney, 2010).

Planning for a healthy city thus means looking at the possibilities for creating an environment in which exercising is encouraged, healthy food is available and the degree to which citizens are exposed to substances and emissions is low

3. Methods

This chapter introduces the research strategy and methods (data collection and analysis) based on the previously described theoretical framework in order to answer the research question and sub-questions. Moreover, the validation and trustworthiness of the adopted research strategy are elaborated upon.

3.1. Research questions

By examining the case of the Motorstraatgebied, Rotterdam, this research aims at understanding what tools in implementing policy ambitions are existent and, more importantly, effective in providing sustainable spatial development in the Netherlands. Furthermore, the implementation process of sustainability targets will be examined. This research will do so by answering the following research question:

How can sustainable housing programmes achieve sustainability targets at a neighbourhood level?

Sub questions that will guide the thesis to answering the research question, are:

1. *How is the implementation process of sustainability targets organised?*
2. *What instruments are useful in the implementation of sustainability targets?*
3. *How is the interaction between relevant actors shaped?*

3.2. Research strategy

As this question is an open question seeking for further understanding of the topic, qualitative methods fit best. In the light of the epistemology, the focus will lay on an interpretivist approach. In line with this, a constructionist ontology forms the basis of this research, as it seeks to understand underlying processes that are formed by people's opinions and behaviour and therefore are not to be seen apart from each other and thus objective.

In this research, qualitative methods are applied to describe, understand and explore the process of policy implementation of sustainability targets. It will be a case-study design for the Motorstraatgebied in the municipality of Rotterdam. This research will provide a detailed analysis about the case of the Motorstraatgebied by diving deep into the literature, policy documents and interviewing important actors and experts. A case-study design fits well because it will provide an extensive description of underlying motives and choices made and will eventually allow an overall understanding of the case. A disadvantage of case-study research is that it is not seen as generalisable (Bryman, 2012). This is not of great importance as this research is aimed to provide only understanding of this and similar cases. On top of this, the case of the Motorstraatgebied can be seen as an example for similar cases, as it is an outstanding case in which sustainability targets are aimed to be met through housing construction. Another reason as to why this case is especially interesting is because ownership is fragmented in which the role of the municipality is to be defined.

3.3. Case study design

A set of criteria informed the selection of relevant case studies. This way of case study selection can also be called non-probabilistic, purposive sampling (Farthing, 2016). The case of the Motorstraatgebied was chosen based on the criteria of location in a big city in the Netherlands, due to the fact that governance processes and actor involvement are more prominent in these cities than they are in smaller cities. Based on available knowledge and expert recommendation, the case of the Motorstraatgebied was chosen. An ongoing redevelopment process was interesting to research as the implementation process was going on at the moment of this research. Respondents that were municipal officials have their mind on this particular case and could therefore describe the process and role of the municipality in great detail.

The case of the Motorstraatgebied can be seen as an example for other, similar, cases as it is implementing sustainability targets in an early stage of the policy implementation process. The municipality of Rotterdam has ambitious targets regarding sustainability and can therefore also be seen as an example for other municipalities. Besides, Rotterdam being a metropolitan area, where multiple influential actors are in debate on spatial development, makes it also an interesting case. One of the other selection criteria was the search for a development project where the implementation of sustainability targets was still ongoing, as the actors are involved in this process at this moment.

3.4. Literature review

A literature analysis was conducted to obtain an overview of the findings in the context of existing literature. The literature reviewed previous official documents, reports, published academic articles, and operative documents, focusing on the planning and implementation of the main sustainability targets in the municipality of Rotterdam. The objective was to explore the Motorstraatgebied project and policies on sustainability in Rotterdam and the extent of earlier research on the subject matter, in order to identify gaps in earlier research.

3.5. In-depth interviews

Among the respondents were representatives of the municipality of Rotterdam, who worked on the case of the Motorstraatgebied for several months to years. On top, experts in the field of sustainable spatial development, the Environment and Planning Act, governance and spatial development processes were interviewed. A topic list was made beforehand, as the interviews were semi-structured. To allow the interviewees speak freely, little interference was done by the researcher.

List of interviewees

Respondent	Function	Organisation/company
1.	Project Manager Motorstraatgebied	Municipality of Rotterdam
2.	Landscape Architect	Municipality of Rotterdam
3.	Urban Designer	Municipality of Rotterdam
4.	Project Manager Hart van Zuid	Municipality of Rotterdam
5.	District manager	Municipality of Rotterdam
6.	Expert sustainable spatial development	Municipality of Rotterdam
7.	Contract specialist	Municipality of Rotterdam
8.	Expert sustainable spatial development	Over Morgen
9.	Expert sustainable spatial development & case of Motorstraatgebied	Over Morgen
10.	Expert Environment and Planning Act	Over Morgen
11.	Expert sustainable spatial development & case of Motorstraatgebied	Arcadis
12.	Expert sustainable spatial development	Arcadis
13.	Expert (legal) advice and construction plan supervision	BODG

The interviewees were sampled through connections of the internship company and further snowball sampling. Every interview was conducted face-to-face or via MS Teams and lasted approximately 60 minutes. During each interview, all topics in appendix 1 were discussed. All individuals were invited to the interviews by email. The respondents chose the place of the meeting. Each interview was recorded and transcribed.

3.6. Participatory observation

During the research period, Over Morgen organised two stakeholder sessions in order to talk about sustainability in the Motorstraatgebied with the municipality of Rotterdam and other relevant stakeholders. The stakeholder session each lasted three hours, with preparation together with the municipality included. As the researcher was a part of these sessions, there were also conversations with relevant actors and between relevant actors. Written notes were also taken into account when looking at the results of this thesis.

3.7. Policy analysis

Policy documents on the topics of sustainability on a national as well as local scale were selected through the lens of coherence. Documents that focused on only one theme of sustainability were excluded as they were not significant for the research scope. The documents were sampled through the lense of a coherent sustainability approach and critically evaluated by the researcher.

3.8. Data collection

The interviews were recorded and transcribed. With the help of Atlas TI, coding was done to analyse the transcriptions. The coding was done in two steps: (1) open coding and (2) axial coding. The purpose behind this was to code the interviews as open minded as possible to analyse the data. This was done in order to code the interviews as objectively as feasible for data analysis. By doing this, the researcher's potential for bias is reduced since, during the open coding process, codes that are literal, factual, and precise are applied to the data. The codes were formed on the basis of the concepts described in the theoretical framework. The coded interviews were compared to each other, as well as to the policy analysis in order to be able to perform an in-depth analysis.

