

Sustainable Cities through Sustainable Food Systems

A comparable research between London and Rotterdam



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Summary

In this thesis, research has been done on the implementation of sustainable food systems within future city vision documents. Food systems are often left-out when it comes to things that can be made more sustainable within our environment. For this research, the two city vision documents of London and Rotterdam have been chosen to analyse and compare, to find out in what ways sustainable food systems are included. In order to find the differences between the policies of London and Rotterdam, it will be researched to what extent sustainable food systems strategies differ in the future plans of London and Rotterdam, and how these could be improved. This is also the main question of the research. The main results of the research were that both London and Rotterdam had the same ambitions regarding sustainable food systems, but their focus points differ. The future vision document of London had Health as its main priority, whereas the document of Rotterdam focused more on Resource Management. On top of that, the London document was more comprehensive, as most of the mentioned strategies regarding sustainable food systems were covered in completion, whereas strategies in the document of Rotterdam were more general. However, the future vision document of London did not mention any form of funding for their strategies, where the document of Rotterdam did mention funding. For future research, there could be looked into the actual implementation of the strategies that are conducted in both documents, and how the affordability of food could be improved.

Table of Contents

Introduction	3
Background	3
Research Problem	4
Theoretical Framework	5
What is already known about sustainable food system policies?	5
What is not known about sustainable food system policies?	6
What will therefore be researched while reviewing the policies?	6
Methodology	7
The Conceptual Model	7
The Data Collection Instrument	9
Results	12
Future Vision of London	12
Food Production	13
Food Consumption	14
Food Distribution	14
Food Affordability	14
Future Vision of Rotterdam	15
Food Production	16
Food Consumption	16
Food Distribution	16
Food Affordability	16
Comparing London to Rotterdam	17
In what way are food systems mentioned in the strategy plans?	17
How do both cities propose to make their food systems sustainable?	17
How could these strategies be improved?	17
Conclusion	19
Bibliography	21
Appendix	22

Introduction

Background

Sustainability is nowadays one of the most used terms when it comes to climate change. The Earth is going through changes and something has to be done about it. When looking at things that can be improved in our society, the most mentioned topics are energy, transport, and resiliency. However, what is often left-out is the effect of current food systems. Food systems include all elements and activities related to the production, processing, distribution, preparation, consumption and the disposal of foods, and the outcomes for health, livelihoods and the environment (Ruben et al., 2021; Delaney et al. 2018; Maybeck & Gitz, 2017). Currently, there is a massive amount of food production to fulfil everybody's needs. However, the production of food - including deforestation and other factors that are linked towards expansion of food production - is responsible for almost 25% of all greenhouse gas emissions (Maybeck & Gitz, 2017). Besides, even though there is a lot food produced, only 'good enough products' are presented in supermarkets, where all the other - just as edible - products are thrown away. This is a shame, as new global development focuses on a new set of targets, including better waste management (Klopp & Petretta, 2017). On top of that, throwing away edible food is not in line with combating the second Sustainable Development Goal made by the United Nations, which is to achieve zero hunger in 2030 (Delaney et al. 2018). According to their study, global policies revolving food systems should not be based on maximising food production. Instead, the attention should be shifted towards access, utilisation and the stability of food. In addition, healthy diets should be promoted, in order to shift towards sustainable diets for everyone (De Vries et al., 2022). A sustainable diet could be defined as a diet which contains enough nutrition for long term good health for a society, and that is enabled by sustainable food systems (Maybeck & Gitz, 2017). Then the question remains; what exactly is a sustainable food system? According to several studies, it implies producing and consuming food within planetary boundaries on the basis of three dimensions: economic, social and environmental. This implies saving water and energy, spatio-temporal modernisation of food production, and ensuring that people will always have access to food, even if the food system is hit by economical or political shocks (Ruben et al., 2021; Delaney et al., 2018; De Vries et al., 2022; Maybeck & Gitz, 2017).

Sustainable food systems have great potential when it comes to battling climate change, however it is not certain whether it is included in every policy document or future vision plans. Therefore, this research will deepen into strategy documents in order to unveil if cities have included any form of sustainable food system policy. This will be done with the help of literature studies and criteria which will be established in the following paragraphs.

