

# Post-industrial Foodscapes

Changing Food Practices in Gothenburg, Sweden.

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# Abstract

With this thesis I explore what I call the “post-industrial” food movement in Gothenburg, Sweden. By post-industrial food I am referring to the new forms of food production that are emerging in post-industrial urban voids, that is specifically, spaces left unused or abandoned after industrial activity. This is a global phenomenon, as we can see from the Urban Agriculture movement in Detroit and London, for example, where post-industrial structures and land are being repurposed for community and commercial food growing. Yet not only are these sites post-industrial, but the methods of production, distribution and consumption that these models embrace are also stepping away from industrial means and are thus also post-industrial. To illustrate this, I have focused on two urban farming initiatives in Gothenburg who have turned post-industrial voids into productive growing spaces. These are my two main case studies, though I draw in other related examples as well. In addition, I have spoken to actors throughout the food chain to gain an understanding of the new values and practices that are emerging in parallel with these urban foodscapes. I analyze these findings through the lens of Social Practice Theory to understand how these *foodscapes* invite new consumption practices through experimentation and learning. The main questions I ask are: how do these small-scale enterprises, which are idealistic in their conception, survive within the conventional socio-economic context? Who are the drivers in the transition to a more sustainable food system? How can we collaborate for more sustainable, local food supply chains? And lastly, what is the role of politics in accommodating this change?

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# 1 Introduction

Located at the mouth of the River of the Geats (*Göta Älv*), Gothenburg is a natural gateway to Scandinavia and was therefore strategically established as a defensive fortification and trade city in 1621 (Polk 2015). Since then it has experienced a long history of industry and trade, and is still the largest port of the Nordic countries (Isakson, Persson, and Lindgren 2001). While trade, logistics and manufacturing remain important aspects of the economy, the Gothenburg of today is a post-industrial city in physical and economic transformation (Balch 2013). It is in transition from being a predominantly industrial based economy, where the majority of the population worked within industry, to a knowledge and skills-based economy (Mistra Urban Futures 2017). The physical landscape is being transformed through the repurposing of disused industrial land and existing structures which are being developed to create a new city center along the river, linking the already established city center to the peripheral areas. The public transport network is being developed and city planning is working to promote cycling, walking and public transport to reduce the impact of cars in the city and encourage environmentally sound lifestyles. This is a particularly significant cultural shift due to Gothenburg's history in the automobile industry which promoted the use of cars and influenced city planning (Polk 2015). Sustainable building and efficient energies moving away from fossil fuels to renewables are also part of the development plan (City of Gothenburg 2018). These plans do not a physical and economic change, but also a cultural change and a blueprint that promotes pro-environmental behavior. Environmental sustainability is at the heart of the current city planning. However, equally important for the development strategy is a socially inclusive and economically sustainable development. In this way, Gothenburg is exemplary for other cities and communities who aspire to implement a holistic and inclusive development.

A local food strategy for Gothenburg is currently being developed with the aim to increase sustainable food production and consumption and reduce the negative environmental and nutritional impacts of the food supply chain (The City of Gothenburg 2018). Due to the high concentration of the world's population in urban environments, cities are at the forefront of sustainability issues tied to the global food system. It is the role of cities "to drive the ecological survival of the human species

by showing that large concentrations of people can find more sustainable ways of co-evolving with nature” (Morgan and Sonnino 2010). Food systems are environmentally challenging due to their intensive use of climate-sensitive resources such as land, water and fossil fuels (Ibid.). Considering that cities are human concentrated centers and that food is the life sustaining force for all humans, changing our practices around food can be key strategic area in sustainable urban development.

In this thesis I focus on the theme of alternative urban food systems in Gothenburg. Through case studies I draw on examples of grassroots and municipal initiatives to create local food supply chains, knowledge networks, and sites for experimentation of small scale sustainable models. I refer to these spaces as *foodscapes*, defined as “places and spaces where you acquire food, prepare food, talk about food, or generally gather some sort of meaning from food” (MacKendrick 2014). I analyze diverse actors in the emerging local *alternative food network*; networks of food provision that are counteractive to conventional, industrial food sector with a focus on new values such as, ‘transparency’, ‘quality’, and ‘locality’ (Sonnino and Marsden 2006). I will illustrate how these foodscapes and networks are, like the city, post-industrial; they provide knowledge and skills that can inspire new food practices from production, to provision and consumption.

I will analyze these *foodscapes*, the findings of my case studies, through the lens of Social Practice Theory, which I will introduce in Chapter 3, to illustrate how they are able to initiate change in our food practices and thus contribute to the overall sustainable development of Gothenburg. In order to put the current development of Gothenburg into context, I will in the following provide a historical background before introducing the theory, concepts and methodology of my research. The subsequent chapters will introduce the data which is presented through case studies and examples of local food innovations within food production and consumption, followed by an analysis, a discussion and a conclusion of my findings.



*Figure 1* Red Russian Kale growing at the old Götaverken shipbuilding pier, the latest production site of the urban farmers at Kajodlingen.

# 2 Background

## 2.1 The Industrial Past

Gothenburg was established in 1621 by King Gustav II Adolf (Enhörning 2010). At this time, Sweden, Denmark and Norway were at war and therefore the city was built as a defensive fortress in a Dutch style with crossing canals, checkered streets and fortified walls. As Gothenburg was the port with the best access to the North Sea as well as both Norway and Denmark, it was an ideal port for international trade. Shipping and trade thus drove the early development of the city (Polk 2015). Inhabited by Swedes, Dutchmen, Englishmen, Scotsmen and Germans (Ibid.), Gothenburg became a multicultural and international trade hub.

The Swedish East India Company, which imported tea, silk and spices from China between 1731-1813, had a particularly strong influence on the early development of Gothenburg (Polk 2015). Industrial activity increased in the end of the 19<sup>th</sup> century with automotive (Volvo, Ericsson), shipyard (Götaverken) and the Swedish ball-bearing industry (SKF) (Furåker 2010). Industrial production and technical innovations then became the drivers of development in Gothenburg. Volvo, for example, was and continues to be a major actor that has had much influence on the planning of the city. Shipbuilding industries expanded in the central areas of the city at Lindholmen, Eriksberg and Götaverken (Polk 2015) and by the 1970s Gothenburg was world leading in the field (Balch 2013).

Alliances were formed between industrialists, politicians and capital owners on one side, while trade unions and the labor force formed opposing organizations. A strong workers movement gained momentum, supported by the Social Democratic Party which came into power in the Gothenburg Municipal Council in 1922, creating a partnership between trade unions and politics for the first time (Polk 2015). The Social Democrats brought about many social reforms under their slogan “The People’s Home” (*Folkhemmet*) which promoted welfare for all citizens by improving living and working conditions for everyone, as well as education and healthcare for all. “The People’s Home” also refers to the housing policy which is a unique feature

of the Swedish welfare state that was first practiced in Gothenburg and then later introduced nationwide when the Social Democrats came into state power in 1932 (Holgersson 2010).

Gothenburg is also known for what is called “The Gothenburg Spirit,” which is what distinguishes the city from other Swedish municipalities and reputedly promotes the benefit of all its residents (Falkenmark 2010). This spirit dates back to the 18<sup>th</sup> and 19<sup>th</sup> centuries, when the city’s elite contributed charitably to the establishment of many public institutions, including hospitals, educational institutions, libraries and museums (Ibid.). Prior to 1920, businessmen, industrialists and officials were in control of municipal political life and the number of votes an individual could have was based on their income. A wealthy individual could have up to 40 times the amount of votes as a commoner, and there wealthy people would quality as the majority. However, with the introduction of universal suffrage, the working class suddenly had a significant political influence, especially at the municipal level. For Gothenburg, with its large working class population, this meant the majority vote for the Social Democrats in the 1922 democratic election (Polk 2015). From then on the welfare of society was seen more as a political duty than a charitable act, and the culture of donation was reduced (Falkenmark 2010). The “Gothenburg Spirit” was from then on used to describe the cooperation between industry and politics which has shaped the development of the corporatist social democracy and laid the foundations for welfare benefits and labor market legislation (Scase 2016).

### **2.1.1 Economic Decline and the Post-industrial Turn**

The 1960s was the most prosperous time in the development of Gothenburg as an industrial city. Migrants came from the countryside and abroad to meet the labor demand of industrial companies. A “Million Apartments Program” was initiated to create one million new apartments within a ten year period to accommodate the increasing amount of labor migrants. However, by the 1970s the Shipbuilding industry collapsed resulting in workers emigrating which resulted in many empty apartments from the Million Apartments Program, creating economic strain for municipal housing owners (Polk 2015). The economic decline instigated radical opposition movements, including the “green wave” of environmental protests which became politically influential (Ibid.).

As a result of the shipyard crisis and the subsequent economic decline, a stagnation occurred in the development of the city leaving large wharf and harbor areas disused and unoccupied. To stimulate development of these areas and link them to the rest of the city, the municipality established Älvstranden Development (*Älvstranden Utveckling*) which is currently the largest urban development project of the Nordic countries (City of Älvstaden-City of Gothenburg 2018). Älvstranden Utveckling is partially owned Municipal Council, yet they can act privately according to the market, which has strengthened the cooperation between public and private interests in Gothenburg (Polk 2015, Green Gothenburg). From then on, the goal was set to transform a heavy industrial city to a diverse residential and commercial city focused on knowledge, technology and cultural production (Polk 2015). By forming cooperative relations between the municipality, academia and business, the post-industrial development of the city has continued in a modified version of the “Gothenburg Spirit” (Ibid.). In the next section I will elaborate on the transition to a sustainable urban development strategy.

## **2.1.2 Development Strategy Gothenburg**

Sparked by the environmental movements during the 70s, environmental sustainability was put on the national political agenda. The concept of sustainable development as outlined by the Brundtland commission in 1987 was made operational in the local Agenda 21 Action Plan, presented at the 1992 World Summit in Rio De Janeiro (Polk 2015). This inspired many Swedish municipalities, Gothenburg included, to adopt concrete environmental strategies (Ibid.). The policies initiated by the Gothenburg municipality at the time were considered quite radical. In the Comprehensive plan of 1993, for example, the challenge of economic growth and environmental carrying capacity were considered hand in hand, and the development of Gothenburg was to be done through measures that balanced environmental and economic issues (Ibid.).

In the Comprehensive Plan of 1999, the social aspect of sustainability was also integrated into the development plan with the concept of citizen’s power, which described the necessity for public engagement and interests (Ibid.). A social agenda was also important to stimulate social inclusion of immigrants and refugees who had come to Gothenburg as a result of Sweden’s liberal immigration policies. Most

immigrants are concentrated in the housing areas built during the Million Apartments Program, which has caused an issue of segregation (Polk 2015). Social inclusion has thus become a top priority in the transition to a sustainable city alongside the necessity for adapting to the challenges of climate change (Mistra Urban Futures 2018a). The municipality's development plan until the year 2035 stresses the importance of a socially, economically and environmentally sustainable development. On the city's website for green development, the tagline goes as follows:

*“In the Gothenburg region we think greener. With roots stretching back to the days of heavy industry, our region has made the successful transition from an industrial heartland to a greener, cleaner waterfront metropolis.”*(City of City of Gothenburg)

Rather than expanding the city and creating urban sprawl, the Development Strategy of Gothenburg plans to develop urban voids and post-industrial areas within the intermediate city and city center, to “retain and reinforce existing qualities” of post-industrial structures and spaces (The City of The City of Gothenburg 2014, 8). This plan will require much densification, creating a close-knit city where housing, jobs and transport are easily accessible to all urban dwellers. The creation of around 80,000 workplaces and housing as well as an efficient public transport system are also part of the strategy to meet the demands of a growing population. It is predicted that the population of Gothenburg will increase by 150,000 by 2035 (Ibid.).

Gothenburg sees itself as a “sustainable city open to the world” and this stays true to the “Gothenburg spirit” and the historical self-image that Sweden and particularly Gothenburg has as “The People's Home” which strives to work for the benefit of all its residents (Falkenmark 2010). Not only does Gothenburg strive to become a sustainable city, but a city that is open to the world, to immigrants and students, as well as tourists.

