

Planting seeds for healthy food acquisition

Exploring how urban agriculture, focussed on local food production of exotic fruits and vegetables, can contribute to everyday healthy food acquisition practices.



*Food has a future – we have a future – when we design our cities
from the soil up*

– William MCDonough



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Author:

Maartje Molenaar

Student number:

WUR: 1014900

TUD: 5199972

Study programme:

MSc Metropolitan Analysis, Design & Engineering (MADE)

Supervised by:

Dr. SCO (Sigrid) Wertheim-Heck (WUR)

Dr. ir. H.N.J (Rick) Schifferstein (TU Delft)

Third examiner:

Dr. ir. NMJD (Nico) Tillie

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Abstract

The (re)localization of the globalized food production towards urban agriculture within alternative food systems is often supported by the potential to shorten the supply chain and decrease the distance between producer and consumer. Reconnecting consumers with production is generally supposed to increase the valuation of fresh foods and consequently the uptake of fresh unprocessed foods in the diet. Therefore, urban agriculture has been suggested as an intervention to change food consumption practices and thereby tackle public health problems such as obesity and type 2 diabetes.

However, the question is how this applies to the multi-ethnic urban population that characterise the multi-ethnic cities of Europe. Where there is a variety of food cultures with their corresponding food preferences, tastes and food practices. The role of urban agriculture and its potential support for healthy food consumption within a diverse urban area has not been studied thoroughly. Therefore, this thesis studies the link between (1) (un)healthy food choice and (2) the food environment in relation to special urban agriculture scenarios, through (3) the food acquiring practices of 15 consumers within the case study of Amsterdam Zuidoost.

Through a social practice lens, this link is examined by first exploring how a healthy dietary pattern is viewed by practitioners of a diverse urban society and how they acquire their foods. Secondly, it shows the barriers of the food environment for a healthy way of food acquisition. Thirdly, future scenarios are tested to examine how the practice of urban agriculture and its influence on the local food environment can support the healthy aspects of the practitioners' lifestyles.

Results show that the accessibility and visibility of the urban agriculture facilities are important for supporting people by the intake of more locally produced foods. In order to reach a large group with healthy locally produced foods, the focus on production must be high. The foods must be accessible within the direct neighbourhood to make sure that people can practice the healthy food acquisition within their daily life. In addition, for knowledge exchange about culinary heritage, cultural foods and the community engagement, the focus must be more on the social aspect of urban agriculture. Overall it is important to make both the places of production and market sales easily accessible

Key words

Urban agriculture, healthy food consumption, Social Practice Theory, food acquisition practices, multi-ethnic society, Amsterdam Zuidoost

List of abbreviations

CHAZ	-	Culinary Heritage Amsterdam Zuidoost
LPEF	-	Locally Produced Exotic Foods
SPT	-	Social Practice Theory
UA	-	Urban agriculture

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1. Introduction

Many of today's food systems and local food environments do not support the consumer in making consistent choices for healthy diets with required nutrition values, resulting in unhealthy food consumption patterns containing a lot of processed foods (Penney, Brown, Maguir, Kuhn & Monsivais, 2015). This and other complex issues and major developments such as rapid urbanisation, climate change and nutrition security place the (re)localization of the global food system high on the municipal council's agendas (FAO & RUAF, 2017; Van Tuijl et al., 2018). This creates a need for alternative local food systems (Pereira et al., 2020). The transition towards food systems on an urban level generates a rise of urban agriculture (UA) initiatives (Morgan, 2015). UA includes a wide range of agricultural activities and facilities in urban and sub-urban areas, such as community gardens, neighbourhood gardens and vertical farming (Lin et al., 2015).

The practice of local food-producing within UA can decrease the distance between farm to fork and therefore lower the environmental impact of urban food consumption (Goldstein et al., 2016). Moreover, it has the potential to reconnect the consumer with production. Many scholars agree that this reconnection through urban agriculture generally leads to an increase in the valuation of fresh foods and consequently the uptake of fresh unprocessed foods in their diets (Audate et al., 2019; Nogeire-McRae et al., 2018; Schram-Bijkerk, van Breemen & Otte, 2015). Especially people involved in urban agriculture food production tend to increase the intake of fruits and vegetables (Bellows et al., 2008). Research has shown that consumers who were not able to consume the preferable amount of healthy food due to the high cost, increase their preferable diet when they have access to the practice of urban gardening (Diekmann et al., 2020).

1.1 Problem statement and knowledge gap

Given the rise of welfare diseases in urban areas, the increase in fruit and vegetable consumption resulted from UA could potentially help to address public health (Bellows et al., 2008). However, the question is whether this applies to the diverse urban population that characterized the multi-ethnic cities of Europe. This diversity of food cultures presents a huge variation in food preferences, tastes, meanings and food practices (Pereira et al., 2020).

This cultural diversity is also important to take into account when asking the question of what a healthy dietary pattern precisely should consist of. Within literature, this is an ongoing debate subjected to continuously change due to constantly developing and changing scientific insights(Cena & Calder, 2020; Dooren & Aiking, 2016; Riley & Buttriss, 2011). Translating those insights into dietary guidelines is currently driven by the trend of universalisation and results in generic guidelines. Two examples are the Planetary Health Diet (EAT-Lancet Commision, 2019) for the whole world population and the Schijf van Vijf

(voedingcentrum, N.D.) for the Dutch population. Those guidelines and other policies view healthy diets as crucial in preventing malnutrition; both under and overnutrition. However, this top-down approach in supporting people to eat healthier does not match with the culturally diverse cities (Pereira et al., 2020). Thus the question arises how the required transition towards healthy dietary patterns can involve all people if the guidelines for healthy food consumption are not inclusive? And how does that relates to the (re)location of the global food systems transitions towards local food systems?

The current urban food transformation initiatives which support the transition towards local food systems, do not yet fully embrace cultural diversity in terms of population composition and their culturally informed consumption practices (Allen, 2010). Thus, the role of urban agriculture and its potential support for healthy food consumption within a diverse urban society is unclear. Many research results within scientific literature have shown that urban gardeners eat more fruits and vegetables than non-gardeners (Alaimo et al., 2008; Hodges et al., 2016; Litt et al., 2011). Moreover, a large amount of behavioural change research created insight into dietary patterns and possible interventions to change those patterns. However, those interventions and guidelines are often focused on an individual's behaviour and do not embrace the cultural diversity of the current urban population (Brons et al., 2020; (Timlin et al., 2020)). Lastly, research has focussed on the diversity of ethnic groups in urban agriculture (Reynolds, 2015) and consumption practices (Brons et al., 2020).

However, those studies do not provide insights in the way urban agriculture could provide an increase in the consumption of healthy foods within a diverse population. As Brons et al. (2020) described, more attention must be paid to the cultural acceptability regarding developments of the local food environment, concerning the people that carry out this practice and the food system in which it is performed. To make sure that the initiatives are inclusive in terms of cultural diversity the meaning around healthy food consumption and local food production must be studied.

Those insights are both valuable for society as well as for scientific purposes. When urban planners can successfully integrate urban agriculture facilities (increasing the healthy consumption patterns), it has the potential to fight lifestyle diseases. Moreover, if we obtain more knowledge about the dynamics around food consumption, both policymakers and food entrepreneurs could create more specific dietary guidelines and inclusive urban food strategies.

1.2 Research objective, scope and questions

This master thesis explores how a multi-ethnic society consumes healthy foods in daily life and how urban agriculture initiatives can contribute to support those everyday healthy food acquisition practices. This will be done by focussing on the practice of food acquisition and studying if, how and why people acquire healthy foods. To create an inclusive approach, the definition of a healthy dietary pattern will be created bottom-up approach, instead of using a top-down guideline. This is done by finding the meanings of the practitioners about what healthy dietary patterns look like. Therefore, a social practice approach is used to discover what meanings, materials and competencies made up the practice of food acquisitioning and analyse how bundles of practices and the current food environment influence those acquisitions practices.

Those results will be linked to a case study in which an urban agriculture initiative is designed that aims to support a shift towards more healthy food consumption by increasing the consumption of exotic fruits and vegetables. In this study, two possible effects of UA are studied: (1) the effect of UA practices of UA practitioners on their acquisition practices and (2) the effect of UA on the food environment. The latter is affect the food acquisition practice of the non-UA practitioners as the introduction of UA can intervene in the food environment and therefore change the food acquisition practices.

Research scope

The scope of the research is limited to one case study, the Culinary Heritage Amsterdam Zuidoost (CHAZ) project. Within this project, several types of urban agriculture scenarios have been created which show different types of urban farming for a multi-ethnic society in Amsterdam. The aim is to sustain the culinary heritage of the diverse society by producing exotic fruits and vegetables. A more detailed description will be given in the research context in chapter 3 of this research.

The scope of the recruitment period was limited to April and May. The recruitment ended when those two months were over or when 15 respondents had been recruited. Each volunteer to the study was asked to participate in an online or offline interview to evaluate their consumption patterns. Because of this, the term of consumption is limited to the practice of food acquisition. Moreover, the focus lies on the current food acquisition practices and barriers and opportunities for change. The past and how the practice changed over time are not included due to the limited scope of this study.

Research question

The overall research question that guides the exploration of this research topic is formulated as follows:

How can urban agriculture contribute to transforming food acquisition practices in more healthy directions amongst the ethnically diverse population of Amsterdam Zuidoost?

Sub questions

- 1.1. How do practitioners from a multi-ethnic society in Amsterdam Zuidoost practice (healthy) food acquisition?
- 1.2. What barriers do the practitioners face during the healthy food acquisition practices and what opportunities for change?
- 1.3. How could urban agriculture within the future food environment fight those barriers and contribute to the goals of an increased amount of consumed fruits and vegetables through healthy food acquisition practices?

1.3 Thesis outline

This thesis research consists of five chapters. Chapter 2 presents the literature review results, which informed the theoretical and conceptual framework. Chapter 3 elaborates upon the data collection and analysis approach of the methodology. Chapter 4 presents the context of the case study. Chapter 5 shows the results of the research. Finally, chapter 6 presents the conclusion and discussion in which the results will be interpreted, limitations of the study will be discussed and further research possibilities will be proposed.

2. Theoretical and Conceptual Framework

This study started with a literature review that created the theoretical basis of this research. Within this chapter the findings will be presented in five different parts: section 2.1 provides a brief discussion of different theoretical perspectives on consumption and behaviour science and argues why and how a social practice approach is useful for studying food consumption. Section 2.2 provides an explanation of the Social Practice theory (SPT) in which the basis and different elements of the theory will be discussed. Section 2.3 discusses how the SPT is applied to consumption studies. Section 2.4 shows how the SPT can be applied to food consumption. Section 2.5 explains how food acquisitioning is the main link between the food environment and dietary intake. Section 2.6 explains the barriers and opportunities framework and section 2.7 explains the scenario testing approach. Building on these seven sections, section 2.8 presents the conceptual framework that is applied to this study.

2.1 Introduction to consumption studies

How food consumption is studied and conceptualized has implications for policies that must target food consumption patterns (Alan Warde, 2005). Therefore, academic literature has been analysed for theories on consumption and behaviour change. This section provided a brief discussion on the switch of approach for researching consumption behaviour.

Consumption behaviour studies are often based on socio-psychological models, focussing on rational individuals as units of analysis (Sargant, 2014). The current consumption behaviour changes strategies primarily draw on those individual behaviour models (Shove, 2012; Spaargaren, 2011). However, a number of sociological scholars argue that those models of individual behaviour change, overestimate the individual power of choice during routinized behaviour (Reckwitz, 2002; Spaargaren & Van Vliet, 2000). This individualistic approach and conceptualization of people as rational individuals could over-simplify the research and overlook physical and social constraints that influence their consumption patterns (Sargant, 2014).

A switch is visible within the literature of consumption research from understanding and influencing individual consumption behaviour towards understanding consumption as integral to social practices (Shove, 2010). The behaviour of individuals takes place through the medium of those social practices and the context in which the behaviour is executed is part of the analysis. Elements like infrastructure, social interactions and time constraints are influencing the behaviour and therefore inherently involved. The social practice approach has the potential to show everyday life patterns (Shove et al., 2012). This approach allows a change from how individual consumption behaviour can be changed toward how the practices and their performance can be changed (Welch, 2016) and thereby overcome the

problems that come along with the social-psychological models for food consumption behaviour. Moreover, it offers possibilities for research that focuses on the establishment and maintenance of new equilibriums in routinized behaviour in everyday life, which is useful for considering interventions that must affect everyday life routinized behaviour. In this case, it can offer new insight for policies and practical intervention of behavioural and social change in food consumption patterns.

2.2 Social practice theory; key concepts

The social practice approach embodies different Social Practice Theories (STP) with contributions from social and cultural theorists, philosophers, theorists of science and technology (Elizabeth Sargant, 2014). Which are trying to resolve the conflict in classical social theory between individual action theories and collective structures theories. It proposes that we should not use human agency nor the social structure as a unit of analysis. Instead, the social practices are the unit of analysis (Shove et al., 2012; Spaargaren, G., Weenink, D., & Lamers, 2016). Social practices can thus function as means of understanding relations between individual behaviour and the social world in which people execute types of behaviour.

2.2.1 Agency-structure relationship

Anthony Giddens and Pierre Bourdieu are some of the first contributors to the SPT by initiating the conceptualization of the agency-structure relation (Spaargaren, G., Weenink, D., & Lamers, 2016). Anthony Giddens proposed the structuration theory, in which he described how social systems are created and reproduced by both social structure and agents. Agents make social systems and social systems forms agents, which works both ways. Structure refers to the recurrent patterned arrangements, which limits the availability of individual choices and opportunity. Agency refers to human action and the capability of an individual to act individual. Structures partly determine agents' behaviour, but agents can also change structures. Behaviour (people) and structure (systems) are intertwined and can co-evolve (Giddens, 1986). The agency-structure relation is conceptualized as a repeated performance of practices carried out by knowledgeable human agents. This structuration allows a sociological debate to what extent social structures and human agency determine an individual's behaviour.

More recent developments of the Social Practice approach are described by the work of Schatzki and Reckwitz as the middle ground for the interplay between agency and social structures. They refer to practices as organized forms of routinized activities and recognized behaviour that is carried out in society and therefore influenced by the social structures.

Several different definitions are used within the field. From the short and multi interpretable definition of Schatzki who describes practices as an integrated bundle of activities and a set

of interconnected doings and sayings (Schatzki et al., 2001), towards more specified definitions like the one from Reckwitz, who describes practices as:

'a routinized type of behaviour which consist of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge.' (Reckwitz, 2002)

Reckwitz (2002) describes practices as routinized behaviour that forms a block of interconnected elements. The practice block is the smallest unit of analysis, since the elements are dependent on each other. The interconnected block of elements cannot further be reduced to single elements. (Reckwitz, 2002).

2.2.2 Elements of social practices

Shove et al. (2012) explain the interrelated elements within the three-element model as materials, competencies and meanings (Figure 1). Materials include human and non-human elements that are required for carrying out the practice such as infrastructure, elements and tools. Competencies can be viewed as skills and the know-how to perform practices. Images explicitly incorporate meanings as formed in practices. These categories are sometimes overlapping and not clear cut defined (Røpke, 2009). At any time a practice consist of a combination of those three elements and they are linked together through the performance of a practice by the practitioners (Shove et al., 2012).

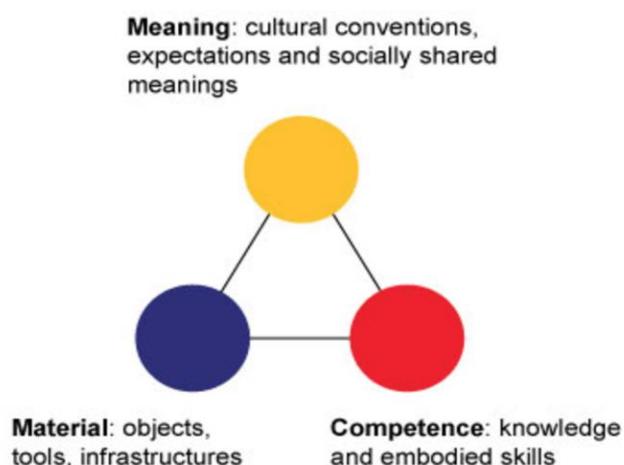


Figure 1, Elements that make up social practices

(Shove et al., 2012)

To exist, social practices are therefore dependent on the performance of a certain practice by a group of human agents. The practices are therefore inherently social, as they are socially shared routinized behaviour of different agents. The performance of the same practice is dependent on a similar interpretation of the meaning of the practice and the required skills and material to carry it out. This similar interpretation allows for the performance of practices by several individuals who are performing the practice in a different space and time. The practice spreads to other spaces when other practitioners enroll in the practice and replicate it. The social importance that is associated with the three elements (competencies, materials and meanings) creates the situation in which practices are shared and evolving across time.

A distinction is made here by several practice theories between practices-as-performance and practices-as-entity (Schatzki et al., 2001; Shove et al., 2012). Practices-as-entity are entities as described above, exciting of interrelated elements and maintained and evolved over time through the continued performances of the practices. Practice-as-performances describe how those entities come to life, are carried out in a social context, combined and how they continue to exist in everyday life (Shove et al., 2012). The latter is specific within a time-space frame and can therefore be observed by focussing on the executed behaviour of a group of practitioners. Jaeger-Erben & Offenberger summarize this as follows: "Practices as entities pre-structure performance but via performances they are adapted to available resources (e.g., time social and financial capital), given everyday contexts and social as well as personal demands." (2014). Figure 2 shows an illustrative iceberg which explains how only the top of the iceberg, the practices-as-performance, is visible, while the combined practice elements, also known as practice-as-entity, are not visible and therefore not directly observable.

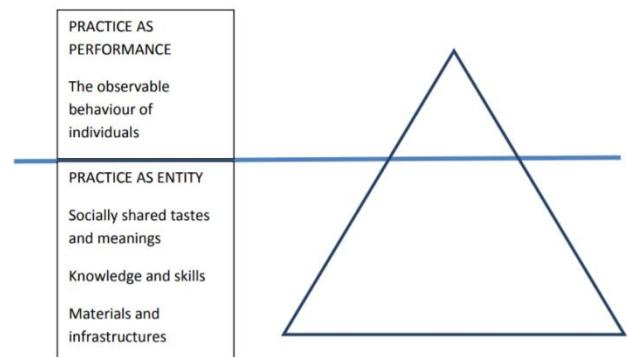


Figure 2: Conceptual model of Spurling et al. (2013).

2.2.3. Change of practices

Agents encounter practices-as-entities as these are situated in the social context. They can adapt and reproduce them through their own interpretation (practices-as-performance). Practices emerge, stabilize and evolve over time due to a congregation and dynamics between the elements and the introduction of new elements. While reproducing the practices, the links between the practice elements break, reorganize and are being built again (Figure 3). This is a continuous process in which both (the linkages between) the elements of the practice-as-entity and the elements between social practices are changing. This process of adaption and reproduction leads to a transformation of the entities over time (Røpke, 2009). Changing the status quo of a practice can be done by introducing a new element or by changing the relations between the current elements.