Research Problem

Now that the background of (sustainable) food systems is known, the opportunity to research this topic becomes available. As mentioned, there is a lack of knowledge about the integration of strategies regarding sustainable food systems in city visions. It is of societal relevance to discover this, because sustainable food systems have great potential for battling climate change. On top of that, sustainable food systems could be of great relevance to reach the Sustainable Development Goals two, six, eleven and twelve (Delaney et al. 2018). For this research, the city visions of London and Rotterdam will be investigated. The United Kingdom is well on its way to meeting the food waste goals (IFCO, 2020), while The Netherlands are in the top five of worst countries for food waste (Séveno, 2022). This could become an interesting comparison. Firstly, it could be expected that London has a better strategy plan than Rotterdam, as London is already the better at preventing food wastes. However, the second hypothesis could be that Rotterdam wants to catch up to London and therefore has a more ambitious plan. The third option could be that London and Rotterdam have similar visions when it comes to sustainable food systems.

The aim for this research is to develop a review plus recommendation for both city visions. The final objective is to get a better understanding of the inclusiveness of sustainable food systems within city policy documents.

Therefore, the main question that will be answered by comparing both of these cities is: *“To what extent do sustainable food systems strategies differ in the future plans of London and Rotterdam, and how could these be improved?”*

This main question will be answered with the help of three sub questions:

1. In what way are food systems mentioned in the strategy plans?
2. How do both cities propose to make their food systems sustainable?
3. How could these strategies be improved?

At the start of this research, the theoretical framework will be explained, together with a methodology and an analysis plan with multiple criteria. This information will be given with the help of a conceptual model and a measurement system for the criteria. After that, the results will be presented of the analysed city vision documents. During this section, all the sub questions will be answered and recommendations will be given for the vision documents. To finalise the research, a conclusion will be written with a summary of the results, together with the recommendations and options for further research.

Theoretical Framework

In order to review the city vision documents as precisely as possible, a few questions need to be asked before the documents themselves can be analysed.

What is already known about sustainable food system policies?

To start with the first question, there are some things that are already known about sustainable food system policies, as multiple authors already discussed several focal points that should be included in these policies. According to the studies of Ruben et al. (2021), sustainable food systems should be based on resiliency, environmental sustainability, affordability and inclusiveness. A studies of De Vries et al. (2022) adds even more to that. They state that the four fundamental forces of a sustainable food system are strongly related to physics, mentioning strong, weak, electromagnetic and gravitational forces. In short, they state that food systems have, in essence, the same fundamentals as Earth. Furthermore, De Vries et al. (2022) developed quite a large list of things that should be considered when talking about sustainable food systems. Firstly, food science and technology (FST) developments should focus on multiple strategies in the production layer, in order to reduce water wastes and guaranteeing diverse and healthy diets. Secondly, FST developments should no longer focus on linear processing chains to contribute to optimising existing food chains. As these do not result in sustainable outcomes. Thirdly, resources should be utilised intelligently through closed energy and nutrient cycles in agricultural food networks, waterless systems like dry fractionation, and establishing a circular economy. A circular economy means that resources are recycled and reused before they become wastes. The last thing that is known about sustainable food system policies, is that it is part of the SDG's made by the United Nations (2023). These goals should all follow the same guidelines which are called 'SMART'. This means that goals should be specific, measurable, ambitious, realistic, and time bound (Klopp & Petretta, 2017). This could also be used to examine the city visions on their sustainable food system policies.

With the information that is given from the literature, it could be concluded that three main policy components regarding sustainable food systems exist. These could be identified as Health, Ecology & Biodiversity, and Recourse Management. The first component primarily focuses on the healthiness of foods and how diverse diets should be. This should encourage people to eat more healthy. The second component focuses more on the sustainability part of the food system as a whole. How it operates, which forms of transport are used, and how the food system affects the environment. The third component mainly focuses on what resources are used in the process and how these could be recycled or replaced by more sustainable alternatives.

What is not known about sustainable food system policies?

Now that it is clear what knowledge is available regarding sustainable food system policies, the second question can be answered. As there are still things that are not mentioned or discovered. It is unclear how expensive sustainable food systems will be or if they are realistic, according to the 'SMART' model of Klopp & Petretta (2017). It is also uncertain if our society is ready for sustainable food systems including sustainable diets. As prices for healthier food may be too high, which could lead to affordability issues. Therefore, it could be argued that Affordability could be a fourth policy component regarding sustainable food systems. However, this would not be an independent component, but it would cover all the other policy components.

What will therefore be researched while reviewing the policies?

