

Final

The Future is Now

STUDYING THE INTERACTION BETWEEN PRESENT
AND FUTURE AMSTERDAM

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Content

Abstract 2

Introduction 3

Theory and Concepts 4

 Sustainable Urban Transformation 4

 Anticipatory Governance 5

 Socio-Technical Imaginaries 5

 How the present impacts the futures 6

 Analytical Framework 7

Methods 9

 The case: Amsterdam Climate Neutral 2050 9

 Stage 1: Vision analysis 9

 Stage 2: City analysis 9

 Stage 3: Comparative analysis 10

 Stage 4: Semi structured interviews 10

 Ethics 11

 Ethics of the methods used 11

 Ethics of the research conclusions 11

Results 12

 Vision Analysis 12

 City Analysis 15

 Comparative Analysis 15

 Semi-Structured Interviews 17

Discussion 18

 Implications of a mismatch between future and present 18

 Recommendations for further research 19

 Limitations to research 19

Conclusions 19

Acknowledgements 20

References 21

 Peer reviewed articles 21

 Government documents 22

 Books 22

 Other sources 22

Abstract

Sustainability visions are increasingly used by urban governments as a means to guide them through the sustainability transition. Much research has been done on the influence of these sustainability visions on present decision-making, however less is known about the influence of the present on the future. This study examined this relationship by assessing the overlap between urban sustainability initiatives in the present and the future goals and plans as described in the sustainability vision. The question that was asked is how and why the future imagined in a city vision overlaps with activities in the city in the present. This question was answered using Amsterdam as a case study. A comparative analysis was done between the sustainability vision and current processes going on in the city. After, stakeholders involved in both the future vision and current sustainability initiatives were interviewed to get an insight in why there is (no) overlap between the future and present. The results show that there is a mismatch between current processes in the city and the sustainability vision. Most sustainability initiatives deal with urban food and waste management, whereas the future deals with energy supply, industry, transport and the built environment. This mismatch can be explained by the project still being in earlier stages, the differences in role perceptions and differences in sources for visions.

Introduction

Over the past centuries, cities have become the epicentres of human life. Now, more than half of the world's population lives in urban areas (United Nations, 2018). The process of urbanisation comes with many challenges, of which many are sustainability related, like the higher ecological footprint, decreasing air quality, and traffic congestion problems (Rees & Wackernagel, 2008). However, cities also create many opportunities. The relatively small scale of cities and the large amount of intellectual, cultural and financial resources ensures changes can be made relatively quickly. Since there is a large amount of resources available in a relatively compact space, some people see municipalities as a major agent in the sustainability transition (McCormick, Anderberg, Coenen, & Neij, 2013).

More and more, cities are engaging with long-term policy planning to overcome sustainability challenges and help guide the sustainability transition. One method that is used for this purpose, is envisioning (Constanza, 2000; Kemp & Martens, 2007). Visions are defined as desirable states in the future (Constanza, 2000). Some governments use these visions to help them make decisions to get to a certain future. In order to increase the quality of sustainability visions, knowledge about the interaction between present urban processes and future visions is required. In addition, this knowledge can help improve the legitimacy of the visioning process as it provides an insight in where the input for a sustainability vision comes from. Furthermore, it allows to anticipate better on what's to come. Lastly, it can help governments create a vision for a sustainable future as it provides ideas for where to find input.

Scholars have studied the interaction between present and future, however, this was mainly one sided: most research studies how the future impacts the present (e.g. Quay, 2010; Vervoort & Gupta, 2018; Hajer & Pelzer, 2018; Hajer & Versteeg, 2019). Much less is known about how the present impacts the future.

When analysing the present-future interaction, there is scholars often use the theoretical lens of anticipatory governance (Vervoort & Gupta, 2018; Fuerth, 2009). This theoretical lens, however focuses on the technocratic aspects of visions and futures. When it comes to creating sustainability visions, the process is however not limited to technocratic processes. An idea about how the imaginative aspect of envisioning works, follows from the concept of socio-technical imaginaries. This concept is defined as "collectively held and performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology (Jasanoff & Kim, 2015)." When using the definition by Jasanoff & Kim, sustainability visions can be seen as the operationalisation of a socio-technical imaginaries. According to this definition, socio-technical imaginaries emerge from what we know and see around us. This assumption raises the question to what extent an urban sustainable future is influenced by the physical and social reality of the city it was designed for and, if this is the case, how this process works. This study therefore aims to answer the question: How and why does the future imagined in a city vision overlap or not overlap with activities in the city in the present?

To answer this research question, the following sub questions must be answered:

- What are the components of the future imagined in this vision?
- What are the components of sustainability going on in the city?
- How do these things (not) overlap?
- What are the reasons for this overlap or mismatch?
- What are the implications of the overlap or mismatch?