3.9. Internship

This research was carried out during an internship at Over Morgen, a sustainability consultancy firm that works on an integrated approach at the junction of sustainable spatial development and energy transition. Their goal is to help create a sustainable environment that fosters future-proof social and technological development. Thanks to the connections of Over Morgen, the researcher had open access to relevant actors as well as experts from Over Morgen and Arcadis. The research has taken place between February and July 2022.

3.10. Positionality

The role of the interviewer (researcher) can be subjective, though this is thought out by only giving away research topics and not static interview questions. The answers were, as far as possible, not interrupted and the researcher was aware of their position for optimal objectivity.

3.11. Triangulation

In this research, validity is increased by carrying out different research methods, interviews, literature reviews, participatory observation and policy analyses. Additionally, the researcher was part of the research that was carried out by Over Morgen to deepen out the sustainability targets for the Motorstraatgebied by speaking to several actors in the area about sustainable housing.

3.12. Validation and reliability

For reliability, a research has to be, to an extent, repeatable. This specific research is probably not to be repeated, but this also is not one of the main focuses. By using different research methods and looking at different viewpoints through several actors and experts, the outcomes are seen as reliable. The researcher tried to a great extent to use a thick description, which means that a detailed explanation of important selection criteria and other relevant information about the case was given. The use of a thick description therefore contributes to validation and reliability of the research.

3.13. Expected outcomes

Outcomes of this research are expected to give a detailed description of the role(s) the municipality plays in meeting sustainability targets through housing programs. By diving deep into three different indicators, a detailed explanation can be given. The role of the municipality will be combined with insights about the coordination between different actors. Examples of useful instruments will be a part of this research, as this is the last indicator.

4. Context

The following section discusses the main findings of the document analysis and the interviews conducted for the case of the Motorstraatgebied in Rotterdam. First, an introduction about the history and context of the transformation of Rotterdam South and specifically the Motorstraatgebied is given. The next section focuses on the results of the policy analysis and interviews.

4.2. Rotterdam

The city of Rotterdam is the second largest city in the Netherlands and count nearly 600,000 residents. It is located near the river de Nieuwe Maas and has a great harbour that is the economic and logistic centre for the city. Because of the bombing in World War II, the city had to be rebuilt which gave way for modern architecture and several skyscrapers. The city has a limited number of city parks, of which only one is located in Rotterdam South.

4.3. Vreewijk

Vreewijk is a green neighbourhood in the south of the Feijenoord area. It contrasts sharply with the metropolitan areas that surround Vreewijk. Vreewijk is seen as Rotterdam's green village ('tuindorp'). There is lots of green space and spacious housing with gardens. The district is devoid of high-rise structures. As two central axes, the Groenezoom and the Langegeer run through the district. The Motorstraatgebied is a part of Vreewijk. Given that this is mostly a business and facility district combined with the postwar architecture of the Motorstraatgebied, it contrasts with the garden community Vreewijk's village-like appearance (Rotterdam.nl).

4.4. Motorstraatgebied

The Motorstraatgebied is an area in Rotterdam South and is close to the shopping area and public transport hub Zuidplein and Ahoy, a big location for events. The area is bounded by the Vaanweg, the Strevelsweg, the Dordtsestraatweg and the Valkeniersweide. It is a mix of industrial buildings, offices, schools and other social facilities. In the area there is also a hospital and an elderly home. In total, there are 3,700 people working in the Motorstraatgebied. With the Startmotor as the first housing project, it now also contains 566 studios where people between 18 and 27 can live. In the future there will be around 700 units added to this area (Ontwikkelvisie, 2021). The development in this area is an ongoing process that will continue until at least 2030.



Image 1: overview of the Motorstraatgebied (Ontwikkelvisie, 2021).

5. Results

5.1. Policy analysis

The following section will elaborate upon existing policy documents that set out targets regarding sustainability and sustainable housing in the city of Rotterdam. A choice was made to focus solely on the policies regarding multiple sustainability subthemes, and not on documents that focus on only one subtheme. The results are presented per document, in a funnel model so that the focus can be brought to the Motorstraatgebied.

In the analysis of the policy documents, several questions were of importance:

1. What is the strategy for sustainable housing programmes?
2. What is said about the implementation process?
3. How detailed is the implementation process described?
4. What is lacking regarding the implementation of sustainability targets?

Eén stad, Rotterdam (Coalitieakkoord), 2022-2026

In their coalition agreement, the municipality of Rotterdam states it strives for a “*green, clean and safe city*”. The focus on creating and maintaining green space in the city is because it has positive effects on the wellbeing and health of Rotterdam’s residents. In addition, adding green space is an effective measure to reduce impact due to more extreme weather conditions as a consequence of global warming. The focus is on five different sustainability topics; energy transition, solar- and wind energy, natural gas free and isolation, circular economy and clean air. In chapter 4, all themes are elaborated on by giving statements on what exactly the municipality is planning on doing in the coming 4 years.

Two chapters of the coalition agreement are particularly important for this research. First, ‘housing and mobility’ and second, ‘climate and energy’.

In the chapter that is on housing and mobility, climate change is one of several discussed topics. The coalition states that:

“In new construction, we take sustainability in an integral way into account from the start. In this way we encourage nature inclusive building, green and blue roofs. Homeowner associations are stimulated to do the same. Additionally, we take the green standard into account in the construction of new housing, with which we stimulate the greening of neighbourhoods” (Gemeente Rotterdam, 2022:27).

Although this statement is a good step in the right direction, it is the only sentence in the chapter regarding housing that states something about sustainability. Additionally, the municipality does not explain how the homeowner associations will be encouraged to build in an integral sustainable way and why there are no other actors involved. The only statement that is made regarding the implementation process is the following:

“We are a reliable government. A deal is a deal. This means that agreements made with the municipal council (e.g. Note of Principles, master plans) and agreements made by the municipal executive with housing associations and building parties (in development

agreements) about decisions mandated to the municipal executive with regard to segmentation and development pace are not to be broken” (Gemeente Rotterdam, 2022:27).

The chapter ‘climate and energy’, includes different statements regarding the different sustainability topics. For the energy transition, an important transition in the Netherlands, there are several funds set up, where at least 170 million euros will go to in order to realise this transition. Residents are asked to think along about the best ways the municipality can handle the energy transition. Additionally, there is a programme on solar- and wind energy, where Rotterdam plays a big role in installing solar panels. Unfortunately, this chapter too does not give a detailed explanation of the organisation of the implementation process.

All in all, this agreement is set up to be pragmatic and concrete. The political parties that are in the coalition of Rotterdam 2022-2026 all strive to be clear and decisive. Ambitions are clear and clarified by set targets, often completed with a concrete amount of euros that the municipality will invest to reach a specific target. However, what is missing is a focus on what is needed in specific areas. Fine-tuning to make it even more concrete would be a good addition. On top of this, an explanation on how the targets are reached is lacking.