That is where the third question can be answered. Everything that is mentioned in the sections above should be taken into account while reviewing these documents. All four components will be researched on how these are implemented within the future visions of both cities. As it is necessary to discover the cost of sustainable food systems, the affordability and the social shift in diet, how a circular economy could be implemented, and how foods will be distributed in the future. Furthermore, the definition of a sustainable food system should show up in some way. Therefore, there will be searched for actions like producing and consuming within planetary boundaries, accessibility to food, healthy diets, and resiliency. If these terms around sustainable food systems are not even mentioned in the policy documents, the United Nations have a long way to go in order to reach their goals.

Methodology

The Conceptual Model

In order to gain all the possible knowledge to answer the questions mentioned earlier, this research will be done in several steps, as shown in the conceptual model below (Figure 1). It starts with the mentioning of a research problem, where the different parts are split up in three sections: the food system, sustainability criteria, and the policy documents. These are the components that will be of most importance during the research. After that, a research question with adequate sub questions are established in order to fill the knowledge gap of the research problem. These will be answered with the usage of the to-be-researched points. As mentioned in the Theoretical Framework, there are still some things about sustainable food systems that are unknown. The criteria will be established through a literature review, where several documents will be studied. The literature that will be used for these criteria will mostly exist of the ones used for the Theoretical Framework. The 'SMART' model should give some insight about the affordability of sustainable food systems. FSTs should focus on multiple strategies in the production layer. Sustainable diets should give information about healthy and affordable diets. Waste management should be mentioned across all the criteria, as it focuses on sustainability overall. These research points should emphasise these topics to find them in the policy documents. Then, both city visions will be scanned and the most important chapters will be selected. These chapters are shown in the Appendix.

The documents are going to be reviewed through a policy analysis. The analysis exists out of reading the necessary parts regarding food system strategies. While reading, most of the attention is payed to terms (which will be further explained in the Data Collection Instrument). Both documents will be read and important parts will be marked together with a comment on the part of text. Once both documents have been read and marked, it is put together in an analysis table. Here it is possible to indicate how well sustainable food system strategies are incorporated in the future vision of both cities. Once the documents have been reviewed with the use of the criteria, the sub questions will be answered using the findings within the documents and the corresponding literature. Now that both documents have been analysed, recommendations will be made for both cities to improve their policies. When that is finished, the research objective has been achieved by getting a better understanding of the inclusiveness of sustainable food systems within the city's policy documents.