### 2.1.3 Green Experiences

Living and researching in Gothenburg for five weeks provided me with an opportunity to observe the Gothenburg culture and get a personal sense of collaboration and sustainability, which were evident from my outsider perspective. I was hosted by a Swedish couple who lived in a municipally owned apartment

complex in the old working class quarter of Majorna. Coming from Oslo, with high rents and an exclusive housing policy, I was impressed to hear that they had a lifetime contract with the limited company “Family Homes” (*Familjebostäder*), and pay a rent of only 6500 SEK for a two bedroom apartment. *Familjebostäder* was established in the 1950s with the vision to contribute to the growing “People’s Home” movement and the mission to provide equal opportunity for housing regardless of ethnic or economic background. *Familjebostäder* is also the company that owns many of the apartments from the “Million Apartments Program” of the 1960s. Aside from social sustainability, the company has a strong environmental agenda to conserve energy, water and other natural resources and reduce household waste by providing thorough recycling opportunities (*Familjebostäder*). During my stay, I perceived an environmental consciousness from the impressive recycling room, the communal courtyard with vegetables and herbs growing in shared boxes, and the shared laundry room equipped with energy efficient appliances. In addition, there was a shelf in the laundry room for exchanging old books. These experiences gave me the impression that Swedish culture (or at least Gothenburg culture) does contain elements of collective, collaborative spirit and a tradition of sharing, exchanging and reusing.

This collective environmental culture was evident out in the streets of Gothenburg as well. The public transport network is effective and affordable, and the bike lanes are extensive, with prevalent bike traffic. One example of an environmental message I perceived was through a number of parking spots around town that had been replaced with bicycle racks designed to look like cars. This sight communicated the amount of space cars take up in our urban environments and how many bikes could fill these spaces instead. I perceived it as a cultural message to encourage residents to cycle instead of driving





*Figure 2* Car shaped bike stands and "Energy and Environmental Engineering" car signify a green shift.

Another green message was received through a number of parking spots around town that were replaced with edible “parks” or “park-ing spots” with flowers, herbs and vegetables that passer-byers could pick. This sight has the potential to spark an interest or a debate about the use of urban space, and the benefits of using public space for cultivation of food. These material spaces in the public eye have the potential to send environmental messages on the cultural level to residents, tourists, and other visitors, signifying a green shift.



*Figure 3 "Park-ing lots" with edible plants and flowers designed by GrowGothenburg*

Second-hand and vintage stores are commonplace, suggesting that re-use is a prevalent cultural message. The re-use of space was also a reoccurring theme during my research, not only of post-industrial space, but also of commercial property. The hosts I stayed with had just opened a used record shop which they were able to accomplish because they were given the opportunity to rent an inexpensive shop-front in an old commercial unit that is waiting for a permit to be torn down. The fact that many of the urban food entrepreneurs I studied were also given short term (demolition) rental contracts gave the impression that private and municipal owned property that is not in use is accessible for small businesses and entrepreneurs to develop their business concepts.

I also experienced a conscious food culture in Gothenburg, with many organic cooperative grocers. Ordinary supermarkets have also a wide selection of organic and local produce, vegan and vegetarian options. Green messages to consumers through marketing are widespread. In addition, restaurants also had many vegetarian and vegan options.

These impressions and experiences during my fieldwork provided first-hand experiences of the green tendencies of Gothenburg and were the starting point of my perspective as a researcher and established the context for my research. With these impressions, together with the industrial past and the transition to a sustainable city in mind, I will now zoom in on the issue of local food systems as a part of the development strategy. In the following section I will provide a brief account of the history of imported foods, followed by an introduction to the National Food Strategy and the current development of a Local Food Strategy in Gothenburg.

## **2.2 Towards a National and Local Food Strategy**

### **2.2.1 A History of Food Trade**

Historically, food has travelled far to and from the Port of Gothenburg. Today the Port of Gothenburg is still the largest port of Scandinavia with 30 percent of Swedish trade passing through (Port of Gothenburg 2015). The Swedish East India Company traded in tea and spices from 1731 until 1813. With improved steam power in the 19th century, ships could make their way up the Göta River. It was therefore necessary to make quays, expanding the Port of Gothenburg (Ibid.). In 1909, the first bananas came into Frihamnen, which was known as the “banana pier” for the entire Nordic region until 2013, when Helsingborg took over. Frihamnen or “the free port” got its name due to the fact that no customs or VAT had to be paid until the goods were taken through the gate, so people would go there to purchase toll free imported goods (Ibid.).

The fishing industry has also been an international success, with herring harvesting stretching back to the 18<sup>th</sup> century. Moreover, the Fish Pier (*Fiskhamnen*) of Gothenburg hosts the largest fish auction in Sweden, bringing together fishmongers and fishermen from all over Scandinavia. Every Monday to Friday from 7 am the auction hall is filled with the latest catch of shrimp, crab, lobster, oysters, mussels, cod, and haddock (Göteborgs Fiskauktion 2018). Wholesale retailers and chefs come down to bid on the selection and prices depend on the weather, quotas and demand (Ibid.).

In the last two decades, however, Sweden has become more dependent on food imports. The food eaten in Sweden is increasingly being produced further away while Swedish food production has decreased (Isaksson 2012). In an effort to become more self-sufficient, more environmentally sustainable, create more workplaces, and still be internationally competitive, Sweden has come up with a long-term strategy to improve and increase national food production. In the next section I will briefly describe this strategy.

### **2.2.2 A National Food Strategy**

In January 2017 a National Food Strategy was presented in Sweden for the first time. The long term strategy aims to increase national food production and in doing so create “more jobs and sustainable growth throughout the country by the year 2030”(Government Offices of Government Offices of Sweden 2016/17). As the Minister for Rural Affairs Sven-Erik Bucht states,

*"With the food strategy in place, food stores and all consumers who want to eat more Swedish food can be sure that there will be more Swedish food to put on the plates both in Sweden and around the world. This is really important for jobs and sustainable growth throughout our country."* (Government Offices of Government Offices of Sweden 2016/17)

The food strategy covers the entire food supply chain and aims to improve the opportunities for sustainable production and consumption for the entire population regardless of social, cultural or economic backgrounds. The action plan covers three strategic areas; (1) rules and regulations, (2) consumers and markets, and (3) knowledge and innovation. The goal is for all these areas to work towards a common goal to create a competitive food supply chain that increases food production, generating growth and employment while also achieving environmental targets and sustainable development (Government Offices of Sweden 2017).

### **2.2.3 A Local Food Strategy**

In 2012 Gothenburg was crowned the “food capital” of Sweden(Mistra Urban Futures 2017). During my research I found that there is a collaborative effort to

increase awareness of sustainable food and training in urban food production. Through education, gastronomy, urban agriculture and social media, new forms of production and consumption are emerging and creating models for a more sustainable food system. However, there is what researcher Gunilla Almered Olsson calls “the missing dimension” – a Local Food Strategy at the political level (2017). She points out that current research and strategies around the themes of urban resilience and sustainable development focus on pressing issues such as transport and infrastructure, renewable energies, design, climate change adaptations and crisis preparedness. Food production and food security are, however, less discussed even though food production is linked in some way to all of the above issues. As she writes, it is “not clear how the footprints of consumption, including food, would be calculated although this is one of the most urgent issues to handle related to urban resilience” (Olsson 2017). Researcher Anna Orru agrees that issues of food have been left on the back burner. She writes:

*“Food is fundamental. Food is the most common and present ‘material’ of our everyday existence. It is an energy supply. This is such a mundane link, food to energy, that it is overlooked and barely discussed in sustainable discourse. What if food was viewed as an energy supply on par with solar and wind, would it then take a more prominent role in the development of sustainable cities?”* (Orru 2016, 11)

The questions of urban food security- who will produce our food, how much, where and for whom- are important questions. Gothenburg is therefore in the process of creating a Local Food Strategy and will be the first municipality in Sweden to have such a strategy. The goal is to make a strategy that links the urban to the rural, preventing environmental and health problems linked to the food supply chain from farm to table. The food strategy will function as a political tool to promote long-term sustainable development and create favorable circumstances for producers and consumers. Moreover, the strategy aims to stimulate entrepreneurship and the creation of jobs (The City of The City of Gothenburg 2018).

The process of creating a Local Food Strategy for Gothenburg began in 2017, the same year the National Food Strategy was announced. The local food strategy will document the food supply chain in Gothenburg from production to post-consumption

and determine which direction to go in the future. As stated on the municipality's website,

*“The food strategy will contain goals and strategies on how the municipality will work with long-term solutions to achieve limited environmental impacts in the food chain, which is one of Gothenburg's local environmental objectives.”* (The City of Gothenburg 2018)

The Local Food Strategy is a political assignment by the Environment and Climate sector in collaboration with Stadslandet, an EU funded initiative by Business Region Gothenburg that has the goal of stimulating business development within food, tourism, logistics, and green industries both in rural and urban areas. The food strategy will thus cover all these areas and act as a link between the rural and urban affairs: *“The goal is to contribute to an increased and sustainable production of food that can lead to growth, more jobs and a more vibrant rural area”* (The City of Gothenburg 2018).

This thesis aims to reveal the potential of urban food producers to contribute to a Local Food Strategy. In addition, I strive to imagine how urban food production can inspire industrial food production or be scaled up without falling into the unsustainable traps of industrialization. I use the term “post-industrialized” to describe what I see as an integration of local food actors into a more sustainable food system of scale, but which keeps the values of these grassroots movements such as, reuse, zero-waste, minimal distance, collaboration, transparency and closed-looped systems. Before I present the case studies that fit under this understanding of post-industrial, I will introduce the theories and concepts used in my research.

## 3 Theory and Concepts

In this section I will present the analytical framework that has guided my research. Firstly, I will introduce the six-pronged approach to sustainable diets as a guideline to *what* needs to be considered in transition to transforming the food supply chain. Thereafter, I will zoom in on the Gothenburg approach to sustainable development through transdisciplinary knowledge production which, like the six-pronged approach, is a cross-sectorial approach to sustainable transition. Lastly, I will introduce Social Practice Theory as a way to understand *how* change in practices can occur. This is the theory I will use in my analysis chapter to dissect the case studies I present.

### 3.1 The “Six Pronged” Approach

Research continues to reveal that the food we eat has a major impact on our health and the health of our environment (Mason and Lang 2017). However, as researchers Tim Lang and Pamela Mason argue in their recently published book *Sustainable Diets: How Ecological Nutrition Can Transform Consumption and the Food System*, our diets and our food systems are tied to much more than nutritional and environmental health. They introduce a “six-pronged” approach to sustainable diets that cover the different areas of sustainable food- from environment, health, social values, quality, economy and governance. That is to say, they take the case of sustainable food beyond the usual definitions of sustainability as social, economic, and environmental concerns. They conclude that actors across and beyond disciplines and throughout the food system- from producers, consumers, civil society and governments- must partake in the transition to a sustainable food system.

They state that, “progress is dependent on how political processes manage four domains of existence: the material (the environment), the physiological (biological processes), the social (human interaction) and the cognitive or life-world (cognition and culture)” (Ibid.4). Their research is informed from the perspective of ecological public health, which holds that policy makers must take the lead when it comes to creating a sustainable food system, and must integrate the dimensions of

environment, health, social values, quality, economy and governance. These six categories were inspired by the work of the Sustainable Development Commission in 2009 and is built on their research (Sustainable Development Sustainable Development Commission 2009). In the following I will provide a short description of these categories to lay the conceptual grounds for what needs to be considered in creating better food systems.

### **3.1.1 Environment**

The environment is in the top three when it comes to the usual sustainability indicators, along with economic and social sustainability. It is an increasing concern that our food systems, from production to consumption and beyond, are impacting our natural environment in negative ways. The agricultural sector of the food system alone is accountable for 30% of global greenhouse gas emissions when emissions from fuel, production of fertilizers and land-use change are taken into consideration (Mason and Lang 2017). Agriculture also accounts for 92% of water use and covers 38% of the earth's arable land (Ibid. 120). Moreover, industrial agricultural practices, which have become conventional agriculture and spread globally, are detrimental to ecosystems by contributing to biodiversity loss, land degradation and pollution of soils, waters and the atmosphere (Ibid.).

Industrially produced food is heavily reliant on fossil fuels across the entire food chain. They are used as during the production process in the form of fertilizers and fuel for machinery, for energy and materials during processing and packaging, as well as during refrigeration and transport (Ibid.). In a transition to a more sustainable food system, reducing greenhouse gas emissions though creating alternatives that are not dependent on finite energy resources is essential.