Rotterdams Duurzaamheidskompas, 2020

Directed by the Alderman of Sustainability, Air Quality and Energy Transition, this document gives an overview of the set targets regarding sustainability in Rotterdam, this will be elaborated upon on the next page. The introduction starts off by stating:

*“We want to move towards a sustainable, clean city in which future generations can also live comfortably, with employment in an industry that runs on sustainable energy and reuse”
(Arno Bonte, 2020)*

By making use of sustainable forms of energy production and renewable materials, the city can add to the challenge of reducing impact on climate change. The focus of the targets is on these two topics. Other topics that are important in the Duurzaamheidskompas are climate adaptation and health. The city of Rotterdam therefore focuses not only on reducing impact on climate change but also on mitigating changes in the climate that are already irreversible.

Long-term agreements

Presented in a table, the municipality gives an overview of Rotterdam’s long-term agreements regarding sustainability. They are set for three different time slots in the future; 2025, 2030 and 2050. With indicators for short term changes, the city tries to subdivide the challenge into manageable pieces. They make a clear distinction in what the targets for the long-term future are and what steps are to be taken in the near future.

Figure 3 gives an overview of the set targets and indicators, as they are presented in the Duurzaamheidskompas (2020).

	Targets for Rotterdam	Important indicator short term
Energy transition	In 2030 the Rotterdam CO2 Emissions must be 49% lower compared to 1990. In 2050 Rotterdam will be climate neutral.	In 2022, the annual Rotterdam CO2-emissions will be turned into a downward trend.
Circular	In 2030 circularity is very normal and we have the use of primary resources halved. In addition, there are 3,500 to 7,000 jobs created that contribute directly to the circular economy. In 2050, the Rotterdam society is completely circular: material cycles are closed.	The waste separation percentage of household waste has been increased from 30.8% in 2018 to 45% in 2023. Circular behaviour of the Rotterdam population rises from 20% in 2018 to 30% by 2023 according to Blauw's behavioural monitor research. Reduce quantity residual waste of 296 kilograms in 2018 up to 249 kilograms in 2022. At least 40 new circular initiatives are realised in the city in 2023.
Climate adaptive	In 2025, Rotterdam will be 100% climate adaptive.	The percentage of properties that do not have an increased chance of flooding during heavy rains rises from 88% to 90%. We will have twenty more hectares of green space in 2022 compared to 2018.
Healthy living environment	In 2020, Rotterdam will meet the European standards. Staying even after 2020 we keep working to improve air quality.	There will be no streets in 2020 that exceed the EU standards for NO2. We are well on our way in 2025 to reach WHO guideline values.

Figure 3: sustainability targets, adapted by the author (Duurzaamheidskompas, 2020)

While the indicators as they are outlined in figure ... are a step in the right direction, a little elaboration is missing. It remains unclear as to when and where the short-term indicators are to be implemented. In order to realise the targets, the municipality has formulated 7 'starting points' which would guide the city into the right direction. The starting points are as follows:

- (1) We [the municipality] do it together with partners and residents
- (2) The municipality is a leading example
- (3) We do while learning and facilitate innovation
- (4) We make use of pairing opportunities
- (5) We formulate frames and enforce when necessary
- (6) We ensure that we realise our ambitions in an affordable, reliable and safe way
- (7) We communicate well

For the sixth starting point, it is explained that realising ambitions in an affordable, reliable and safe way can differ for every project. This touches upon the organisation of implementing, making clear that it is not possible to state an overarching approach on how the targets are to be met. However, more elaboration is still missing.

Chapter 4 up until 7 give a more detailed explanation of the targets for different policy areas. For each topic concrete measures, projects and budgets are formulated. Targets for the built environment are specified within the topic of sustainable energy production. For the other topics, the built environment is a more integral part of the targets.

This document is a good example of how the municipality can be concrete and specific in setting targets for sustainability on a municipal level in the future. By creating an overview in which coherence is central, set out by linking opportunities for connecting different sustainability topics, the targets are clear for the city. However, what is missing is a more location-specific approach and explanation of the organisation of the implementation process, which will be elaborated on in the next paragraph of this research.

As indicated in the previous paragraphs, the local authority of Rotterdam has an extensive policy database on creating a sustainable living environment. The next paragraph will dive deeper into the existing policy documents on Rotterdam South, and more specifically the Motorstraatgebied.

Nationaal Programma Rotterdam Zuid, 2019-2022

Rotterdam South is an area where residents do not live in wealth. Research shows that 68% of the residents in the neighbourhoods Feijenoord, Charlois and IJsselmonde have a low income and 32% are middle or high income (Programmabureau NPRZ, 2019). Not only do residents of Rotterdam South have a lower income than the rest of Rotterdam, children score lower on tests, there are less highly educated residents, more people on unemployment benefits and several other indicators that Rotterdam South needs to pay extra attention to (Programmabureau NPRZ, 2019). Therefore, the National Programme Rotterdam South sets out tasks for this area in the coming years.

In the 'resident-oriented' approach, there are three pillars that need attention in policy: living, work and school. Within these three pillars, there are key dimensions that are important throughout all three pillars. Those are safety and stability. For the residents of Rotterdam South those are important qualities of a neighbourhood.

The National Programme Rotterdam South does not focus on sustainable housing. This is understandable, as the social factors for this neighbourhood are of more attention. The municipality, in this document, has laid a focus on affordable housing that invites social interaction in order to create a neighbourhood where inequality of opportunities ('kansenongelijkheid') is lowered, rather than sustainable housing.

This context is important when researching a neighbourhood that is located in Rotterdam South, as this Programme might hold back innovations in sustainable housing.

Ontwikkelvisie Motorstraatgebied Rotterdam, 2020

The Development Vision for the Motorstraatgebied elaborates the concepts as they are set out in the National Programme Rotterdam South as well as the Duurzaamheidskompas and additional policy documents.

This vision starts off by setting out the urban planning conditions ('stedenbouwkundige randvoorwaarden'). These preconditions include the outlines of the look and feel of the neighbourhood, the connection to surrounding areas and the character of buildings and public space. Furthermore, topics such as urbanisation, living, work, social facilities, parking, accessibility and sustainability are elaborated upon. Based on the Duurzaamheidskompas, the topics of sustainability are further explained by elaborating on the topics of energy transition, circular economy, climate adaptation, nature-inclusivity, and healthy living environment. In the Development Vision it is stated that some of these objectives are established in legislation and regulations. Other targets are not officially established in legislation. The municipality stated to encourage project developers to contribute to those targets in making the city more sustainable. How they will do so, however, is lacking.