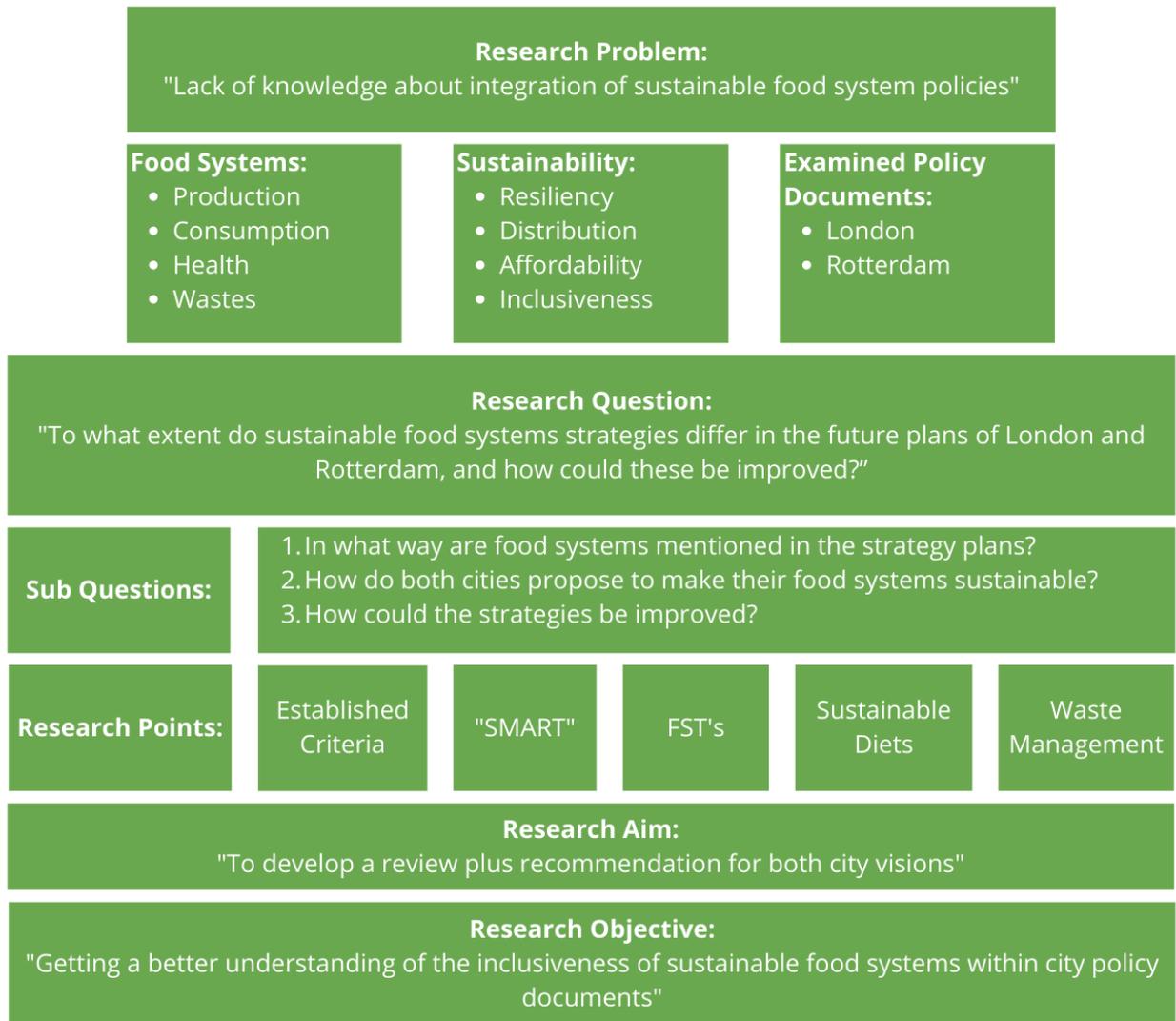


Figure 1: Conceptual Model

The Data Collection Instrument

The analysed data will come forth out of the following documents: *The London Plan - the spatial development strategy for greater London* (Greater London Authority, 2021), and *Omgevingsvisie Rotterdam: de Veranderstad - werken aan een wereldstad voor iedereen* (Gemeente Rotterdam, 2021). Both of these documents are quite recent and have a look into the future towards 2050. On top of that, this data is very accessible. It is shown on public pages of their websites.

Which cases are going to be analysed is more difficult, as it is hard to predict where the necessary information in the documents lies. However, when scanning both of the documents, several chapters came forth. These are viewed in the Appendix at the bottom of the thesis and count as the cases that will be studied. The variables that will be analysed, are most-likely particular words. Such as food, sustainability, production, consumption, distribution, electrification, circular economy, health, resources, and wastes. These kinds of key terms will hopefully come forward in both documents, as these will probably indicate that there is some mentioning of sustainable food systems in the cities' programmes.

If these terms and other findings are indeed visible in both documents, they will be analysed with the help of criteria, based on the existing literature. In total there are four criterion, which covers all elements for a sustainable food system. All of the criteria are listed in Figure 2. All of these criteria will be ranked on the basis of implementation in the document. Every criterion has an explanation of what the future vision should take into account regarding sustainable food systems. On a scale of "--" to "++", each criterion is ranked. This is also shown in Figure 3.

Criterion	Description
Food production	Food production should become environmentally sustainable. Meaning that FST developments should focus on reducing water wastes, reusing energy and nutrients in agricultural food systems, and minimising food waste.
Food consumption	Food consumption should become environmentally sustainable. Meaning that food systems should offer sustainable, diverse, and healthy diets. On top of that, food wastes should be minimised at the consumption level.
Food distribution	Food distribution should become environmentally sustainable. Meaning that food suppliers should travel as little distances as possible, or should travel using sustainable methods. Such as electric trucks, and cleaner ships or planes.
Food affordability	Sustainable food systems should remain affordable. As they should follow the guidelines of SMART. Meaning that sustainable food systems should be ambitious and time bound, but also realistic.

Figure 2: Criteria based on existing literature for the policy analysis

Rank	Description
--	Nothing about the criteria is mentioned in the future policy vision.
-	Something about the criteria is mentioned in the future policy vision, but without further explanation of terms, strategies, etc.
+	The criteria is clearly mentioned in the future policy vision. The terms are explained and even strategies are conducted.
++	The criteria is completely mentioned in the future policy vision. The terms are clearly explained, strategies are made, and even implementation is already shown.