Theory and Concepts

Before it is possible to answer the research question, it is important to touch on some of the major concepts and theories that are related to the topic of urban sustainability transitions. This way, it is possible to better understand what research question means, how to answer the research question and where this thesis stands compared to other scientific literature on the topic. This chapter will proceed as follows: first, to understand what the urban aspect of the research question entails, the concept of sustainable urban transformation is explored. This will explain the different dimensions of sustainability in a city as well as the drivers behind societal change on an urban level. Then, to understand the nature and analysis of sustainability visions, two concepts will be explained: anticipatory governance and socio-technical imaginaries. The concept of anticipatory governance will provide insight in how scholars often perceive and analyse long-term policy visions used to guide sustainable urban transformations. Socio-technical imaginaries will explain the non-governmental and technocratic aspects of sustainability visions. The chapter concludes by integrating all this information into an analytical framework that will be applied to the data.

Sustainable Urban Transformation

To answer the question 'how and why does the future imagined in a city vision overlap or not overlap with activities in the city in the present?', it is necessary to understand the theories and concepts that are related to this question. First, as the question aims to provide insight in sustainability transitions in an urban context, it is important to understand what sustainable urban transformation entails and what is known about it.

Sustainable urban transformation is defined as 'purposive, systemic, long-term and vision-led economic, social, cultural, organizational, governmental and physical change that leads to sustainable urban structures and environments and corresponding technologies, markets and institutions, that determine patterns of production and consumption of resources, by long-term oriented governance approaches and flexible, adaptive and reflexive policy designs that promote active collaboration among stakeholders, integrate different perspectives and bodies of knowledge and expertise, and stimulate experimentation with and learning from different solutions and approaches' (Ernst, de Graaf-Van Dinther, Peek, & Loorbach, 2016). From this definition Ernst et al. (2016) identify three key components that are vital in a sustainable city: (I) sustainable places and their management and usage, (II) the sustainability transition of the urban development regime and (III) sustainability transitions in related societal sectors. Sustainable places and their management relates to a climate mitigating and adapted physical (built) environment. Sustainability transition of the urban development regime, implies that municipalities should facilitate and promote participation of stakeholders in decision making as well as initiate experiments and urban living labs. Sustainability transitions in related societal sectors means that all institutions and processes going on in the city (e.g. water management and transport) should be executed as sustainably as possible.

Six drivers can be used to make progress in those three components (Yang, 2010): population, governance, policy, wealth, technology and lifestyle. Population refers to the fact that urbanisation and mass population in cities creates a necessity for sustainable use of resources (e.g. surface, food and energy) in order to keep a constant quality of life. Governance is only a driving factor when there is good governance. It drives sustainable urban transformation as people have the power (and the ambitions) to create significant change in the city. Policy is a driver because it is the most direct issue of change (and thus the biggest driver for urban transformation). Wealth is considered to be a driver as economic development is related with improving the quality of life, which is sustainable. Technology is a driver as new innovations can be used as a means to increase sustainability. The last driver is lifestyle. This means that individual behavioural choices about the way people live can boost (e.g. green lifestyle) or slow down sustainable urban transformation.

Urban transformation is thus driven by population, governance, policy, wealth, technology and lifestyle. Envisioning can be seen as part of the governance driver. If the aim of a vision is to transform the city into a more sustainable city, then it is thus necessary that it addresses three things: Sustainable places, transitions in urban development regime and transitions in related societal sectors.

Anticipatory Governance

To analyse how cities deal with the future, the theoretical lens of anticipatory governance is often used. The concept is studied by scholars from various fields, including governance, sociology, science and innovation studies (Vervoort & Gupta, 2018). Due to this wide range of scholars being engaged with this topic, there is a lot of discussion of the definition of the concept. Fuerth describes anticipatory governance as ‘a system of institutions, rules and norms that provide a way to use foresight for the purpose of reducing risk, and to increase capacity to respond to events at early rather than later stages of their development’ (Fuerth, 2009). However, according to many scholars, there are more dimensions to this definition (Vervoort & Gupta, 2018). Guston describes anticipatory governance as ‘a broad-based capacity extended through society that can act on a variety of inputs to manage emerging knowledge-based technologies while such management is still possible’ (Guston, 2013). Through this definition, it is learned that anticipatory governance is not just a system that deals with the future, it can also be seen as a capacity. Boyd et al. add another three characteristics to the list: first, it is a multidimensional concept. Second, it is an evolutionary breakthrough. Third, the abstract nature is caused by the complex hierarchical structure as well as many feedback loops (Boyd, Nykvist, Borgström, & Stacewicz, 2015). When applied to the context of this thesis, anticipatory governance is a lens that can be used to analyse how governments, especially municipalities, deal with the future. It can therefore assist in analysing the process of envisioning.

Socio-Technical Imaginaries

Anticipatory governance, however, is very focused on the technocratic aspect of sustainable urban transformation. However, envisioning is not limited to technocratic processes. It is also about ideas and imagination. What the nature of a sustainability vision is, can best be described using the concept of socio-technical imaginaries. Socio-technical imaginaries were first introduced by Sheila Jasanoff & Sang-Huyn Kim in 2009, when they were exploring the American -and Korean governments’ ideas on nuclear power (Jasanoff & Kim, 2009). The theoretical concept describes a form of a future that is a desirable social reality, that can be reached using science and technology. It is defined as ‘collectively held and performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology’ (Jasanoff & Kim, *Dreamscapes of Modernity*, 2015). As can be derived from this long definition, a socio-technical imaginary has a couple of characteristics. First, the imaginary is collectively held, meaning it is the compromise of what a group considers to be a desirable future. Because of this characteristic, imaginaries are culturally and temporally specific. Second, there is an emphasis of the word ‘performed’ in the definition. This means that imaginaries are not just an idea, but also have a clear and realistic action potential, that is acted upon by its creators. Third, the future that the imaginary describes is a description of a desirable social reality, implying certain structural changes to society. Fourth and finally, this collective desirable future of a social reality, is made possible by new technologies and knowledge produced by scientists. This means that innovation is the key enabler of a socio-technical imaginary.