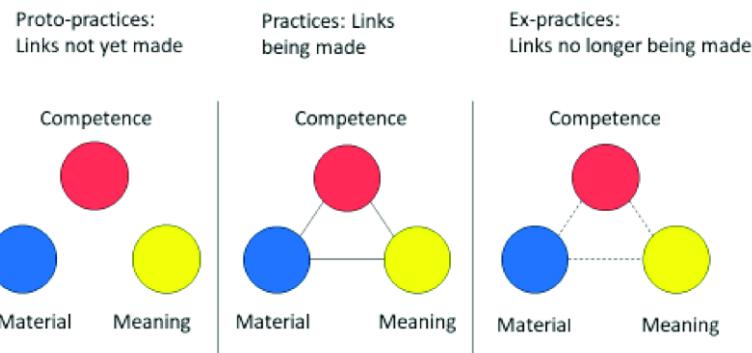


Figure 3, the evolvement of practices

Above a summary of the literature review is presented regarding the use of the social practice theory and how social practices evolve over time. In order to be able to study food consumption as social practice, the developments around consumption as social practices will be discussed before explaining the theoretical approach towards food consumption practices.

2.3 Theories of social practice in consumption research

The practice-oriented research is applied to consumption research by various researchers such as Shove (2003), Warde (2005) and Spaargaren & van Vliet (2000). Within the literature, it is highlighted as a potential approach for addressing sustainability consumption issues and consumption culture. Moreover, there is an increase in food consumption studies that are based on a social practice approach as well (Brons et al., 2020; Elizabeth Sargent, 2014; Jaeger-Erben & Offenberger, 2014). Within this section, a few different frameworks for analysis consumption will be discussed.

Warde contributed to this practice-oriented consumption research approach by defining consumption as:

“(...) a process whereby agents engage in appropriation and appreciation, whether for utilitarian, expressive or contemplative purposes, of goods, services, performances, information or ambience, whether purchased or not, over which the agent has some degree of discretion.” (Warde, 2005, p. 137).

Shove et al. and Spaargaren go a step further by creating and describing specific models for sustainable consumption. As described in Paragraph 2.2.2 Shove and her colleagues define practices based on the three elements model. According to them, sustainable consumption can be obtained through influencing the practices by affecting the interrelated elements: stuff, skills and images.

While Shove's model mainly focuses on the three-element model of the practices as a unit of analysis, Spaargaren (2000) introduces two other concepts: 'System of Provision' and 'Lifestyle' (Figure 4). This allows for the introduction of the wider context of practices as defined in the consumption definition of Warde (2005). The system of provision includes the circumstances in which consumers are enabled or constrained to consume by the availability

of certain products in everyday life. Shove et al. refer to this as infrastructures and places this integrated part within the practices themselves. Lifestyles can be seen as narratives defined by the practitioner about what type of person, based upon the set of practices that the practitioner engages in. One can, for example, see themselves as a healthy person, by explaining the way they practice health in food consumption, exercising and sleep patterns.

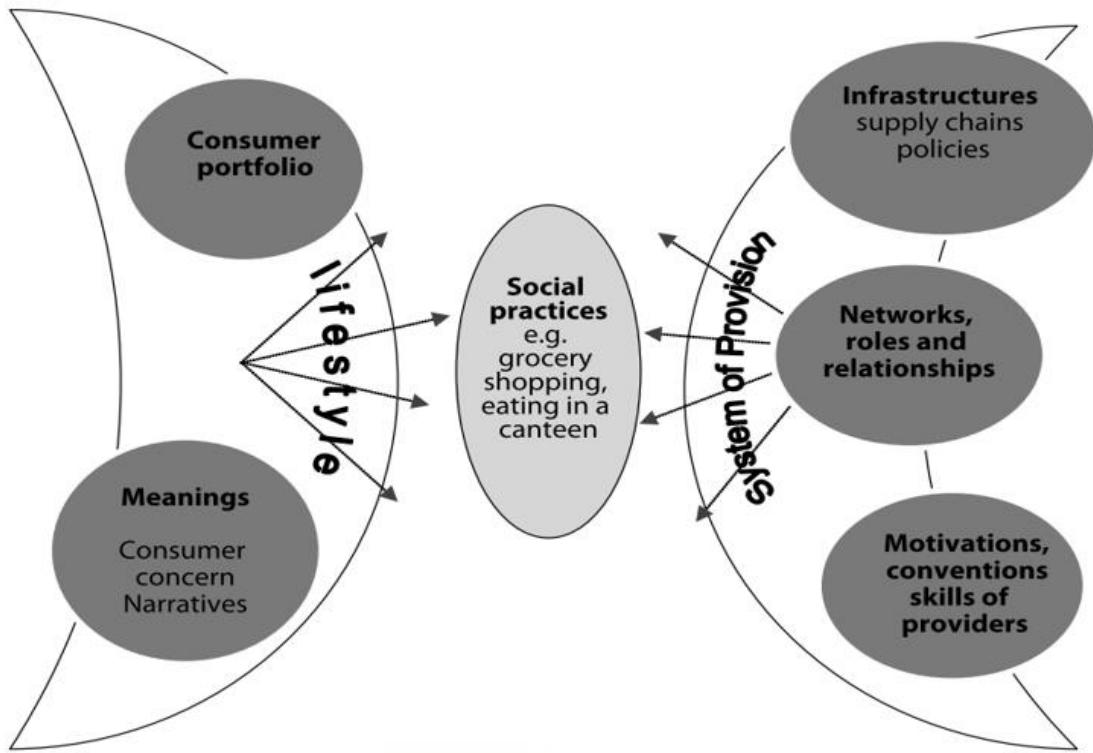


Figure 4. Conceptual model of Spaargaren et al. (2007)

The place where both concepts meet allows for the execution of the consumption within the so-called 'consumption junction'. This is the place where the lifestyle meets the system of provision and allows for carrying out of the social practice.

This section shortly introduced the theories used within social practice-based consumption research. The following section will demonstrate why practice-based thinking is useful for food consumption as well. Moreover, the theories described above will be conceptualized to create a practice-based approach that is applied to this thesis research.

2.4 Food consumption through the lens of social practice theory

Behaviour of food consumption can be conceptualized as social practices as well, as they are routinized day-to-day activities that are performed by practitioners. Any food consumer practitioner understands the consumption practice similarly based upon the shared meaning that they have learned as knowledge agents within the social structure in which the food consumption takes place. Moreover, they know what materials must be included and what skills are needed to be able to carry out the food consumption (Shove et al., 2012).

Applying the social practice approach to (healthy) food consumption creates the opportunity to analyse how the routinized behaviour is situated in the social and physical context of the system of provision in which the practices take place. Sargant (2014) explains this with an example of eating within a school canteen, in which three elements influence the behaviour of a practitioner: the social context e.g. with who you eat, the physical aspects e.g. where you can eat and lastly what role the practitioner has within the practice of food consumption. This allows for the identification of the dynamics within the provisioning, the availability of products and infrastructures within the consumption junctions. This allows for the identification of opportunities and limitations for the development of healthy food consumption practices within different settings in which they take place.

With regards to this research, the social practice approach for food consumption creates a good baseline. It allows for analysing both the situated consumption practices, the dynamics of the practice elements and the relation between the food environment (system of provision) and the healthy aspects of the lifestyles of the practitioners. To specify it more, food consumption practices are often divided into the following practices: food acquisitioning, cooking and eating practices.

2.5 Food acquisitioning as the link between food environment and dietary intake

Within the scope of this research, the food acquisition practice is the main practice of focus, within the wider bundle of food consumption practices. As the goal of the study is to discover how dietary intake can become more healthy, it is important to know how food acquisition practices influence this dietary intake and how it is formed by the food environment. Figure 5 illustrates the possible relation between dietary intake and the daily practice of food shopping practices. Moreover, it shows those two concepts are related to food retail provisioning which allows for the hypothesis that dietary change can be created by a change in the food retail via the way of food acquisition practice. Thus, the food retail provisioning within the food environment is the dependent variable for dietary intake (Wertheim-Heck & Raneri, 2019).

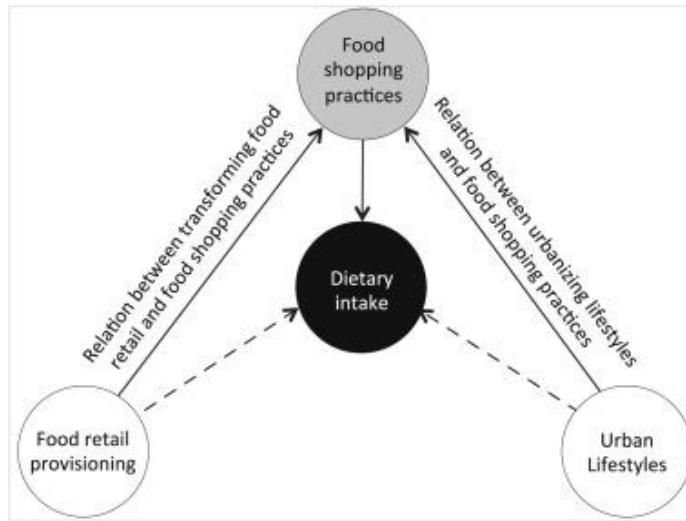


Figure 5. Conceptual model of Wertheim-Heck & Raneri (2019).

2.6 Opportunity and Barrier framework

Based upon the stated hypothesis, food retail within the food environment can support or create a barrier for healthy food acquisitioning practices. This research goes further than the analysis of the current acquisition practices by looking at several scenarios of different forms of urban agriculture initiatives. This is based on the hypothesis that urban agriculture can change the food environment. This change in the food environment, and especially the retail provisioning could support the dietary intake of fruits and vegetables. Therefore, the current acquisitioning practices are analysed and the Social Practice approach is combined with the opportunity and barrier framework. This will create the possibility to find what practice elements create those barriers and how those can be tackled by finding opportunities for change.

2.7 Scenario testing

The second part of this research focuses on a future-oriented AU initiative. This initiative is the CHAZ project and functions as a case study. To test possible AU, four scenarios of different types of AU initiatives are used. Through this scenario testing, the current food acquisition practices and the related barriers and possibilities for change can be linked to future initiatives.

2.8 Conceptual framework

Based upon the practice model (Figure 4) of Spaargaren & van Vliet and the interpretation of it by the work of Brons et al., (2020), a conceptual framework is created and illustrated in Figures 6 and 7. Within this section, the conceptual framework will be discussed by explaining how the variables of this research are conceptualized. This is based on the

following hypothesis: food consumption is influenced by food acquisition practices and that food acquisition practices may be influenced by urban agriculture initiatives, in which case you examine the two pathways described.

2.8.1 Current food acquisition practices

Figure 6 focuses on the analysis of the current food consumption practices in relation to health. The goal of the first part (Figure 6) is to analyse the consumption practices of practitioners of Amsterdam Zuidoost. Moreover, I intend to investigate how consumption practices are influenced by the food environment and the bundles of practices in order to find the consumption junction that allows for healthy food acquisition practices. This allows for the identification of specific barriers within the food environment and bundles of practices that do not allow the performance of the intended healthy food acquisition practice.

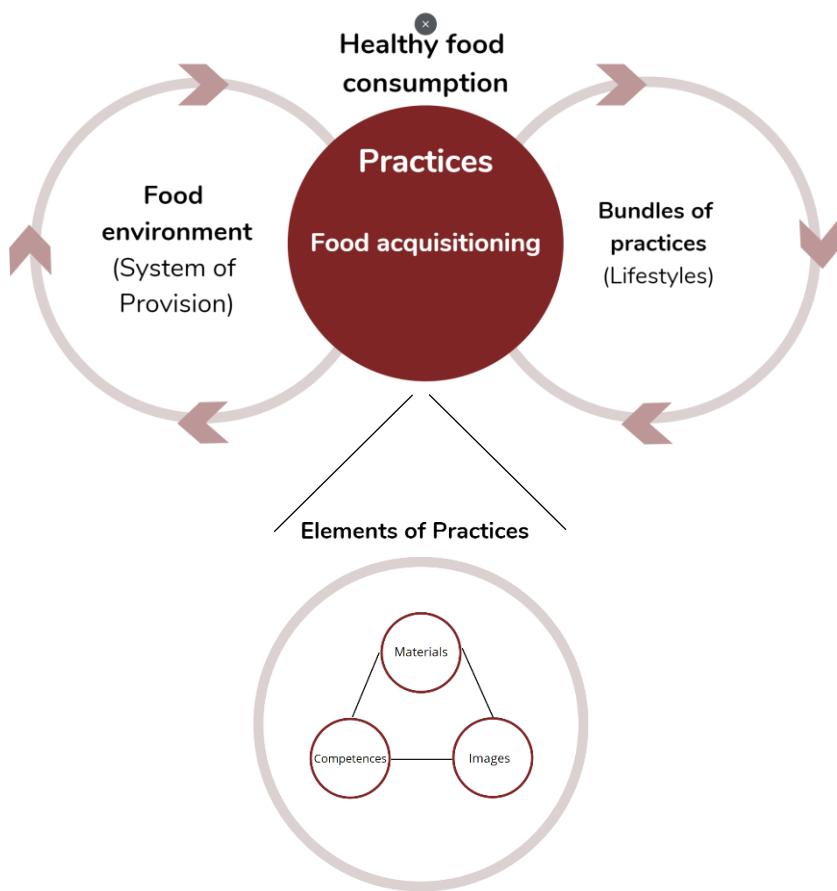


Figure 6, Conceptual framework part 1: The current food consumption practices influenced by the food environment and bundles of practices

Practices as entities

As described in section 2.2.2, the practices are an interconnected block of three elements that are situated in a social context. For this study, the meanings of what healthy foods look like according to the practitioners and whether that is in line with the goal of more

consumption of fruits and vegetables, form the baseline of this study as they influence how people acquire foods.

Bundles of practices

Practices are not performed in isolation but they are rather interconnected with each other within a wider bundle of practices. Food acquisition practices are influenced by other practices like work, commuting and leisuring. If one practice changes, it could change others as well, due to the competition of time and other resources (Shove et al., 2012). For example, if you have to work longer and you also have to commute a longer distance than before, there is less time available for food shopping and cooking activities.

2.8.2 Introducing of urban agriculture

The second part of the framework (Figure 7) is used to create the baseline of analysing the effects of the possible changes in the food environment and consumption practices through the introduction of urban agriculture practices. The goal is to identify what elements of urban agriculture can support the healthy acquisition practices of the practitioners. Urban agriculture can change food acquisition practices in multiple ways. This thesis examines two different pathways: (1) food acquisition practitioners get directly involved in the practice of urban agriculture or (2) the practitioners' food acquisition practices get influenced by changes within the food environment, caused by the urban agriculture initiative.

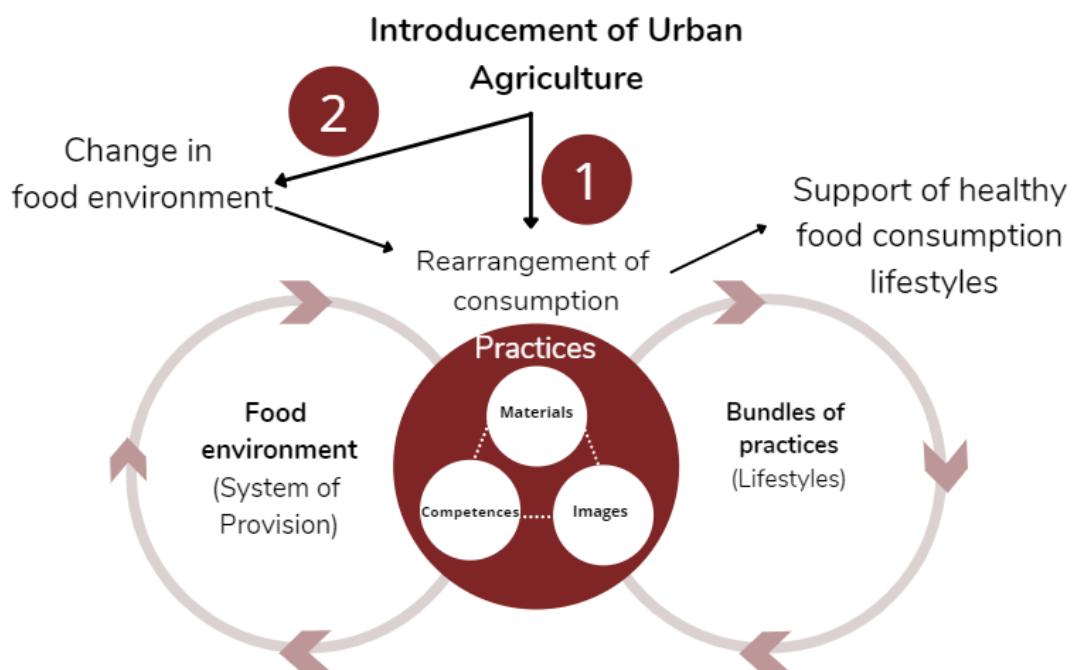


Figure 7, Possible change on food environment and consumption practices generated by the introduction of the CHAZ project.

3. Research Design and Methods

This chapter explains how the SPT and scenario testing is operationalized within this exploratory study, to determine how urban agriculture in Amsterdam Zuidoost can contribute to healthy consumption practices.

Paragraph 3.1 starts with the research context. Second, paragraph 3.2 explains the methodological approach for practice-based research and the foresight scenario method. Third, paragraph 3.3 describes the data gathering methods, research population. Finally, paragraph 3.4 elaborates on the data analysis.

3.1 Research context

To conceptualize this study within the scope of a Master's thesis research, it will be applied within the following selected case study: The Culinary Heritage Amsterdam Zuidoost project (CHAZ). Within this section, the case study will be shortly discussed, followed by a short discussion on why this case study is suitable for this research.

The food demand within Amsterdam Zuidoost is different from other parts of the city since the culinary heritage of the residents is different due to their non-western ethnic background. The specific demand for exotic vegetables, fruits, and herbs within this city district, does not always match with the supply of locally produced products. Therefore, a lot of those products are shipped from across the world, resulting in extra CO2 emissions within the food chain. Moreover, it has also recently been revealed that these imported vegetables are cultivated with the use of too many pesticides/herbicides. For this reason, a lot of vegetable imports are now restricted, which causes a rise in prices due to scarcity (AMS, 2020). Besides that, citizens from Amsterdam Zuidoost have more diet and lifestyle-related health issues like type 2 diabetes and obesity than citizens from other parts of the city (Stronks et al., 2011; Volksgezondheidenzorg.info, n.d.).

Therefore, professionals and researchers from the AMS Institute, Wageningen University and Research and Next economy set up the CHAZ project in which they provided an impetus to analyse the possibility for the cultivation of exotic vegetables and fruits. Moreover, they intend to further develop this form of urban agriculture and make it a permanent part of Amsterdam's food strategy. The overall main aim of the CHAZ project is to create a system in which all citizens have access to a diet that is healthy, affordable, safe and culturally accepted. One of the goals is to increase public health by producing through an increase of accessibility and thereby increase of consumption of healthy exotic fruits and vegetables. Therefore, the production of locally produced exotic foods (LPEF) will be necessary.

As said before, current urban agriculture initiatives do not embrace cultural diversity in terms of population composition and their culturally informed consumption practices. The CHAZ project focuses on the ethnic diversity of the population of Amsterdam Zuidoost. Moreover,

one of the goals is to increase healthy food consumption patterns by intervening within the food environment. Therefore, the practice of food acquisitioning is crucial within this goal and the study population's characteristics make the CHAZ project suitable as a case study to discover how culturally inclusive urban agriculture initiatives could contribute to healthy food acquisition practices amongst an ethnically diverse population.