Figure 3: Ranking system of the criteria for the policy analysis

When reviewing all the future policy vision documents, most important parts of text (that includes the mentioned variables, or are mentioned in the criteria) will be marked. This will be done in different colours, so when gathering all of the data, it is clear which part of text belongs to which criterion. On top of that, a comment will be placed to which criterion it belongs to. In this way, the text can be thoroughly scanned and read without missing any important parts. To retrieve everything, the important parts will be marked and comments will be on the side of the document mentioning which parts belong to which criteria. This analysis method is most suitable, as it does not require particular programmes - like ATLAS.ti - to use, only Lumin PDF Viewer. Marked parts of text are easy to find back and they have comments linked to them. In this way, it keeps the documents comprehensible and easier to review.

The main objective is to gain knowledge about the integration of strategies regarding sustainable food systems in city visions and the research question and the sub questions should help with that. Therefore, the city vision documents that will be analysed through criteria, should help to find answers to these questions. When all of the information has been analysed, reviewed and exported into corresponding tables, results of the analysis can be written. Once the results are there, it is possible to answer these questions that should help to gain knowledge. All of this will be done in the next chapter.

Results

Future Vision of London

The City of London is the capital of both England and the United Kingdom. By 2040 it expects to have over 10 million inhabitants in the city only (Greater London Authority, 2021). Currently, the whole metropolitan area already covers 13 million inhabitants. London is one of the most important cities regarding economic development in the UK and is mostly known for its creative and innovative inhabitants. On top of that, the UK is the front-runner when it comes to food wastes (IFCO, 2020). This makes London an interesting case to study, as this city government should already have clear strategies when it comes to sustainable food systems. The question remains if The London Plan still has a lot of new strategies regarding food systems, or if they took a different approach for the future of London. Therefore, the future vision document of London is analysed. It is called *The London Plan - the spatial development strategy for greater London* (Greater London Authority, 2021). This document was made under supervision of the new elected Mayor and therefore serves as a guideline for the local government. Strategies made in The London Plan should actually be made possible and is therefore quite a strict document. Land-use plans could actually change because of this document, as long as the priorities are met.

In the Foreword of the document, the Mayor talks about the fact that he is very proud to announce this future vision document and that he wishes to create a “city that works for all Londoners” (Greater London Authority, pg. XIII, 2021). London should become a city where everyone has equal opportunities, created through “Good Growth” (Greater London Authority, pg. XII, 2021). This implies providing a affordable home for every citizen, including them in their transition to a sustainable city, and to not only focus on economic growth but also on the social cohesion of the Londonders. The document also states that London’s health problems are quite severe. As more than 75% of the inhabitants do not actively travel each day and the current food environment is still not healthy enough. This is displayed with the fact that almost 40% of children between six and eleven years old suffer from obesity.

The purpose of this document is therefore to include Londoners in the future plans and make the city better and healthier for everyone. Based on the writing style, it is more on the convincing side instead of an informational document, but it does not make it unpleasant to read. After analysing the chosen chapters for this document, an assessment table was established which is shown in Figure 4.

Criteria	Score	Explanation
Food Production	++	Every single part of the criterion has been met within the future vision of The London Plan. It focuses on: renewable energy generation, waste-management, more local- and less mass-production, and a circular economy.
Food Consumption	++	This criterion is also completely covered in the London Plan. The plan initiates to promote healthier lives for all Londoners through diverse and healthy diets. This is worked out in several policies.
Food Distribution	++	Already a lot has been done for this criterion. Food production near the source, to travel as little as possible. Distributors are made sustainable through electrification of trucks.
Food Affordability	--	Nothing has been specified for food affordability in the future vision document.

Figure 4: the assessment table for the future vision document of London

Food Production

Regarding the food production for sustainable food systems, The London Plan is quite extensive. It aims to be zero-carbon by 2050. They plan to do this through smart technologies, implementing a circular economy, making use of secondary materials, waste management, and aggregates. The government of London is obliged to support any development regarding a circular economy. This also includes food production and waste management. To elaborate about waste management, storages should have separate collections of dry recyclables, food waste and other waste. It even states that the equivalent of 100 per cent of London's waste should be managed within London (i.e. net self-sufficiency) by 2026. That is not even the biggest ambition of The London Plan. The document also states that the Mayor has set out a municipal waste approach in order to achieve a municipal recycling target of 65% and achieving a 50% reduction in food wastes per person by 2030.