Socio-technical imaginaries may have a strong resemblance with two other concepts used in social sciences: discourse and ideology (Jasanoff & Kim, 2015). Discourses and imaginaries have in common that they are both collectively and systematically held values. The two concepts differ, however, as a discourse is often language based and does not include the action potential nor the use

of science and technology as a means to create the desirable future. Ideologies differ from imaginaries as they do not strive to reach a certain specific future, nor do they use technology as a means to reach their goals.

Socio-technical imaginaries exist on all levels of governments (Levenda, Richter, Miller, & Fisher, 2019). Local imaginaries usually have close connection to national imaginaries, however they often have lots of differences as well. This is caused by the cultural and socio-economical differences between the region and the country.

Although socio-technical imaginaries are usually created for energy related futures (e.g. Jasanoff & Kim, 2009; Levenda, Richter, Miller, & Fisher, 2019; Jasanoff & Kim, 2013), the concept can be extended to sustainability visions. Sustainability visions can be seen as the materialisation and operationalisation of socio-technical imaginaries. Sustainability visions and socio-technical imaginaries share the characteristics that they both describe a collective desirable future, in terms of social reality that is supported and reached by technology and science and both have a clear action potential. The two differ, however in the sense that a socio-technical imaginary is much broader than just a vision. Next to a vision, other ideas and activities are part of a socio-technical imaginary.

How the present impacts the futures

As mentioned in the introduction, not much research has been done yet about the present relates to the future. However, there are some theories and concepts that can give an insight in this relationship.

Erik Olin Wright introduced the concept of real utopias (Wright, 2009; Wright, 2013). These are defined as ‘utopian ideals that are grounded in the real potentials of humanity, utopian destinations that have accessible waystations, utopian designs of institutions that can inform our practical tasks of navigating a world of imperfect conditions for social change’ (Wright, 2009). As an example of a real utopia, Wright mentions Wikipedia. The platform is similar to an older institution (classic encyclopaedias), but it has different rules, that are more idealistic. These rules are that anyone can access the information for free and everyone can contribute, without being paid. These rules ensured a more fair distribution of knowledge and, in the end, ended up changing the institution as the world used to know it, with millions of viewers per day.

The idea of real utopias can be applied to cities as well. Although on a bigger scale, cities can be seen as institutions that can be changed to have a more idealistic purpose, the idealistic purpose being sustainability. Once one city succeeds in being a sustainable, the idea could spread, realising change in the institutions (cities) as we know them today.

A different concept is that of prefigurative politics (Leach, 2013). This concept is usually used in the context of activism and social movements and refers to social movements being examples of desirable futures (Mason, 2014). An example could be the Woodstock festival, where people were protesting against war by uniting and having fun.

In the light of these new concepts, cities could be seen as real utopias: during sustainable urban transformation, people try to change to rules of established institutions to make them more fair, clean and sustainable. Within the city, there are initiatives that can be considered prefigurative: they are depictions of what initiators think is a better way to organise that specific process (e.g. local and organic food, instead of mass-produced food from abroad).

Analytical Framework

In this thesis, the content of a sustainability vision was compared to current urban activities and processes contributing to a sustainable future. For this specific purpose, no framework exist. However,

there are frameworks that analyse futures (Marion, 2019) and evaluate sustainability visions (Wiek & Iwaniec, 2014). The analytical framework created for this study is based on these two frameworks, socio-technical imaginary theory (Jasanoff & Kim, 2015) and theory on the three key components of sustainable urban transformation (Ernst, de Graaf-Van Dinther, Peek, & Loorbach, 2016).

The framework created by Marion (2019), is made to analyse and compare (serious) games dealing with the future. The framework consists out questions that try to analyse the assumptions, governance modes and attitudes towards the future. Some of these questions have been transformed to fit the purpose of comparing urban present realities and future scenarios and are used in the framework created for this study.

The framework created by Wiek and Iwaniec (2014), is made to assess the quality of sustainability vision. It deals with both the content and the process of creating a sustainability vision. Points addressed in their framework have been taken into account when designing the framework for this thesis.

The framework that is created for the policy and city analysis (see Methods), is shown in table 1. It will focus on two categories: perspectives and content. In the perspectives section, the socio-technical imaginary is analysed. It deals with how the future is perceived in the document, what important aspects are of the sustainable urban transformation and what barriers for this future are being perceived. The content part will focus the three key components of sustainable urban transformation as described by Ernst et al.: sustainable urban places, sustainability transition of the urban development regime and sustainability transitions in related societal sectors.