Although the municipality of Rotterdam does promise to give direction to solutions on creating a sustainable living environment, as the above paragraphs show, multiple questions remain regarding the implementation process. It is not specified how the municipality exactly will encourage project developers in making sustainable decisions, nor how they will check whether or not the developers, or other important actors, will do so. The targets are not always clear, but do give the direction to follow for the area of the Motorstraatgebied.

A last remark on the Development Vision concerns the statement that landownership is very fragmented. A part of the development plots is owned by private parties and only a small share of them is owned by the municipality. The municipality states that for the redevelopment process, it is dependent on the private parties that are involved in the redevelopment of the area. This makes it harder to determine preconditions for the area than in the case of land owned by the municipality. The municipality states to not want to have an active role in the development process, but not a passive one either. It is not explained how the role of the municipality is to be shaped, nor elaborated on the strategy for implementing targets into those developments.

Concluding remarks policy analysis

In conclusion, the policy documents that contain important guidelines on creating a sustainable living environment try to lay down rules and targets for sustainable housing. These targets are not entirely clear in the coalition agreement, but when a closer look is given to the Duurzaamheidskompas, the overview of the targets made it obvious. However, what is lacking is a complete overview of the process on how the targets are to be met. This gives the idea that the municipality of Rotterdam lacks ownership on the process behind implementing targets regarding sustainable housing programs. The municipality does not have a strategy for the implementing process, nor does it elaborate on how other actors should be involved and why. This may be considered implicit, but gives problems for municipal officials who are at stake in the implementation process. In addition, considering that the Motorstraatgebied is located in Rotterdam South, it is subjective to other factors that are more important than creating sustainable housing. Affordability, safety and stability are priorities.

The next paragraphs will elaborate on how the process of implementation of the sustainability targets should be designed.

5.2. Interviews and stakeholder sessions

The following paragraph will explain the answers that were given by the respondents to the interview questions on the three aspects of implementation: organisation, interaction and instruments and other aspects that were discussed. Additionally, the results from the stakeholder sessions are discussed.

As the previous paragraph shows, the policy documents are lacking two things:

- (1) Focus on when and where to implement sustainability targets
- (2) Elaboration on how to design the process of implementing the targets

It is clear that little is known about and elaborated on the implementation processes through which sustainability measures should be met in the existing policy documents of the municipality of Rotterdam. Elements of governance processes are mentioned within the policy documents. The Duurzaamheidskompas as well as the Ontwikkelvisie mention the importance of involving stakeholders. It is, however, not specified who these stakeholders are, how and when they should be involved and what their impact can be. In addition, it is not specified what the role of the municipality is in coordinating such stakeholder involvement or other processes, nor what instruments should be used in order to meet the targets that are set in the policies. Therefore, the next paragraph will give an elaboration on how the processes are shaped in the case of the Motorstraatgebied by setting out the different aspects as they are discussed in the in-depth interviews.

5.2.1. Organisation

For the aspect of organisation, the role of the municipality in the implementation process was discussed during the interviews. It was mentioned by several respondents that it is hard to define one universal role for the municipality in every housing programme. A division that was made was the role in case of landownership by the municipality and landownership by the project developer or the housing corporation. Ideally, most respondents agree that the best role for the municipality is that of a partner. However, it is not always carried out because of the role that landownership plays.

When the municipality owns the land, it is easier to act as a partner, as the municipality and other actors are in the same position. The project developer wants something from the municipality, often a permit, and the municipality wants something from the developer, in this case sustainable housing. Both parties discuss their ambitions and targets and they are equal in doing so. The role that the municipality takes on in this case can best be defined as the role of partner, as it is described by Kronsell and Mukhtar-Landgren (2018). In the role of partner, the following aspects are of importance: participating in partnership on fairly equal terms, shared leadership, the importance of collaboration is emphasised, and the municipality has a specific and explicit function that is unique for municipalities. These are all indicators that fit the municipality of Rotterdam in the case of the Motorstraatgebied. By meeting other actors as well as organising stakeholder sessions, the municipality poses as a real partner in the collaboration with the other actors. As the theoretical framework revealed, the municipality does not fit only one role, but several roles are applicable.

When the municipality is not the landowner, but the developer or housing association is, the role is harder to define. Sometimes, respondents state, it is necessary to act as a promoter or enabler in order to meet sustainability targets. If the developer is the party that is deciding what sustainability measures are included in the programme, it is needed to invite the developer into participation in the implementation of sustainability targets. The municipality can provide knowledge and economic resources in order to include sustainability measures into the programme. The municipality takes on a role that is in need of more leadership. Indicators that fit the role of promoter are: initiation, calling

upon other actors to participate, allocation of economic resources/taking active participation in raising funding, municipal leadership. The indicators that fit the role of enabler are: opens up acting space for other actors, opens up opportunities for collaboration, municipalities participate but do not have an explicit leading role, support via indirect provision of e.g. buildings. This role is sometimes pointed out as necessary to leave room for initiatives by other actors, such as developers.

For the Motorstraatgebied, the role of the municipality was not defined beforehand. In the interviews as well as the stakeholder sessions it became apparent that the municipality does not really take the leadership in the implementation of the sustainability measures.

The role of promoter was not very prominent in the Motorstraatgebied. The role of enabler was seen in the projects of Motorstraatgebied. The municipality opened up space for others to act and come up with sustainability measures. Developers that are landowners came up with sustainable housing designs early on in the process. Additionally, the municipality created opportunities for collaboration by inviting important actors to the stakeholder sessions to discuss sustainability measures. In the stakeholder sessions, the municipality is open to ideas generated by other actors. They open up the space for others to act as leaders, they share leadership. The importance of collaboration is emphasised by the municipality as they ask a consultancy firm to organise the session, so that they can be one of the actors, instead of the leader. In the sessions it also became apparent that the developers, housing corporations and other actors are willing to talk about sustainability measures to incorporate in their plan, because they are not forced to do what the municipality decides, but can take their own ideas and knowledge into the plan.

“(...) You must not sit in that chair, I always let people who have the knowledge think of what fits best.” (Respondent 8)

In this quote, the role of invitation planning comes forward. The municipality invites other partners to act, as they have more knowledge than the municipality.

The respondents point out that this is not very common to do for a municipality in a spatial development project. They stated that it was a relatively new process of implementing the targets as it was done now.

“That is actually the first time that this has happened that we really start a conversation about sustainability together with stakeholders in such a neighbourhood” (Respondent 7)

For other projects, the role of partner is the best way to describe the actions of the municipality. The indicators that fit this role were: participating in partnership on fairly equal terms, shared leadership, the importance of collaboration is emphasised, municipality has a specific and explicit function that is unique for municipalities, partners are named. The importance of collaboration is emphasised by the respondents within the interviews, but this also became clear when looking at the actions undertaken by the municipality. By inviting actors to the stakeholder sessions, listening to their input and making sure that the leadership was not obvious for the municipality, it became clear that the municipality acts as a partner.