This thesis research is conducted during and after the exploration phase of the GCH project. It was therefore possible to use the results of the exploration within my research. This was in the form of four different scenarios for urban agriculture in Amsterdam Zuidoost, which will be described in chapter 4.

3.2 Research approach

This section explains different research possibilities for a case study with a social practice-based approach and argues why certain choices were made. Moreover, it explains how the CHAZ project created input for this research.

Social practice-based research

Social practice-based research has no unified practice approach (Schatzki et al., 2001). It is rather a broad range of approaches that allow identifying routinized behaviour and explain why people act in a certain way. Researching food consumption patterns and possibilities for change in the food environment can thus be carried through different research methodologies.

Using a Social practice approach, the focus of analysis lies on the practice instead of the behaviour of the person. This makes it important to research the locates where practices take place. The qualitative case study approach seems to be the most suitable for analysing practices since it can shed light on how practitioners perform and entrain practices in real-life settings (Halkier & Jensen, 2011).

The mechanism of zooming in and zooming out is introduced as a useful methodological and theoretical tool that allows for analysing the practice on different levels, when using a social practice approach. Zooming in allows to analyse the practice-as-performance by asking for the sayings and observing the doings of practitioners. The mechanism of zooming out allows researchers to see how the practice is situated in the wider bundle of practices (Nicolini, 2012).

Especially qualitative research approaches such as observation and shadowing are useful to get insights into the zoomed in state of the practices; performances of practices, also referred to as 'doings of practices' (Alan Warde, 2005). It allows for analysing the embedded knowledge and required elements that are implicit in certain phenomena and activities around food consumption. Moreover, it allows for gaining a rich understanding of the context of the

practice (Spaargaren, G., Weenink, D., & Lamers, 2016). However, observations and shadowing methods for consumption practices research have limitations. The presence of the research observer, in house consumption settings, will influence the usual dynamics of the practitioners.

Other qualitative research methods like in-depth interviews and focus groups are suitable as well for analysing the practices since they can explore why and how people act the way they do. This is due to the ability of those qualitative methods to gain insights into the characteristics, elements and changes of the practices (Sargent, 2014). Moreover, these can be conducted online, which was necessary in the Covid-19 pandemic. Thus, these can be used to learn about the practices-as-performance in the form of sayings about doing.

Case study

According to Geels et al. (2015), qualitative methods, such as case studies, are useful methods for analysing consumption practices. This is because studies focussed on consumption practices require interpretative and comparative methods that can find the patterns and underlying social mechanisms of consumption practices. The reason for using a case study for this research is to examine contemporary real-life situations and provide a basis for applying the concepts related to the SPT.

3.3 Research design and methods

This subchapter describes the steps that have been taken during the different phases of the research and argues why this was useful for this study. This study started with desk research of existing literature on the SPT, food consumption and urban agriculture. Afterward, the empirical research was conducted through semi-structured interviews, observations and a focus group.

3.3.1 Desk research; Literature review

A literature review is used to explore the SPT and how it relates to consumption patterns. The academic literature used for this review is found through Google Scholar and the online library of Wageningen University and Research. Different search terms were used, such as: 'Urban agriculture', 'local food production', 'Social practice theory for food consumption', 'food consumption practices', 'healthy food consumption', 'urban food environment', 'local food system', 'Health of citizens Amsterdam Zuidoost'.

After finding the useful exciting literature for this research, a literature review is executed. The Social Practice literature review was necessary to start with in order to find a structure for the qualitative research. Moreover, it created the basis of the theoretical framework, conceptual framework as described in chapter 2.

During this phase, a literature review was combined with case study research in the form of attending the meetings of the CHAZ project. This was mainly to get a sense of what the project was about and in what way it could be used in this research. With a role as observer, the context of the project was analysed. After completing the inventory research of the CHAZ project, the empirical part of this research began.

3.3.2 Qualitative research

The qualitative data in this study was produced by several empirical methods. The empirical research was conducted from April until June 2021 and is based on semi-structured interviews and observations.

3.3.2.1 *Semi-structured interviews*

For the first part of this research, the data collection is gathered through semi-structured interviews. This allowed for investigating the 'sayings' of practitioners by zooming in into their specific food consumption practices and identifying what practice elements (materials, competencies and meanings) influence the practices. Moreover, it allowed me to zoom out to the practice-as-entity and investigate how the healthy food consumption practice is embedded in the wider bundle of practices in the lifestyles of practitioners (Nicolini, 2012).

The semi-structured interview is the main source of data gathering. Before the question started, the interview topic and the case study project were introduced. The structure of the consumer interviews was as follows: First respondents were asked to explain consumption patterns focussed on food provisioning, cooking and eating in their everyday life and how that relates to their view of doing healthy foods practices (zooming in). Secondly, respondents were asked to explain their changing food consumption practices in a dynamic interplay between lifestyles, food environment and broader bundles of everyday practices.

The second part of the research focussed on the future-oriented case study. A foresight scenario method was used to envision the possibilities of urban agriculture and the resulting changes in the food environment. This made it possible to test the scenarios during the interviews. Therefore, the scenarios of future urban agriculture were presented and used to envision a new food environment. They were asked to provide feedback on the different scenarios and name the elements that they think will support them in their healthy eating practices.

Half of the interviews were conducted together with a fellow MADE student, doing research on the same case study. Therefore, the structure of those interviews were a bit different: First respondents were asked to explain their food consumption and production practices in relation to their opinion of doing healthy food consumption practicing. Secondly, the scenarios of future urban agriculture were presented and they were asked in what way they see similarities with their local food production practices in relation to healthy food consumption.

Appendix A and B provide the interview guide.

3.3.2.2 Qualitative research: Observations

Some interviews have been coupled with observations to investigate the performance of practices, also referred to as 'doings'. However, the observations were not always doable due to the COVID-19 measures. Therefore, all interviews focussed on the 'Saying about doings'. This represents the characteristics: when, where, how and with whom the food consumption practices were carried out. It allows for the identifications of the barriers that practitioners experience with healthy food consumption.

A couple of observations were collected during or after the interviews with respondents. One time the interview was on a terrace while having lunch in the Bijlmer Arena. Another time I did shadowing and small interviews with food market vendors at the Anton de Komplein food market while the respondents acquired their groceries. Afterward, the interview was conducted and I observed her cooking a meal together with her grandmother. Two times I was invited to visit the urban gardens of two different pairs of prosumer respondents. Lastly, two times I was invited to a lunchroom to interview the owners of a lunchroom in Bullewijk and one in Reigersbos.

3.3.3 Selection of research respondents, conduction procedure and research population

Respondents for this research were recruited in several ways: in an open call for participation in this research, respondents were recruited through my social network and online through several websites of residents groups, churches, urban gardens communities, online platforms (Facebook, Linked In, Instagram and Couchsurfing). Moreover, I asked people in person, by handing out flyers on the Anton de Komplein food market, resulting in zero participation. Most respondents were found through a search within my social network.

After the selection of the respondents, the interviews are scheduled at a specific time and place. In total ten interviews were conducted, of which seven interviews with one interviewee and four interviews with two interviewees. In total fifteen respondents were interviewed. Four interviews took place online through ZOOM and the other six took place in real life. All respondents were asked to sign a form or had to confirm that they were okay with recording the interview.

3.4 Data Analysis

After conducting the interviews, the audio files were transcribed verbatim in the Dutch language. A combination of content and thematic analysis was performed, to do deductive analysis. With the use of code categories arising from the social practice approach-based conceptual framework, a content analysis is performed. The thematic analysis was used to define different themes within or outside of those code categories related to those themes. Afterwards, those themes were placed into categories.

The results of the scenario testing were analysed through this thematical analysis. This created the possibility to indicate what themes are important for the goal of healthy food consumption and what elements of the different scenarios are related to those themes.

3.5 Ethical considerations

To make sure that the research is conducted in an ethically right way, several conditions have been taken into account by taking the following actions: all respondents were informed of my interview request via email or a mobile text message and to ask whether they wanted to participate in this Master Thesis research project. At the start of the interview, I introduced the research topic, my role as a researcher and the way how the personal data would be handled to ensure privacy. In an online meeting, the interviewee received a consent form (Appendix E) via email and was asked to approve the recording of the interview. In the case of an offline meeting, the participant was asked to sign a consent form, after explaining the form in detail (Appendix C & D). Furthermore, all respondents are anonymized within the rapport. The respondents' names have been replaced with numbers and other specific data that could refer to a person have been excluded.

4. Research context: The Culinary Heritage Amsterdam Zuidoost project Case Study

The first phase of the CHAZ project focused on the question of whether it is feasible to create urban agriculture in and around Gaasperplas, and to do so in such a way that it fits in with the socio-economic ambitions of Amsterdam Zuidoost and also makes a contribution to the preservation of the culinary heritage. The study intended to answer the question of how feasible urban agriculture is for Amsterdam Zuidoost, spatially, technically, economically and organizationally. In short, can urban agriculture in and around the Gaasperplas area, under the denominator 'food connects', get a physical but also a socio-economic place? This exploratory research resulted in four scenarios, which are presented together in Table 1.

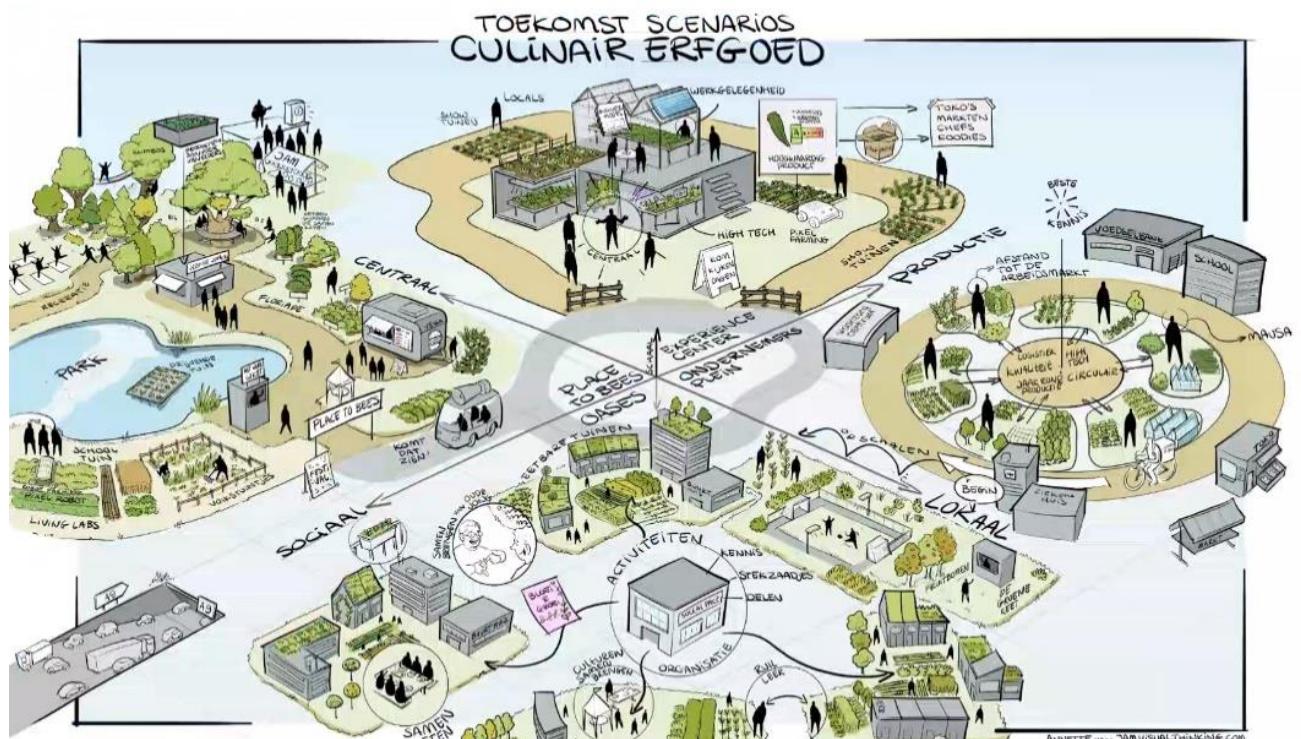


Figure 8. Four scenarios for urban agriculture of the CHAZ project

The four scenarios for urban agriculture emerge at the intersection of two axes. The first line explores what urban agriculture can mean, locally or centrally. The other line explores urban agriculture as a producer of food or as a social connector. During the exploration of the four quadrants, five themes were central: health, cultural identity, social cohesion, entrepreneurship and education. The practice of consuming fruits and vegetables is interwoven with those five themes. Table 1 summarizes all four scenarios. The full description will be showed in Appendix F.

Table 1. Scenario description of the CHAZ project

Scenario	Description
1. The experience centre	<p>Experience centre that fulfills a central role in the district. An entrepreneur provides innovation and continuity of products that are produced in greenhouses, in a vertical farm or another form of agriculture. The products are sold locally, they are fresh and nutritious. The location offers employment in agriculture, but there are also jobs in the services that the company provides.</p> <p>There is a restaurant meeting room and a greenhouse classroom for the schools in the area. The centre also provides space for an engaged community of residents from the Southeast. They have their own gardens in or around the greenhouses, but they can also help out at the company. In short, the Experience Centre is bustling with activity.</p>
2. Oases	<p>In Oases, urban agriculture is spread like a dense network throughout Amsterdam Zuidoost. Urban agriculture can be found everywhere in the district: in streets, on roofs, parks, near schools and sports fields. Being active and together is paramount. Vulnerable residents who are struggling with health problems, exclusion or loneliness are connected to initiatives in the neighbourhood.</p> <p>There are neighbourhood gardens where young and old eat the vegetables they have grown together. Fruits grow alongside the sports fields. The various cultures exchange recipes with each other at the annual harvest festival for the neighbourhood. Management is organised on a local and low-threshold basis. There may be coordination and (knowledge) exchange at neighbourhood level, for example from the community centres. People feel they own the greenery and that is why it remains clean, whole and safe.</p>
3. Places to bees	<p>Place to Bees is the location in Zuidoost where all urban agriculture activities can be found in one location. It is an innovative park where you will find school and allotment gardens, a picking and climbing forest, a bee garden but also an innovative floating garden or even a weeding robot. All sorts of things are organised around urban agriculture, in a way in which actively connecting through food is paramount. Producing a lot of food at this location is not a priority, it is primarily a park to experience. Place to Bees does everything possible to involve the neighbourhood in the activities.</p>
4. The entrepreneurial square	<p>The Entrepreneurial Square forms a resilient network of small-scale (semi-) professional entrepreneurs in local food in Zuidoost. They are enterprises of food producers, processors, logistics service providers (delivery services), market vendors, retailers, restaurants and caterers that originate from and are intertwined with Zuidoost. Together they ensure that there is a year-round supply of local products.</p>

5. Results

After explaining the theoretical baseline, conceptual framework, methodological approach of this research and the context of the case study research, this chapter presents the results of this study. First, the sample population is illustrated in section 5.1. Afterwards, the results are presented in three parts: First, the current food acquiring practices are illustrated in relation to healthy consumption images of the practitioners in section 5.2. Secondly, the barriers and opportunities for change will be presented in section 5.3. Lastly, it presents how those practices relate to the special urban agriculture scenarios of the CHAZ project in section 5.3. Together, those parts show how the current healthy food acquisition practices are carried out, what obstacles practitioners face while trying to acquisition healthy foods and how urban agriculture can support the transforming food acquisition practices towards more healthy directions.

5.1 Sample population

The interview sample size consisted of ten interviews with in total fifteen respondents originating from six different countries. Six respondents had a migration background, nine were born in the Netherlands of which three had migrants parents and six with parents that were born in the Netherlands as well. Moreover, several respondents were already engaged in urban agriculture and home growing practices at the moment or used to be engaged in the past. Eight respondents were growing their own foods in a community garden at that moment. Seven respondents were not growing their own foods and were therefore totally dependent on the food supply within the local food environment for their food acquisitions. Table 2 represents the participant characteristics.

While selecting the respondents it was important to ensure a diverse range of respondents by including citizens with different cultural backgrounds. This large scale of search attempts should have made sure that the research population included a large diversity of cultural backgrounds. In this regard, my sample does not completely match this requirement, as it includes six nationalities, out of the 130 nationalities presented in Amsterdam Zuidoost. (see Table 2).

Table 2, Interview participant profiles

NUMBER	AGE	GENDER	COUNTRY OF ORIGEN	Migration History	YEARS OF LIVING IN AMSTERDAM ZUIDOOST	EXPERIENCE WITH HOME GROWING PRACTICES	LEVEL OF EDUCATION
1	28	Male	Bulgaria	Migrated; 10 years living in the Netherlands	3	No	MSc WO
2 ¹	74	Female	Suriname	Migrated 47 years living in the Netherlands	?	Yes	High School
3 ¹	28	Female	The Netherlands	Born in the Netherlands, Migrant parents	2	No	BSc WO
4	30	Male	The Netherlands	Born in the Netherlands	6	No	BSc HBO
5	29	Male	Suriname	Migrated, 14 years living in the Netherlands	4	No	BSc HBO
6 ²	40	Male	The Netherlands	Born in the Netherlands, Migrant parents	2	No	BSc HBO
7 ²	37	Female	The Netherlands	Born in the Netherlands, Migrant parents	35	No	BSc HBO
8	69	Male	Eritrea	Migrated, 43 years living in the Netherlands	30	No	BSc HBO
9	69	Male	Indonesia	Migrated, 45 years living in the Netherlands	43	Yes	BSc HBO
10	?	Female	United States of America	Migrated,	-	Yes	PhD
11 ³	69	Female	The Netherlands	Born in the Netherlands	11	Yes	MSc WO
12 ³	66	Female	The Netherlands	Born in the Netherlands	10	Yes	BSc HBO
13	28	Female	The Netherlands	Born in the Netherlands	28	Yes	BSc HBO
14 ⁴	72	Male	The Netherlands	Born in the Netherlands	43	Yes	BSc HBO
15 ⁴	73	Female	The Netherlands	Born in the Netherlands	43	Yes	BSc HBO

1. Interviewees number two and three were interviewed together. I was invited to go shopping with the granddaughter(3) and to eat together with the grandmother(2).

2. Interviewees number six and seven were interviewed together in their lunch room.

3. Interviewees number 11 and 12 were interviewed together as owners of a community garden.

4. Interviewees number 14 and 15 were interviewed together as a married couple and head of an organization of a few community gardens.

5.2 Healthy food acquisition practices

Within this section, the current food acquisition practices will be presented. First, practitioners' definitions and meanings of what healthy foods are and the required competencies of recognizing this type of healthy food are presented. This is followed by the specification of the way how practitioners practice food acquiring. The results zoom in into the *practice-as-performance* of healthy food acquisition practices, as well as zoom out by discussing how the practice is situated in the wider bundle of practices and influenced by the food environment.

5.2.1 Meanings of healthy foods and the competencies of recognizing healthy foods in everyday life

The focus of this research is on food acquisition practices, and the competence of recognizing healthy food as they function informative for food consumption patterns. Therefore, all practitioners were asked to describe their view on healthy consumption practices to study how 'healthy food' is defined for and by them. By identifying those meanings and how this impacts their food acquisition practices the baseline of study is generated.