Table 1		
<i>Sustainable Urban Futures Framework</i>		
	Sustainability vision (future)	City reality (present)
Perspectives		
Definition of socio-technical imaginary		
Optimistic/pessimistic		
Emphasized sustainability challenges		
Sustainability challenges not addressed		
Role of actors		
Barriers		
Sustainable urban places		
Built environment		
Urban nature		
Sustainability transitions in related societal sectors		
Transport		
Energy supply		
Waste management		
Food management		
Water management		
Sustainability transition of the urban development regime		
Innovation & Technology		
Circular economy		

Methods

The case: Amsterdam Climate Neutral 2050

A case study was done in order to find out whether and why urban imagined futures overlap with activities in the city. For this study, the city of Amsterdam was chosen. Amsterdam is the capital of the Netherlands, has a surface area of about 219 km² and a citizen count of approximately 850.000 people (Municipality of Amsterdam, 2018).

Amsterdam was chosen as a case study as it is one of the few cities in the Netherlands with an elaborative sustainability vision for the long term (Municipality of Amsterdam, 2019). Furthermore, Amsterdam is one of the bigger cities in the Netherlands, making it easier for further research to compare to other major cities. Lastly, over the past couple of years, the municipality of Amsterdam has shown ambitions to create a more sustainable city, making it interesting as an example (e.g. Claus, 2019; NOS, 2019).

The choice for Amsterdam has consequences for the validity and reliability of the study. First of all, only one city is analysed. The results in this study can be location and culture specific, which means the conclusion might not apply to all cities. Second, analysing one city also means analysing one visioning method. Other cities can use other methods to create their sustainability vision, ensuring a bigger or smaller mismatch between the reality in the city and the envisioned future.

Stage 1: Vision analysis

Sub question answered: What are the components of the future imagined in this vision?

In the first stage of answering the research question, the sustainability vision for Amsterdam (Routekaart Amsterdam Klimaatneutraal 2050) was analysed (Municipality of Amsterdam, 2019). This was done using the analytical framework mentioned above. The aim of this vision analysis is to assess what aims and plans are included in the sustainability vision, what principles these aims and plans are driven by and what roles for the different actors is envisioned. The sustainability vision was accessed through the municipality's website.

The choices made in this stage have consequences for the validity and reliability of the results. The sustainability vision that was analysed was still evolving and therefore not final. Even though the first vision was already published and used, the municipality was still discussing the contents with the public. This influences the results as components found in the city could become part of the sustainability vision still after these conversations are finished. Furthermore, the framework used to perform this analysis is based on existing frameworks to analyse (sustainable) futures. However, these were not designed for the specific purpose of comparing a future vision to the present reality of a city.

Stage 2: City analysis

Sub question answered: What are the components of sustainability going on in the city?

In the second stage of the research process, the current activities and processes in the city were analysed, using the same analytical framework as the vision analysis (mentioned in the section Concepts and Theories). The aim of this stage is to assess what activities, processes and ideas of the city are already available that work towards a more sustainable future. This included both local government and citizen initiatives as well as existing infrastructure. The process is similar as the vision analysis, however the acquisition of sources is different. Data for this analysis was gathered by searching the internet and asking locals about sustainable initiatives. Example of search words are 'duurzame initiatieven Amsterdam' (sustainable initiatives Amsterdam), 'Amsterdam duurzaam'

(Sustainable Amsterdam), 'duurzaam vervoer Amsterdam' (sustainable transport Amsterdam) and 'recycling Amsterdam.'

The choices made in this stage have consequences for the validity and reliability of the results. The quality of the analysis depends on the visibility of sustainability initiatives in the city, as only the processes that have websites and are known with locals were analysed. The municipality, however, has a bigger network and knows the city better than the author, which means they have access to more sustainability initiatives.

Stage 3: Comparative analysis

Sub question answered: To what extent do the sustainability components of the vision and the city overlap?

In this stage of the study, the results from the city analysis and the policy analysis was compared. This resulted in three lists: one with issues that are addressed both in the sustainability vision and the city (the overlap), one with issues that are only addressed in the city or the sustainability vision (the mismatch) and one with issues that are addressed by nor the city nor the sustainability vision (the neglected). The aim of this comparison is to assess to what extent the issues are dealt with in present and future and how these overlap.

There were no consequences for validity or reliability in this stage.

Stage 4: Semi structured interviews

Sub question answered: What are the reasons for the overlap/mismatch between issues discussed in the sustainability vision and the reality of a city?

In order to explain the results found in the comparative analysis, semi-structured interviews were conducted in this last stage. These interviews were conducted with actors that contribute to a sustainable future for Amsterdam. This includes people working at the municipality of Amsterdam, sustainability initiatives in the city and other actors involved in the creation of the 'Routekaart Amsterdam Klimaatneutraal 2050' vision. Participants were asked about their inspirations, goals, perspective on roles of different actors, relationship with the municipality and role in the visioning process. Interviews were done with different stakeholders involved in the creation of the sustainability vision.