As for the production cycle, there are also some great ambitions. Page 365 of the document is all about implementing a circular economy and reducing (food) wastes as much as possible by 2030. On top of that, the government should explain how this circular approach needs to be done and what guidelines there need to be followed. It also states that London should develop towards more local production, instead of mass production. People should be able to buy their day-to-day products, but it should not be any more than that. If production facilities do no longer meet the demand, such facilities should be replaced by green alternatives.

Food Consumption

The document has a clear statement when it comes to food production:

“A healthy food environment and access to healthy food is vital for good health.” (Greater London Authority, pg. 18, 2021). The main target is to achieve active and healthy lives for all Londoners, enabling them to make healthy choices, and to create a healthy food environment by restricting unhealthy options. The Healthier Catering Commitment helps different food businesses in London to offer more healthy food to the citizens. The Commitment aims for a reduction in the consumption of fat, salt and sugar, and an increase in access to fruit and vegetables.

A new policy is also established for consumption patterns around schools. This policy should confine that takeaway food markets should not be within 400 metres walking distance from schools. If there are food takeaways nearby schools, the school director needs to compensate by offering healthy food themselves. Overall, the Mayor’s Food Strategy prioritises to make all Londoners healthier and the food system being less damaging for the environment.

Food Distribution

A lot has been written for sustainable distribution in The London Plan, also for food systems. To start, the plan mentions that food should be produced near the source, as this reduces transport distance and therefore emission rates. Furthermore, London should recognise the need to provide a sustainable ‘last mile’ distribution policy, with ‘just-in-time’ servicing (such as food). Enabling sustainable last-mile movements, including bicycles and electric vehicles.

The icing on the cake is that development plans should facilitate sustainable movement by rail, waterways and road, to support carbon-free travel by 2050. This is done through the use of hydrogen energy and electric vehicles, which will be supported by according charging stations.

Food Affordability

Unfortunately, not a lot has been mentioned about food affordability in the document. The only sentences that state something in the right direction are that The London Plan wants to tackle inequality in order to increase people’s health, and that the plan strives to increase the availability of healthy food. However, this is not in line with the criterion and does not give any insight in food affordability for the future.

Future Vision of Rotterdam

The city of Rotterdam has the largest harbour in Europe and is in the top five of the largest harbours in the world. This makes it a very important factor for the Dutch economy, as it is widely used for import and export. However, regarding food waste and many other aspects, the Netherlands are still in the top five of worst countries for food waste (Séveno, 2022), which is also caused by distributable factors in the main harbour. This makes Rotterdam an interesting case, as the Netherlands are mostly recognized as a sustainable and developed country. Therefore, the future vision document of Rotterdam is analysed. It is called the *Omgevingsvisie Rotterdam: de Veranderstad - werken aan een wereldstad voor iedereen* (Gemeente Rotterdam, 2021). This document has been made to show the inhabitants of Rotterdam what the plans of the municipality are for the future of Rotterdam. When compared to London, this document is not as strict. This future vision is more an illustration of what could be made possible in the future for the Rotterdam area. Instead of changing particular zoning plans, it would be more likely to work around them. This document is also a showcase to the rest of the Netherlands, so people can read their strategies for future improvements of the city. Overall, the document is quite easy to read, which makes it comprehensible for most of Rotterdam's inhabitants. Its purpose is to give insight in the future of Rotterdam and to show people what the municipality is up to for future progression. As compared to the future vision of London, it does not try to convince the reader of how 'great' Rotterdam is, it mainly tries to make the reader enthusiastic about the future of Rotterdam. After analysing the chosen chapters for this document, the following assessment came forth (Figure 5):

Criteria	Score	Explanation
Food Production	++	Every part of the criterion has been met within the future vision document of Rotterdam. Their focus is on: establishing a circular-economy, improving waste management, using more renewable energy sources, and less mass-production.
Food Consumption	+	The municipality already established some great plans regarding improved food consumption! Every citizen should have healthy food within reach according to the document. However, the conducted strategies are not further elaborated on.
Food Distribution	+	The document completes most of this criterion. Their aim is to make transportation of products sustainable by the use of electric- and hydrogen powered vehicles. However, not much is mentioned about travel distances.
Food Affordability	--	Nothing has been specified for food affordability in the future vision document.

Figure 5: the assessment table for the future vision document of Rotterdam

At the start of the document, it states that Rotterdam is supporting “good growth” (Gemeente Rotterdam, pg. 2, 2021), which is a similar statement when compared to London. This includes improving the well-being of their citizens, a sustainable society, and economic development. The document also states that Rotterdam is known as a city where there is a drive for innovation. How this is recognized within the separate criteria will be explained in the following paragraphs.