Many respondents described what a healthy diet should look like based upon specific elements of which meals should exist. The first thing mentioned by every respondent is the importance of eating vegetables and having a balanced diet in order to carry out healthy consumption practices. Some respondents touched upon the healthiness of the production process; Organic produced foods would be healthier since there are fewer pesticides involved. Moreover, the majority named the diversity of foods as a crucial element for a healthy eating pattern. According to respondent 2 (F, Age 69, Surinamese), that is because of the vitamins within vegetables. Some respondents clarified that with an example of specific knowledge about the nutrients and vitamins of specific pieces of vegetables:

Sometimes I eat a raw pepper, it has a lot of vitamin C, I think it has pretty much the most vitamin C of all vegetables. So if you need an immune boost, I'll eat that or ginger, I'm a big fan of that too. Especially when I start to feel a little sick I just eat it raw. (M, age 30, Dutch)

Moreover, several respondents clarified what a diet should not look like by explaining what unhealthy food consumption was within their view. The following aspects were named: eating high-processed foods like fast foods, drinking too much alcohol or sugar-rich drinks, too much snacking, eat too much rice & potatoes (starch). The activity of ordering food or take away meals is also associated with unhealthy food consumption.

The differences in meanings will be explained based on various examples. First, the respondents with a migration background often referred to the food culture of their country of origin while discussing their meaning of healthy food consumption practices. Therefore,

the meaning of health appeared to be shaped and influenced by the food culture of the respondents. Both respondents 2 (F, Age 74, Surinamese) and 5 (M, Age 30, Surinamese) described the added value of specific nutrients within Surinamese vegetables, e.g. the iron richness characteristics of antroewa. Moreover, one stressed the bitterness of those Surinamese vegetables:

In Suriname the vegetables get sun. Then you have the bitterness you are used to. A friend of mine always said: "bitter in the mouth makes the heart-healthy" (Translation of the phase: "Bitter in de mond, maakt het hart gezond") (F, Age 74, Surinamese)

While some especially named the different micronutrients of specific foods, others explained how the different meals within the day should look like, based upon the macronutrients of specific food groups:

Bread and carbs should be consumed in the morning. Carbs are breaking down the first in your body and they are the source of your energy. So basically if you are going to eat carbs, it should be done in the morning to give it time to digest in until lunch. For lunch, you eat a hot meal, like rice, chicken, steamed vegetables, like cooked stuff. In the evening you have to eat light e.g. a salad. But no carbs, because you need to digest it and then you get the power of the carbs that you do not need when you are going to sleep. In my country we say, in the morning you have to eat like a king, at lunch eat like a prince and at dinner, you have to eat like a homeless person. That is the ideal so that your body can deal with the energy in the right way. (M, age 28, Bulgarian)

While discussing the healthy meanings of the different food cultures, some comparisons are made related to the question of what way of food culture-based food consumption practices are more or less healthy. Respondent 5 (M, age 30, Suriname) recalls from his youth in Suriname that the way of consuming a hot meal for lunch and some lighter meal for dinner. That is because your body does not have to digest a heavy dinner and therefore can relax when you go to sleep. However, he stated that this is a discussion point since other people say that this is not the case. Another respondent (M, 28, Bulgarian) argues that Bulgarians eat healthy foods, but they eat a lot and drink more beers. While Dutch people eat healthier but the products of less of quality.

Hereby, a difference was visible in generations of migrated families. The granddaughter (F, age 28, Dutch) of an immigrated grandmother explained to me why she thinks that the Surinamese kitchen is less healthy at some points: The oil in which we bake the vegetables and the excessive use of salt and salt-based tastemakers like Aromat and the way of preparing foods by frying them. Her grandma, on the other hand, explained why preparing

the vegetables the Surinamese way is healthier than the Dutch way of preparation because you wash away the vitamins when you cook it. That is why they fry a lot in oil.

Second, the meanings of healthy food consumption differ due to the exposure to information about healthy food consumption such as national dietary guidelines (Schijf van Vijf). Some respondents were struggling with finding the right information of what is healthy and whatnot. They were confused due to all the different meanings of what a healthy diet looks like. A woman and another man who I met during an observation at a vegan Surinamese lunchroom, stated that the information provided by the government and professionals was too scarce and incomplete. This translated into distrust in other areas of information such as labels. This is illustrated by a woman on the market as follows:

Labels can no longer be trusted. Feeling and reason must prevail! (F, Age unknown, Surinamese)

Thirdly, others created awareness about healthy food consumption patterns through life events and diet-related health issues, like diseases of affluence such as type 2 diabetes. Some respondents changed their diets based upon the health advice from a professional doctor or dietician. Another participant (F, Age unknown, Surinamese) said that she was chronically ill and would have liked to know earlier that this kind of healthy food helped her symptoms. Then she wouldn't have had to take all that medication. While some practitioners were able to change or sustain their healthy consumption diet, others were searching for their personalized way of healthy consumption practices:

I am also eating salads now, I was on a regime, in which I ate a lot of protein to lose some weight. But I love beers. I would prefer drinking beers than anything else. After work you are tired and you drink 2 beers and you are done. I tried to stop drinking beers during the weekdays. I was doing this regime, so basically baking some chicken and eating salad with some sauce. But I had a tough period, due to stress issues, resulting in digesting problems. So, therefore, I went back to my normal diet with carbs and proteins and hopefully I will stabilize. (M, age 28, Bulgarian)

To sum up, this section presented different meanings of healthy food that are present amongst practitioners living in Amsterdam Zuidoost. The meaning of 'healthy foods' bundles with other meanings that build up the food acquisition practices e.g. the meaning of imported cultural foods which are more tasteful and healthier than the LPEF. Secondly, this meaning seems to be influenced by the information available within the context where the practice is executed. Therefore, knowledge is required to be able to make certain decisions about what is healthy and unhealthy. Thirdly, the meaning is shaped by the life event that affects the health status of the practitioners. Although this could change the meaning, a switch of practice elements is required to sustain the new healthy food acquisition practice.

5.2.2 The practice of food acquisitioning

This section will present the results of how the practitioners interact with the food environment by describing the way how they acquire their food on a daily basis and how the presented image of healthy food acquisitioning in combination with the other practice elements of materials and competencies resonates within those practices.

Based on the empirical results three types of acquisition practices are identified: purchasing through purchasing foods in stores sources, home-growing and wild picking. Purchasing foods in stores primarily takes place at regular supermarkets, fresh food markets and ethnic stores. In some cases, the practitioner was partly self-sufficient as their produce their own vegetables. The practitioners that were mainly purchasing through market-based sources were dependent on the food supply chain within the city. Most of the acquiring activities are at the typical Dutch supermarkets, fresh markets and ethnic stores. Some acquiring practices including wild picking practices and direct purchase from the farmer or home growers within the inner social circles of the practitioners.

Purchasing foods in stores

Based on the observation of food acquisition and the interviews, both practitioners and market vendors highlighted the most important criteria of food selection for consumers. This section will elaborate on those criteria of the selection patterns.

The research showed the culturally inspired meanings of imported vegetables versus LPEF. The Surinamese migrants explained how important the selection of imported Surinamese vegetables is during the acquiring practice at the fresh market. They argued the taste of imported vegetables is better, due to the climate condition in which they grow. Respondent 5 explained that as follows:

I notice a difference in Surinamese cuisine, between products that are actually imported and products that are grown locally. You really notice that the imported products taste a bit more natural. (M, Age 30, Surinamese)

Another participant from Bulgaria preferred the locally grown vegetables and fruits over the imported in the supermarket. He stopped eating vegetables from the traditional Dutch supermarkets because he argued that they do not taste well. Hereby, the reference was made to the large scale production of fruits and vegetables in Southern Europa. He did explained that we need to have this type of large food production to feed the world populations, but it lowered the quality and taste of the foods.

Moreover, some practitioners experience a lack of locally produced and organically grown fruits and vegetables in the food offer of Amsterdam Zuidoost. The current organic fruits and

vegetables that are present within the shops are not that of great quality either. Respondent 1 explained that as follows:

Most of my food shopping activities take place at the Turkish supermarket. Which is not local at all.. But that is a bit due to lack of availability. If I can buy something organic in the supermarket, I think it's ridiculous that it's packed in plastic. Plus there are lots and lots of organic veggies that grow too big, losing flavour. I would prefer to buy organic vegetables when it comes to taste, so to speak. (M, Age 30, Dutch)

The way practitioners interpreted organic foods also differs. One immigrant talked about the fact that he sees organic foods as locally produced, perhaps produced within your own garden. He even argued that bio-labelling is just because of the extra money that can be earned with the label. As long as you know how it grows and how it is taken care of, he would trust the production more than when he would buy it in a store with an organic label on it.

Finally, food safety was one of the concerns that influence the acquiring practice. Some migrants argue that they do not trust the safety of the food sold in ethnic stores or market stalls. Specifically, the hygiene standards of some ethnic butcher shops are questioned by a Bulgarian practitioner. Moreover ready to eat meals are also questioned by practitioners, e.g.

I always say you don't know how they make it. We wash our meat well. I also don't buy fried fish at the market anymore. They don't have time to wash it with acid. We always wash our meat with acid, lime or lemon. (F, AGE 74, Surinamese)

To sum up, the way people acquire foods in stores is influenced by several elements: culturally inspired meanings which resonate within specific shopping criteria, meanings about the origin of the foods, health and safety. The meaning about health does affect the food acquisition practice. However, the availability of specific foods influences this healthy food acquisition practices by either supporting or limiting the cultural informed practices.

Ordering meals/ take away

Another acquisition practice is the upcoming practice of ordering meals, take away and delivery services for groceries. Especially the younger respondents were talking about this phenomenon (AGE <= 30). The positive side of ordering meals was the time-saving element. Respondent 3 (F, Age 28, Dutch) described it as a good way of spending time during dinner with friends, instead of standing in the kitchen all night to cook for her guests. Respondent 1(M, Age 28, Bulgarian) on the other hand prefers cooking himself if someone comes over for dinner from a hospitality perspective. He would rather order food if he comes home from a long day of work and he has no energy left to acquire and cook a meal. This is because he does not live with a partner or flatmate who could acquire food for him when his practice of

working requires more time than the practice of healthy food acquisitioning. Thus, the practice of ordering foods is dependent on the limited time available within the bundle of practices.

Other practitioners, on the other hand, described this new way of acquisitions as a lack of cooking skills. Respondent 5 (M, Age 29, Surinamese), described his view on this practice as follows:

I think that's a shame that people order so many meals. It's good that it is there, but I notice that some people are therefore hindered in their development in the kitchen. But if there are people who really can't do it, then it might be better not to have to stand in the kitchen? Overall, it is good for the people who indeed have not found a talent in the kitchen but does not mean that it is the solution for the rest of your life.

According to respondent 4 (M, Age 30, Dutch), it is at least better than the pre-processed meals sold in the supermarkets, as a chef is cooking a meal for you. On the other hand, others stressed that you do not know what the ingredients are and how much salt, oil or sugar is used when you order meals. Those uncertainties about the healthiness of those meals made it different for some practitioners to use it in daily life practices. Still, respondents did make a distinction in terms of the healthiness of the different types of delivered meals. The following quote represents the meaning of unhealthy types of food acquisition:

In my building I often see delivery, but that is not healthy for you. I get it if you do it once a month, when you are busy, but not too often. I live next to a McDonald's and KFC and I often see kids here eating at the McDonald's, while they are supposed to have dinner at that time. It is not a nice dinner for a kid that is growing up! (M, Age 28, Bulgarian).

Based on the knowledge and meanings about the healthiness of food acquisitioning and eating practices practitioners still tried to perform healthy ways of food ordering. Respondent 2 (F, Age 28, Dutch) tried to always choose the takeaway option with the most amount of vegetables, as they were more healthy in her opinion than the meals with fewer vegetables.

While some respondents enrolled in this ordering meals practice for its convenience and time-saving element, others were forced to do so due to the risks for Covid-19 infection. Mainly respondents with compromised health or elderly indicated that this risk influenced their way of food acquiring practices. Respondent 2 (F, Age 74, Surinamese) and 13 (F, Age 28, Dutch) did not go to the market, since corona and therefore dependent on other people (home care, family) who get things on the market for her. One of them explained the food acquisition practice and barriers that were involved as follows:

Yes, that's a bit difficult at the moment, because of corona I have actually only used HelloFresh. That is because I am living by myself and I have a connective tissue disorder and that affects my immune system. Therefore I had to take a lot of distance

and I stayed out of supermarkets as much as possible. That is why I have done a lot through meal boxes ordering or I got groceries through people or a pick-up point. (F, Age 28, Dutch)

Other respondents argued why they do not prefer the practice of ordering groceries of meals over the practice of food shopping in stores. This was mainly because of the price of food ordering and takeaway practices. People thought that mainly the unhealthy meals were double in price, but the healthy variants were way too expensive to do on a daily or weekly basis.

Another reason was that going to the (super)market inspires them to cook other types of meals, due to all the tasty things that are present within those shopping environments. The following quote illustrates this:

You could also use the delivery services for your groceries. However, I think you should keep going to the supermarket because It gives you the feeling that you are away for a while and yet you are going to stores as it allows you to focus on other things. To be more precise, there are a lot of delicacy and tastier things that you then see which form a lot of inspiration for the other meals, that you could cook another day. Instead, you need to make sure that you do not directly go for the meals that you were inspired for if you already have things at home for the meal that you planned to have. E.g. If I have prepared everything for nasi already, I could still buy the elements for the other meal but maybe I'll have it next week anyway. In that case, I use planning to make sure that I do not necessarily have to go to the store when I suddenly want something today. (M, Age 29, Suriname).

This however does require the skills to plan ahead, as the other practices in his bundle of practices did not allow him to spend time on food acquisition on a daily basis. Several practitioners indicated that they sometimes lack this skill and are therefore more likely to make a quick unhealthy choice in food environments such as the station. Thus, the skill of planning ahead the meals that you will eat throughout the week could make people less dependent on unhealthy food delivery and take away services.

To sum up, the practice of food ordering and takeaway meals has become more popular, especially amongst the younger practitioners. This can partly be explained by the fact that food consumption practices are part of wider configurations of practices. This means that practices constrain each other in terms of time. Although this is more time convenient, the practice of food ordering is also associated with unhealthy food consumption. Therefore, the skill of planning meals ahead is highlighted as a useful skill to make people less dependent on the current takeaway facilities and delivery services.

Buying locally produced food(s)

Apart from buying foods from local shops or restaurants, respondents highlighted an alternative of buying local foods, directly from the farmer or from relatives, friends or acquaintances who grow their own fruits and vegetables. This type of food acquisition was mainly appreciated by the immigrants who used to know exactly where and by whom their fruit and vegetables were grown in their country of origin.

The best way to acquire foods is to find a person who grows their own foods and then you buy it from them. A lot of people in Bulgaria, commercialize their own produced foods and you know that they are grown in a real garden. If you want something proper, you go to Facebook and you can buy, for a little bit more, high-quality products for friends or other relatives. (M, Age 28, Bulgarian)

Respondent 1 (M, Age 28, Bulgarian) stressed the fact that he misses the Bazar type of markets. In Bulgaria, those are the only places where you can obtain locally produced fruits and vegetables and where you know the person who grows them. He did mention the market at the Anton de Klomp plein that was kind of similar to those bazaars, but it was not always clear when the market days were and whether those products were grown locally or imported.

In contrast, some respondents with an immigration background preferred imported vegetables to LPEF, often because of their taste.

During the observation at the fresh market respondent 2 (F, Age 28, Dutch) explained to me what the different Surinamese vegetables were and how they differ from the Surinamese vegetables that are produced in the Netherlands. She talked about how the generation of her grandmother prefers the imported vegetables that are grown in Suriname, mainly because of the taste.

To summarize, the examples above reflect on the reasons for eating locally produced fruits and vegetables. It illustrates how practitioners with a migration background miss their cultural foods, as well as the ways of acquisition those foods in local bazaars or within the social circles. Thus, maintaining a cultural diet is not always possible, which results in a big change in country-of-origin-dependent lifestyle or an increase for import products.

Growing your own foods

Eight respondents had experiences with home growing practices. Of which seven respondents were engaged with the practice of home-growing within Amsterdam Zuidoost. They either had a home garden or they used the possibility to grow within a community garden within the neighbourhood.

The younger respondents tend to have an interest in food growing, but they indicated that they have too little time and space to grow their own fruit, vegetables and herbs. Moreover, respondents 1(M, Age 28, Bulgarian), 2(F, 74, Surinamese) and 5 (M, 29, Surinamese) stated that they lack the right knowledge to be able to grow foods themselves. Respondent 1 mentioned more specifically that he missed knowledge on how you deal with external weather events.

Although respondents are willing to learn about the practice of urban food production, not everyone saw the added value of local production of exotic fruits and vegetables. This was mainly based on their meanings about the exotics vegetables that are already produced within the other parts of the Netherlands. Those are often less tasteful due to the lack of sunlight and because they are filled with water during its growth process according to the respondents. The following field note highlights this meaning of one of the respondents:

When I asked respondent 3(F, Age 72, Suriname) if she would like to grow exotic fruits and vegetables here locally, she answers: No because it won't taste as it does in Suriname. But we have always had a vegetable garden in Suriname and we have grown a lot ourselves. Nevertheless, she did practice urban agriculture on her balcony in Amsterdam, but that food production was mainly focused on 'Dutch vegetables'.
(Field notes - 17/06/2021)

To summarize, these examples show how practitioners practice food acquisition. Practitioners obtain their food through different ways; purchasing in stores, home-growing and wild picking. Especially within the market-based sources, there is a clear wish from the practitioners for specific cultural foods and particular ways of producing practices. This results in different selection criteria such as locally produced or imported, organic grown and safety aspects. Moreover, results show a shift of acquisition practices towards more take away meals, meal boxes and ordering in practices, which can be explained by the time efficiency related to the wider bundle of practices. Simultaneously, another part of the practitioners spent time on producing their own foods or picking eatable vegetables in the 'wild' public space. Thus, this section has shown how food acquisition are built upon the three elements: meanings, competencies and materials. Moreover, is showed how food acquisition practices are influenced by the bundles of practices in terms of time and the country of origin-dependent lifestyles, as well as the food supply within the food environment.

5.3 Barriers and opportunities for healthy food acquisition

So far, the results of the research showed the similarities and differences of meanings of healthy food consumption, the way practitioners practice food acquisition and how this is influenced by both the food environment and the bundles of practices. Although respondents had a clear meaning of what healthy food consumption looks like, not everyone acts upon this. This is in line with the idea that the practice of food consumption is not always performed based upon active considerations (A Warde, 2016). Therefore, this section translates the results of the food acquisitioning practices into a barriers/opportunities framework that shows how the practitioners are holding back within their healthy food acquisitioning practices. Moreover, it shows the opportunities of change, that fight those barriers.