This method was chosen as through interviews, it is possible to create a better understanding of the process of visioning and therefore why there is (no) mismatch between the sustainability components in the city and in the vision. The questions therefore were on the subjects of the creation of sustainability visions and on the influence of other governmental bodies. A semi-structured interview was chosen as the results will be compared in order to understand a certain process. A structured interview would not allow for follow up questions that are needed to create a full understanding of the process. An unstructured interview would be too free to be able to compare the answers with answers from other interviews. Participants were approached using networks, inquiry email addresses available on websites and public events (e.g. info nights) where actors engage with the public to talk about sustainable futures. The interviews were recorded, transcribed and analysed.

The choices made in this part had consequences for the validity of the research as well. The results of interviewing one person per party involved in the visioning process was limited to the knowledge of the interviewee. As a result, the data was based solely on this person's perspective.

Ethics

Ethics of the methods used

Ethics were especially considered during the interviews. Participants signed an informed consent form agreeing to going on record with an interview on the topic of sustainable futures (see appendix A). In the thesis, the given answers will be made anonymous (the names of the interviewees will not be disclosed). Interviewees were not pressured to answer and were informed that they were able to stop the interview at any given time.

Data was only saved offline, in a secured folder on secured laptop. Fingerprints and passwords were needed to access both the recordings and the transcripts of the interviews.

For the literature review, the rules on fair research and plagiarism as stated by the statutes of Utrecht University were taken into account.

Ethics of the research conclusions

No non-ethical consequences were expected for the conclusions of the study.

Results

Vision Analysis

The sustainability vision *Routekaart Amsterdam Klimaatneutraal 2050* is a vision that was made during the earlier stages of formulating a vision for the sustainability transition and was formulated as “an open invitation to the city”. The vision and plans described in this document are supposed to guide the municipality in ongoing discussions with citizens and stakeholders. During the sustainability transition, the municipality sees itself as a “director in improvisation theatre” (Municipality of Amsterdam, 2019): they provide a frame in which there is enough space for people to experiment with sustainability and they will provide the support necessary for these experiments to succeed and evolve.

In the vision, the municipality of Amsterdam starts by discussing their ideas for a sustainable future. As the title of the document implies, carbon-neutrality is key in this vision. Furthermore, it is often emphasized in the document that the city wants to get rid of using natural gas as an energy source. The lack of knowledge on the importance of sustainability is seen as the main barrier to As the document was formulated as an open invitation, it explains the rules as well as the importance of good collaboration between stakeholders. This is followed by a discussion of the challenges up ahead, a vision of the ideal situation, the actions the municipality is about to take the city to this goal and they make suggestions of actions and responsibilities of citizens and other stakeholders (e.g. businesses).

What becomes clear from the policy analysis, is that only certain sustainability issues are discussed in the sustainability vision. The municipality focuses on five major issues: sustainable energy, transport, sustainable industry, built environment and the sustainable organisation of the municipality itself. However, in the plans that they describe, there are also implications for innovation & technology as well as the circular economy. The content of this vision can be found in table 2.

	Sustainability vision (future)	City reality (present)
Perspectives		
Definition of socio-technical imaginary	A city that is carbon neutral and does not rely on natural gas as an energy source (emphasized). In 2050, stakeholders of every kind (citizen, business or government), works together and has adapted their environment and behaviour as such that emissions and carbon footprint are as small as possible	‘A city where people are conscious of the impact that they have on the planet and all actors [governments, citizens and businesses] take their responsibility to reduce this impact as much as possible’ (De Stadsgroenteboer). Emphasis on a circular society and fair distribution of costs among actors.
Optimistic/pessimistic	Optimistic	Optimistic
Emphasized sustainability challenges	<ul style="list-style-type: none"> • Sustainable energy • Transport • Sustainable industry • Built environment • Sustainable organisation 	<ul style="list-style-type: none"> • Food management • Waste management • Urban nature • Built environment
Sustainability challenges hardly/not addressed	<ul style="list-style-type: none"> • Urban food • Urban nature • Water management 	<ul style="list-style-type: none"> • Sustainable energy • Transport • Circular economy
Role of actors	Municipality: example role as well as facilitating sustainability initiatives legally and financially	Municipality: Should act in the best interest of the planet as (unlike entrepreneurs) they do not have to

	<p>Citizens: think of ways they can contribute to a climate neutral Amsterdam and reach out to the municipality when in need of help for an idea</p> <p>Entrepreneurs: join existing sustainability initiatives or come up with your own and promote it</p> <p>Industry: biggest emitters of the city. Lots of ground to win, but also lots of opportunity</p> <p>Other governmental bodies: governmental bodies depend on each other and should work together to make sure they all can advance in the sustainability transition</p>	<p>focus on getting an income. The municipality should stimulate sustainable initiatives and look for ways to upscale these initiatives for the whole city</p> <p>Citizens: should be aware of the impact their behaviour has on the planet and should try to minimise this impact</p> <p>Entrepreneurs: can offer more sustainable options to consumers, enabling them to live a more sustainable life. Furthermore, they should take their responsibility and ensure processes in their company are as sustainable as possible</p> <p>Industry: has due to their big scale a lot of opportunity and options to contribute to a more sustainable city</p> <p>Other governmental bodies: Should act in the best interest of the planet as (unlike entrepreneurs) they do not have to focus on getting an income. The municipality has the power to make structural changes to the system, making it easier for citizens and entrepreneurs to play their part in creating a sustainable future.</p>
Barriers	<ul style="list-style-type: none"> • Not everyone thinks of the sustainability transition as a necessity 	<ul style="list-style-type: none"> • A system that financially stimulates unsustainable behaviour • Sustainable entrepreneurship is more labour-intensive (especially agriculture)
Sustainable urban places		
Built environment	<ol style="list-style-type: none"> 1. Sustainable public institutions (schools, libraries etc.) 2. Sustainable offices 3. New housing free of gas and CO2 neutral 4. Decrease of CO2 emissions in businesses 	<ul style="list-style-type: none"> • De Dakdokters • Rooftop Revolution • Duurzame Amsterdamse Theaters • Jij maakt de H-buurt • Sustainability Masterplan KIT • Amsterdam Rooftop Solutions • Schoonship