### **3.1.2 Health**

Human health is affected by our food system and the health of the population is a sustainability indicator, thus the conversion to a sustainable food system must take health into consideration. First of all, there are health risks directly associated with industrial food production. The use of antibiotics on industrially farmed animals to treat, control and prevent disease and stimulate growth is controversial due to the fact



that antibiotic resistance is becoming widespread (Mason and Lang 2017, 96). This has negative health consequences as bacterial infections become resistant to antibiotic cures, and become thus incurable. Antibiotic resistance can be spread from animals to humans through the food supply chain or through horizontal gene transfer, where resistant genes are transferred from animal bacteria to human pathogens (Ibid.). Another health risk that results directly from food production is exposure of farmworkers and civilians to chemical pesticides, insecticides, and fertilizers which can have various health impacts.

Aside from production, a well-known contradiction in the global food supply system is that around 795 million are undernourished due to food insecurity, while another 2 billion are obese or overweight due to overconsumption (Mason and Lang 2017). On the one side there is an inability to access nutritional food sources resulting in micronutrient deficiencies, most commonly of iron, vitamin A and iodine (Ibid. 78). On the other side there is an overexposure to saturated fats, salt, and sugar- energy dense but micronutrient poor foods that contribute to obesity and the development of non-communicable diseases such as type 2 diabetes and cardiovascular disease (Ibid. 78). The selection of these types of food items among consumers are influenced by availability, price, marketing, retailing, and portion sizes.

### **3.1.3 Social Values**

The variations in food choices and eating habits are also inevitably tied to our social values which range from culture, religion, socio-economic status, education, upbringing, generation, gender and more. Therefore, consumer habits are not easily generalizable or predictable, yet they are often steered by what is socially and culturally appropriate or available (Mason and Lang 2017). This is conflicting with the neoliberal doctrine that consumer habits are based merely on individual choice and makes the issue of sustainable food even more complex. The food we eat reflects who we are, where we are from, and in some cases what we stand for. For example, ethical eating has become a priority for many western consumers who are concerned with animal welfare, Fairtrade and organic labelling. These concerns have become global social food movements where individuals shape their personal and collective identity. Food choices are also a reflection of our cultural background. Often globalized cultures tend to hold on to the eating practices of their countries of origin.

Therefore, when it comes to creating sustainable diets and food strategies for culturally diverse cities such as Gothenburg, there needs to be a balance between the *localization* of food supply chains and *globalization* of food culture, where fairly traded goods from developing countries are promoted (Morgan and Sonnino 2010).

### 3.1.4 Quality

Quality is another concern when it comes to consumer choice, yet quality is also a matter of individual preference and is therefore not easily definable. However, there are certain regulatory measurements in the food system that control food quality. When it comes to quality assurance, sensory attributes such as color, appearance, taste and aroma are taken into consideration along with durability and shelf life. Food safety is also an issue, as consumers become more concerned about, additives, genetically modified organisms, and microbiological or toxicological contaminants. Nutritional value and healthiness of food products are also taken into consideration. In the case of industrial food, quality is assured through regulations and food labelling. In alternative food networks, however, a closer relationship between the producer and consumer is the best assurance of quality (Mason and Lang 2017). As Mason and Lang argue,

*“new conceptualizations of food quality have emerged within alternative food networks; from the expansion of local organic food to focus on animal welfare, eating food in season, artisanal or ethical production and heritage, tradition, traceability and authenticity, all of which can be included in a description of food quality”* (Ibid. 208-209).

### 3.1.5 Economics

Food is a commodity and the cost of food has an enormous impact on consumer choices. Those who are economically disadvantaged can't afford quality food. The price of food is dependent on many factors, such as the price of the energy used to produce it, the weather, and the cost of inputs (Ibid. 236). At the same time, the cost of food does not reflect the true value of internalized costs such as agricultural inputs, production, processing, packaging, and waste nor the externalized costs such as the cost of environmental degradation, pollution or the cost of poor health

resulting in poor diets. Agricultural workers and food producers are underpaid, dependent on government subsidies and receive an unfair share of food profits, while large manufacturing corporations dominate in international food trade (Ibid. 240).

In the current capitalist food economy, the waste of resources is abundant. Resources are regarded as capital in the form of monetary capital, natural capital, human capital, and social capital, all of which are exploited (Ibid. 231). Human and fossil fuel energy is wasted, water and land are wasted, and even the food produced is wasted. Another contradiction in the global food system is that roughly one third of food produced globally is lost or wasted (FAO 2018), which is calculated to have a bulk trade value of \$964 bn (Mason and Lang 2017). Most food waste occurs at the production and retail level, while consumers in wealthy countries waste 230,000 tons, amounting to nearly the entire net food production of sub-Saharan Africa (FAO 2011). At the same time an estimated 793 million in the world suffer from chronic hunger (Ibid). To quote Mason and Lang, “Food epitomizes waste ...Some of this waste is pure inefficiency- profligate use of energy, over engineering-but much is failure to recycle, to re-use or prevent.” (249). Moreover food waste is a waste of the natural resources and environments used to produce it, meaning land, water , energy use and pollution in vain (FAO 2018).

Yet economics is just one of the prongs in the transition to a sustainable diet and Mason and Lang hold that the food economy needs to focus the shift to “values for money” rather than “value for money” (251). Value should be seen in the other factors of sustainability I have presented here. One direction is to aim for a circular economy, where all resources are seen as “borrowed” and to be returned into the system (Ibid. 249) rather than capital to be exploited. Behavior change amongst consumers is also necessary to change wasteful consumption habits. However, in this transition, governance must take the lead in making the right policies, which I will discuss briefly in the following.

### **3.1.6 Governance**

The complexity of the issues outlined above make food governance and policy making very complicated when all of the above is to be considered. Neoliberal thinkers see consumption habits as the sovereign will of consumers. However, as

I've discussed, consumer choices are dependent on many variables. It is the role of governance to make the more sustainable choices more accessible on all levels of the food system (Ibid.260). Mason and Lang emphasize that governance is not only the government as in the state, but the “actions, decisions and process roles of many actors, all of whom have a stake in the food system” (Ibid.). Consumers are also actors in the food system, having the potential to pressure progressive policy together with scientific data and organization (Ibid. 307).

The “six-pronged” approach from Mason and Lang that I have introduced in this section offers a framework to understand what needs to be considered in transition to a more sustainable food system. Moreover, it is comparable to the Gothenburg approach to sustainable development as a collaborative effort between stakeholders, which I will describe in the next section.

## 3.2 Transdisciplinary Knowledge Co-Production

Mistra Urban Futures is an international platform that works with sustainable urban development through *transdisciplinary knowledge co-production*. Julie Thompson Klein (2001, p. 7) defines transdisciplinarity as, “a new form of learning and problem-solving involving cooperation among different parts of society and academia in order to meet complex challenges of society” (as cited by Orru 2016).

This approach comes from the standpoint that the sectorial boundaries of traditional policy making are limiting and obstructive to genuine engagement of private and civil societal interest groups. The social and environmental challenges in cities involve many stakeholders and “no single actor has the capacity or power to fully grasp or address this complexity” (Polk 2015, 2). Moving away from the traditional compartmentalization of city planning, policy-making, administration and academic research, *transdisciplinary knowledge co-production* goes beyond academic disciplines and works interactively across sectors and between diverse stakeholders to gain experience and knowledge for sustainable futures.

In Gothenburg, Mistra Urban Futures can be seen as a continuation of the “Gothenburg Spirit” and the culture of collaboration between local business, municipalities, academia and the public/private sectors (Polk 2015,23). The

Gothenburg platform was founded by seven organizations in the Gothenburg region that meet outside their sectors to identify challenges and develop knowledge of sustainable urban development, based on both academic and practical experiences.

Food is one of their focus areas, and research projects within food issues are supported by the research network. The Urban Food Network aims to bridge the gap between research and practice in creating resilient urban food systems. Mistra Urban Futures supports The Urban Food network by bringing together researchers, practitioners, politicians, and actors from the business and non-profit sector (Mistra Urban Futures 2018b). One PhD project supported by the Mistra Urban Futures network which has been informative to my own research is that of Anna Maria Orru on “A Biologically-Centered Framework in Urban Foodscapes.” This project focuses on how urban foodscapes can transform individual behavior, because policy and technology are not enough to fuel a green shift in behavior. As she writes,

*“How would technology solve the relationship between nature and humans? This is a vital question to ask when confronting ways to instill behavioral change in terms of sustainable urban lifestyles which seem to be a significant solution but under-researched. Furthermore, while energy, wind and water were readily discussed, why was food not also considered as a viable resource for urban-making? Food is an energy source, and a common resource for all species.”*(Orru 2016, 4)

Through engaging in urban foodscapes, bodies can gain ecological knowledge and ethos that can “transform our urban conduct by questioning our eating habits: where we get our food from and how we eat it seasonally”(Orrù 2015, 48). In other words, food has agency in societal transformation. In the next section I will elaborate on the concept of agency in the tradition of Social Practice Theory, which will help to strengthen the theoretical perspectives put forward so far.

### **3.3 Social Practice Theory**

A common feature of all the theoretical perspectives presented here is the conviction that we need to acknowledge the contribution of different types of knowledge and experience in order to succeed in initiating change. It is not possible for one actor or one type of knowledge to tackle the many social and environmental challenges posed

by industrial food systems. Mason and Lang's "Six-Pronged Approach" lays out the diverse criteria that needs to be considered when creating sustainable food systems (the what and the why), while Mistra Urban Future goes beyond disciplines in diverse local settings to co-produce knowledge for sustainable urban development (the who and the where). Social practice theory, however, provides us with a theoretical backbone to understand *how* societal change occurs. It provides us with a framework to understand the different ways we acquire knowledge and how this knowledge influences social practices and habits. It is a theoretical framework to understand how change can happen and the different agencies that influence social behavior and habits- from individuals, material objects/spaces, and social contexts.

One of the pioneers of social practice theory was Pierre Bourdieu. He defined the concept of *habitus* to describe the system of skills and habits that humans are predisposed to in a certain social and cultural space (Wilhite 2016, 24). These skills, habits and know-how are inherited and routinized through culture and experience and strongly influence practices. Bourdieu explains that the "presence of the past" is what influences and forms practice. Thus our *habitus* influences our practices. At the same time performances of practices using new material objects or spaces can influence the habitus, in a dynamic relationship that is susceptible to change (Sahakian and Wilhite 2014).

Our practices are anchored in our knowledge and our experiences from the past, which we acquire through three main dimensions; (1) our bodies (physical and mental), (2) our material world (infrastructure, design and technology) and (3) our social contexts (culture, norms, values, and institutions) (Ibid.). The knowledge produced from these dimensions has *agency*. *Agency* is another central concept in the theory of social practice, defined as the ability of something to influence an action (Ortner 1989 as cited by Sahakian and Wilhite 2014). Agency is distributed amongst the three dimensions mentioned above. More specifically, the knowledge we gain through our bodies is also referred to as embodied knowledge. Embodied knowledge is that which we gain through engaging in repeated physical actions, such as when we practice sports or even everyday know-how such as tying our shoes. The material world around us, from infrastructures and buildings to technology, have agency because they structure, or script actions in certain ways. Similarly our actions

are informed by our social contexts and the cultural norms, values and messages that frame the action.

The *distributed agency* of these dimensions is thus the key to changing the *habitus*, meaning that a change in a material space can also influence a change in bodily or cultural practices. Likewise, a change in governance and cultural norms can inform material spaces or bodily practices. In other words, a change in one of the above mentioned dimensions is likely to lead to a change in the other (Sahakian and Wilhite 2014). To break deeply embedded practices it is necessary to tackle all of these dimensions. In transition to a more sustainable *habitus*, change can take form through changes in bodily knowledge (through for example participation in new forms of practice), through changes in the material landscape or the socio-political rules and norms governing a practice.