Materials

First of all, practitioners lack specific materials in order to perform healthy food acquisition practices. Not having the financial resources will limit the freedom to choose within the food acquisition practice. This results in more highly processed foods and less fresh fruits and vegetables. Practitioners 1 explains this as follows:

I have noticed that McDonald's and KFC are super cheap, but if you want to eat something healthier, it is probably more expensive. How can you eat healthy food, while you can get food that is fulling your stomach up, compared to a salad that you digest in 15 minutes? If it would be cheaper you could eat two salads. Eating properly and healthy is only for people that can afford it. (M, Age 28, Bulgarian)

Moreover, the lack of money can probably limit the motivation of people to start producing their own foods by practicing urban agriculture. Respondent 13 (F, Age 28, Dutch), stressed the fact that people with a low economic status probably do not have time to think about what foods are healthy and what foods are not, let alone that they have time to grow their own vegetables. In addition, a lack of financial resources can limit the required materials that you need to have for urban agriculture practices, such as seeds, rake, hoe and water pomp.

Therefore, respondents believed that the market price of fruits and vegetables should be reduced. Moreover, the price of unhealthy foods such as fast foods should be increased. Urban agriculture that produces enough could lower the price of certain foods. Especially the price of the imported exotic fruits and vegetables is currently high and fluctuates widely due to the Covid-19 pandemic and seasonal production. Local production could reduce and stabilise the market price and therefore increase the accessibility of cultural foods for everyone in the city district.

The market price reduction could be translated to a reduction of the cost price and market prices of healthy takeaway meals. One lunchroom owner (M, Age 40, Dutch) explains how

this can reduce in price of their healthy takeaway meals can influence the consumption patterns of the residents and inspire them to live more consciously. Moreover, if this would be linked to community centres, the community can prepare affordable healthy meals made with locally grown vegetables and consume this together.

Secondly, the lack of space for both food consumption (acquisition and cooking) and urban agriculture practices is highlighted as a barrier for healthy food acquisitioning practices. Respondents explained how their small kitchen influenced their food acquisitioning practices as they do not have a lot of space to store the foods and not a lot of equipment to prepare the foods. Therefore, practitioners were struggling with planning the meals for the week as they cannot store the foods within their kitchen.

Moreover, the practice of urban gardening was for some not doable within their direct environment due to the lack of space for a garden and the equipment. Currently, people are already involved within community gardens initiatives, like the *Bloei en Groei* initiative. Those gardens can often provide space for a garden and equipment. Respondent 13 (F, Age 28, Dutch) explains it as follows:

I think that for many people the lack of land is the first obstacle, because most people here live in high-rise buildings and in flats. There are really people with a garden, but it's usually limited. I live in a flat myself and I have noticed that there are quite a few residents here who would like to start a garden group or something. But they just don't have the land for it. And to arrange it yourself, especially with the council, it is a lot of fuss. So people are more likely to choose to join Bloei en Groei or some other organisation where it's already been arranged. Where you have less of a say, but they make the decision out of that's convenience.

However, according to respondent 13 (F, Age 28, Dutch) for joining those groups, you have to pay a fee and there are certain restrictions that you must abide by. Practitioners could therefore feel a barrier to participate within those initiatives. In addition, respondents highlighted some opportunities to increase the accessibility towards urban agriculture practices through rooftop gardens and smaller community gardens within the direct neighbourhood. In addition, a community kitchen could help provide people more kitchen space to store and cook foods, as well as to have shared meals together with the community.

Availability of food types within food environment

According to the respondents, there was a lack of (take-away) restaurants and shops that serve healthy meals within Amsterdam Zuidoost. The current restaurants that do serve healthy meals are too expensive according to the practitioners:

There are not that many nice restaurants in Zuidoost. If you want to get people enthusiastic about sustainability and healthy food, then you could open more

restaurants and café that focus on this. But then again, I immediately think that this is something for the richer target group. People who can afford it. So again, that only attracts a specific group. (F, Age 28, Dutch)

Therefore, affordable (take-away) restaurants could help to promote to choose healthy foods. If the shops decrease prices for healthy meals, or if they only serve healthy meals, they could help people who buy prepared meals to have a sufficient dietary intake.

Second, practitioners are limited in their food acquisition practices due to the low availability of affordable imported cultural foods. For some immigrated respondents it was hard to maintain their cultural diet, resulting in an unhealthy dietary change:

A lot of foods that I was used to eat, are not available here. Especially the locally grown foods. It was quite a cultural shock. But now that I know where I can get the stuff, I am going back to a proper diet. (M, Age 28, Bulgarian)

For the Surinamese respondents, the cultural foods were presented within the food environment of Amsterdam Zuidoost, which made the dietary change less necessary. However, the prices of those cultural foods are quite high in some periods as the production is scarce and they need to be transported from other parts of the world. This results in a lack of access to residents with limited income:

There are indeed people here at the market who specifically sell certain Surinamese vegetables; okra, pate, very long aubergines, kousenband and it is indeed all imported and therefore quite expensive. (M, Age 30, Dutch)

Moreover, practitioners believe that those imported cultural foods are better in terms of taste and amount of nutrients. Therefore, people should learn about the differences and similarities between imported vs LPEF. This can be done by offering learning experience facilities, where practitioners also learn about the effect of imported cultural foods on the environment and the sustainability aspect of LPEF.

Meaning

As described in section 5.2.1, the cultural-informed meanings about imported foods are influencing food acquisition practices. Practitioners find the current LPEF less attractive than the imported exotic fruits and vegetables. Now that the price of imported foods has risen and the quantity lowers, practitioners could suffer from a lower accessibility. Therefore, the shift is required to the acquisition of LPEF in order to sustain the consumption pattern of the cultural meals.

Respondents highlighted two possible opportunities to tackle this barrier: First create learning facilities that could learn residents about the negative environmental effects of importation of vegetables and fruits. Second, make the acquisition practice of LPEF more

attractive by lowering the market price of LPEF. The material practice element (price) of the food acquisition practice is in this case more influencing the meaning element. This creates a chance that people will buy the imported foods again if the market price drops or their income increases. Therefore, a combination of both interventions would work best in transforming the food acquisition practice toward the acquisitioning of LPEF.

Competencies

Respondents explained how they or practitioners within their social circles miss the skills to acquire healthy foods and use that to cook healthy meals. Therefore, there could be shopping and cooking classes be provided to learn practitioners where they can acquire LPEF and how they can prepare them in a healthy way. The younger generation could learn from the older one, which could include a lot of knowledge about the certain food cultures presents amongst the older generation. They could learn how to use and prepare food products originating from other cultures. Thus, the diet could be inspired by many cuisines. For those who lack time to acquire healthy foods, another option is to provide healthy prepared meals and meal boxes with locally produced foods at a community centre or through delivery services. In this way, people will still be able to eat healthy foods without having to spend more time on them than they do nowadays.

Moreover, practitioners miss certain skills and knowledge to involve in the practice of urban agriculture. Although there is interest, respondents explained that this practice does not fit within their wider bundle of practices. In addition, some fear is present that the energy and money used is a waste if you want to produce your own foods and it fails:

If you want to grow food yourself and it is supernatural without being genetically modified, you probably end up with nothing and you spend so much money and time. as growing foods is super difficult. I have an example: a neighbour of mine in Bulgaria grows his own foods; tomatoes, cucumber, eggplants, zucchini, apples everything. Once a year something is going wrong with for example the climate, and the harvest can be ruined. the point is that it looks super nice to eat healthy with your own foods produced in your garden, but doing it in a successful way is another story, and most likely impossible. (M, Age 28, Bulgarian)

Therefore, lessons and courses could be provided for all ages to learn about the practice of local food production. According to some respondents, this practice could lead to a revaluing the foods that you produce, as you see how much time and resources it cost to produce it. Therefore, it could be useful to learn people a bit about the practice, even though they cannot perform it due to lack of time in daily life. This can be done by neighbourhood-based events which link the local food production practices to certain food markets or cultural events. Or this can be provided through accessible urban farms with visitor facilities that allow for knowledge sharing.

Secondly, respondents explained how they missed planning skills for food acquisition practices, which increased the chance to perform take-away or delivery practices. Thus, knowing what you will eat for the coming days will help practitioners to be less stressed about the practice of food acquisitioning and cooking:

If you know a few days in advance what you will eat the other day so that you can already buy everything in advance. If you're feeling up to it and questioning who's going to arrange the evening meal? Using a good planning makes sure that you already have the basic ingredients. That saves a lot of stress. (M, Age 29, Surinamese)

Opportunities such as meal planning courses or meal boxes could help people to increase their planning skills. If people within the neighbourhood could learn from each other in the form of a course or workshop, they could also learn about the meanings of what healthy foods are for them and their neighbours. Moreover, meal boxes like Hello Fresh, could help people who lack time and skills to acquire healthy foods and creates meals out of it. Those boxes can be filled with locally produced foods and include culturally diverse meal recipes. This way practitioners can learn to cook different cuisines present within their neighbourhood. In addition, fusion meals can be presented or traditionally unhealthy meals can be transformed into more healthy versions.

Thirdly, practitioners lack knowledge about the practice of wild picking. This creates a possibility to learn more about food production within a less controlled environment, compared to an urban garden. Thus, it could learn people to know what plants are edible and which are not. During a visit to a garden one urban agriculture practitioner told me how she recently got into the practice of wild picking:

I have recently developed an interest in wild picking. I like to go out and do it myself, because there is so much more than just the vegetables in the supermarket. And then you notice how easily we are manipulated as consumers, as the municipality does not want to see too many consumers picking their foods and herbs in 'wild' public space. (F, Age unknown, Surinamese)

Table 3 summarizes the barriers that respondents encounter during the process of healthy food consumption and especially during the healthy food acquisition process. Moreover, it shows proposed opportunities to fight those barriers.

Table 3, Barriers and opportunities for change

Healthy acquisition practices	Barriers	Opportunities
Materials	Lack of finance <ul style="list-style-type: none"> - Not enough money to be able to buy or grow healthy foods 	<ul style="list-style-type: none"> - Lower the price of fruits and vegetables and increase the price of unhealthy foods - Lower the price of healthy takeaway and delivery meals - Cook affordable meals at e.g. community houses
	Lack of space for <ul style="list-style-type: none"> - Urban gardening or cooking - Cooking healthy meals 	<ul style="list-style-type: none"> - Community garden - Rooftop gardens/ greenhouses - Community kitchen
	Availability of foods within food environment: <ul style="list-style-type: none"> - Affordable imported cultural foods - Availability of healthy meals - Availability of organic foods 	<ul style="list-style-type: none"> - Create learning experience facilities to learn about the effect of imported cultural foods on the environment and the sustainability aspect of LPEF - Healthy (fast) food take away restaurants that offer affordable meals - Focus on organic production processes within urban agriculture practices.
Meaning	Cultural informed meanings of imported and locally produced foods Imported foods that are imported from the country of origin or a country with a similar climate are more tasteful and contain more nutrients than locally-produced exotic fruits and vegetables.	<ul style="list-style-type: none"> - Learning facilities for residents, where they can learn about the differences between imported exotic fruits and vegetables and the Locally produced ones and the negative environmental effects that result from importation. - Decreasing the price of LPEF to make them more attractive than the imported exotic foods.
Competencies	The skills to acquire and cook healthy meals	Cooking classes for all residents the target group and other interested
	Knowledge on how to grow your own healthy foods	Neighbourhood events related to local food consumption
	Planning skills for food acquisition	<ul style="list-style-type: none"> - Meals planning courses within neighbourhoods - Meal boxes like Hello Fresh with locally-produced foods
	Wild picking knowledge	Classes or workshops on edible plants
Bundle of Practices	Time to acquire and cook healthy meals	A community centre where you can get healthy meals and locally produced vegetables. These could be sold in some sort of meal box
	Time to practice urban agriculture	Learning possibilities of urban agriculture without practicing it yourself on a daily/weekly basis through accessible urban farms with visitor facilities that allow for knowledge sharing

5.4 Scenarios of Urban agriculture

Section 5.2 described the current food consumption practices and how they are influenced by the food environment and bundles of practices. This is done by zooming in and out on the acquisition practices. This section will present how those here-and-now practices relate to the spatial effects of urban agriculture. This is done by testing the spatial four scenarios. the results of the different scenarios will be discussed in detail in section 5.4.1. Next, the results are summarized within Table 4, which shows the pros and cons that were named by the practitioners. Secondly, in section 5.4.2 the common themes that were present amongst the different scenarios will be tested. Lastly, those themes and the results of the scenario testing will be linked to the barriers and opportunities for change in section 5.4.3

5.4.1 Scenario testing

This section will summarize the elements of the different scenarios as described by the scenario developers and the corresponding reactions of the respondents concerning the goal of healthy food consumption. Thus, this section highlights respondent's views towards this type of urban agriculture and what aspects (miss)match with the scenario developers' vision.

Scenario 1 – The experience centre

Scenario 1 is the most favourable scenario for 8 respondents.

First of all, according to both the scenario developers and respondents, the combination of high involvement of residents and high production at the same time provides possibilities to influence the consumption patterns of residents. This is highlighted as one of the important aspects to lower the distance between food procurement and consumption. This could be done through community-supported agriculture (CSA), by creating growing and selling possibilities within and around the experience centre. This allows for self-picking practices and cooking and eating together practices aimed for both community development and knowledge exchange.

Knowledge exchange is one of the crucial elements required to push practitioners towards more healthy food consumption practices. The centre offers a lot of possibilities which allow for knowledge exchange from the producer towards the visitors. Moreover, the community gardens allow for knowledge exchange between consumers of the community. All respondents were enthusiastic about this idea. However, they think it will mainly attract the people who are already interested.

Apart from the knowledge transfer about urban agriculture practices and healthy food consuming practices in the experience centre, this scenario provides the extension in which the food produced is distributed throughout the city district. This allows for access to local food at supermarkets or take-away shops that use the local products in their meal preparation processes. To make it even more accessible and inclusive, foods can be provided to homeless

shelters like “het leger des Heils” or for non-profit organizations that provide food packages for low-income families and individuals. Respondent 6 (M, Age 40, Dutch) mentioned how interesting it would be for local restaurants so that they can get their produce very fresh.

Respondents said that it would be an interesting place to visit during the weekends and that it would be inspiring for both young and older residents. It could inspire them to learn more about (local) food production, food cultures and exotic fruits, vegetables and herbs:

I think it helps to go and cook with people. At such a centre, all kinds of activities are possible, for example, to let people taste new things. I think you can stimulate people to eat differently in that way. The cost aspect that you mentioned is also very important. If you offer people something for next to nothing and let them get to know it that way, it can help. (F, Age 69, Dutch)

However, several respondents stressed the fact that it was too centrally located and therefore too far away for a lot of citizens of the Zuidoost district. The experience centre would therefore mainly have a pull factor for those who are already interested in the food production aspect. To reach a wide audience, the accessibility must be higher. The aspect of food distribution towards different neighbourhoods could increase the accessibility of locally produced foods. However, it would lower the knowledge transfer aspect of the experience centre itself. A visit to the experience centre would be more valuable but due to the limited amount of time for food acquisition and the other necessary practices of the respondents, it would be weekly or monthly activity, instead of daily practice for food and knowledge acquisition.

Scenario 2 – Oases

Scenario 2 was favoured by 8 respondents and therefore one of the most chosen scenarios. However, other respondents were very critical about it. Respondents 1 (M, Age 28, Bulgarian) and 5 (M, Age 29, Surinamese) questioned the financial visibility and health effects of this scenario and due to the marginal low level of production and the requirement for local voluntary supervision. This is illustrated by the following quote:

Some residents have more green fingers than others. If everyone could use a field to grow foods, it will result in the fact that out of the ten fields you have, only three fields actually produce vegetables. You have to prevent that, it has to be equal. Moreover, you need a supervisor again and all the facilities must again be financed by subsidies. (M, Age 29, Surinamese)

On the other hand, the visibility of the food production throughout the neighbourhood was highlighted several times. Respondents proposed to use pieces of public space that are too small for other purposes as potential space for food editable trees and bushes. This could create a food landscape in which the consumer directly sees how some perennial plants

within the urban green domain produce editable. However, for community gardens, some stressed that this would require larger pieces of land, which is would be less visible due to the little amount of public space within the city. Therefore, according to respondents, flat roofs or empty buildings must be taken into consideration as well.

Lastly, it could function as a connection of the neighbourhood and provide the chance to learn from your neighbours about the nature and origin of specific exotic foods. This will enable citizens to acquaintance with new types of vegetables and knowledge on how this is consumed within other food cultures. Hereby, local neighbours could retrieve products from the community garden, participate in activities around food production and cooking. This could create a push towards new views on traditional dishes and fusion meals by combining different elements from multiple food cultures, such as types of food and cooking techniques. It could be done by introducing the concept of *world vegetables* to create inclusive community gardening. Moreover, it can be linked to school gardens where the younger generation learns what healthy foods look like and how they are grown from the elderly. This view is illustrated by the following quote:

You are directly involved with people. You get much more vision and understanding of what goes on in their neighbourhood and with their neighbours. You have much more of a network to fall back on. And you are consciously working on your health, looking for relaxation, networking, building communities and you also get sustainable and good food out of it. Which helps in terms of that socio-economic status and the finances that people have available.

Hereby, it is important to mention that specific exotic fruits and vegetables need indoor growing facilities that support their growth by generating the right climate conditions. Within the social-oriented community gardens, this could be very hard to install, due to the high cost of installation, maintenance and support systems. Therefore, respondents thought it would be hard to create facilities for social-oriented urban agriculture where they can produce exotic fruits and vegetables.

Scenario 3 – Places to Bees

Scenario 3 is a scenario chosen by 5 respondents.

The Places to Bees scenario offers a range of opportunities for knowledge transfer focussed on local food production, healthy consumption and cultural and culinary heritage aspects. Overall respondents foresaw this as a place where consumers and urban agriculture practitioners could get inspired by all different facets related to food cultures and their correspondent food production and consumption practices. Moreover, this culinary heritage could be linked to the future by combining it with the future aspect of food production on a local scale. This could increase the awareness of health and sustainability issues related to food consumption. The following quote elaborates on this:

I think that this place can serve as a kind of inspiration place to stimulate people to think about personal sustainability, about food and consumption, and thus inspire people to do things differently. Especially if you also add a kind of workshop space with meditation things or whatever, where you can make different combinations around health and food and sustainability. Then that could certainly be a place where you inspire people. (F, Age 28, Dutch)

Moreover, it was associated with a food festival where people could spend a weekend day. One opportunity named by respondent 2 is the ability to combine the food with other Surinamese traditions, like games. The scenario developer planned to link this place to national holidays and ethnic festivals, like Holi, Srefidensi day, Christmas and Carnival. This would relate (healthy) food consumption to cultural identity and therefore increase the audience that would be interested.

According to the respondents this scenario had the potential to inspire people to consume more healthy foods. However, the problem of accessibility was highlighted by several respondents it the accessibility. Although there is special transport available, people will still find it too far away. Respondent 13(F, Age 28, Dutch) explained it as follows:

How do these people get there? Look, the people who are already interested will come. But if you connect this with the local initiatives, then you attract the local people, who normally wouldn't come here, and let them be inspired even more and thus, like a kind of inkblot, let them all work out and keep on giving each other; also known as contagious neighbourhood power.