Food Production

The future of sustainability exists out of a circular philosophy. This implies that resources and energy sources are no longer wastes, but are recycled back into the production cycle. These sources will also no longer be fossil fuels, but are replaced by sustainable solutions like solar- and wind energy. Maybe even hydrogen in the future. The vision even states that by 2050, no more fossil fuels will be used for production activities. On top of that, there are newly discovered techniques regarding industry, focussing more on ‘customer-made’ production, instead of mass-production. This is more sustainable and requires less space within the city. Even the citizens of Rotterdam have taken initiative to found different sorts of corporations to support sustainability, this also applies to food systems. This is very much in line with the criterion, as resources are recycled, sustainable alternatives are being made and waste is better managed.

Food Consumption

The city strives to offer a balanced and healthy diet towards its citizens. With the ambition that every inhabitant has access to healthy food within its own neighbourhood and has enough choice in the supermarkets. In some particular schools throughout the city, unhealthy foods are not even tolerated anymore. This is also very in line with the criterion, because the municipality offers a healthy and diverse diet for everyone, even by discouraging unhealthy foods.

Food Distribution

Their main aim is to make mobility from and towards the harbour more sustainable. This will be done through implementing more electric- and hydrogen powered transporters in the city. On top of that, energy is going to be recycled for further use within the city. Most of the criterion has been covered in the document, except for travel distances. This problem could be tackled in the future.

Food Affordability

The vision is not very precise on the affordability of food, but does mention affordability of future products in general. The city government aims to make their products “future proof”, which could mean that they strive for affordable products in the future. On top of that, they want their economic growth to be inclusive. Meaning that every citizen should be able to profit from the economic growth of the city. This is a great endeavour, but it is not really focused on food and therefore not covering the criterion.

Comparing London to Rotterdam

Now that both documents have been analysed and all of the information about both documents is known, it is possible to start answering the sub questions.

In what way are food systems mentioned in the strategy plans?

Food systems are well-mentioned in both strategy plans, but The London Plan gives a little more insight specifically for food systems. As food systems are included in every section except for food affordability. The Omgevingsvisie of Rotterdam gives more general strategies, which should also include food systems. As food systems are mostly mentioned in the way of food consumption, since the municipality of Rotterdam aims to offer a healthy and balanced diet which is sustainably produced. Food affordability, and food distribution are not mentioned specifically, but more in overall statements. However, both documents have visions that are in line with the criteria, which is the most important.

How do both cities propose to make their food systems sustainable?

To compare both cities, both have inspiring ambitions for their cities to make food systems more sustainable. However, The London Plan is again more in depth with their strategies and elaborate a little more on what their actual plan is. An example of this is for the implementation of the circular economy. The document follows the same path as the document of Rotterdam, but with the addition of smart technologies, better waste management and more specific targets to achieve. The Omgevingsvisie of Rotterdam still lacks a little deepening in their future strategies, but the document has made a good start. Primarily the move from mass-production to more sustainable production is a proper strategy. A difference worth mentioning is the fact that The London Plan did not present any form of funding throughout the document, whereas the Omgevingsvisie of Rotterdam did. This should be taken into account when looking at the possibilities.

How could these strategies be improved?

Now that both cities have been compared to each other, it is possible to give recommendations to both future vision documents. For the Omgevingsvisie of Rotterdam, there could be a little more focus on elaborating about their food systems strategies. In some cases, particular strategies are too general and should be specified. In other cases, food is completely left-out as a solution. For example, the document states that “an environment which stimulates playing could lead to a decrease in obesity” (Gemeente Rotterdam, pg. 36, 2021). Healthier food is not mentioned here, whereas The London Plan does mention food as an option. The document of Rotterdam also states that “economic activities like food production” (Gemeente Rotterdam, pg. 54, 2021) are essential for a greener environment, but this is not further elaborated on. Statements like these make it seem that there is some sort of attention for food, but not in a specified matter.

For The London Plan, most of their health issues are aimed to be solved using sustainable food systems and most of the strategies are clearly elaborated on. However, it did score a "--" on food affordability, meaning that the Greater London Authority could do some research on keeping their foods affordable for everyone. Unfortunately, Rotterdam had the same score which gives them the same task.