*Foodscapes* have the agency to activate change by acting as material or cognitive spaces that can influence new practices through bodily experience or skills and cognitive learning (knowledge). By transforming post-industrial voids into foodscapes, not only does it signify a green transition and send a positive message in the cultural dimension, but it also creates spaces for experimentation which have the ability to influence individual behavior (bodies) and thus habits which can be passed on to future generations. In the discussion of the case studies that will be presented, I will analyze my findings under the lens of Social Practice Theory to identify the agencies that post-industrial foodscapes in Gothenburg provide. In the following chapter I will elaborate on the methods used during my research.

# 4 Methodology

In this research project I have used a mixed methodological case study approach, using both qualitative interviews and an online survey. I incorporate ethnographic methods through fieldwork, qualitative interviews and participant observation. The main goal of this approach was to find insights that can be applicable in other contexts outside of the field, as Alex Stewart writes in the *Ethnographers method*, “preconditions for doing such work is, quite literally, that research results can be applied in more contexts than that of the microenvironment of fieldwork” (Stewart 1998, 47). During my research I was driven by a conviction that other cities could learn something from the alternative food movement in Gothenburg. In this chapter I will describe the methodological process of my research project from the initial motive to details of my fieldwork.

## 4.1 Initial Motive

When I started planning my research, I was eager to pick up on an unanswered question that emerged from my previous MA thesis entitled “The Roots and the Revival of Urban Agriculture in London.” I discovered through my research, which was partly historical (the roots) and partly qualitative (the revival) that the motives for farming in London today differ greatly from the motives of the first urban farmers. I found through historical research that the first urban allotments in London were necessities for industrial workers as a means of survival and sustenance just as the urban victory gardens were essential for food provision during both world wars. Similarly, market gardens surrounding and within the city were necessary to provide food for the growing population of London throughout the 16<sup>th</sup> and 17<sup>th</sup> century. Through my informants, I concluded that the motives for growing food in the city today were mostly social (pedagogical or therapeutic) or environmental (green space, access to nature), yet there were few urban farmers that were economically self-sufficient and most were dependent on government or corporate funding. With my concern for the unsustainable food system, I wondered how we could achieve system



change if small scale local farming is not economically sustainable. This question has fueled my interest in urban food production.

From my own personal experience with urban farming in Oslo and establishing the herb garden, *Herbanists*, at the city farm *Losæter*, I am aware of constraints of urban space and the challenges of generating an income from such small scale production. When I heard about the initiatives just 290 km south-east, in Gothenburg, I was inspired to continue my research in urban food production to find out how diverse actors are attempting to integrate socially and environmentally sustainable models within existing economic structures.

## 4.2 Fieldwork

My initial plan was to do a comparative cultural study by doing a case study of one urban food entrepreneur in Sweden and a similar model in England, spending two weeks with each enterprise. However, when I started fieldwork in Gothenburg, my research took a new direction through a snowball effect and I decided to tighten my focus on Gothenburg. Considering Gothenburg's history as well, I thought the agenda for sustainable development was interesting with the background of Gothenburg as a heavily industrial port city with a strong tradition of collaboration and workers movements. I set out to discover what other actors were a part of this movement and spent a total of five weeks in Gothenburg going to lectures, conferences, and museums, working with case studies as well as interviewing informants.

I chose to engage with my main case studies through participation in addition to observing diverse actors in the food scene. I spent most of my time with my two main case studies, Kajodlingen and Stadsjord, but I also participated in a day long course through Foodmaker, a training program that aims to inspire urban food producers and create a knowledge network amongst diverse actors in the food chain, from growers and cooks to municipal workers, city planners and policy makers. I joined the course for a day and interviewed the founder and the course coordinator in depth. All of the cases presented are part of the Foodmaker community whether as former students or lecturers. The Foodmaker community represents the need for a transdisciplinary knowledge network that fuels alternative food system. I also spent a

day at “Inspiration day for Local and Sustainable Food,” hosted by the municipality where most of my informants were present. This was another transdisciplinary knowledge arena where diverse actors from the food chain were present to discuss the benefits and challenges of local food.

During my first round of fieldwork I spent two weeks working with Kajodlingen, two urban farmers that have developed a financially viable model for growing vegetables for restaurants at the disused port of Frihamnen. Kajodlingen has been exemplary in the commercialization of urban food in Gothenburg, inspiring a proliferation of commercial growing initiatives in Gothenburg, which I also explored during my fieldwork. I worked with them for two weeks and interviewed both employees. I also interviewed six cooks whom they collaborate with closely to gain a perspective of the consumer side. The case I set out to study with Kajodlingen was the case of economic viability for urban growers. In the industrial food system, small-scale farmers in general struggle to compete. Small scale urban producers have other challenges, yet as this case study shows, with the right approach, commercial urban farming is possible and can even have some advantages. The success of Kajodlingen has inspired other private and municipal initiatives that aim at increasing the amount of food produced in the city by working in collaboration with other actors in the food scene to promote nutrition and organic farming on arable urban land. One of these projects is through the municipal property office, called Stadsnära Odling, which links those who wish to grow commercially with urban land that is suitable for growing. These initiatives are considered in the same case study as Kajodlingen.

I soon found out that Kajodlingen was just one of the initiatives in Gothenburg that was using post-industrial space to create a closed-loop alternative food system. They told me about Stadsjord, the pioneers of the urban farming movement in Gothenburg who have been filling post-industrial urban voids with pigs and gardens for years, and are currently raising fish and growing vegetables in an aquaponics system at an abandoned industrial slaughterhouse. Stadsjord then became my second case study. During my second round of fieldwork I attended two lectures at Stadsjord and toured their aquaponic system. I also attended a lunch seminar about industrializing aquaponic fish production in Sweden, where I heard more perspectives on aquaponic

fish production and got to taste smoked catfish from the aquaponic system. In addition I conducted an in-depth interview with a representative of Stadsjord. This case represented a technological innovation to combat an environmental problem, namely, the unsustainability of conventional fish farming and the overfishing of oceans. The aquaponics system at Stadsjord, like the model of Kajodling, is a replicable model that can inspire the future of urban food production. Stadsjord and Kajodlingen share similar values and ultimately have the same goals, yet the methods and technology they use are different and have different challenges. With the case of Stadsjord I discovered the political challenge of scaling up and commercializing urban food production, particularly those of a technological nature.

My fieldwork was a patchwork of ethnographic participation, observation, listening, watching and even tasting. Most importantly, I had the opportunity to interview various informants in the urban food scene who are driving the movement forward. In the following section I will elaborate on the conduction of interviews.

#### 4.2.1 Transdisciplinary Qualitative Interviews

In order to gather perspectives from diverse actors in the alternative food networks of Gothenburg, I interviewed informants from various expertise and backgrounds outside of academic disciplines, hence the use of the term *transdisciplinary* (Polk 2015). I had in-depth semi-structured interviews with urban growers, an urban fish/pig farmer, six cooks, a cycling apple presser, municipal employees, a politician, an architect, and two representatives from Foodmaker, an entrepreneurial food training network in Gothenburg. Many of my informants had also worked in other sectors of the food scene, for example, one municipal worker was also a commercial farmer on the side, the fish/pig farmer had also worked for the municipality and within academia, and the apple presser had also worked within organic certification. In this way, different sectors and types of knowledge and experiences overlapped and intersected. Moreover, there was an obvious collaboration and network between these actors, as informants would mention each other and recommend that I should speak to one another, which led to a snowball effect during my research. The questions I asked varied from informant to informant, as I altered the questions asked according to their respective expertise and backgrounds. All together I conducted a

total of 17 semi-structured interviews that varied in duration from 20 minutes to an hour. All of the interviews were recorded with consent, though some of the information that has formed my understanding was not recorded or was in the form of informal conversation.

### 4.2.2 Online Survey

To gain a consumer perspective I created an online survey for customers of REKOring which is used by many of my informants, both producers and consumers. REKOring is a Facebook group where local producers can advertise what they have in season every week. Customers can place an order and pay via a telephone application to reserve their orders, which they pick up directly from the producers at a pre-arranged pick up point. The survey included questions about the motives for using REKOring using the criteria presented in “six-pronged approach” from environmental, health, social values, economy, quality and governance.

### 4.2.3 Limitations of my Research

Besides the usual time constraints characteristic of most research projects, there are other limitations to my research findings. For one, given the diversity of the perspectives of my informants, it may be difficult for my findings to be replicated. While these findings might not be generalizable and objective, they offer *perspicacity*, which Stewart defines as, “the capacity to produce applicable insights”(Stewart 1998, 47). The diversity of perspectives from different disciplines and trades in the alternative food scene in Gothenburg could also contribute to the objectivity of my research given that it transcends perspectives, giving a more holistic view.

Another factor that could have limited my understanding was language barriers. I conducted most of my interviews in Norwegian, which is my second language, although I lack certain academic vernacular which sometimes made it difficult to understand or make myself understood. Since my informants were all Swedish, there were some communication difficulties due to differently terminology for many words in Norwegian and Swedish. All of the quotes presented in what follows are my own translations.

#### **4.2.4 Ethical Considerations**

Due to the public nature of some case studies, it is difficult to keep individual identities anonymous, however all quotes are used with consent from the informants. Otherwise they are only quoted by their profession or the organization they represent.

# 5 Case Studies: New Forms of Production

## 5.1 Post-industrial Food Production Gothenburg

The term “post-industrial” was coined by Alain Touraine (Touraine 1971) and was used to describe the transition from a machine dominated goods producing society to a service based information society. However, as sociologist Dan Bell argues, the transition to the latter does not displace the former, as industry remains an important aspect of the post-industrial society, yet it is not the main livelihood for the population. Rather, information technology, education and professional services have become the main employers of the population (Bell 1976). This is the case in Gothenburg. Manufacturing and industry are still important economic activities for the city, yet there has been a shift of focus on growth in other sectors based on knowledge, technology and innovation through collaboration between the academy, the municipality and the business world (Balch 2013).

Alternative food systems in post-industrial landscapes share the qualities of post-industrial society that Dan Bell describes. Urban Food entrepreneurs are minimizing distance between the producer and the consumer, offering personalized and even customized service through the use of modern information technology. Moreover, they are producing food without mechanical and chemical industrial inputs. The use of human energy and muscle has returned, and in some cases pre-industrial methods such as following the seasons and soil fertility have returned. Unlike industrial food production, which is invisible for the consumer and often far away, post-industrial urban food production is accessible and visible for the consumer. In the case studies and examples I will present, the consumer can take part in the production process, blurring the lines between consumer/producer. In the case of Gothenburg and other post-industrial cities, urban food producers are redefining abandoned industrial land and buildings and making sustainable closed loop systems and examples of a circular food economy.

Perhaps the biggest shift from the industrial food system to a post-industrial food system is the shift in values of these producers. Instead of a desire to mass-produce and make a profit, these urban food entrepreneurs are driven by a will to contribute to positive societal change and create socially, environmentally and economically viable alternatives. They work in solidarity with competitors and customers and “borrow” the resources available in the city to create close-loop systems and examples of a circular economy. In the following I will present case studies of just a few of the many initiatives that I came across during my research.

## 5.2 From Growing Boxes to Forks: Kajodlingen



*Figure 4* Drawing of the Kajodlingen logo on a container at the Frihamnen production site.

### 5.2.1 A New Model in an Old space

The old port of Frihamnen (the free port) is today part of Älvstranden Utveckling, the largest development project of the Nordic countries that aims to create a new city center along the riverside. At Frihamnen the development is already visible, and one of the projects is a public park in an old bus parking lot called the Jubilee Park which

features a children's playground, an architecturally designed public sauna, and community growing boxes. Adjacent to the jubilee park is the commercial urban farm Kajodlingen, which is the case study I will present in this section.

Frihamnen is historically a port with a reputation of exotic foods transported from long distances such as tea, spices and bananas. For many years the pier has been abandoned, however, the last two growing seasons it has been used as a production site for local greens that are delivered to the city's farm to table restaurants through Kajodlingen, which translates as "Port Cultivation." Founders Jonas Lindh and William Bailey started experimenting with commercial production of salad greens, cabbages and edible flowers on the other side of the river at Masthugskajen in 2015, with 35 square meters of cultivated space in raised beds. The next year they were given the opportunity to increase their production at Frihamnen through a deal with the municipal property office and Älvstranden Development, who offered them a 700 square meter space for 2 SEK/ m<sup>2</sup> yearly (1400 SEK). The municipality also paid for the 35 raised beds and soil made from the city's organic waste.