Urban nature		<ul style="list-style-type: none"> • Boomparken voor West • Park om de Hoek • Bomen voor Amsterdam • Groene Gibraltarbad • Knowledge Mile Park • Jouw Stek • Op de Schop
Sustainability transitions in related societal sectors		
Transport	<ol style="list-style-type: none"> 1. Stimulate electric vehicles 2. No car/emission zones 3. Local sustainable energy 4. Electric taxi's 5. Stimulate work from home 6. Better bicycle infra 7. More efficient cargo transport 8. Carsharing 9. Decrease attractiveness of driving in the city 	<ul style="list-style-type: none"> • Schone Taxi's voor Amsterdam • Elektrohaven • Hellobike/Urbee/DonkeyBike/OVfiets • MRA elektrisch • Greenwheels/Connectcar/Car2go
Energy supply	<ol style="list-style-type: none"> 1. Increase solar energy 2. Increase wind energy (harbour) 3. Increase biomass energy (harbour) 4. Updated electricity network 5. Fair distribution of costs among citizens 6. City planning → buildings can host solar 7. Use of industrial heat 8. Production of hydrogen 9. Closing non-renewable energy plants 10. No use of gas 	<ul style="list-style-type: none"> • Amsterdamse Zoncoalitie (Nissan) • Zonnepanelen Delen • Car Terminal • City Deal Aardgasvrij
Waste management		<ul style="list-style-type: none"> • Recyclefietsen • De Lokatie • Unbegun • Roetz-Bikes • Zero Waste Lab • PlasticWhale

Food management		<ul style="list-style-type: none"> • Stadsgroenteboer • Venkel • Conscious Club • Hartog's Volkoren Bakkerij • Café de Ceuvel • De Culinaire Werkplaats • Bloem • Beter & Leuk • Amsterdamse Balkontuin • Tropentuin • Van Amsterdamse Bodem • Zeeburgertuin • Pluk • Fruittuinen van West
Water management		<ul style="list-style-type: none"> • Hemelswater • Rainproof
Sustainability transition of the urban development regime		
Research & Technology	<ol style="list-style-type: none"> 1. Increased attractiveness to circular and sustainable industry 2. Research to the possibility of geothermal energy in Amsterdam 	<ul style="list-style-type: none"> • Circular Research Collaboration
Circular economy	<ol style="list-style-type: none"> 1. Sustainable energy tax system 	<ul style="list-style-type: none"> • GeldGROENwassen • Amsterdam Sharing City

City Analysis

When analysing the current sustainability initiatives in the city, it becomes clear that the fields differ in both number of initiatives and variety of initiatives. Fields with many initiatives are urban nature, food management and waste management. Fields with less initiatives are energy supply, transport and circular economy.

When looking at the content of the individual initiatives, it is observed that some fields have a bigger variety in initiatives than others. One of the fields with a big variety of initiatives is Food Management. The initiatives in this field focus on local and organic food production, sustainable distribution and healthy and sustainable (e.g. vegetarian) catering of the food. Furthermore, the initiatives try to empower people to produce their own food. The field of waste management has a big variety of initiatives as well as they focus on waste collection as well as a wide variety of recycling methods (e.g. upcycling and re-using).

Fields with less variety are transport and built environment. In the transport field, close to all initiatives focus on electric driving. In the built environment field, the vast majority of initiatives has a focus on refurbishing roofs to roofs with blue-green functions.

The full results of the city analysis can be seen in table 2.

Comparative Analysis

When comparing the socio-technical imaginaries, it becomes clear that the vision has different underlying principles than current processes. The vision envisions a city without emissions and use of

gas, whereas the initiatives emphasize the importance of circularity. The two differ as zero-emissions is merely a part of circularity. Circularity entails the re-use and recycling of all waste, not just emissions. The two have in common that they emphasize the importance of the inclusiveness of sustainability: a sustainable city has everyone playing their part. Furthermore, they both mention a fair distribution of costs and benefits among actors.

When looking at the perspectives on actor roles, there is one major difference. The municipality sees itself mainly as a facilitator, supporting and connecting actors in the field of sustainability. Non-governmental actors in the city, however think that role should be more elaborate and mention that the municipality should take more initiative. Moreover, they should, together with other levels of government, make systemic changes to ensure a sustainable behaviour is affordable and stimulated. Other roles are perceived as similar.