It is remarkable that the role that is described by the respondents as the best role, is also the role that the municipality of Rotterdam seems to be taking.

All in all, what is most important is collaboration. When the targets are clear, it is necessary for all parties to collaborate in order to meet the targets. How the collaboration should be shaped is elaborated upon in the next section.

5.2.2. Interaction

For the aspect of interaction, six indicators that were formulated in the theoretical framework were discussed with the respondents. The six indicators of interaction as stated in the theoretical framework were (Boogers, 2013):

- (1) Equality of stakeholders in terms of power and resources
- (2) Necessity to participate in the decision-making process
- (3) Experiences with cooperation or conflict
- (4) Supportive leadership
- (5) Openness and exclusivity of decision-making forums
- (6) Trust, involvement and outcomes process

In order to give an overview of the results regarding the six indicators as formulated by Boogers (2013), the results were set out in figure 4.

Indicator	Results
(1) Equality of stakeholders in terms of power and resources	The stakeholders involved in the process of initiating projects in the Motorstraatgebied are equal. The municipality knows the stakeholders and they know each other. Through the Directors Meeting ('Directeurenoverleg') the private developers speak to each other on their separate projects.
(2) Necessity to participate in the decision-making process	The stakeholders of ongoing development projects feel the necessity to participate in the decision-making process. Some of them do not have the knowledge on sustainability so they want to learn from the sessions on what they can do for sustainability in the area. Others already know a lot about sustainability and are willing to discuss the options with the municipality through the stakeholder sessions.
(3) Experiences with cooperation or conflict	The stakeholders in this process do not really have a history of working with each other. Some people have worked together in the past, but roles were different.
(4) Supportive leadership	The leadership from the municipality can best be described by a combination of partner, promoter and enabler (see Organisation). The role of partner is described by several respondents as the ideal position. Only this is not always possible.

(5) Openness and exclusivity of decision-making forums	The decision-making is very open. Actors are invited to discuss sustainability measures in the session organised by Over Morgen. Residents of this and surrounding areas are also invited for participation.
(6) Trust, involvement and outcomes process	The respondents, employees of the municipality, state that they trust the developers. They are willing to cooperate and there are, so far, no conflicts.

Figure 4: indicators and results, by the author

Several respondents stated that it was of most importance that actors, set out in the theoretical framework, know and trust each other. In the case of the Motorstraatgebied this was true. Through a monthly meeting that is called the 'directeurenoverleg' (directors meeting), stakeholders meet each other and discuss the spatial plans for the Motorstraatgebied. The municipality is not really a part of this, but is sometimes invited for this meeting to. Additionally, the municipality asked consultancy firm Over Morgen to deepen the sustainability measures for the Motorstraatgebied. Over Morgen organised stakeholder sessions in which the municipality as well as other important actors were invited to discuss the sustainability measures to be taken in the area.

"Well that holds many facets... I mean, that starts with what I just said not to impose it at the front, but to get there together." (Respondent 8)

This quote sums up the overall message most of the respondents had. Meeting sustainability targets through cooperation should be seen as a process and not as a checklist. Over Morgen organised two sessions in which municipal officials, project developers and sustainability experts could discuss the targets for the area with the goal of writing down concrete measures.

"[We asked Over Morgen to] bring the choices into the picture, with what we start the conversation with... well with property owners or land owners (...) and give us feedback on the priorities we have set for this" (Respondent 1)

Stakeholders are familiar with each other, had met before, or met each other during these sessions. Respondents stated that this was very valuable in the process so that they can gain trust in each other. Out of the six indicators, respondents agree that trust is one of the most important indicators. When the municipality and other actors trust each other, it is not very necessary to write down agreements on the measures that should be taken to meet the sustainability targets. Trust is often built out of experiences with cooperation or conflict. When actors already know each other early on in the process, it is easier to trust that they will honour existing commitments.

It can be concluded that trust is the most valuable indicator in reaching sustainability targets. The respondents mention that it is necessary to talk about sustainability measures early on in the designing phase so that it can be implemented into the housing programmes. When actors know each other, they can build trust and writing down agreements is not always necessary. However, as this does not make a completely solid plan, sometimes it is necessary to write down agreements. This is when instruments play an important role.

All in all, the aspects of organisation and interaction point towards invitation planning rather than admission planning. This would mean that the municipality invites other actors to come up with sustainability measures instead of writing the framework for measures beforehand. The next chapter will elaborate upon this last aspect, instruments, more.

5.2.3. Instruments

Writing down agreements on sustainability measures that are non-legally binding in contracts is not always necessary. Several instruments to steer non-legally binding measures are discussed during the interviews. Other aspects than solely instruments came up during those discussions. The results are listed down below.

In case of a plot that is owned by the municipality, making developers build houses in a sustainable way is easy. Through writing out a tender, the municipality is able to set high targets regarding sustainable housing. A private party can respond by designing a plan that meets these targets and the municipality picks the plan that follows their directions the best. Writing out a tender is an instrument that can only be used in case of landownership by the municipality. In the tender procedure, a Programme of Requirements ('Programma van Eisen'), is a part of the procedure. Within this instrument the sustainability measures that the municipality thinks are necessary to be taken in the area are written down. Two of the respondents state that it is good to keep the targets a bit vague, so that private parties can compete and the outcomes are optimal in terms of sustainable housing.

"That means that you have to know a lot about technology, finances and then you are taking over the role of the constructor really (...) I always let people who have the knowledge think of what fits best." (Respondent 8)

There are two sides to a tender procedure. The Programme of Requirements ('Programma van Eisen'), can consist of concrete measures or vague ideas. Important in this matter, according to respondents, is trust between the municipality and the private developer. When the municipality is familiar with the developer and knows its qualities, it can describe the measures vaguely and have the developer come up with innovative plans.

"(...) but yes, that's the point. Trust Of course. You know each other, make a plan and that they actually carry it out, as it is permitted" (Respondent 1)

In case the municipality does not have such a trust relation, the municipality can be more concrete in writing down measures to which they can hold the developer accountable. The respondents agree that in both situations, trust is an important factor.

In case of a plot where the municipality is not the landowner, it is harder to force the private parties to do what the municipality wants. All respondents agree that in this case, it is necessary to involve actors early on in the process to discuss sustainability measures and write them down in the Note of Principles.