Figure 5 William from Kajodlingen watering the cabbages.

Both Jonas and William come from a community gardening background, but felt that it was not satisfying enough. They wanted to test out a commercial model to see if there was a market for urban produce. As William described,

*“We both come from Community gardening, but we felt it wasn’t satisfying for us and we wanted to try commercial gardening. So that’s how we met and that’s the center of attention: to try and make it commercial.”*

Kajodlingen uses a cooperative economic model, where the workers themselves Jonas, William and one IT worker own and run the business. Their income is dependent on the time they put into the company and the revenue they generate. Initially their customer basis was Michelin guide restaurants who they thought would be open to the idea of freshly harvested vegetables from nearby. They contacted four

restaurants while they were building the first boxes and all of them said yes immediately. In the first season of 2015 they didn't sell so much, but they were able to pay their yearly rent and get the feeling for selling to see if the model could function.

*“Since 2015, which was more of a start/test year so there was very little, we only earned a few thousand, but it was still important to sell the first year to get the feeling of selling and understand that it works and have faith that this fresh model works.”* (Interview with Jonas)

Since 2016 they have been selling enough to support the two of them financially for the growing season reaching an average monthly income of 12,000 SEK each after tax.



*Figure 6* Polyttunnel at Kajodlingen's Frihamnen site.

## 5.2.2 Proximity to Customers

What is unique about Kajodlingen, besides the fact that they are growing vegetables on an abandoned port in the middle of the city, is the relationship they have with the cooks at the restaurants they deliver to. The cooks are what make their model feasible because they are the most concerned about the freshness of the food, the quality, and the selection. Without cooks, there wouldn't be a market, as William from Kajodlingen said:

*“We wouldn't exist, because we get a lot of pep as well and you feel like you meet a lot of people from different branches that have the same thoughts, so we gain from each other in that way. I want to continue selling to chefs because you get so much knowledge from them so it's a positive. Otherwise you don't want to grow in the dark so to speak, you want to test it on reality all the time and get feedback and that's worth a lot.”*

The proximity to the customer is an advantage for urban food producers. They can avoid the packaging, middlemen and travel which are characteristic of the conventional industrial food system. They can harvest and deliver produce by electric bike to several restaurants within an hour. Logistically it is more practical with this type of model, as Jonas described:

*“We can for example deliver our produce directly harvested from the soil, without washing or packaging them, because we can leave that responsibility to the cooks, because they would do it again anyway if we did wash them. That's normal for them. The rule that we have to consider is the transport of the vegetables from here to there and then we have to for example have food safety certified boxes that are clean.”*

In addition to delivering to restaurants, Kajodlingen also invites private customers to come to the farm to harvest and purchase produce. During the summer months, especially in July when the vegetables are at peak, many restaurants close, which was initially a challenge for Kajodlingen. However, they started an open harvest day called “Pick-n-Pay” where anyone could come and harvest their own vegetables and pay by weight. This has turned out to be successful because private consumers can pay a bit more for less produce, while restaurants need more in bulk for a cheaper price. The Pick-n-Pay days also have a function for the community by making a new form for production visible and accessible. When I asked if they thought Kajodlingen could have a positive impact on communities and the environment, Jonas answered:

*“Absolutely, both socially and environmentally. You can see this when we have open garden harvest days, people are super happy and they get a sort of satisfaction from doing something right.”*

Proximity to consumer and customer networks is definitely an advantage that urban farmers have compared with farmers in the countryside. As William described:

*“It’s easy for us for meet customers and make and maintain daily contact with restaurants. So this is very important and makes us more successful than many farmers in the country, because they don’t have time to find these kinds of collaborations.”*

Social media is also an important factor in marketing and communicating urban food production. Kajodlingen is active on Instagram and Facebook, and have a website describing their services which vary from restaurant delivery, pick-n-pay, courses, lectures, events and garden design for businesses who wish to switch out their “grey for green” (Kajodlingen). This season they will also sell their produce through an online market the Facebook group “REKO ring.” REKOring is an important factor in the local food movement of Gothenburg, which I will elaborate on in the following chapter where I will introduce the consumer case studies.

### **5.2.3 Proximity to Resources**

Not only is proximity to the consumer an advantage for urban farmers, but also for the environment. The proximity to the customer also means that the produce can be delivered straight away and hence it does not need to be refrigerated or transported by car, so you can eliminate fossil fuel emissions. Moreover, there is a proximity to urban waste products that can be re-sourced and put back into the soil, so urban farms have the potential to reduce waste and, “try to close the loop between waste from restaurants and parks and bring it back into the soil here” (Interview with Jonas).

The small scale nature makes it possible to manage without machinery and tractors that run on fossil fuels. Moving away from fossil fuels is another argument for small scale urban food production. When I asked William if small scale urban farms could compete with conventional industrial agriculture his answer was:

*“Ah, nooo. We’re a long way from that I guess. But I don’t know, they are cheating, they run everything on oil, we run by hand. So I think they’re cheating. It’s a big question because in many ways we are more effective than the conventional farmer because we use the square meters more effectively, I would say. They harvest once and they sell once.”*

This is not to say that urban farming is superior to rural farming, but that urban farming can be complementary to sustainable rural farming and help mitigate food miles and emissions. There are certain vegetables with shorter shelf lives that can grow in small spaces and harvested many times, such as salads, leafy greens, herbs and edible flowers. Urban farms such as Kajodlingen can make use of otherwise empty urban spaces and make them productive, green oases. One of the visions of Kajodlingen is to make a model that is simple and replicable. They hope to inspire other entrepreneurs to replicate their model. As William explained:

*“I think you can have many more commercial gardens where people buy their salads during the summer and maybe tomatoes as well because you don’t have to go to buy at the ICA or the supermarket during the summer. Maybe you can go to your commercial farmer and maybe that commercial farmer is situated on a rooftop with greenhouses that run on heat from the house”*

Kajodlingen have proven that their model works by replicating their model in new spaces. In the spring of 2017, they made a rooftop garden at the Clarion Post Hotel, which I will elaborate on in the next section.

#### **5.2.4 Taking it to the Next Level: Rooftops**

One of the restaurants that William and Jonas deliver to is a Japanese/Swedish fusion restaurant on the first floor of the Clarion Post Hotel called *Vrå*. After using Kajodlingen’s services for a while, the head chef thought it would be nice to have her vegetables grown even closer to the kitchen. She thought of the empty rooftop and mentioned to the owners that Kajodlingen might be interested in creating a garden there. The owners were positive to the idea and so were William and Jonas, so in the spring of 2017 they made a 70 square meter roof top garden with a greenhouse. They made a deal that the hotel would pay for the construction, the soil, and buy everything that they grow. They supply both restaurants in the hotel, *Vrå* and *Norda*, and the chefs can influence what they grow and how much, and even come and harvest the vegetables themselves. This is a unique collaboration between producers



and consumers, where they collaborate to find the best economic circumstances for both actors, which is also more ecologically sound. Moreover, they have turned an empty unused space into a beautiful productive space. The new form of production that William and Jonas offer has been strengthened by collaborating with a financially strong company, such as Clarion Hotel. This collaboration has also inspired other companies to become interested in collaborating with them, while other urban farmers are proliferating by following their example. In the following, I will provide some examples.



*Figure 7* Kajodlingen's rooftop garden at Clarion Hotel.

### **5.2.5 A Replicable Model**

The model of Kajodlingen is definitely replicable, as they prove by creating gardens in different urban spaces. In the fall of 2017, ICA supermarket chain contacted Kajodlingen to see if they would be interested in creating a rooftop garden in 2018 on one of their stores to cultivate salad greens that could be sold in the store. Unfortunately, the plans weren't approved by the property owner who did not want

to take the risk. However, the interest shows that there is a business potential for urban farmers. In the spring of 2018 Kajodlingen moved their production at Frihamnen to another pier called Lindholmen, which is the old shipbuilding site of Götaverken industry. The location is in the middle of the “Rive City” development and this time they will be independent of the property office and will be renting directly from Älvstranden Utveckling at a much higher rate, but with a five year contract. The first year they will pay 30,000 SEK, then it will double to 60,000 SEK for 2019 and then finally up to 90,000 SEK in 2020. In addition, an investment of 100,000 SEK was necessary to build new growing beds to cover a 500 square meter area. They are also planning a small project with Volvo for whom they will make an urban gardening demonstration. After this project is finished they will incorporate these beds to their production site adding 150 square meters more.

These new investments will require a much higher turnover, but Jonas and William have a plan for their economic sustainability. At this new site they will rent out some of the space to others who wish to grow commercially in order to get more people involved at the site and someone to share the rent with. They are already renting space to two women who are growing cut flowers for local restaurants, shops and pick-n-pay days. They call their company “Blomsterpiren” which translates to English as “The Flower Pier.” In addition, they plan to rent out the space for courses and events. For example, this summer they are already planning a music festival at the site. Even though the rent will be much higher at this area, there are many advantages of moving. First of all, they have a longer contract, which guarantees them at least five years to stabilize and develop their model. Secondly, this spot aims to be more of a social meeting place and will have the capacity to reach out to a larger audience, with the potential to make more of an impact and thus maybe a chance to stay there longer than the initial contract. For instance, every Saturday there is a large market in one of the nearby market halls called “Lindholmen Streetfood Market.” On these occasions Kajodlingen plans to open their gates to the public to harvest their own vegetables. Moreover, there are a number of food trucks and restaurants who can potentially buy their produce.

The fact that both a large hotel chain and a supermarket chain are interested in supplying produce from their rooftops shows that there is a business potential for

urban food producers. Not to mention that Volvo is also advocating and supporting urban agriculture. Kajodlingen has been exemplary in proving that it is possible to grow commercially in a small space and on a rooftop. Their success has been a catalyst for similar movements in the municipality and other urban food incubators. Kajodlingen was the first purely commercial project supported by *Stadsnära Odling*, which is the municipal property office's initiative to stimulate urban farming by linking arable urban land and space to those who want to grow. Some of their projects are non-commercial and focus on providing allotments for Gothenburg's citizens to grow their own food, but in 2016 they initiated a project called *Stadsbruk Göteborg* (Urban Agriculture Gothenburg) that links urban land with those who want to grow commercially. On the website it states, "The aim of Stadsbruk Göteborg is to create jobs and to contribute to a green, ecological and compact city"(The City of Gothenburg 2018 ). In the next section I will describe their current project which is stimulating models similar to Kajodlingen.

## The "Test Beds"

Stadsbruk Göteborg was initially a temporary project, but a more permanent, long term project has emerged from it in the form of two "test beds" that are being leased out in Skogome and Angered, both areas that are just outside of the city and concentrated with a large immigrant population. The land in Skogome was previously used for cow grazing and the land in Angered was unused. Both areas were chosen due to the fact that there are no plans for development until at least 25 years from now. In this way, the municipality can guarantee that the leasers have the potential to develop long term growing enterprises. The municipality provides basic infrastructure such as toilets, running water, storage and a source of shelter which the leasers will pay for <sup>1</sup> in addition to a yearly price of 3000 SEK per hectare. The spaces leased vary from 500-1000 square meters. The yearly cost is estimated to be around 1500 on average per leaser (Interview with Urban Agriculture Coordinator, October, 2017).

Otherwise, the conditions for lease are that the cultivation must be organic and for commercial purposes. The reason for this is to encourage the growers to grow more

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<sup>1</sup> At the time of the interview the costs of the infrastructures had not yet been finalized.



than they would had been growing on their free time and thus increase the amount of sustainably produced food in the city limits. Increasing urban food security is the ultimate goal of this initiative. To quote one of the urban agriculture coordinators,

*“If more food is grown locally, we become less dependent on complex national/global transport systems and routines. A flood of growers also becomes more resilient than few single producers.”*

Aside from striving for economically and ecologically sound growing enterprises, the testbeds at Skogome and Angered have been agentive as plots for social integration offering a possibility for people from all backgrounds equal opportunity to try growing commercially. They have not angled Stadsbruk Göteborg as a social integration initiative; however, the opportunity has been beneficial to immigrants with a background in their home country in agriculture. So far there are eleven leasers in total between the two areas and about 3-4 of them come from this background. These testbeds have created an opportunity that these leasers would otherwise not have had without money to invest in infrastructure and equipment. Otherwise the leasers come from a gardener training background or just a strong enthusiasm to try out a model “à la Kajodlingen” (Interview with Urban Agriculture Coordinator, October 2017) and sell to local restaurants. About half the leasers are women and the age group varies from 30-60. Thus so far the testbeds have engaged a diversity of social backgrounds within the first eleven leasers.