When it comes to the content of the vision, there seems to be a mismatch. As mentioned in the policy analysis, the vision discusses five main issues: industry, transport, energy, built environment and organisation of the municipality. The fields with most initiatives, however, are food management, waste management and urban nature. By whom the fields are discussed is shown in figure 1.

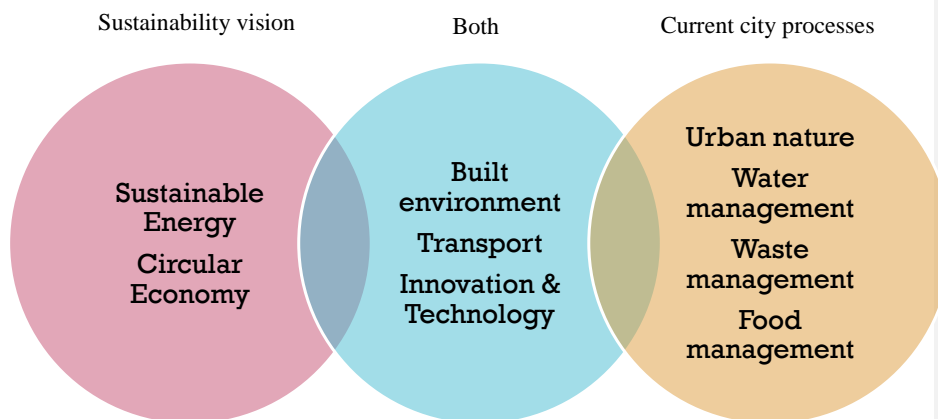


Figure 1: Venn-diagram of overlap between future vision and current city processes

When comparing the plans in the sustainability vision with the initiatives from the city, we see that the initiatives are focused on only a select few of the plans presented in the vision. In the transport field, only 3 out of 9 plans match with the initiatives (Stimulate electric vehicles, electric taxis and carsharing). Nothing is initiated on the other plans (bike infra, no car zones, work from home), with the goal to improve sustainable transportation in the city. The same is the case in the energy supply field. Here, only 2 out of 10 plans match with the initiatives (increase solar and use industrial heat). Alternatively, we do not see this happening in the field of built environment. All plans in the vision in this field can be matches with ongoing processes in the city.

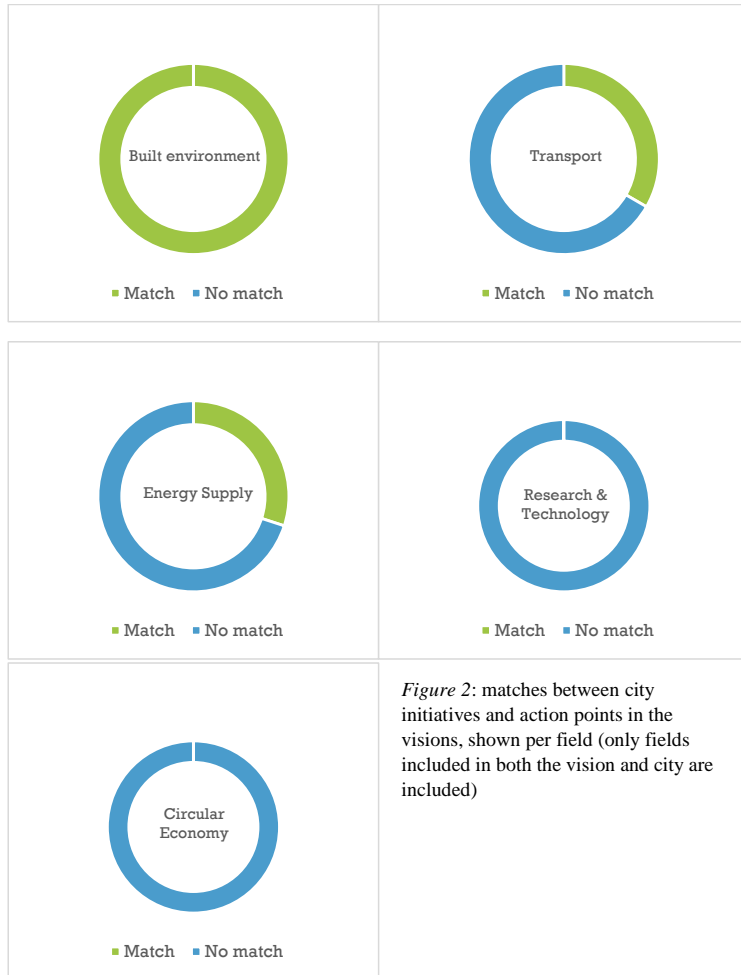


Figure 2: matches between city initiatives and action points in the visions, shown per field (only fields included in both the vision and city are included)

Semi-Structured Interviews

Interviews were conducted to get an insight in why the mismatch observed above happened. From the answers can be deduced that people behind the initiatives have not (yet) engaged with the municipality when it comes to sustainable futures. People are often not even aware of the process at all. When asked if they would engage with the project and visit the meetings organised by the municipality in the future, people responded hesitantly. Considerations for this decision were the form of the meeting, the timing (these initiatives are often entrepreneurs that have a very busy schedule) and self-efficacy.