In order to have the trust that private developers will meet the agreements, it is necessary to discuss sustainability targets early on in the process. The next step in this process is writing down what is discussed between municipality and developer. Respondents agree that the Note of Principles ('Nota van Uitgangspunten') is, of all available instruments, the instrument that can best be used when the measures that should be taken have to be written down. Other instruments that were mentioned were the Anterior Agreement, building permits and zoning plans. The last two, however, are less useful as they are established documents that cannot easily be changed per project. This inflexibility makes it hard to use these instruments for the purpose of meeting sustainability targets through location-specific housing programmes.

Besides the instruments that are mentioned in the previous paragraphs, there is also a new instrument that the municipality will be using in the future. The following paragraph will elaborate upon this policy tool.

Policy tool

One of the respondents stated that the municipality of Rotterdam is also working on an extra tool that can help municipal officials that are working on spatial development. This tool, that is not yet officially launched and therefore cannot be named within this thesis, is an online tool that summarises the policies that are applicable in the area. Municipal officials can select the area that they are working on and receive a document with a summary of sustainability targets, strengths and weaknesses of the area. The respondent that worked on this tool stated that this was originally brought up as an idea to overcome problems that urban planners have to organise sustainability targets as well as come up with the right measures for the right area. This may help the municipality in the future with coming up with the right sustainability measures for the right area.

Environment and Planning Act

The new Environment and Planning Act will also change a lot regarding instruments that can be used to write down agreements on sustainability measures. When the new law is implemented, which is expected to happen within the coming year, instruments like the *Omgevingsvisie* and *Omgevingsprogramma* can be used for this matter. However, one of the respondents who is an expert in this new law, stated that the possibilities that the law can bring, can be also used without the existence of the law. There are several ways that the municipality can already write down the targets in a way that will be standard once the Environment and Planning Act is implemented. On top of this, the new instruments will not be a requirement for the municipality to use. Therefore, it can be concluded that the process of stakeholder involvement is more important than the possibilities instruments may bring. The conclusion will be further elaborated on in the next chapter.

5.3. Additional results

As the interviews were semi-structured, the respondents did not talk solely about the three aspects of organisation, interaction and instruments, as they were formulated in the theoretical framework. All additional results will be discussed in the next paragraphs.

5.3.1. Knowledge of the planning team

In 2019, the planning team had a project kick-off. In this session, they discussed the main targets and ambitions for the area of the Motorstraatgebied, within its context of Rotterdam South. In this kick-off, several actors from within the municipality discussed what was needed for the area.

It is not very usual that sustainability experts are a part of the planning team. In the case of the Motorstraatgebied, there was an expert involved very early on in the process. They pointed out that the planning team of the Motorstraatgebied was brave enough to take a stand in reaching sustainability targets for the municipality of Rotterdam. After the first session, the Development Vision was written. Remarkable again was the attention to sustainability. The targets for sustainable development were set for the area of Motorstraatgebied by the sustainability expert, stated respondent 6.

“So, I formulated a number of new ambitions for that plan. Where, for the Motorstraatgebied, I also dared to go further than what is usual” (Respondent 6)

Respondent 6 also mentioned that it was unusual in their opinion that the team, consisting of the Project Manager, the urban planners and landscape architects, has affection and commitment towards reaching the sustainability targets. The Project Manager had had an extensive role in making sustainability a part of the development process.

The division that is made by the respondents on landownership, makes two options for writing down targets. First, it can be done in a very precise way so that other actors know exactly what sustainability measures should be taken into account when designing the housing programme. Second, it can be kept a bit vague in order to invite the developers to come up with an innovative sustainable housing programme. In both options, it is important that the planning team has knowledge on the topic of sustainable housing. Respondents state that this is not usually the case for planning teams.

“The department Circular Building is not a part [of the planning team], no” (Respondent 3)

“In the planning team, there is often not a sustainability expert” (Respondent 7)

In case of the Motorstraatgebied, however, this is different. Several respondents state that the Project Manager has the right knowledge and affection for sustainability. Furthermore, respondents state that the sustainability expert, from the sustainability department, was involved early on in the process. This is something that is not usual for similar development projects because, as one of the respondents stated, often people within the municipality change jobs frequently which makes it hard to find a contact person to talk to in such a situation.

5.3.2. Institutionalised or not

During the interviews, it became clear that sustainability is not yet an institutionalised topic in spatial development. When asked about this topic, several respondents stated that they did not yet have knowledge on sustainable measures, or knew how to find people who had. Several respondents mention the laws and rules that are applicable for parking and for heating systems are very institutionalised, but that this is not the case for sustainability measures. That the planning team of the Motorstraatgebied had this knowledge, is exceptional and does not happen often in other planning teams within the municipality of Rotterdam. Some respondents state, however, that a change is happening and the Sustainability Department is becoming much more visible for the Department of Spatial Planning. These conditions make it in general harder to create sustainable housing programmes, simply because it is a topic that is not always thought of.

5.4. Concluding remarks

To end this chapter of results, one quote from one of the respondents that gives an accurate overview of all the findings is the following:

“That it [the implementation of sustainability measures] is not so much a checklist as a method, a process approach” (Respondent 12)

The remaining of this thesis will elaborate upon the link between the results and theoretical framework that were set out in the previous chapters.

6. Conclusion

The aim of this research was to define the implementation process of sustainability targets by studying a case in the municipality of Rotterdam. The following paragraphs will answer the main research question, by setting out the results in combination with the theory on the three different sub-questions.

It is clear that there is a need for sustainable housing. While the Netherlands are dealing with an enormous housing shortage, climate change is real and especially impacting city life. One of the ways to deal with this complex problem is by creating sustainable housing. Municipalities in the Netherlands have targets regarding sustainable housing. While those targets are clearly defined and reaching towards a more climate adaptive and mitigating society, the implementation process for those targets is still not clear. This thesis has tried to give an overview of the implementation process of sustainability targets into housing programmes by researching a case in the city of Rotterdam. This case can be seen as an example for other similar cases. The research question of this thesis was as follows:

How can sustainable housing programs achieve sustainability targets at a neighbourhood level?

The sub-questions were defined as follows:

1. *How is the implementation process of sustainability targets organised?*
2. *How is the interaction between relevant actors shaped?*
3. *What instruments are useful in the implementation of sustainability targets?*

To be able to answer the research question, a case study was selected to give a thick description of the processes of the implementation of sustainability targets in Rotterdam. The Motorstraatgebied is an area in Rotterdam South where spatial development is ongoing. Targets for sustainable housing in Rotterdam are ambitious and the planning team of the Motorstraatgebied is motivated to create sustainable housing in this area.