Scenario 4 – The entrepreneurial square

Scenario 4 is chosen by 6 respondents

The entrepreneurial square has the potential to sell a high amount of LPEF in several places within the city districts. The scenario developers aimed to combine this local entrepreneurship with accessibility to healthy food through elements like takeaway meals for the elderly produced by the neighbourhood, community-owned cargo bikes to deliver locally produced products to schools, food bank cooperation, connect production places in the community centres. This increases the accessibility for this type of food acquisition.

Respondents highlighted the economic feasibility of this concept, because of the high degree of entrepreneurship as well as the potential to have LPEF which is available all year round. This high availability of local foods within the direct food environment where people acquire their daily products is pointed to as a required element for healthy food consumption. It fits within the daily lifestyles of the respondents since they already invest time in food acquisition within their own neighbourhoods within the city district.

However, respondents were afraid of the potential that this entrepreneurship would lower the knowledge exchange possibilities about healthy food consumption towards the consumers. One of the arguments is given is that market vendors will not focus on these healthy consumption aspects when selling, but mainly on the amount of sold products. Some also questioned the price range.

Moreover, they questioned whether entrepreneurs would be interested. They stressed the fact that the project initiators should have a clear proposal for small parties to clarify the projects' purpose and explain what it will bring them in the end.

Overall, this scenario has the potential to create a large market for LPEF and has a high degree of accessibility, since it can be implemented in all existing food shopping areas. Therefore, it has the potential to influence the food acquisition practice on a daily basis.

To summarize. The scenario developers included a lot of different aims which were tested with the respondents. Table 4 shows an overview of the pros and cons of the different scenarios.

Table 4, the pros and cons of the scenarios

Scen ario	In favour of .. respondents	Pros	cons
1	8	<ul style="list-style-type: none"> - Learning and working paths for people on welfare - High involvement of local residents and high production at the same time 	<ul style="list-style-type: none"> - Low level of accessibility - Only attractive for those that already have a large interest in urban agriculture
2	8	<ul style="list-style-type: none"> - Visibility within the neighbourhoods - Efficient land use - High level of accessibility - Function as a connection of the neighbourhood 	<ul style="list-style-type: none"> - Ownership; Stealing of vegetables - Low economically viability - Marginal harvest - <i>Supervision necessary</i> - <i>It will not reach all the people you want to reach.</i> - <i>Too much activity for residential area</i> - <i>Lack of space within neighbourhoods</i>
3	5	<ul style="list-style-type: none"> - Change to perform cultural activities such as games or national holidays - Inspiration place to stimulate people to think about sustainability and food consumption 	<ul style="list-style-type: none"> - Low level of accessibility - Focused more on entertainment than on social impact - Finding the right spot is hard since citizens value the Gaasperplas for their nature.
4	6	<ul style="list-style-type: none"> - Yearly round supply of fruits and vegetables. - Access to LPEF within the direct food environment 	<ul style="list-style-type: none"> - Price: Consumer probably has to pay more - Less learning possibilities for consumer - Low willingness to cooperate. - Entrepreneurs involved: there is the idea that if they make money, then they are profitable, - <i>It only applies to a certain group of people that eat exotic fruits & vegetables.</i>

5.4.2 Themes arose from scenario testing

As mentioned in the scenario review description, there is quite some overlap between the scenarios. Therefore, by means of a thematic analysis, the recurring aspects have been pinpointed. This section will elaborate on the required themes which are important for implementing urban agriculture, according to the respondents.

1. Location

The most mentioned factor that is crucial for the support of healthy food consumption practices is the accessibility of both the production and sale area of locally produced fruits and vegetables. To succeed in the goal of a change in dietary patterns, the level of accessibility of healthy food acquisition places must be high enough for the target group. High accessibility is defined as a small distance to the food production areas and a high amount of participation possibilities or the possibility to own a piece of land for personal urban agriculture practices.

The local-oriented scenarios within the direct neighbourhoods have the most effect on the consumption patterns due to the following reasons: First of all, the accessibility to both the sell and production location is the highest, which makes it possible to interact with facilities on a daily basis. For the first pathway, in which people practice urban agriculture, this means that they can easily participate within the urban agriculture activities. For the second pathway, where people get in with healthy food acquisition possibilities through a change in the food environment, this would mean that there are selling markets for LPEF, healthy takeaway meals produced from LPEF and opportunities of seeing how the food grows.

Respondents stressed that the centrally oriented scenarios would only be attractive for those who are already interested in food production and consumption practices. Moreover, the accessibility could differ per person and generation. One could easily bike to the central oriented location, while others are dependent on public transport or family and friend who can bring them.

Secondly, the local orientation of urban agriculture activities increases the visibility of the food production activities. This visibility allows for interaction within the process of food growth on a daily basis. Respondent 13 (F, Age 28, Dutch) highlighted the possibility to include eatable plants within the urban green public space which is already exciting. She believed that an urban food-oriented landscape would increase the interest in healthy food consumption.

To specify it more, different locations within Amsterdam Zuidoost are discussed. For the situation of one central location in scenarios 1 and 3, different opinions were present amongst the respondents. Several respondents saw this as an opportunity to create more value for the Gaasperplas by creating better recreation facilities. Others stressed that this nature area is

also really valuable since it is one of the few places in Amsterdam where you can sit in pure nature, in silence and hear nature.

The local-oriented scenarios number two and four were valued higher in terms of accessibility and visibility. However, the question raised whether there is a sufficient amount of space available to create the food production places. Moreover, Respondent 2 (F, AGE 74, Surinamese) questioned whether citizens find the urban agriculture practices nuisance:

I am also thinking, our people are busy. So it shouldn't be in a residential area where people are bothered quickly. You know, people are often bothered and easily disturbed by things they don't do themselves.

2. Knowledge exchange

Knowledge exchange is highlighted as one of the main aspects that is important for the changing of healthy food acquisition practices. Hereby, the focus lies on two topics; learning about different food cultures and healthy food consumption. Within the section, both topics will be explained based on the opinions of the respondents. Afterward, the cross-section of those two focus points will be explained based upon the scenario analysis.

Within the first pathway, practitioners can learn about the nutritional values of the food that they are producing. Respondents who are working in gardens provided their experience with the knowledge transfer component. Respondent 11 (F, Age 69, Dutch) explain the effect of her food-producing practices on the learning process:

In general, these gardens do encourage you to look at forgotten vegetables. Vegetables that you don't see in the supermarket anymore, or don't know what they look like or how much you can eat. We learned that you can eat the flowers, the roots, the leaves et cetera. So I think that has a lot of advantages.

However, not all citizens have time to learn about healthy and cultural-dependant food consumption through the practice of food production. Other practices like work, commuting, household are too time-consuming to be able to add the practice of food production in there. Currently, the respondents who lack an appropriate amount of time for food acquisition and cooking, tend to go for a takeaway meal or snack. This is made possible by the current amount of fast foods availabilities within the current food environment. For those practitioners, the introduction of urban agriculture must be affecting the food environment in such a way that it allows for high accessibility and knowledge exchange about healthy ways of food consumption.

Within the scenarios those different types of knowledge transfer possibilities are provided in three different ways: from producer to consumer (scenario 1), from selling to consumer (scenario 4), between consumers (scenario 2&3) and between different ethnic groups

(scenario 2&3). The scenario developers provided examples such as (school) classes for food production as well as taste and cooking lessons. Moreover, it includes different types of training possibilities for work within the local agri-food sector.

In all cases, the respondents the importance of the knowledge exchange between ethnic groups. If they could learn about the cultural and culinary heritage of those groups, it could potentially increase community engagement. Moreover, it could help to change the unhealthy food consumption practices present within the different cultures. This intersection is formulated by respondent 4 in the following way:

I think you say, the way of cooking is, is very much culture-bound. The people who don't necessarily have a fascination for cooking, eat what they have been taught. In the Surinamese culture, a lot of deep-frying is done to kill bacteria; if you heat things to 70 degrees, bacteria die. If you heat things to 170 degrees, you are safe anyway. So it is part of the culture that people do a lot of deep-frying. That is a bit of a tradition. So that is difficult to change. Anyway, I think that restaurants can respond to this by, for example, using the same ingredients to make other healthier dishes. Or by making the current traditional dishes more healthily. A vegan corner takeaway restaurant opened here last year, they work with a lot of Surinamese ingredients, but they do other things with it, including not using refined sugar. (M, Age 30, Dutch)

3. Affordability

Another recurring theme is the affordability of healthy foods. To reach the goal of increasing healthy food consumption patterns, all consumer groups should have the ability to acquire healthy foods. As literature has shown, people with a lower social-economic status can benefit from producing their own vegetables and fruits and therefore increase the intake of those foods. Therefore, this target group can be supported within their healthy food acquisition practices through high accessibility of urban agriculture practices (pathway 1) or a price replacement of healthy foods within the food environment (pathway 2). However, as some practitioners highlighted, eating healthy foods is quite hard if people already struggle with making ends meet.

It is just a question of whether they have sufficient opportunities in their daily lives to meet all these needs. There are also quite a few people here with a low socioeconomic status who simply do not have the opportunities to get healthy food at such a price, or do not have enough opportunities at all to deal with issues such as vegetarian and sustainable healthy foods. (F, Age 28, Dutch)

Therefore, it could be useful to link those urban agriculture initiatives to non-profit organizations that provide food boxes to people who live below the poverty line. This could be combined with recipes in the form of meal boxes with recipe cards, to make sure that people also prepare healthy foods in a healthy way.

Moreover, as the results of the first question show, migrant practitioners still prefer the import foods above the locally produced exotic fruits and vegetables. However, they also explained that the price of the foods is often more important than the origin. If the locally produced foods would be way less expensive and not differ in taste too much, practitioners might choose for the cheaper locally produced exotic fruits and vegetables. Thus, this could increase the wish for locally produced exotics foods instead of culturally imported foods.

To summarize, the future-oriented scenarios testing results contain overarching results which should be taken into account by designing the urban agriculture initiatives. First, the location of the production and market should be easily accessible for everyone. Moreover, a part of the food production should be highly visible within the food environment to let everyone interact with this in daily life. Secondly, there should be knowledge exchange facilities that allow to learn from both producers and other community members about the practice of food production and the culinary heritage of the diverse community. Thirdly, the LPEF should be affordable to give everyone the opportunity to acquire healthy and fresh food.

5.4.3 Relation between food acquisition practices and scenarios

After analysing the current food acquisition practices, identifying the barriers that practitioners experience as restraining within their practice of healthy food acquisition and analysing the scenarios of urban agriculture, the following step is to determine how those are related to each other. This section will link the barriers that practitioners face within their food acquisition practice to the opportunities that the different scenarios can offer. Hereby, the identified ways of food acquisition are categorized based on the pathways and linked to the barriers and opportunities for change (table 3).

Pathway 1 – Urban agriculture practitioners

Within the scenarios, the practice of food production is either professional with the goal of commercialization and high production or social-oriented. First, the effects of the urban agriculture practitioners' pathway will be presented.

Restaurant managers (M, Age 40, Dutch) (F, Age 37, Dutch) explained how they could lower the price of their healthy takeaway meals if they would get the chance to produce and harvest their own vegetables. They explained that they need more knowledge for this, to keep the food production line running constantly. Therefore, scenario 1 is most suitable since it offers the chance to obtain professional food production skills. Moreover, it creates spaces where food production can be situated. According to respondent 7 (F, Age 37, Dutch), this could potentially lower the price of their meals and therefore influence the food environment (pathway 2) as well. Within the second part of this section, we will zoom in on the effect of pathway 2.

For the recreational food producer practitioners who will both produce and consume themselves or within their community, without the goal of commercializing it, the main barriers are the lack of space, time and knowledge to practice urban food production. Scenarios 1,2, and 3 could provide the places where people would get the chance to start their own garden. These provide a chance to learn from residents with different types of country-of-origin-oriented lifestyles.

However, the production of exotic fruits and vegetables is hard within the direct Dutch climate, which requires greenhouses or another type of innovative solutions. Having only social-oriented scenarios will threaten the availability of locally produced exotic fruits and vegetables. Therefore, apart from social-based scenarios 2 and 3, another production-oriented scenario should be included to be able to create the aimed inclusive local food system where the local cultural foods can be produced.

Pathway 2 - Effect on food environment through urban agriculture initiatives

Apart from the effect on the food acquisition practices, the conceptual framework includes the indirect effect of the UA initiatives on the food environment and therefore a rearrangement of the food acquisition practice elements. This section explains how scenarios could help people in rearranging towards their meaning of a healthy diet by finding the right scenario elements for the barriers that they face now.

Purchasing foods in shops

Practitioners highlighted the potential of scenarios 1, 2 and 4 to change the availability of healthy foods within the near environment. This can be commercialized as scenario 4 shows, which allows for a seasonally dependent but yearly-round availability of locally produced foods. Especially, its characteristics of high accessibility of market-based food acquisition possibilities within the neighbourhoods would create a possibility in which people can integrate the locally produced food shopping into their daily practices. However, the results showed the differences in the food acquisition practices amongst the respondents. Therefore, the different lifestyles must be taken into account to define what cultural preferences they have and how the bundles of daily practices influence their food shopping practices. This would mean that they should start with investigating what types of exotic fruits and vegetables should be produced.

Secondly, the scenario 1 and 4 could learn practitioners the skill to acquire produced foods. Moreover, it could learn people to learn to plan the practice of food acquisitioning. To make the process more easy and accessible for people who suffer from a lack of time, the food boxes like 'Hello Fresh' could be provided. This is again possible due to the yearly round accessibility. In addition, they could help with creating a healthy food acquisition option for

the lower-income practitioners through free school lunches, takeaways meals and cooperation with Foodbanks.

Wild picking acquisition

Although wild picking respondents state that it does not provide the necessary daily intake required for a person, it could lower their required amount of groceries acquired from shopping practices. Thus, this could be helpful for people that do not earn enough money to buy the required amount of foods for their daily intake. Nevertheless, it mainly includes certain fruits, vegetables and herbs which will increase the intake of those types of foods. Therefore, it could help to lower the amount of consumed processed foods.

For this practice, the main barrier identified is the lack of knowledge of what types of green are eatable within the public space. The knowledge exchange facilities of scenarios 1,2 and 3 are therefore useful for this type of food acquisition practice.

Food acquisition within direct social circles and communities

Practitioners who lack time to either produce their own or acquisition healthy foods could be supported by the community in the form of buying foods or meals. At community centres special meals could be prepared with locally produced foods that are less likely to be sold in stores due to minor damage or deformation. Scenario 4 could be useful as it creates a network in which the surplus can be donated or sold for a lower price to specific communities. Moreover, Scenario 2 created the possibility to share meals, made from vegetables, produced in the direct community garden.

Ordering/ Take away practices

Practitioners who suffer from a lack of time for healthy food acquisitioning practices could be supported by creating more healthy takeaway and delivery facilities within the food environment. By making those meals available in the direct place where food acquisition practices take place normally, it could make the choice for healthier alternatives easier to make.

Locally produced foods

As said, the culturally inspired meanings of valuing imported exotic fruits and vegetables higher than the locally produced is important to take into account. Scenario 1 could offer learning possibilities where the practitioners can learn about the sustainability and difference in environmental Impact between imported food and LPEF. Scenario 2 could arrange the social networks where people obtain food directly from the relatives or neighbours who produce the foods.

To summarize, the four different scenarios consist of useful elements, that could fight the barriers of healthy food acquisition practices. Scenario 1, offers possibilities for practitioners of both pathways. It can fight the barrier of lack of competencies by allowing knowledge exchange, required to learn the practice of AU and wild picking, planning food acquisitioning practices and about the pros of LPEF. Locally, it offers high accessibility to LPEF supported by the high food production and distribution, with the potential to lower the market price of the LPEF and therefore fight the barrier of lack of financial resources.

Scenario 2 offers knowledge exchange about food production and acquisition on a local level, which is therefore easily accessible. Moreover, it fights the lack of space for gardens and cooking facilities, by offering space for UA practices and community shared meals where people who lack time, can still obtain healthy and culturally diverse meals. Moreover, it could neighbourhood events which are related to the local food consumption

Scenario 3 creates an inspiring place where people can learn about culturally diverse meals. Thus is would be possible to learn from other cultures and transform the traditional meals in more healthy versions.

Scenario 4 creates mainly opportunities for the second pathway or for professional UA practitioners who work within the local agri-food sector. It has a lot of influence on the local food environment and therefore the potential to fight the accessibility and availability barriers to LPEF, healthy and cultural fruits and vegetables.

6. Conclusion and Discussion

Urban agriculture has the potential to shorten the food chain and reconnect consumers with food producers. This could lead to a revaluation of fruit and vegetables with a possible increase in consumption of these foods. However, current urban agriculture initiatives do not fully embrace cultural diversity in terms of their culturally informed consumption practice.

This research provides insight into the food acquisition practices and explored the potential of urban agriculture to support healthy acquisition practices of an ethnic-diverse urban population. In this chapter, I will summarize and interpret the results, reflect on the theoretical and methodological approach, discuss limitations of the research approach and research methodology, provide suggestions for further research and discuss policy and design recommendations.

6.1 Findings and interpretation

This thesis aimed to explore how urban agriculture within a culturally diverse population might contribute to healthy food acquisition. This section summarized the results and answers the main research question of this research: *How can urban agriculture contribute to transforming food consumption practices in more healthy directions amongst the ethnically diverse population of Amsterdam Zuidoost?*

The research has been done by interviewing citizens to explore what their image is of healthy food consumption, how they perform food acquisition practices and what barriers they experience while practicing their ideal food acquisition practice within the current food environment. In addition, several scenarios have been tested to explore what elements of urban agriculture are necessary to support an ethnically diverse society within the cultural-based healthy food consumption practices.

Results show that there is a difference in meanings about healthy food consumption present amongst practitioners living in Amsterdam Zuidoost. This difference seems to be partly explained by the diverse population. Although practitioners seem to get more aware of the topic of healthy food consumption, specific knowledge is required to be able to make certain decisions about what is healthy and unhealthy.

Zoomed out a bit, this research has shown that the practitioners practice food acquisition in different ways. Practitioners obtain their food through one or a combination of the following ways; market-based sources, home-growing and wild picking. It was shown that time is an important element in the way of food acquisition practices. Market-based shopping allowed for time-efficiency and obtaining cultural foods. While others obtained foods through urban farming practices and wild picking. Amongst the migrant practitioners, cultural foods played

an important role within their acquisition practices. A strong wish for imported foods was present. This allowed them to cook their cultural meals and therefore maintain their culinary heritage. Thus, it can be concluded that food acquisition is influenced by the bundles of practices in terms of time and the country of origin-dependent lifestyles.

Lastly, within the analysis of the current food consumption practices, the practitioners defined the barriers encountered within the food environment in which they perform the food acquisition in practice. The practice elements (materials, skills and images), the food environment are used to structure the barriers. Practitioners suffered a lack of materials such as finance and space. This lowered their ability to acquire healthy foods and practice healthy food cooking and food production. Moreover, some lacked the knowledge and skills on how to obtain and cook healthy food or how to grow or pick fruits and vegetables. Within the food environment, they missed affordable organic and locally produced foods, as well as cultural foods. Moreover, they missed healthy alternatives for fast food takeaway meals. This is partly explained before by the lack of time to acquire and cook healthy foods. Those practitioners also stressed that they lack time to learn about urban agriculture and local food production. Moreover, different opportunities for change were suggested and linked to the barriers to tackle them.