Discussion

In the results, a clear mismatch between the present and future is observed. The present is focused on food management, urban nature and waste management, whereas the future emphasizes energy supply, transport and built environment. Moreover, it was observed that the initiatives vary in number and variety. Whenever there is overlap between the future and present in a certain field, the initiatives are often focused on very few of the action points mentioned in the sustainability vision (see figure 2). Furthermore, it is noteworthy to say that a significant part of the initiatives that do touch on the action point in the sustainability vision are actually (co-)initiated by the municipality of Amsterdam. From the interviews, it has already become clear that the mismatch can be due to the lack of awareness of *Amsterdam Klimaatneutraal 2050* among sustainable entrepreneurs. This ensures a lack of interaction and participation from people who run current sustainability initiatives. A different explanation for the mismatch, can be found in the fact that the analysed version of *Amsterdam Klimaatneutraal 2050* is in an early stage of the project. The website of the Municipality of Amsterdam states that participation meetings are still an ongoing process, meaning more advanced versions of the sustainability vision could be more inclusive and considerate of present sustainability practices in the city. A third possibility for the observed mismatch is the observed differences in perception of roles. The municipality sees entrepreneurs as the primary initiator of urban sustainability and itself as merely a facilitator. However, people behind sustainability initiatives think the municipality should be the initiator and take a more active role in the sustainability transition. This is driven by the fact that sustainability is generally not the primary motivation to start a sustainable initiative (but rather passion about the job or opportunity). Both actors thus seem to wait for each other to approach each other to make progress in the sustainability transition. A fourth and last possibility for the cause of the observed mismatch, is the difference in (re)resources between the municipality and initiatives. A big part of the initiatives mentioned in table 2 originate from ideas, opportunity and personal experiences (e.g. with sustainability issues), however, policy often uses science and numbers as a starting. The fields that are discussed in the sustainability vision are the fields that have the highest emission rates in emission monitors of Amsterdam (klimaatmonitor.databank.nl), however the emissions coming from fields that are not considered in the vision, but are considered by initiatives do have a big impact on the environment as well. However, the actual CO₂ is actually emitted outside city limits (e.g. farmland for food). In numbers, Amsterdam seems therefore to be performing well in those fields, ensuring it is not a high priority for policy makers, whilst in reality the city might not be performing as well as it thinks is.

Implications of a mismatch between future and present

The question that these observations raise is what the implications are of a mismatch between present and future. These implications can be categorised in parameters. First, a mismatch between future and present can be an indicator for a lack of public participation in the vision design process. Visions are used to guide policy-making over time. For public participation, it is important that stakeholders are included in the design process of the vision. Public participation is one of the key characteristics of sustainable urban transformation: the sustainability transition of the urban development regime (Ernst, de Graaf-Van Dinther, Peek, & Loorbach, 2016). A lack of participation is therefore, by definition, not sustainable. Furthermore, participation is believed to improve legitimacy, democracy and effectiveness (Hebinck & Page, 2017). However, Hebinck & Page (2017) also identify two negative effects of participation to policy making. First, it makes it harder for people to be held accountable. Second, it slows down the policy making process.

Second, the mismatch could have an impact on the effectiveness of the vision. On the one hand do current practices and the plans described in the vision compliment each other, ensuring city broad progress in sustainability. Tasks are divided making it easier and more free for all parties to focus on their own tasks. Also, if initiatives are self-sustaining and non-government owned, it can save the municipality money. However, not having an overarching vision on all sustainability challenges in the

city could lead to a lack of coordination, decreasing efficiency and making the transition even more expensive.

Recommendations for further research

What the exact implications are of a mismatch between present and future like in Amsterdam, remains unknown and could be an interesting topic for further research. It could also be interesting to repeat this research for other cities, potentially finding out whether there are cities with a bigger overlap between the future vision and current sustainability practices. If that is indeed the case, how do vision approaches differ from cities with a small overlap/big mismatch.

Limitations to research

The reliability and validity of this study have been influenced in a couple of ways. First, the analytical framework is based on futuring theory and existing frameworks, however, since present-future interactions is a relatively new field, no existing framework existed for the specific purpose of this study. Furthermore, the analysed initiatives in the city analysis are all found through internet and networking. The completeness of the list of sustainable practices in the city thus depends on the visibility of the initiatives. The amount of interviews done was very limited due to limited time and saturation of interviewees (many students approached the same target group). Especially the interview section should therefore be read and considered with caution.

Conclusions

The question on hand in this thesis is how and why the future imagined in a city vision overlaps or not overlaps with activities in the city in the present. Through the comparative analysis of the future vision and the present city, it was found that there is a mismatch between the two: the future deals with sustainable energy production, built environment and transport, whereas most initiatives in the city focus on food management, waste management and urban nature. Possible explanations for this mismatch are the lack of interaction between municipality and initiatives (due to the lack of awareness among people working for initiatives), the early stage of the project and differences in role perceptions between the municipality and non-governmental actors. The observed mismatch may have consequences for the legitimacy, effectiveness and costs of the sustainability transition for Amsterdam.

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