So far about two thirds of the leasers have started growing on the testbeds and a few have tested different platforms for selling including restaurants, REKOring and even the Kviberg market which is known for cheap competitive prices and surplus trading. The rest are still preparing for the 2018 season. In total there is space for 35 leasers between the two testbeds and a potential to open another test bed in Southern Gothenburg. Other actors are also creating opportunities for aspiring urban farmers, such as GrowGothenburg, which I will present in the following.

## **GrowGothenburg**

GrowGothenburg is another platform that aims to increase the production of food in the city by linking those who wish to grow commercially with land from private and public actors. With a background in design and architecture, the founders of Grow

Gothenburg have been dedicated to stimulating participation in design processes and making urban agriculture accessible and visible to the public. They are the designers behind the “park-ing” lots pictured in figure 2. Since before the establishment of GrowGothenburg, founder Johnathan Narraine has been hosting free Food Safaris together with the FoodPrintlab, “an organization of architects, city planners, engineers and biologists with a collective passion for designing our future food systems”(GrowGothenburg 2018). GrowGothenburg was established officially in 2016 and their main project has been the development of their online platform which functions as a meeting place to inform the public about urban farming and link landowners to those who would like to grow. Together with the municipality and Gothenburg Green World 2016 they established an interactive map that shows existing urban farms and available land for growing. The aim of this platform is to increase awareness and access to land in the urban farming movement “by sharing land, knowledge and project ideas”(GrowGothenburg 2018). One of my informants had found a piece of land through Grow Gothenburg and started a similar model to that of Kajodlingen by growing greens to deliver to local restaurants under the name of Stadsgrönt (Urban Greens). Stadsgrönt was also inspired by the success of Kajodlingen. Grow Gothenburg collaborates with a diverse actors from the municipality, the business sector, the education sector, city planning and design. Their approach is congruent to the argument in this thesis that food system change is dependent on the engagement and collaboration across and beyond disciplines and economic sectors. As they state on their website, “designing food systems is something we all need to participate in - and it is done through education, mobilization and active participation in the design of the built environments”(GrowGothenburg 2018).

In this section I have presented the case of Kajodlingen and the “butterfly effect” that occurred as a result of their success in proving that commercial urban farming is possible. The emerging movement occurring on various levels is a positive development in the post-industrial food scene of Gothenburg. In the next section I will introduce my second case study, who is taking urban food production beyond soil and pallet boxes.

### 5.3 Beyond the Pallet Box Garden: Stadsjord



*Figure 8* The post-industrial slaughterhouse where Stadsjord has their aquaponic fish and vegetable system

Niklas Wennberg, the founder of Stadsjord, initially worked theoretically with sustainable design solutions at Chalmers University of Technology. He founded Stadsjord in 2009 as an initiative to bridge the gap between theory and practice around the theme of sustainable food production in Gothenburg. Stadsjord has since been a pioneering knowledge center that has been experimenting with projects throughout the city in collaboration with diverse actors. Many of their projects are demonstrations of how to make productive use of what Niklas refers to as “urban voids” in the city and engage public interest by cultivating public spaces. The projects at Stadsjord are partially funded as research, otherwise they generate income through lectures and events that communicate issues around urban food production and sustainability. In the past, they have also sold produce, and today they are selling aquaponic fish to restaurants and private customers through REKOring. The main project of Stadsjord currently is to industrialize and scale up aquaponic systems in Gothenburg and other parts of Sweden, however they have also experienced with other models of farming in the city, which I will discuss before presenting the case of urban fish.

### 5.3.1 Pigs Plow the Way

In order to “materialize the talk” around urban farming and sustainable design, Stadsjord started their first projects in 2008 when they brought pigs to an area in Høgsbo. The pigs were fed on the city’s food waste, from household waste, to supermarket waste, excess apples and even brewery waste. These were the first pigs in Gothenburg since the second world (Interview at Stadsjord, October 2018). The pigs are effective in “plowing” lawns and eating difficult weeds such as thistle and ground elder to prepare the land for growing food. After the first piece of land had been prepared in Høgsbo, Stadsjord began growing food. From the beginning, Stadsjord has made it part of their mission to create space for entrepreneurship in urban farming and were the first urban farm not only to sell produce from their farm, but to inspire other farmers to commercialize their business by offering courses in food entrepreneurship.

*“We wrote in our mission statement that we wanted to create space for entrepreneurship. Eat all the food up yourself if you are hungry, give it away if you are generous, or sell if you want to earn money. So we did it as a provocation or a discussion. There needs to exist a buying and selling dimension for urban agriculture. So we suggested this to many associations in Gothenburg that you must be able to sell products.”* (Interview at Stadsjord, October 2017)

The pigs have been used at about 15 sites around the city to prepare the soil. The second project of Stadsjord, however, was done at a site where there was no soil and seemingly no hope for an urban farm. They moved to this site in 2011, an industrial wasteland in Kvillebäcken described as an “urban void with contaminated land, a huge plot with zero faith in an urban farm at this spot by a gas station and a wrecking yard” (Interview Stadsjord, October 2017). At this location called “Kvartersodlat Kvillebäcken” they had a green house, four containers and raised pallet beds. This was the first project supported by the municipality’s initiative *Stadsnära Odling*. Every Thursday they hosted a market, where local producers could come and sell their produce. The market was called “Salupall” (food pallet) a play on the Swedish word “Saluhall” (food hall). My informant described,

*“Everyone who had quality certified produce could sell at our market, the only thing they needed was a certificate, so that those of us who arranged Salupall could come and control their production kitchens and gardens. But you could represent your own garden and products.”* (Interview at Stadsjord, October 2017)

They would host garden parties with over 1000 attendees and 500 paying lunch guests, creating a green social arena in a former urban wasteland. Transforming “urban voids” has been a mission for Stadsjord from the beginning, and even though the gardens may not last forever due to development projects, “the experience of the garden stays in our hearts and our minds” (Interview at Stadsjord, October 2017).

From the beginning Stadsjord has been a force in commercializing urban farming and initiating the discussion about urban farming as a source of urban sustenance, rather than merely a social or pedagogic platform. Stadsjord has been experimenting with different models and since 2015 they started experimenting with aquaponic fish in an abandoned industrial slaughterhouse in the old part of the city. In the next section I will elaborate on this project.

### 5.3.2 Technological Foodscapes: Aquaponics

For many the thought of food production is most commonly associated with soil, and taking care of the soil is paramount to sustainability and food security. Perhaps less discussed in the food debate is the importance of taking care of the oceans, which cover 71% of our earth’s surface and hold an estimated 50-80% of life on earth (MarineBio Conservation Society). Global fish stocks and marine biodiversity have been depleted as a result of unsustainable practices such as trawling. Moreover, the amount of fossil fuel energy used in industrial fishing is not sustainable, and nor are global consumption patterns of fish. In Sweden, for example, only 12% of the fish eaten is from Sweden, while 88% is imported (Lecture at Stadsjord, October 2017). In fact, seafood is one of the most highly traded commodities on the planet (Jones 2017). Aquaculture is one alternative to industrial fishing that can be a more sustainable solution if done right. As Robert Jones of the Nature Conservancy writes, *“If we could grow more seafood locally, it would shorten the seafood supply chain, reduce seafood’s carbon footprint, stimulate local economies and provide local jobs”* (Ibid.).

Aquaculture in oceans is one option, however, Stadsjord would say leave the ocean alone and produce your fish and your vegetables locally and simultaneously in a closed-looped aquaponics system where the vegetables are fertilized by fish waste (ammonia) that has been converted to nitrate. Stadsjord saw the potential of the post-

industrial slaughterhouse as a space to experiment with an aquaponics system. In this system one ton of fish provides nutrients for ten tons of vegetables (Lecture at Stadsjord, October 2017). The fish do not need any antibiotics or animal proteins as they do in other aquaculture systems. Moreover, the fish in this system are Tilapia and Catfish, which are fed with a feed made from the city's food waste and insects that are raised by brewery waste 50 meters away. Founder Niklas Wennberg writes, *"We need to focus on cultivating omnivores and herbivores, or 'water pigs' and plant eaters. Moving down in trophic levels means that we present good food at a lower price to the consumers and at a lower cost to the oceans and the overall environment"* (Wennberg 2017).



*Figure 9* The fish feces are pumped into the highest tank where the ammonium is converted into nitrate.

Fish food is the only input aside from the energy used for electricity. Arguments against aquaponics might hold that they are not sustainable because of the fact that they use regular energy, however Stadsjord states:

*"We use regular energy and we have pumps and lights and stuff, but it's extremely little energy use compared to fishing with big diesel motors. Also we are in the middle of the city, so there is a lot less transport. The food comes from the city, the feed is from the city, and the consumer is in the city. So production is local and the distribution is local. There are fish that are flown around the world. It's*



*completely crazy how much energy is used here. So our model is extremely energy effective.”*



*Figure 10* The nitrate is then pumped into these containers to feed the vegetables.

In 2017, they raised two tons of fish and in 2018 they expect to double their production. At the current scale they are able to provide 100 people in Sweden with fish for a year (Interview Stadsjord, October 2017). Stadsjord hopes to scale up urban food production in order to integrate it into the industrial food system with the ability to compete with conventional products. Stadsjord feels that the municipality does offer enough support the development of the aquaponic system, preferring visible urban farming initiatives that are aesthetic and give an impression of sustainability to the public. Though there has been an increased focus on urban agriculture in the municipality since Stadsjord started, my informant felt that the development has happened too slowly,

*“There are many that understand me when I say that I am a little tired of the pallet gardens, that the development has happened way too slowly if it’s going to be realistic to talk about urban farming as a way of providing the city. The profitability*

*that Gothenburg has set up fuels the doubt that urban food production can provide. There are way too small volumes that are selected from the municipality. If there was an effort to provide more food, with for example aquaponics, you could show that urban farming does not only have a social function, but also has the ability to provide food. And this is what they haven't done.”* (Interview at Stadsjord, October 2017)

However, my informant does give credit to the municipality for being one of the few municipalities that has a budget for urban farming:

*“At the same time we are one of the municipalities that has a budget to develop these strategies. They have allocated a specific budget and in certain sectors there has been a progress, but not enough for followers to stop criticizing urban farming as a social symbol.”*

Though urban farming has received more attention and support in recent years than it has in the past, it is questionable whether the municipality or the food policy makers and urban planners see the potential of urban farming to *provide* food for city dwellers. The fact that Kajodlingen and models similar to theirs are more easily proliferated may indeed suggest that visible, simple models are more accepted because of their ability to send a cultural message of green development to both residents and tourists in Gothenburg. In other words, visible urban farming initiatives give the impression that there is a lot of political activity, when there could actually be a lot more. I will discuss this more in the discussion and analysis chapter. Before I move on to present my case studies in new forms of consumption I would like mention Foodmaker Gothenburg, which is a supporting force in the urban food movement of Gothenburg functioning a link between all the actors described in this chapter.

## **5.4 Foodmaker Gothenburg**

Foodmaker is a training course in urban food production that aims at creating a network for different actors within the food system, from growers, chefs, and other food entrepreneurs to city officials and politicians. Jonas and William took the course while starting up Kajodlingen and Niklas Wennberg from Stadsjord is guest lecturer and host at the aquaponics farm. The content of the course is structured with the



intention of inspiring entrepreneurs from “idea to functioning business models” and to find ways to give “small scale ideas profitability in a large scale system” (Interview at Foodmaker, October 2017). While large-scale industry is a planned monopoly, small scale, local food producers need to find local networks and markets. Foodmaker acts as a start-up for food innovators, offering a platform to make contacts and take their ideas to the next level, or as one informant explains:

*“..To take it to the next step. It is a channeling and facilitating that exists within startups for technology and other affairs but that hasn’t existed within food production”* (Interview at Foodmaker, October 2017)

As urban farming is still quite a fringe activity and not a mainstream practice, it is important for actors within the movement to act synergistically to fuel the development. One of the challenges is making small scale production viable in a large scale system, as a representative from Foodmaker states:

*“To grow from the stage where you can earn money to survive to earning money to invest in your business, to create a solid base, is a huge step. A lot of the course is about this. You can take a farmer who is passionate about doing something good, and then you take a cold-hearted entrepreneur. What happens in this meeting? What can the farmer learn from the entrepreneur? What is ecological sustainability and what is economic sustainability? We try and get these two worlds to meet”*

As I mentioned in the introduction to this chapter, the entrepreneurs presented in these case studies are driven by a will to make a societal change rather than an economic profit. These are often conflicting spheres. The Foodmaker course offers startup guidance to those who want to change the system from within by offering a better option for society and the environment, while still being economically sustainable. Foodmaker is a space for transdisciplinary networking between diverse actors in the food chain who are aspiring to change the food system. Luckily there is a rising interest to support these movements among consumers, which I will present in the following chapter.