The policy analysis showed that the targets for sustainable housing are clear on a municipal level. The municipality of Rotterdam has a document on sustainability and sets out targets for the future. By dividing the targets into groups of targets that need to be met by 2025, 2030 and 2050, the goals are clear. However, the policies do not elaborate upon the designing of the organisation process, interaction and instruments that can be used. Therefore, the in-depth interviews with a focus on these three aspects gave an explanation. On top of this, targets are not location-specific. The level of a neighbourhood is not well explained within the policy documents that were analysed. In the interviews, however, it became clear that this problem is seen by the municipal officials and there is also a tool being designed in order to solve this problem. This tool will give an overview of the existing policies and strengths and weaknesses in an area so that the planning teams can see what sustainability measures will fit for the specific area.

The first sub-question, *'How is the implementation process of sustainability targets organised?'*, can be answered by defining the role of the municipality. Several roles, as they are set out by Kronsell & Mukhtar-Landgren (2018), were discussed in the in-depth interviews. Respondents were clear on this aspect; the best role for the municipality is that of a partner. The municipality and other actors should be equal to each other in order to meet sustainability targets through housing programmes. However, there are cases in which it is better for the municipality to take on leadership. When the municipality

is not a landowner, the targets can be set out during the process of tendering and meeting sustainability targets is easy through discussing the measures with the other actors. When the land is owned by another party, this process is harder. In this case, the municipality can sometimes better take on the role of promoter or enabler. When taking leadership, the targets are set out clearly and the municipality leaves room for the developer to come up with measures but also checks whether or not the targets are met. In the Motorstraatgebied all roles for the municipality were present. In some cases, the planning team took a more leading role than in other cases. By inviting actors for the stakeholder sessions and creating space to cooperate, the role of enabler was used.

The second sub-question, '*How is the interaction between relevant actors shaped?*', is harder to answer. In the Motorstraatgebied, actors are familiar with each other. Through the Directors Meeting ('Directeurenoverleg'), actors meet each other to discuss the Motorstraatgebied. On top of this, the municipality asked consultancy firm Over Morgen to organise stakeholder sessions to discuss sustainability in this area. By meeting each other regularly and speaking about sustainability measures, trust is built between actors. According to the respondents, trust is the most important indicator for cooperation. In both scenarios of landownership by the municipality and by other actors, trusting each other leads to better outcomes regarding sustainable housing. Building a trust relationship can be done by involving actors in an early stage of the development and really cooperate towards a shared goal or target.

This leads to the third sub-question '*What instruments are useful in the implementation of sustainability targets?*'. The respondents gave an overview of available and useful instruments. Examples are the Note of Principles, the anterior agreement, zoning plans and the Programme of Requirements. It is clear that some of the targets need to be written down and checked. Especially targets that the developers are obligated to meet by law, but when targets are above the norm, it is better to talk about sustainability measures, build trust and therefore design sustainable housing programmes than to write down measures and check whether or not they will be met. Additionally, the municipality is not always the party that knows everything about designing sustainable housing. It can sometimes be good to leave this role for the developer. In case there is no trust relationship, the Note of Principles can be used to write down agreements on sustainability measures that should be taken into account when designing the new housing. However, a conclusion can be made that involving actors at an early stage of the development process and thereby building trust between actors is of more relevance than writing down agreements within legally binding contracts.

In conclusion, the answer to the main research question, '*How can sustainable housing programmes achieve sustainability targets at a neighbourhood level?*', is threefold.

- (1) The best role for the municipality is that of a partner, but it is sometimes necessary to take on the role of promoter or enabler
- (2) The interaction between actors is shaped by building a relationship. When actors are familiar with each other they can build trust and make agreements on sustainability measures
- (3) When the trust relationship is good between several actors and the municipality, it is not needed to write down agreements. Involving actors in an early stage is more important

To be able to conclude, some side notes are necessary. First, Landownership is a great indicator for the organisation of the implementation process. When the municipality is a landowner, it is generally easier to meet sustainability targets through housing programmes by setting out specific targets in the tender procedure. When the municipality is not a landowner, cooperation with the developer is

important. Therefore, involving stakeholders in an early stage of the development process is of more importance in case that the municipality is not a landowner. Second, knowledge on sustainability measures is not always present in planning teams. In the team of the Motorstraatgebied, the sustainability consultant was a part of the team early on in the process. The Project Manager and the urban planner too have knowledge on and affection for sustainability. Through the stakeholder sessions organised by Over Morgen, the sustainability measures were explained and discussed in order to create a sustainable living and working area in the Motorstraatgebied. The case of the Motorstraatgebied can therefore be seen as an example for other cases, as this planning team took on the roles of partner and promoter/enabler in order to create space for cooperation with at the basis the right knowledge of sustainable housing.

All in all, what is most important is a trust relationship between different actors. When the actors trust each other, there is no need to write down agreements in a very formal way. This trust relationship can best be built by getting to know the other actors and discussing the sustainability measures as partners. Sometimes, however, it is necessary to play the role of promoter or enabler in order to create the meeting space for actors to cooperate. Therefore, there are situations where the municipality should take on a more leading role.

7. Discussion

Multiple reflecting notes regarding this research can be made. First of all, the reliability of the methods and data can be discussed. The respondents were found using a snowball sampling. This means that the respondents know each other and surprising respondents may have been left out. On top of this, other important actors such as developers and housing corporations were left out of this research as a matter of time restriction. Further research could add to this gap by diving deeper into the role of other actors than solely the municipality. As the interviews were held in Dutch, the translation could have some serious interpretation issues. In order to let this have a low impact on the outcomes of the research, the interviews were coded and analysed in Dutch and only quotes that were used in the result section were translated.

As the selection procedure of the case selection is subject to subjectivity, this should also be considered for internal validity. As indicated in the methodological section, the choice for Rotterdam was based on a preliminary analysis, but the choice for the specific case of the Motorstraatgebied was mostly based on available knowledge and expert recommendations. This makes this selection random and therefore can have some critique regarding internal validity.

As this study concentrated on a single case-study in Rotterdam, the Netherlands, the transferability of this study's findings to others is consequently debatable in certain instances. However, the aim of this study was not to offer a broad framework for the implementation of sustainability targets, but to reveal the role it has played in a project that can be similar to others. A suggestion for future research would be to conduct a comparative case study analysis between other contexts.

The number of interviews can be considered a limitation because the findings do not fully reflect the experiences and viewpoints of all the actors, as this research focused solely on actors within the municipality and experts, and can thus be seen as being insufficient.

For further research, it would be recommended to further elaborate on the final stages of the development process, as the process of redevelopment of the Motorstraatgebied is at the beginning. Other topics of interest could be the relationship between different actors and the municipality from the view of stakeholders such as developers and housing corporations.