After analysing the current food acquisition practices, scenarios of urban agriculture have been tested to predict what kind of elements of urban agriculture are necessary to promote practitioners in their health food acquisition practices. Hereby two different types of practitioners have been taken into account: (1) Urban agriculture practitioners and (2) food acquisition practitioners who get influenced by changes within the food environment, caused by urban agriculture practices.

For practitioners who fall or want to fall under category one, the scenario testing has shown that the urban agriculture practices must have high accessibility to the gardens and farms. Moreover, there must be possibilities to cultivate cultural foods to ensure an inclusive food system in which knowledge exchange between different ethnic groups is possible. For novice gardeners, this knowledge exchange is important to give them the right knowledge and skill to be able to practice and engage with the practice of urban agriculture.

For practitioners who fall under category two, the scenario testing has shown that practitioners would like to have high accessibility to fresh and healthy foods, including exotic fruits and vegetables. Hereby, a preferable combination is to combine fresh market products with healthy prepared meals. This wish for healthy takeaway possibilities stems from the lack of time to do their shopping and cook at times when they are busy. Moreover, the knowledge exchange possibilities must be created to support people in making healthy choices and to support culinary exchange.

Thus, not one specific scenario can fight all the barriers indicated by the practitioners within the current food environment. Therefore, a combination of different elements which are present within the scenarios must be combined to support healthy consumption practices. To reach a large group with healthy locally produced foods, the focus on production must be high. Production must include all types of fruits and vegetables, not only exotic foods. In addition, for knowledge exchange about the culinary heritage, healthy foods and community engagement, the focus must be more on the social aspect. Overall, it is important to make both the place of production and market sales easily accessible, support knowledge exchange between prosumers and consumers and between consumers of different country-of-origin lifestyles and make healthy cultural foods that are locally produced affordable.

To sum up, this thesis has explored what ways of implementing urban agriculture within an ethnic-diverse could potentially be supportive for healthy food acquisition practices. The research showed how the image of health influences the food acquisition practices and how it is supported or opposed by the food environment and bundles of practices. Moreover, it showed the barriers that are present within the food environment. Different types of urban agriculture initiatives are necessary to support people in performing their healthy acquisition practices; from future-oriented high tech towards traditional and cultural dependent ways of food-producing and preparing. The food environment should provide access to healthy food acquisition and information to allow for knowledge exchange about healthy and cultural food practices.

To conclude, the results suggest that the urban agriculture initiative has the potential to support the healthy aspects of food consumption if the lifestyles, the bundle of practices of the practitioners and the contextual factors are taking into account in the design process. Thus, it could form the first step towards creating an inclusive food environment in which everyone has the ability to acquire healthy locally produced cultural foods. Nevertheless, due to the exploratory nature of this research, it cannot be concluded with certainty that the proposed urban agriculture initiative will influence the food consumption patterns of the whole population. Several uncertainties are present, such as the economic feasibility, the scalability of design and the generalisability of the results. Therefore, more research must be done to identify different lifestyles present within the society, what type of knowledge is required to educate practitioners and what specific types of foods people miss within the current food supply chain.

6.2 Lessons from theoretical basis and methodology approach

This research has used the Social Practice Theory as a framework for analysing food consumption patterns. Analysing the food consumption practices, food acquisition in particular, allowed me to step away from the individual behaviour analysis by focussing on the practices and how they are shaped by the social context and the carriers. In this research, the principle of zooming in and out was used to analyse the practice on different levels. Zoomed in into its core the practice exercises of three elements; Materials, skills and meanings. This created a clear starting point of what the current acquisition practices exist of and what elements might need to change in order to change the practice towards more healthy food consumption practice.

Zoomed out created the possibility to couple the food environment and country-of-origin dependent lifestyles into the analysis. This formed the basis for the link towards the introduction of culturally inclusive urban agriculture and its potential effect on consumption practices. Thus, the STP has the potential to conceptualize a lot of different elements which allows for a rich theoretical description of the routinized activities related to food consumption.

Nevertheless, this theoretical approach was often quite challenging. Due to the number of categories which make up or influence a social practice, it is hard to take every aspect into account within this research. Moreover, the categories do not always have clear borders and sometimes overlap. This created situations in which it was quite hard to place elements into the right category. However, as the reality of practices and human interaction is quite fussy, the sociological theory does represent reality quite well.

Furthermore, the step into the future was sometimes hard to take, as the SPT lens is mainly used to analyse current practices. Therefore, a practice-based design approach would have been useful. This could translate the practice theory from a descriptive into prescriptive future-oriented design methods(Kuijer et al., 2013). This was not possible due to the scope of the research and the timespan of a master thesis research. Therefore, the design scenarios have been used to envision the future food environment together with the practitioners. This turned to be useful, but it was hard to pinpoint the specific elements within the scenario which are necessary to support healthy food consumption practices. Especially because respondents did not always know how they will practice food acquisition within a changing food environment.

6.3 Limitations of the research approach and further research possibilities

This explorative research approach has created an interesting combination of current practices analysis and future-oriented urban agriculture scenario designs testing. Nevertheless, the research approach has created some limited factors, which have influenced the research results.

First, The exploratory nature of this research combined with the future-oriented approach resulted in some limitations within the scope of the results. In particular, the focus of the research changed from consumption food (acquisition, cooking and eating) practices to mainly the process of acquisition. Therefore, the results could have been more specified if this focus point was chosen earlier within the process. Taking more time to conceptualize the research variables within the design process of the research could have lead to more specified results.

Secondly, the primary data collection has been conducted during the Covid-19 pandemic. The corresponding measures influenced the data collection phase, because of the restriction of working from home as much as possible. Therefore, most interviews have been conducted online, which lower the opportunity to read and interpret non-verbal communication. Moreover, direct observation of the food consumption practices was not possible most of the time. Taking a SPT approach, the research focuses on *sayings*(interviews) and *doings* (observation) of the consumption practice. This creates the possibility to analyse both the practitioners' views on their practices(*sayings*) and the performances of practices (*doings*), which is important as practitioners do not always act like they think they do. However, In this case, the observations were not always possible and therefore replaced by *sayings* about *doings* during the interviews. As a result, particular information about food consumption practices might be missing.

Thirdly, the sample does not represent the diverse population of the city district Amsterdam Zuidoost completely. The population of Amsterdam Zuidoost represents 130 nationalities. Within this research sample, only six nationalities have been included with an overrepresentation of the Dutch or Surinamese nationality. Some large representative groups like Antilleans and Ghanaians are not included due to a lack of responses to my interview request. Therefore, the results might be oriented towards the Dutch and Surinamese lifestyles. More interviews with other nationalities and other types of data collection could have made the results more enriched.

This research provided new knowledge on the bridge between urban agriculture and its potential support on healthy food consumption patterns. As a result of the exploratory nature of the research, several open ends have been identified, which require further research.

First, several urban agriculture initiatives and practitioners are already active. I would be fruitful to research their consumption practices to analyse whether it changed and how their urban agriculture practice contribute to this change. In addition, it would be useful to study

the food consumption practitioners who are not interesting in the topic of food consumption or production. This group was hard to reach within this research and is therefore missing within the research scope.

Secondly, it would be fruitful to include more case studies within the research approach. By research different urban areas, other types of ethnic-diverse societies could be included in the research, resulting in a generalizable and scalable research result. Moreover, by doing more ethnographic research, including participant observations, the country-of-origin-dependent lifestyles of the different ethnic groups could be explored better. This could affect the match of the different lifestyles and the scenario designs of urban agriculture.

6.4 Recommendations

Policy

First, the municipality has an important role to play in contributing to a healthy, social and sustainable food system for all Amsterdam residents. By means of a food strategy, the city council aims for a healthier food system in which every citizen has a chance to consume healthy foods. Based on the research results, I recommend taking a social practice approach to learn how citizens interact with food and the food environment in daily life. By learning about the consumption practices and how it is influenced by the food environment and the cultural diverse lifestyles, the local food policies can be customized to make them more inclusive in terms of cultural diversity.

Secondly, the national guidelines provide generic advice on what a healthy diet should look like. However, this does not take into account the culinary diversity of urban societies. This research showed the different images present amount this ethnic diverse population. Therefore, I recommend to analyse the differences in dietary needs use that to purpose more inclusive and culturally sensitive guidelines.

Design-guidelines

Based on the results of this research, several insights have been generated for designing culturally inclusive urban agriculture facilities within a multi-ethnic neighbourhood. Therefore, this section will provide several design recommendations for designing UA initiatives that could support healthy food acquisition practices.

First, I recommend to create UA facilities that are accessible for all residents. Although not everyone will carry out the practice of UA, everyone should be able to enter the facilities easily. Therefore, the space should look like it is a public space where everyone can spend time. Moreover, the food that is produced must be accessible for the whole neighbourhood

as well. This can be done by designing markets where LPEF can be sold to society, where residents can interact with this food environment in daily life.

Secondly, The food production should be visible within the direct neighbourhoods. This will increase the visibility of the growing process in daily life. This is interesting because the respondents stressed that most scenarios will mainly pull the residents that are already quite interested in the topic of food production and food cultures. While it will be harder to pull the residents who are currently not interested. Therefore, the attractiveness of the facilities is highly important. As every generation and culture has another lifestyle, it will be important to include all different types of pull factors. For children, you create learning facilities where they can learn about urban agriculture and the consumption of fruit and vegetables playfully. This can be done by placing vegetable gardens and food forests alongside playgrounds and create interaction between the two areas.

7. Literature

Alaimo, K., Packnett, E., Miles, R. A., & Kruger, D. J. (2008). Fruit and vegetable intake among urban community gardeners. *Journal of Nutrition and Behavior*, 40(2), 94–101.

Allen, P. (2010). Realizing justice in local food systems. *Economy and Society*, 3(2), 295–308. <https://doi.org/10.1093/cjres/rsq015>

Bellows, A. C., Brown, K., & Smid, J. (2008, January). *Health Benefits of Urban Agriculture*. members of the Community Food Security Coalition's North American Initiative on Urban Agriculture. https://www.researchgate.net/publication/238742667_Health_Benefits_of_Urban_Agriculture

Brons, A., Oosterveer, P., & Wertheim-Heck, S. (2020). Feeding the melting pot: inclusive strategies for the multi-ethnic city. *Agriculture and Human Values*, 37(4), 1027–1040. <https://doi.org/10.1007/s10460-020-10031-x>

Cena. (2020). Defining a healthy diet: evidence for the role of contemporary dietary patterns in health and disease. *Nutrients*, 12(2). <https://doi.org/10.3390/nu12020334>

Diekmann, L. O., Gray, L. C., & Baker, G. A. (2020). Growing “good food”: Urban gardens, culturally acceptable produce and food security. *Renewable Agriculture and Food Systems*, 35(2), 169–181. <https://doi.org/10.1017/S1742170518000388>

Dooren, van. (2016). Defining a nutritionally healthy, environmentally friendly, and culturally acceptable Low Lands Diet. *International Journal of Life Cycle Assessment*, The, 21(5), 688–700. <https://doi.org/10.1007/s11367-015-1007-3>

Elizabeth Sargent. (2014). *Sustainable food consumption A practice based approach* .

Giddens, A. (1986). The constitution of society: Outline of the theory of structuration. In *Practicing History: New Directions in Historical Writing after the Linguistic Turn* (pp. 121–142). Cognitive Therapy and Research. <https://doi.org/10.1007/BF01173303>

Goldstein, B., Hauschild, M., Fernández, J., & Birkved, M. (2016). Testing the environmental performance of urban agriculture as a food supply in northern climates. *Journal of Cleaner Production*, 135, 984–994. <https://doi.org/10.1016/J.JCLEPRO.2016.07.004>

Halkier, B., & Jensen, I. (2011). Methodological challenges in using practice theory in consumption research. Examples from a study on handling nutritional contestations of food consumption. *Journal of Consumer Culture*, 11(1), 101–123. <https://doi.org/10.1177/1469540510391365>

Hodges, E., Kristenmcivor, S., & Brown, S. (2016). A case study: Advancing public health through Gardens for Healthy Communities (GHC) in New York City: The role of anti-obesity objectives in urban agriculture policy. in *Sowing Seeds in the City Human Dimensions*. Springer.

Jaeger-Erben, M., & Offenberger, U. (2014). A practice theory approach to sustainable consumption. *GAIA*, 23, 166–174. <https://doi.org/10.14512/gaia.23.S1.4>

Kuijer, L., Jong, A., Computer-Human, D. E.-A. T. on, & 2013, undefined. (2013). Practices as a unit of design: An exploration of theoretical guidelines in a study on bathing. *Dl.Acm.Org*, 20(21). <https://doi.org/10.1145/2493382>

Lin, B. B., Philpott, S. M., & Jha, S. (2015). The future of urban agriculture and biodiversity-ecosystem services: Challenges and next steps. In *Basic and Applied Ecology* (Vol. 16, Issue 3, pp. 189–201). Elsevier GmbH. <https://doi.org/10.1016/j.baae.2015.01.005>

Litt, J. S., Soobader, M. J., Turbin, M. S., Hale, J. W., Buchenau, M., & Marshall, J. A. (2011). The influence of social involvement, neighborhood aesthetics, and community garden participation on fruit and vegetable consumption. *American Journal of Public Health*, 101(8), 1466–1473. <https://doi.org/10.2105/AJPH.2010.300111>

Morgan, K. (2015). Nourishing the city: The rise of the urban food question in the Global North. *Urban Studies Journal Limited*, 52(8), 1379–1394. <https://doi.org/10.1177/0042098014534902>

Nicolini, D. (2012). *Bringing it all Together: a toolkit to study and represent practice at work*. Oxford: Oxford University Press. https://scholar.google.com/scholar?hl=nl&as_sdt=0%2C5&q=Nicolini%2C+D.+%282012%29.+Bringing+it+all+Together%3A+A+Toolkit+to+Study+and+Represent+Practice+at+Work.+In%3A+Practice+Theory%2C+Work+and+Organization%3A+An+introduction.+Oxford%3A+Oxford+University+Press%2C+213-241.&btnG=

Penney. (2015). Local food environment interventions to improve healthy food choice in adults: a systematic review and realist synthesis protocol. *BMJ Open*, 5(4), e007161.

Pereira, L., Drimie, S., Maciejewski, K., Tonissen, P. B., & Biggs, R. O. (2020). Food system transformation: integrating a political–economy and social–ecological approach to regime shifts. *International Journal of Environmental Research and Public Health*, , 17(4), 1313. <https://doi.org/10.3390/ijerph17041313>

Reckwitz, A. (2002). Toward a Theory of Social Practices. *European Journal of Social Theory*, 5(2), 243–263. <https://doi.org/10.1177/13684310222225432>

Reynolds, K. (2015). Disparity Despite Diversity: Social Injustice in New York City's Urban Agriculture System. *Antipode*, 47(1), 240–259. <https://doi.org/10.1111/ANTI.12098>

Riley, H., & Buttriss, J. L. (2011). A UK public health perspective: what is a healthy sustainable diet? *Nutrition Bulletin*, 36(4), 426–431. <https://doi.org/10.1111/j.1467-3010.2011.01931.X>

Røpke, I. (2009). Theories of practice - New inspiration for ecological economic studies on consumption. In *Ecological Economics* (Vol. 68, Issue 10, pp. 2490–2497). Elsevier. <https://doi.org/10.1016/j.ecolecon.2009.05.015>

Schatzki, T. R., Cetina, K. K., & Von Savigny, E. (2001). The practice turn in contemporary theory. In *The Practice Turn in Contemporary Theory*. Taylor and Francis. <https://doi.org/10.4324/9780203977453>

Shove, E. (2010). Beyond the ABC: climate change policy and theories of social change. *Environment and Planning*, 42, 1273–1285.

https://journals.sagepub.com/doi/pdf/10.1068/a42282?casa_token=_l7Txyl73tIAAAAF45_vF9w8O_36Bt_rWqF6JY6h9uTrQR9luCwnaLIRwZKxxEDttAP0pTG7OwOJTZhMOIDXwEGgws_Q

Shove, E. (2012). Putting practice into policy: reconfiguring questions of consumption and climate change. *Contemporary Social Science Journal of the Academy of Social Sciences Putting Practice into Policy: Reconfiguring Questions of Consumption and Climate Change*, 9(4), 415–429. <https://doi.org/10.1080/21582041.2012.692484>

Shove, E., Pantzar, M., & Watson, M. (2012). *The dynamics of social practice: Everyday life and how it changes*. Sage. https://scholar.google.com/scholar_lookup?title=The+Dynamics+of+Social+Practice%3B+Everyday+Life+and+How+it+Changes&author=E.+Shove&publication_year=2012

Spaargaren, G., Weenink, D., & Lamers, M. (2016). Practice theory and research: exploring the dynamics of social life. In *Practice Theory and Research Exploring the dynamics of social life*. Routledge.

Spaargaren, G. (2011). Theories of practices: Agency, technology, and culture: Exploring the relevance of practice theories for the governance of sustainable consumption practices. *Global Environmental Change*, 21(3), 813–822.

https://www.sciencedirect.com/science/article/pii/S0959378011000379?casa_token=1Q2DkoXVD80AAAAAA:cRHqvq3fnXR85g1DgMFL5q4l-9HZkzZypLPpKzo0Rm5tiA39q4fkM9YXKmqNasKvh1G7l6Qfdgw

Spaargaren, G., & Van Vliet, B. (2000). Lifestyles, consumption and the environment: The ecological modernisation of domestic consumption. *Environmental Politics*, 9(1), 50–76. <https://doi.org/10.1080/09644010008414512>

Timlin, D., McCormack, J. M., Kerr, M., Keaver, L., & Simpson, E. E. A. (2020). Are dietary interventions with a behaviour change theoretical framework effective in changing dietary patterns? A systematic review. *BMC Public Health*, 20(1), 1–18. <https://doi.org/10.1186/S12889-020-09985-8>

Warde, A. (2016). The practice of eating. *John Wiley & Sons*. [https://books.google.com/books?hl=nl&lr=&id=PJsCwAAQBAJ&oi=fnd&pg=PT5&dq=warde+A+\(2016\)+the+practice+of+eating&ots=eC_fLvLdgN&sig=eonVriDSDtEm7QVDXXRQbT_q_8w](https://books.google.com/books?hl=nl&lr=&id=PJsCwAAQBAJ&oi=fnd&pg=PT5&dq=warde+A+(2016)+the+practice+of+eating&ots=eC_fLvLdgN&sig=eonVriDSDtEm7QVDXXRQbT_q_8w)

Warde, Alan. (2005). *Consumption and Theories of Practice*. <https://doi.org/10.1177/1469540505053090>

Welch, D. (2016). Social practices and behaviour change. In *Beyond behaviour change* (pp. 237–256). Policy Press. <https://doi.org/10.1332/policypress/9781447317555.003.0012>

Wertheim-Heck, S. C. O., & Raneri, J. E. (2019). A cross-disciplinary mixed-method approach to understand how food retail environment transformations influence food choice and intake among the urban poor: Experiences from Vietnam. *Appetite*, 142, 104370. <https://doi.org/10.1016/J.APPET.2019.104370>

8. Appendices

Appendix A - Interview Guide Dutch

Consumer

A. Het doel van het onderzoek

1. Begroeting en inleiding
2. Project inleiding
Er is een voorlopig onderzoek gedaan naar mogelijke scenario's van lokale voedselproductie van exotisch fruit en groenten.
3. Doel van het onderzoek:
Het doel van dit onderzoek is om te verkennen hoe de overgang naar lokale stedelijke voedselproductie en een verandering in de voedselomgeving kan bijdragen aan veranderingen in de voedselconsumptie.
4. **Vraag om goedkeuring voor opname.**
5. Inleiding van de belangrijkste onderwerpen van het interview

B. Inleiding

1. Kunt u zich even voorstellen?
2. Naam, leeftijd, geslacht
3. Land van herkomst/nationaliteit(en)
4. Opleidingsniveau
5. Wanneer bent u in Nederland en Zuidoost komen wonen?