# 6 Case Studies: New Forms of Consumption

In this chapter, I will present some cases from the receiving end of the food chain; the consumers who are purchasing the products from the case studies in the previous chapters. These cases represent supporting forces in the post-industrial food movement of Gothenburg. They are supportive in that they represent a demand, and therefore, a market for local food producers. First I will discuss the role of chefs in the alternative food network. Thereafter I will present a local food platform called REKOring.

## 6.1 The Chef as an Activist

In his book *The Third Plate: Field Notes on the Future of Food*, chef Dan Barber visits farmers and food producers from around the world to reveal how the best flavors are created and how industrialization of agriculture has destroyed the flavor, quality, and cultural history of food. He writes, “*In the rush to industrialize farming, we’ve lost the understanding, implicit since the beginning of agriculture, that food is a process, a web of relationships, not an individual ingredient or commodity*”(Barber 2014). By bringing food production into the city, urban farmers are exposing this web of relationships to urban dwellers and thus have the potential of changing our relationship to food. The role of the chef is to set the standards and convey this message through their selection of produce and their menus. To restate a quote from William of Kajodlingen, without chefs they would not exist as there would be no market for them:

*“We wouldn’t exist, because we get a lot of pep as well and you feel like you meet a lot of people from different branches that have the same thoughts, so we gain from each other in that way. I want to continue selling to chefs because you get so much knowledge from them so it’s a positive.”*

Chefs, especially Michelin guide chefs, know that a good meal starts on the farm and they like to tell their dinner guests about where their food comes from. To quote Dan Barber again, “Chefs are known for their ability to create fashions and shape markets. What appears on a menu in a white-tablecloth restaurant one day trickles down to the bistro the next, and eventually influences everyday food culture” (Barber 2014). This quote resonated with one of the views of the six chefs I interviewed during my fieldwork. I questioned whether expensive restaurants could have an impact on the food system and society as a whole. One chef responded that, for example, *NOMA*, the Danish restaurant ranked as the world’s best four times, only uses ingredients that are grown and gathered locally, and this sends a message to chefs all around the world, setting the standard. If world leading restaurants are only using seasonal and local ingredients, this may eventually impact everyday food culture. Eventually, supermarkets and industrial food brands are marketing their products for their locality. It could be said that by changing the menu and putting certain things on a menu, chefs have a political role in prioritizing one type of ingredient over another, thus changing the agenda of food production.

Chefs also have a role as storytellers and the stories they tell have a cultural impact. All of the chefs I interviewed said that they like to tell their customers where they source their produce and write it on the menu. One of the restaurants I interviewed had a 4-course tasting menu with only vegetables from Kajodlingen, where the farmers were present at the dinner table. What better way is there to create a link between producers and consumers than by eating dinner with your farmers? Another chef described the importance of storytelling as follows,

*“You know where it comes from, you can tell the stories that make the produce more valuable. It’s not just a carrot or a nasturtium, but it fills a purpose. It should be treated with respect, and this happens if it has a background and a story.”*(Interview at *Tvåkanten*, October 2017)

Through telling stories about the produce, we are not only respecting the produce, but also the producers. One chef expressed that there needs to be a renewed sense of occupational pride in the food system which had been lost in the industrial food system. She described how the middlemen and those who delivered the fish have often no knowledge of the product,

*“I just want to skip the middlemen because they don’t know anything. There is no traceability at all and they can’t meet me in the knowledge I have, they don’t even know which fish I’m talking about. I need to have direct contact with someone and know exactly where the fish was caught, by whom and how? I need to get it directly to me instead of having a delivery man that goes all over and when they come here no one who knows where it came from. If I can get it directly then I can lift the fish and give the fisherman credit.”*(Interview at Vrå, October 2017)

Of the six chefs I interviewed, all of them responded that the quality of the produce was one of the main reasons for using Kajodlingen and other local producers.

*As one chef said “First of all it’s the proximity and that you can get the produce within an hour after it’s harvested so it’s also about the freshness. They have a really good thing there, it’s really good quality.”* (Interview at Bhoga, October 2017)

In contrast to industrial producers and big vegetable retailers, the produce from Kajodlingen is freshly harvested, meaning that the flavor is better, but also that it lasts longer than conventional produce. Another chef explained:

*“There is a big difference in quality, their produce tastes a lot more and lasts longer. If you look at a bag of salad from ICA for example, it came from a farm from Italy maybe and then was transported in a truck for 2 weeks and then when it finally comes to Sweden it’s 3 weeks old and has already started to wilt. But their salad, if I get it harvested the same day it’s delivered, lasts for 2 weeks maybe, 2-3 weeks”*(Interview Alldes Matkultur, October 2017)

For chefs there is no doubt that freshly harvested local produce is the best option and the more they can source locally, the better. There was a general consensus amongst the chefs I interviewed that it has become easier in the past years to source locally. Kajodlingen was the closest producer for all of them, but they were all open to the idea of more local producers. This shows that restaurants and cooks have definitely created a demand for local food, and thus a market for local food producers. One chef described the development as follows:

*“You can see already from the last years that there are more and more small farms that are doing better and have a better selection that don’t need to have such*

*extremely high prices because they can produce high enough volumes and deliver to more restaurants also. You notice that this impacts small farm systems”* (Interview Bhoga Restaurant, October 2017)

Though there is a demand for local produce amongst chefs, not all chefs are as concerned about the stories behind their produce, as one chef explained,

*“I experience that a lot of cooks don’t have a lot of knowledge. They are satisfied just by asking the middlemen where it comes from. When it comes to fish for example, when you ask where a fish comes from and they say “the North Atlantic,” it doesn’t tell us anything, do you know how big the North Atlantic is? Which boat caught it? And in which way? Where in the North Atlantic? Nobody knows.”* (Interview at Vrå, October 2017)

Moreover, she explains that many chefs create their menus for months in advance and are dependent on a certain supply of the ingredients on their menu. She thinks that in order to think sustainably one must adapt to the seasons and create menus based on what’s available. Kajodlingen offers this opportunity to experiment with what is available and she says that she wishes she could have this same collaboration with other food producers. For example she would love to find a fisherman who

*“has a vision of fishing with sustainable fishing methods that doesn’t fish threatened species. We can make a deal that we buy whatever they catch and do something with that. That’s what we do with the vegetables from Kajodlingen, when it’s time for something to be harvested, we find a way to use it.”* (Interview at Vrå, October 2017)



*Figure 11* Jonas and William of Kajodlingen planning with the head chef at Vrå.

Another view expressed is that it is often the consumers that have more knowledge and know what they want to eat. For example, she pointed out that 38 % of restaurants guests in Sweden come from the Lifestyle of Health and Sustainability (LOHAS) demographic, a growing customer group that doesn't consume based on price, but on ethical values and sustainability. Not only is the general population becoming more formally educated, but information technology allows us to gain information instantly. Thus consumers are increasingly conscious and can influence chefs. When dinner guests start asking where their food comes from, this also sets a standard for chefs. It has become important that no ingredient can be chosen without knowledge. The post-industrial food movement requires a realization that in fact, "food is a process, a web of relationships, not an individual ingredient or commodity" (Barber 2014). In the following section I will describe another platform in in Gothenburg and elsewhere in Scandinavia that offers an opportunity for consumers and producers to meet.

## 6.2 REKOring Gothenburg

REKO ring is a local food initiative that started in the Ostrobothnia region of Finland in 2013(Hushållningssällskapet).The initiative was inspired by a similar French local food platform called *Association pour le maintien d'une agriculture de proximité* (AMAP) (association for the maintenance of local agriculture). The name REKO stands for “REjäl KOnsumtion” in Swedish which means “fair consumption.” It is an online buying/selling platform where food producers can publish what they have available or in season in a Facebook group. Producers sell everything from vegetables, meat, bread, cheese, eggs, juices and more. Members of the group can then place orders and either pay for them in advance via a smartphone application called SWISH where funds can be transferred through your telephone number or they can pay upon delivery. Every week there is a prearranged meeting point where consumers come to pick up their orders directly from the producers. In Finland there are over 120 REKO rings with around 4000 producers and 300000 consumers which contribute to the turnover of about 40,000,000 euros (Bond 2018).

REKO is a growing grassroots movement that is now spreading throughout Scandinavia. In 2016 the first REKO ring came to Grästorp in Sweden in 2016. Now there are over 70 REKO rings in Sweden(Hushållningssällskapet). Each group or “ring” has their own Facebook group and their own guidelines for who can sell based on locality and production methods. However, the most important guideline for all REKO rings is that the producer must be present because the main point is that the produce goes directly from the producer to the consumer without any middlemen. In the REKO ring Gothenburg Facebook group they write,

*“The meeting between producer and consumer creates a lot of value, how cool is it to buy the food directly from those who raised or grew it instead of an anonymous shelf on the supermarket”*(REKO Göteborg). Solidarity and transparency between producers and consumers with no middlemen is the main purpose of REKO rings.

The Gothenburg REKO ring started in the spring of 2017 and is used or will be used by all the urban food producers presented in the previous chapter. Kajodlingen will start selling via REKO this season, entrepreneurs from the municipality’s

commercial testbeds and Grow Gothenburg sell there, and Stadsjord sells their aquaponic Catfish and Tilapia through REKO.

There are many advantages for the producers who use REKO. For one, they are paid fairly for their products which helps renew a sense of occupational pride and financial security. Moreover, they know in advance how much they need to harvest for each customer before each delivery, and can therefore avoid over-harvesting and food waste. Producers also save time as the pick-up meeting point is only open for one hour. Thus REKO is a much more effective and profitable way to sell produce than to sell to a middleman or to stand for many hours at a farmers market where it is not guaranteed you will sell everything that is harvested. One producer describes REKO as follows:

*“It has increased the effectivity of producers, because usually they would have to wake up at 5 am to harvest and then stand at a market for 8 hours and that’s not so effective because you don’t know when or if the customers are coming. In this way there is 1 hour delivery, that’s been paid for beforehand via Facebook and you know that you will sell absolutely everything that you bring with you. Super smart. These consumers are also very interested and willing to pay more. We could probably take double pay.”*

Though the prices are usually higher via REKO than other markets, the consumers are not concerned about the prices and are willing to pay more to know that the food they eat is healthy, environmentally friendly, quality food. In response to an online survey I sent to REKO Gothenburg users, price was the least important motivation. The top priorities scored evenly between supporting local producers, eating sustainable food, eating quality food and knowing where food comes from.

REKO Gothenburg ring is quite young. Most of the respondents to the survey had only place orders via REKO less than five times and even more responded that they only purchased through REKO ring once in a while. Through interviews and personal communication I learned that it is not possible for producers to be economically sustained only through REKOring, however it does add to their incomes. Some producers do however make a living through going around to different REKO rings. For example, The REKO ring in Borås, just outside of Gothenburg is the ring with the most members and the highest turnover (Seminar



about Local and Sustainable Food). Some local Gothenburg producers sell to both rings.

The first season of REKO Gothenburg had a very low turnover according to the group's administrator. Nonetheless, the existence of the platform offers an opportunity for local producers that they otherwise wouldn't have. With the recent increase in urban producers and the municipality's effort to stimulate entrepreneurship within urban farming, REKO ring has the potential to grow. The REKO movement is still a fringe movement, but it has the potential to reach a larger audience. Other IT startups are already experimenting with similar models to REKO ring that are not dependent on Facebook, but more open source platforms with the same ideology that could have the potential to reach more consumers. A startup called Local Food Nodes is one example that has created a global network for local food with a very similar model to that of REKO ring (Local Food Local Food Nodes 2018).