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Appendices

List of interviewees

Respondent	Function	Organisation/company	Length	Online/ offline
2.	Project Manager Motorstraatgebied	Municipality of Rotterdam	40 mins	Offline
3.	Landscape Architect	Municipality of Rotterdam	40 mins	Online
4.	Urban Designer	Municipality of Rotterdam	35 mins	Offline
5.	Project Manager Hart van Zuid	Municipality of Rotterdam	40 mins	Online
6.	District manager	Municipality of Rotterdam	30 mins	Online
7.	Expert sustainable spatial development	Municipality of Rotterdam	50 mins	Online
8.	Contract specialist	Municipality of Rotterdam	30 mins	Online
9.	Expert sustainable spatial development	Over Morgen	50 mins	Online
10.	Expert sustainable spatial development & case of Motorstraatgebied	Over Morgen	50 mins	Offline
11.	Expert Environment and Planning Act	Over Morgen	30 mins	Offline
12.	Expert sustainable spatial development & case of Motorstraatgebied	Arcadis	35 mins	Offline
13.	Expert sustainable spatial development	Arcadis	50 mins	Online
13.	Expert (legal) advice and construction plan supervision	BOdG	50 mins	Online

1st round of coding: open coding

code *nprz = Nationaal Programma Rotterdam Zuid
actors
context_nprz
desirability_concreteness
function
further_than_norm
instruments_available
instruments_used
interaction_actors_desirable
interaction_actors_msg
interaction_conflict
interaction_necessity
knowledge_sustainable_housing
landownership
legal_contract
Omgevingswet
organisation_process_current
organisation_process_desirable
prioritisation
relation_to_case
role_municipality
role_projectdeveloper
role_projectdeveloper
role_projectmanager
sustainability_definition
sustainability_integrity
sustainability_trend
unclarity_targets

2nd round of coding: axial coding

code group	code
background	function
	relation_to_case
organisation	organisation_process_current
	organisation_process_desirable
	unclarity_targets
	knowledge_sustainable_housing
	desirability_concreteness
	further_than_norm
	role_municipality
	role_projectdeveloper
	prioritisation
instruments	instruments_used
	instruments_available
	landownership
	legal_contract
interaction	actors
	interaction_actors_msg
	interaction_actors_desirable
	interaction_conflict
	interaction_necessity
lessons_MSG	role_projectmanager
	role_projectdeveloper
	context_nprz
judicial	Omgevingswet
sustainability	sustainability_definition
	sustainability_integrity
	sustainability_trend

Interview guide

Als eerste wil ik u bedanken dat u wil meewerken aan mijn onderzoek. Dit onderzoek heeft als doel bij te dragen aan de wetenschappelijk kennis over het realiseren van gemeentelijke duurzaamheidsambities op wijk- of buurtniveau. Het onderzoek heeft als hoofdvraag: "How can sustainable housing programmes achieve sustainability targets at a neighbourhood level?".

Uw antwoorden zullen in principe zonder uw naam worden verwerkt, maar ik zou wel graag uw rol binnen de gemeente willen benoemen. Hiermee is te herleiden om wie het gaat. Verder wordt de informatie gebruikt voor mijn afstuderen en gepubliceerd voor studenten van de Universiteit Utrecht. Bent u daar oke mee?

- ja/nee

Om de antwoorden nog een keer te kunnen beluisteren en goed te kunnen analyseren, zou ik het gesprek graag opnemen. Mocht u tijdens het gesprek een vraag niet willen beantwoorden of stoppen met deelnemen aan het onderzoek, dan is dat geen probleem en kunt u dat aan mij aangeven. Als u daar interesse in heeft, dan kan ik aan het eind van het onderzoeksproces de resultaten naar u opsturen.

Heeft u begrepen wat ik zojuist heb verteld en stemt u ermee in dat ik dit gesprek opneem?

- ja/nee

Dit interview heb ik opgedeeld in een aantal stappen. Ik zou graag willen beginnen met uw achtergrond en rol binnen de gemeente.

Achtergrond

1. Wie bent u en wat is uw rol binnen de gemeente?
 - a. Wat is uw rol binnen het Motorstraatgebied?

Mijn onderzoek gaat over het realiseren van gemeentelijke ambities op het gebied van duurzaamheid op een niveau van een wijk of buurt. Om hier verder op in te gaan, zou ik graag het begrip duurzaamheid bespreken.

Duurzaamheid

2. Hoe hangen duurzaamheidsambities samen? Waarin zit de integraliteit?
3. Hoe kan je keuzes maken tussen de verschillende thema's?
4. Hoe worden deze uiteindelijk gerealiseerd?

Om te kunnen bepalen of en waar in het proces verandering dient te komen omtrent het realiseren van duurzaamheidsambities, zou ik graag dieper ingaan op hoe dit proces wordt vormgegeven.

Proces en organisatie

5. In welke stappen van gebiedsontwikkeling wordt er nagedacht over duurzaamheid?
6. Welke partijen en andere actoren zijn er betrokken bij dit proces?
7. Zien alle actoren de noodzaak om mee te denken over duurzaamheid binnen het project? Waarom wel/niet?
8. Zijn alle actoren met elkaar bekend? Hoe zit het met vertrouwen?
9. Welke rol als leider neemt de gemeente? Wat is een wenselijke rol?

Om de vertaalslag te kunnen maken naar het écht realiseren van ambities, wil ik nu graag dieper ingaan op de mogelijkheden van verschillende instrumenten die worden gebruikt om deze vast te leggen.

Instrumenten

10. Wat zijn instrumenten die gebruikt of ingezet kunnen worden om gebiedsontwikkeling te verduurzamen (in het Motorstraatgebied)?
11. Hoe worden ambities nu vastgelegd in plannen?
 - a. Kan dit anders? Hoe?
12. Wat gaat er veranderen met de komst van de Omgevingswet?
13. Vanuit mijn literatuurstudie komt naar voren dat er vaak in toekomstvisies vergaande ambities zijn over duurzaamheid, maar dat deze in het proces verloren gaan. Hoe kunt u dit verklaren?

Borging

14. Hoe denkt u dat de gemeente kan controleren of ambities over duurzaamheid worden waargemaakt?
15. Kunnen hier concrete maatregelen voor worden opgeschreven?
16. Gebeurt dit nu al binnen de gemeente Rotterdam? Of een andere gemeente?

Afsluiting

17. Zijn er onderwerpen die u belangrijk vindt maar nu niet aan bod zijn gekomen?
18. Heeft u nog vragen over het onderzoek?
19. Denkt u dat er collega's zijn die ik ook moet spreken voor mijn onderzoek?

Nogmaals heel erg bedankt voor het meewerken.