C. Inzoomen: de praktijk als voorstellingen

Huidige voedselconsumptiepraktijken in relatie tot gezondheid

Dieet (eetgewoonten)

1. Wat is je favoriete maaltijd?
 - a. Wat maakt deze maaltijd speciaal voor je?
2. Wat heeft u gisteren gegeten? ontbijt, lunch en avondeten)
 - a. Waar heeft u het gegeten?
 - b. Was dit de gebruikelijke manier van consumeren (business as usual) of was dit een uitzondering?
 - i. Als het een uitzondering was; wat veroorzaakte deze uitzondering?
 - c. Had iets of iemand invloed op deze keuze van eten?
3. Wat heb je gegeten? Hoe heb je gegeten?
4. Deelt u eten?
5. Wat voor gereedschap gebruik je tijdens het eten?
6. Wat zijn de regels voor het delen van eten?

7. Wat heb je deze week met vrienden en familie gegeten?
 - a. Had iets of iemand invloed op deze keuze van eten?
8. Wat heb je deze week op je werk/school of in de kerk gegeten?
 - a. Had iets of iemand invloed op deze keuze van eten?
9. Wat eet je als je deze week alleen eet?
 - a. Had iets of iemand invloed op deze keuze van eten?
 - b. Waren er nog belemmeringen die je tegenhield in

Koken (bereidingswijzen)

10. Wat kook je normaal gesproken zelf
 - a. Welke kooktechnieken gebruik je?
 - b. Wat voor apparaten gebruik je voor het bereiden en koken van het eten?
 - c. Welke vaardigheden heb je nodig om te koken?
 - d. Welke vaardigheden en tools mis je?
11. Zou je meer willen leren over koken?
 - a. Waarom (niet)? Kun je daar dieper op ingaan?
 - b. Wat zou je er graag in willen veranderen
 - c. Wat zou je daarvoor nodig hebben?
 - d. Houd iets je tegen?
 - e. Kun je uitleggen wat je tegenhoudt om dit te leren?

Kopen en kweken van voedsel (verwervingspraktijken)

12. Hoe verkrijg je normaal je voedsel? Uit de tuin, winkel, restaurant?
 - a. Percentage
13. Besteert u speciale aandacht aan specifieke kenmerken van de voedingsmiddelen?
14. Zou u uw manier van voedsel verwerven willen veranderen?
15. Heeft u ervaring met het verbouwen van uw eigen voedsel?
 - a. Zo ja, welk voedsel verbouw je dan?
 - b. Welke tools en vaardigheden heb je nodig om je voedsel te verbouwen?
16. Zou u meer willen leren over het verbouwen van uw eigen voedsel?
 - a. Waarom (niet)?
 - b. Kunt u uitleggen wat u tegenhoudt om dit te leren?

Gezondheid (beeld)

17. Tegenwoordig wordt er veel gesproken over voeding en gezonde voeding. Kunt u mij vertellen wat deze termen voor u betekenen en wat u ervan weet? (Kennis & beeld)
18. Hoe zou 'goed eten' of 'gezond eten' er voor jou uitzien?
 - a. Welke vaardigheden en tools heb je hiervoor nodig?
19. Verschil in lokale of belangrijke voedingsmiddelen?
20. In welke bezigheid heb je deze week meer gezonde keuzes gemaakt? In welke bezigheid maak je minder gezonde keuzes?

D. Uitzoomen; Praktijken als entiteiten

Veranderende voedingsgewoonten, levensstijlen en voedselomgeving

Veranderingen in voedselconsumptiepatronen

21. Zijn uw eetgewoonten de laatste jaren veranderd?
 - a. Wat is er veranderd?
 - b. Wat was de aanleiding voor die veranderingen?
 - c. Hoe bent u ertoe gekomen te overwegen uw dieet te veranderen?
22. In welk opzicht denkt u dat het voedsel hier en nu gezonder of minder gezond is dan toen u een kind was?
23. Wie/Wat beïnvloedt je eetpatroon? (Infrastructuur, levensstijl, praktijkbundels)

Cultuur (imago)

24. Welk soort voedsel eten mensen gewoonlijk in uw cultuur? Waar geven ze de voorkeur aan?
25. Wat is voor jou belangrijk in je relatie met voedsel? Wat betekent voedsel voor u?
26. Hoe zou je de eetcultuur omschrijven?
 - a. Welke gewoonten deelt u met anderen?

Voedselomgeving (systeem van voorzieningen)

27. Wat vindt u van het Amsterdamse voedselaanbod?
 - a. Past het bij uw culturele gewoonten?
 - b. Wat mist u in het voedselaanbod?
 - c. Zou u het voedselaanbod willen veranderen?

E. Toekomstige voedselconsumptiepatronen

Identificatie van conflicten en kansen

28. Zou u uw consumptiepatronen willen veranderen?

- a. Zo ja, wat zou u willen veranderen en waarom?
- b. Wat weerhoudt u ervan om het nu te veranderen?

29. Welke belemmeringen voor verandering stelt u zich voor?

30. Welke vaardigheden (koken of voedsel verbouwen) heb je nodig om je voedselconsumptiepatroon te kunnen veranderen?

31. Welk type kennis heeft u nodig om uw voedselconsumptiepatronen te kunnen veranderen?

32. Welke materialen hebt u nodig om uw voedselconsumptiepatronen te kunnen veranderen?

Veranderende voedselpraktijken in een veranderende voedselomgeving

Voorstelling van de toekomstige stedelijke voedselomgeving en gelokaliseerde stedelijke voedselproductie.

33. Als je de kans zou krijgen om je eigen voedsel te verbouwen, zou je dan geïnteresseerd zijn om dat te doen? Waarom?

34. Op welke plaats zou u de lokale landbouw willen zien? (eigen buurt, rond school/werk of ergens anders?)

- a. Waarom?

De vier verschillende scenario's worden besproken voordat de volgende vragen worden gesteld.

35. Welk van de vier scenario's voor stedelijke voedselproductie spreekt u het meest aan? Waarom?

36. Welke elementen van die scenario's zou u in uw eigen buurt geïmplementeerd willen zien?

37. Hoe zou u willen interageren met de lokale voedselomgeving? (hulp in tuinen, buurtevenementen die verband houden met lokale voedselconsumptie of iets anders)

38. Welk scenario zou gunstig zijn voor uw dagelijkse consumptieroutine?

39. Hoe kan deze verandering in de voedselomgeving u helpen bij uw gewenste veranderingen in voedselconsumptie?

Appendix B - Interview Guide English

A. The aim of the research

1. Greetings and introduction
2. Project introduction:
There have been an preliminary investigation that search for possible scenario's of local food production of exotic fruits and vegetables.
3. The aim of research:
The aim of this research is to explore how the transition towards local urban food production and a change in the food environment can contribute to changes in food consumption.
4. Ask for recording approval.
5. Introduction of the main topics of the interview

B. Introduction

1. Could you please introduce yourself?
2. Name, age, gender
3. Country of origin/ nationality(y)(ies)
4. Level of education
5. **When did you come to live in the Netherlands and in Southeast?**

C. Zooming in: practice as performances

Current food consumption practices in relation to health

Diet (Eating practices)

1. **What is your favourite meal?**
 - a. What makes this type of meal special for you?
2. What did you eat yesterday? (breakfast, lunch and dinner)
 - a. Where did you eat it?
 - b. Was this the usual way consuming (business as usual) or was this an exception.
 - i. If it was an exception; what caused this exception?
 - c. Who/What influence your eating patterns? (Infrastructure, lifestyle, practice bundles)
3. What did you eat? How did you eat?
4. Do you share food?
5. What kind of tools do you use while eating?
6. What are the rules for sharing food?

7. What did you eat with friend and family this week?
 - a. Who/What influence your eating patterns? (Infrastructure, lifestyle, practice bundles)
8. What did you eat at work/school or church this week?

- a. Who/What influence your eating patterns? (Infrastructure, lifestyle, practice bundles)
9. What do you eat if you eat alone this week?
 - a. Who/What influence your eating patterns? (Infrastructure, lifestyle, practice bundles)

Cooking (Preparing practices)

10. What do you normally cook yourself?
 - a. Which cooking techniques do you use?
 - b. What kind of devices do you use for preparing and cooking the food?
 - c. What skills do you need for cooking?
 - d. What skills and tools do you miss?
11. Would you like to learn more about cooking?
 - a. Can you explain what you need for that?
 - b. Can you explain what holds you back from learning this?

Buying and growing foods (Acquisition practices)

12. How do you normally obtain your food? From the garden, store, restaurant?
 - a. Percentage where
 - b. Can you explain why there?
13. Are you paying special attention to specific characteristics of the foods?
 - a. What are those characteristics?
14. Would you like to change your way of obtaining foods?
15. Do you have experience with growing your own food?
 - a. If so, what food do you grow?
 - b. Which tools and skills do you need for growing your own foods?
16. Would you like to learn more about growing your own food?
 - a. Why (not)?
 - b. Can you explain what holds you back from learning this?

Health (image)

17. These days, people talk a lot about nutrition and healthy foods. Could you tell me what these terms mean to you and what you know about them? (Knowledge & image)
18. What would 'eating well' or 'healthy eating' look like for you?
 - a. What skills and tools do you need for this?
19. Differences in local or imported foods?
20. In what occupation did you make more healthy choices this week? In what occupation do you make less healthy choices?

D. Zooming out; Practices as entities

Changing food practices in a dynamic interplay between lifestyles, socio-material context, food environment and broader bundles of everyday practices.

Changes in food consumption patterns

21. Have your eating habits changed in recent years?
 - a. What have changed?
 - b. What initiated those changes?
 - c. How did you come to consider changing your diet?

22. In what ways do you think food here and now is healthier or less healthy than when you were a child?

23. Was it hard to maintain cultural diets and eating habits in the Netherlands?

Culture (image)

24. What type of food do people usually eat in your culture? What do they prefer?
25. What is important for you in your relationship with food? What does food mean to you?
26. How would you describe the food culture?
 - a. What customs do you share with others?

Food environment (System of provision)

27. What do you think of the Amsterdam food offer?
 - a. Does it suit your cultural habits?
 - b. What do you miss in the food offer?

E. Future food consumption patterns

Identifying conflicts and opportunities

28. Would you like to change your consumption patterns?
 - a. If so, what would you like to change and why?
 - b. What is holding you back from changing it now?

29. What barriers of change do you envision?
30. What (Cooking) skills do you need in order to be able to change your food consumption patterns?
31. What type of knowledge do you need in order to be able to change your food consumption patterns?
32. What materials do you need in order to be able to change your food consumption patterns?

Changing food practices in a changing food environment

Envisioning of future urban food environment and localized urban food production.

33. If you would get the chance to grow your own food, would you be interested to do so? Why?
34. At what place would you like to see the local agriculture? (own neighbourhood, around school/work or somewhere else?)
 - a. Why?

The four different scenarios will be discussed before the following questions are asked.

35. Which of the four scenarios for urban food production appeals to you the most? Why?
36. What elements of those scenarios would like to be implemented in your own neighbourhood?
37. How would you like to interact with the local food environment? (help within gardens, neighbourhood events that link to local food consumption or something else)
38. What scenario would be beneficial for your daily consumption routine?
39. How can this change in the food environment help you with your preferable food consumption changes?

Appendix C –Dutch Consent Form for offline interviews

In te vullen door de deelnemer

Ik verklaar te zijn ingelicht over de aard, methode, doel en belasting van het onderzoek. Ik weet dat er geluidsopnames gemaakt worden. Ik weet dat deze gegevens en resultaten van het onderzoek vertrouwelijk zullen worden behandeld en alleen anoniem aan derden bekend gemaakt zullen worden.

Ik stem vrijwillig in met deelname aan dit onderzoek over voedsel consumptiepatronen en behoud het recht om op elk moment, zonder opgaaf van redenen, mijn deelname te beëindigen.

Naam Deelnemer

Handtekening

Datum

In te vullen door de onderzoeker

Ik heb een mondelinge toelichting gegeven op het onderzoek waarin ik de aard, methode, doel en belasting van het onderzoek uitleg. Ik zal eventuele verdere vragen van de deelnemer over het onderzoek naar vermogen beantwoorden.

Maartje Molenaar

handtekening

Datum

Contactgegevens voor meer informatie:

Maartje Molenaar

Email: maartjemolenaar@wur.nl

Tel: +31 612618122

Appendix D –English Consent Form for offline interview

To be completed by the participant

I declare that I have been informed of the nature, method, purpose of the study. I am aware that the interview is recorded. I know that my personal details and the data of the study are confidential and only will be shared anonymously to third others. My questions have been answered in a satisfactorily way.

I voluntarily agree to participate in this study on food consumption patterns. I thereby reserve the right to terminate my participation in this study without any consequences at any moment in time.

Name interviewee

Sign

Date

To be completed by the researcher

I have explained the aim and procedure of the study to the participant to the best of my ability. The participant has the right to withdraw from the study without consequences at any moment in time.

Maartje Molenaar

handtekening

Datum

Contact details for further information:

Maartje Molenaar

Email: maartjemolenaar@wur.nl

Tel +31 612618122

Appendix E – Online consent

Onderzoeksinformatie

Stadslandbouw in Amsterdam Zuidoost - Mei, 2021

Waar gaat het onderzoek over?

Het onderzoeksproject ‘stadslandbouw in Amsterdam Zuidoost’ bestaat uit twee onafhankelijk onderzoeken naar de effecten van huidige en nieuwe stedelijke voedselproductie mogelijkheden rond Gaasperplas en in de wijken in Amsterdam Zuidoost. In het onderzoek van Maartje Molenaar wordt de invloed van lokale voedselproductie op voedselconsumptiepatronen onderzocht. In het onderzoek van Merel Schonagen wordt de relatie tussen stadslandbouw en de inspraak van bewoners op hun leefomgeving onderzocht. Als onderdeel van dit project volgen wij het ‘Culinaire Erfgoed Project’ van het AMS Instituut. Hierin wordt verkennend onderzoek gedaan naar de mogelijkheden om verschillende vormen van stadslandbouw in te zetten voor het lokaal verbouwen van exotische groenten rondom de Gaasperplas.

Wat is het doel van dit interview?

In het interview willen we dieper ingaan op uw mening over de invloed van stadslandbouw op uw consumptiepatronen en uw mening en ervaring over de inspraak en participatie in stadslandbouwinitiatieven.

Wat houdt deelnemen in?

- Tijdens het online interview wordt er een **audio en video opname** gemaakt. Alleen de audio opname wordt gebruikt voor analyse in het onderzoek.
- Er zal **vertrouwelijk** met de data worden omgegaan. De data is alleen toegankelijk voor het onderzoeksteam en zal worden ganonimiseerd.
- Het gesprek wordt gebruikt voor onderzoeksdoeleinden. De resultaten van het onderzoek worden gepubliceerd in een rapport en gebruikt voor wetenschappelijke publicaties.
- Deelnemen in het onderzoek is **vrijwillig**. Je kan er altijd voor kiezen om vragen niet te beantwoorden en je mag je ten alle tijden terugtrekken uit het onderzoek.

Door deel te nemen aan het interview stem je in met deelname aan het onderzoek en het verwerken van de data uit het interview, zoals hierboven staat omschreven.

Contactpersonen:

Merel Schonagen (masterstudent)

Merel.schonagen@wur.nl

(+31) 6 14345443

Maartje Molenaar (masterstudent)

Maartje.molenaar@wur.nl

(+31) 6 12618122

Appendix F – Results of Exploration phase Project Culinary Heritage Masterplans

Scenario 1. The Experience Center: Central located and high production oriented

Experience centre that fulfils a central role in the district. An entrepreneur provides innovation and continuity. In the centre, the products are produced and processed in greenhouses, in a vertical farm or another form of agriculture. The products are sold locally, they are fresh and nutritious. The location offers employment in agriculture, but there are also jobs in the services that the company provides.

There is a restaurant meeting room and a greenhouse classroom for the schools in the area. The centre also provides space for an engaged community of residents from the Southeast. They have their own gardens in or around the greenhouses, but they can also help out at the company. In short, the Experience centre is bustling with activity.



Figure 9 . Experience centre scenario

Scenario 2. Oases: Local & social-oriented

In Oases, urban agriculture is spread like a dense network throughout Amsterdam Zuidoost. Urban agriculture can be found everywhere in the district: in streets, on roofs, parks, near schools and sports fields. Being active and together is paramount. Vulnerable residents who are struggling with health problems, exclusion or loneliness are connected to initiatives in the neighbourhood.

There are neighbourhood gardens where young and old eat the vegetables they have grown together. Fruits grow alongside the sports fields. The various cultures exchange recipes with each other at the annual harvest festival for the neighbourhood. Management is organised on a local and low-threshold basis. There may be coordination and (knowledge) exchange at neighbourhood level, for example from the community centres. People feel they own the greenery and that is why it remains clean, whole and safe. In Zuidoost there are already many initiatives in urban agriculture, the first oases are already there, and in this scenario, there will only be more. Thus, together they will be stronger.



Figure 10. Oases scenario

Scenario 3. Place to Bees: Central and social-oriented

Place to Bees is the location in Zuidoost where urban agriculture is all about. All urban agriculture activities can be found in one location, for example around the Gaasperplas. It is an innovative park where you will find school and allotment gardens, a picking and climbing forest, a bee garden but also an innovative floating garden or even a weeding robot. All sorts of things are organised around urban agriculture, such as eateries, food festivals and yoga classes.

So there is always something to do at the location, actively connecting through food is paramount. Producing a lot of food at this location is not a priority, it is primarily a park to experience. Place to Bees does everything possible to involve the neighbourhood in the activities. If you are less mobile, you will be brought and picked up for free. It is a location where you can relax, but you can also help with weeding, pruning and harvesting.



Figure 11. Places to bees scenario

Scenario 4. The Entrepreneurial Square: Local and High production oriented

The Entrepreneurial square forms a resilient network of small-scale (semi-) professional entrepreneurs in local food in Zuidoost. They are enterprises of food producers, processors, logistics service providers (delivery services), market vendors, retailers, restaurants and caterers that originate from and are intertwined with Zuidoost. Together they ensure that there is a year-round supply of local products.

The diversity of entrepreneurs and the range on offer is great. Young or old, a high-tech greenhouse or allotment, sometimes with a social purpose or not, cultivation or logistics, sometimes they work closely together, sometimes they do not have to. The products find their way to residential care centres, schools, the market, the supermarket and the hospital. And if there is anything left over the Voedselbank benefits. A number of the businesses spread their wings after a while, also find new markets for their products or services outside of Zuidoost.



Figure 12. The entrepreneurial square scenario