Conclusion

This research was conducted because food systems have a bigger impact on our environment than people might think, and it is often left-out when it comes to policies about sustainability. Therefore, there was a lack of knowledge about the integration of strategies regarding sustainable food systems in city visions. This research is of societal relevance, because sustainable food systems have great potential for battling climate change. On top of that, sustainable food systems could be of great relevance to reach multiple Sustainable Development Goals. For this research, the city visions of London and Rotterdam were investigated and multiple hypotheses were established. The first possible outcome was that London had a better strategy plan than Rotterdam, as London is already better at preventing food wastes. However, the second possible outcome was that Rotterdam wanted to catch up to London and therefore had a more ambitious plan. The third possible outcome was that London and Rotterdam had similar visions when it came to sustainable food systems. The aim for this research was to develop an analyses plus recommendation for both city visions. The final objective is to get a better understanding of the inclusiveness of sustainable food systems within city policy documents.

To answer the main question, most of the differences between both city visions lie within elaboration, but the main goals are similar. This leads to the third hypothesis, as both documents have the same ambitions. However, there are still some differences that should be pointed out. Firstly, the London document primarily focuses on the Health component where the Rotterdam document mainly focuses on Resource Management. Therefore, most literature from Maybeck & Gitz (2017) is found within the London document and most literature from De Vries et al. (2022) is found in the Rotterdam document. Secondly, the London document did not mention anything about funding, which could make their strategies less realistic and therefore not 'SMART' (Klopp & Petretta, 2017).

What could be learned from both of these future vision documents, is that sustainable food systems are actually implemented, but the focus might differ. London is coping more with obesity and therefore has a priority for Health, while Rotterdam has more problems regarding sustainability and therefore focuses more on Resource Management. Every city has their own priorities and this is reflected in the presence of sustainable food systems.

When reflecting on this research, there were some positives and some negatives. To start with the positives, most of the studied literature came back in both documents. Especially a lot from De Vries et al. (2022), with the mentioning of the circular economy, other strategies to improve sustainable food production, and the implementation of healthy and sustainable diets. However, there was also a lack of literature while studying the future vision documents. As there is not a lot mentioned in the literature about

sustainable distribution which both documents did mention. Some other things to take into account are that The London Plan has a total of more than 500 pages, whereas the Omgevingsvisie of Rotterdam nearly has 200 pages. This could explain the lack of elaboration in the document of Rotterdam. Furthermore, there is quite a lack when it comes to food affordability, as both documents did not mention a lot when it came to that criterion. Therefore, suggestions for future research are to look into food affordability for both of these cases and to see how the created strategies are actually implemented. For now, the knowledge gap has been closed and sustainable food systems are making a march.

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Appendix

1. The chapters that will be analysed for both city vision documents

Chapters to be analysed - <i>The London Plan</i>	Chapters to be analysed - <i>Omgevingsvisie Rotterdam</i>
<p>Chapter 1.2: Making the best use of land Chapter 1.3: Creating a healthy city Chapter 1.6: Increasing efficiency and resilience Chapter 2.1: Opportunity Areas Chapter 3.1: London’s form, character and capacity for growth Chapter 5.1: Developing London’s social infrastructure Chapter 5.2: Health and social care facilities Chapter 6.4: Land for industry, logistics and services to support London’s economic function Chapter 6.5: Strategic Industrial Locations (SIL) Chapter 6.7: Industrial intensification, co-location and substitution Chapter 6.9: Retail, markets and hot food takeaways Chapter 8.8: Food growing Chapter 9.3: Energy infrastructure Chapter 9.5: Water infrastructure Chapter 9.7: Reducing waste and supporting the circular economy Chapter 9.8: Waste capacity and net waste self-sufficiency Chapter 9.9: Safeguarded waste sites Chapter 10.1: Strategic approach to transport Chapter 10.3: Transport capacity, connectivity and safeguarding Chapter 10.7: Deliveries, servicing and construction</p>	<p>Chapter 1: Why an environmental vision? Chapter 2.2: Space for entrepreneurship, doing and thinking Chapter 3.3: From fossil fuels towards more climate-neutral en circular use Chapter 3.4: Economics in transition Chapter 4.1.2: The Rotterdam harbour within the region Chapter 4.3: Landscapes and nature revolving Rotterdam Chapter 5.1: The direction of Rotterdam Chapter 5.4: Pleasant life in the delta Chapter 5.7: Working together on the energy- and resource transition Chapter 5.9: Environmental quality and the living area keep asking for maintenance Chapter 7: The environmental vision: new instrument, new way of working</p>