In this section I have provided some examples of alternative forms of consumption that offer markets for urban food producers and thus are part of the post-industrial food movement. In the next section I would like to further dissect the findings of my case studies from the lense of Social Practice Theory.

# 7 Analysis

In this chapter I will draw on the diverse threads of theory introduced in Chapter 3 in order to identify and analyze emerging themes from the case studies. I will mainly use social practice theory in my analysis. First I will arrange the emerging themes in the cases presented in relation to the type of knowledge and agency they have in changing food practices. In this discussion I hope to convey an understanding of the synergetic effects of individual and collaborative efforts as well as the agency distributed among the cultural, social, and material contributions to a more sustainable food system.

## 7.1 Social Practice Theory: Post-industrial Habits

Perhaps the greatest challenge in achieving lasting change is reforming social practices, both individually and collectively. As discussed in the theory chapter, Social Practice Theory offers an analytical framework to understand the different agents of change.

Practice theorist Andreas Rechwitz defines practice as “a routinized type of behavior which consists of several elements, interconnected to one another: 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. (2002, 249 cited in Wilhite 2016). Our practices are anchored in our *habitus*, which Pierre Bourdieu defined as the set of routinized dispositions created and perpetuated through lived experiences in a social and cultural space. That is, our practices are dependent on the knowledge created through the history, people (bodies and minds), material objects and cultural norms of a given space. When our *habitus* starts to change, both physically and culturally, so can our practices. Yet at the same time our *habitus* is dependent on our practices and changing practices contribute to a changing *habitus*. In other words there is a dialectical, dynamic relationship between practice and *habitus* (Sahakian and Wilhite 2014). In the same way that other animals adapt to changing habitats, humans adapt to changing *habitus*.

Gothenburg is a changing habitat, in transition from being a heavy industrial port to a self-proclaimed “sustainable city open to the world.” The material modification of space has the agency to transform our *habitus*. In this transition the people, institutions and material infrastructures need to adapt mentally and theoretically (cognitively), physically and practically (experientially) and through design and technology (materially). These types of knowledge are held by people (minds and bodies), materialities, and social contexts. Each of these dimensions has *agency* defined by Ortner as, “the capability or power to be the source and originator of acts”(1989 as cited by Sahakain and Wilhite 2014). The synergetic effect of these aspects have a *distributed agency*, meaning that they are inevitably intertwined and a change in one aspect might lead to a change in the others. For example, a change in material space may invite the individual to change their bodily (experiential) actions. Similarly, a change in consciousness and ethics has the ability to direct our actions.

In achieving stable change, a challenge lies in changing those practices which are embedded deeply in our *habitus* and routinized individually and collectively. These are known as habits. Practice theorist Elizabeth Shove define habits as “recurrently and consistently reproduced by suitably committed practitioners” (Sahakian and Wilhite 2014). New habits need to be formed in order to achieve lasting sustainable change, both individually and collectively. When it comes to food practices in Gothenburg, actors within urban food networks are changing practices across the food supply chain, from growing, transportation, retail and preparation. A proliferation of these material foodscapes has the potential to initiate sustainable practices and thus lasting change through providing knowledge and skills through experimentation, thus raising awareness and consciousness and thus initiating a cognitive, cultural change.

In the following I will analyze the emerging themes of the cases studies presented thus far in the light of social practice theory and analyze how the emerging foodscapes in post-industrial landscapes contribute to changing practices around food consumption. First I will identify the need for cognitive change in the sustainable food movement and the need for transdisciplinary theoretical knowledge about the importance of local and sustainable food. Secondly, I will argue for that engaging in bodily practice provides experiential knowledge that has the potential to initiate

sustainable food practices. Thereafter I will explain the agency of the physical and technological material worlds in changing food practices.

### **7.1.1 Reflexive, Cognitive Knowledge: Minds**

Through learning we gain knowledge which influences how we act in the material world. Thus to encourage sustainable practices it is necessary to proliferate knowledge about sustainability. When individuals gain information about food systems, the information they receive can be cognitively and consciously rejected or accepted, and can influence the way we act as individuals. In the case of urban farming, individuals who have knowledge about food security and environmental sustainability are more likely to support the movement and engage in more sustainable food practices. Ignorance or a lack of knowledge of the benefits and full potential of urban food production are what make people skeptical to its development. For instance, one of my informants who works with sustainability in the Västra Götland region questioned, “Why should we grow food in the city when there is so much space in the country?” (Personal Communication, “Inspiration Day for Sustainable and Local Food”). This same person also said that urban farming was “a lot of talk, but not a lot that happens.” On this occasion we were at an “Inspiration day for local and sustainable food” where Kajodlingen and REKOring among others presented their models. I realized how important this type of event was to break prejudices, inform and convince this informant and others who are not knowledgeable about the full potential of urban food production. This same informant also pointed out that transport had the least impact on the environment, so it wasn’t necessary to grow food in the city on a larger scale. This view resonated with the view of a politician that I interviewed who also maintained that food miles had the least amount of environmental impact, so there was no rush to create a local food supply chain, even though it would likely be necessary. These informants were both positive to urban agriculture for their positive social and pedagogical benefits, as well as their ability to create green spaces in the city, yet they were not as convinced as those who had deeper knowledge about the benefits of urban food production.

The Farmers presented in the case studies are not only food producers, but food educators and environmentalists who are knowledgeable in their fields and willing to share their knowledge through lectures, seminars, and guided tours. The Chefs presented also have a more profound mission than cooking good food. They are also environmentalists, educators and even activists in their field. Similarly, Foodmaker and GrowGothenburg have also transcended their respective fields of tech start-up and architecture and have also become knowledge producers and educators around food. These examples show that food can be experienced in many ways and there are thus also many angles to approach food system change. An approach to food system change that takes into account the experience and knowledge *across* the “chains” of the food supply chain may be more effective in initiating lasting and holistic change.

Knowledge proliferation is not only important for individuals, but also for the collective movement towards sustainable practices. Issues of sustainability involve many different stakeholders and even definitions of sustainability vary between policy, practice and research. As Merritt Polk and Jaan-Henrik Kain write, *“Different interpretations of sustainable development and their applications reflect a variety of underlying political and ideological world views and values. They show different degrees of connectivity between social activities, economic growth, and their resultant environmental impacts, and represent different beliefs about how such impacts are best addressed”* (4). Thus often sustainability efforts come across as being ambiguous. This is also the case when it comes to sustainable food production. Some believe that technology and science have the answer to environmental issues around food production, for example, those who advocate gene modification and the further intensification of agriculture. On the other side there are those who, like the cases in this study, want to bring the human factor back into food production and mimic ecosystems in local, small-scale, regenerative systems. There is therefore a challenge in identifying a common goal for sustainable food when sustainability itself is not easily defined. Polk and Kain suggest that

*“Any discussion of sustainable cities must start from the perspective that sustainability means different things to different actor groups. It is therefore equally important for research on sustainable cities to be based on inclusive processes which*

*can better capture the situated understandings of sustainability that exist in particular contexts by a variety of urban actors.” (Polk 2015)*

This is what they refer to as *knowledge co-production*. In the case of integrating urban food production into the local food strategy for sustainable development, actors like Foodmaker, and GrowGothenburg work across and beyond disciplines to proliferate knowledge about urban food production. Similarly, the above mentioned event arranged by the municipality called “Inspiration Day for Sustainable and Local Food” was focused on networking across sectors. The day featured presentations from diverse local food actors, the business sector, regional and municipal civil servants, and curious individuals. During the mini-open space the question for participants was, “How can we collaborate for more local and sustainable food?” In exchanging the experiential intellectual knowledge between diverse actors, the movement for sustainable local food can be strengthened. To quote Polk and Kain once more, “Knowledge about urban challenges and how to address them is best developed by engaging with various practices, interactions, and rationalities of policy-makers, planners, developers, activists and residents taking place in cities.” This type of engagement is what is needed in order to change habits, an engagement of bodies and minds in new ways of doing things to experience the benefits of change first hand. This approach can be much more effective than simply providing information alone.

This is also the case for the issue of urban food. In order to increase individual and collective knowledge and consciousness about the benefits and challenges of urban food production it is necessary to work across and beyond disciplines. Working beyond disciplines means applying knowledge to bodily practice, which is what I will elaborate on in the next section.

### **7.1.2 Experiential Knowledge: Bodies**

Through cognitive learning we acquire knowledge which we can apply in practice. What we know has an impact on the physical actions we make in our daily lives. Our consciousness and our ethics direct our actions, yet engaging in new bodily activities in new material spaces can also inform our ethics. We acquire habits through bodily means by repeating actions until they become routinized. Our habits are also

accumulated through cultural immersion, such as for example, posture or eating etiquette. Our individual bodily actions are inevitably tied to our *habitus*, our social contexts and our material world. When it comes to food, people who live in the industrial worlds have developed industrial eating habits based on what is available materially, but also based on social contexts, political ideologies and economic systems. In the industrial capitalist economic food system, food production is invisible to most consumers, especially urban consumers who are 70 percent of the global population (Polk 2015). Most consumers have thus become habituated to relating to food by comparing prices on supermarket shelves full of anonymous, processed foods without local or historical value. The unavailability of other options has previously made other practices difficult, and where they have been available they are expensive and exclusive. The integration of fair, sustainable, organic and local produce into the capitalist market has made alternative consumer practices more available to the masses.

Neoliberal economic rationale puts weight on the choice of sovereign consumers to initiate societal change. This rationalistic approach assigns consumer practices to individual preferences within markets, meaning a change in the food system is purely dependent on consumer demand to change what is available in markets. Policy responses tend to favor this approach seeing individual agents alone to be capable of making sustainable behavioral and attitude changes. Social practice theorists see this approach as “too narrow,” and has not been so effective in initiating significant change (Hargreaves 2011). This is due to the fact that it ignores the deeply embedded influence of culture, social contexts and materialities on consumer behavior. A social practice approach, on the other hand, “*provides a more holistic and grounded perspective on behavior change processes as they occur in situ*”(Ibid. 80) and suggests that change is dependent on a “fundamental structural change in society”(Ibid.) What we know and what we do is dependent on an array of factors. Creating the physical circumstances and socio-political contexts for sustainable behavior is the key. At the same time, as Hargreaves writes, “generating more sustainable practices calls for the links and elements of existing practices to be challenged and broken before being replaced and remade in more sustainable ways” (83).

Urban foodscapes have the potential to bring food production into the city, visible for the consumer, and in many cases invites the consumer to engage in the production process or meet the producer personally. In the case of Kajodlingen, for example, individuals are invited to harvest their own products to purchase at the “Pick-n-pay” days. The bodily experience of harvesting your own food has the potential to influence sustainable eating habits, as researcher Bethany Turner writes, “engagement in embodied practices is shown to contribute to the development of an embodied form of sustainability whereby participants, through individual engagement and re-creations of place are able to reconnect to the food system and engage with the urban landscape in new, productive, and more sustainable ways”(Turner 2011, 510). From personal experience I can say that after the first time I pulled a carrot from the ground, buying store-bought carrots wrapped in plastic has never been satisfying, whether they are organic or not. The act of engaging with our food has the agency to change the way we think about food and thus our consumption practices around food. In the following I will elaborate on the agency of material realities.

### 7.1.3 Material Knowledge: Physical Landscapes

The world population is increasingly urban and cities are constantly expanding to adapt to the increasing populations. It is also necessary for cities to develop in a way that supports our natural environment and encourage sustainable lifestyles in response to ecological pressures. City dwellers have become increasingly distanced from nature and natural processes. Urban foodscapes have the potential to bring nature and natural processes into the city. In the case studies presented here it seems that visible public initiatives receive more support from the political and municipal forces than, for example, the aquaponics system at Stadsjord who feel that urban farming has dwelled too long as a “social symbol” and that urban farming is seen by politicians as, *“just an aesthetic thing that is just about design so you can drink a cafe latte where there is a little greenery and not just flowers, but maybe a little kale because it reminds us of food.”* Kajodlingen, on the other hand receives a lot of municipal and public support, perhaps due to their visibility as a social symbol, but also due to the materials they use, which are natural elements: soil, water, and sun. To quote William from Kajodlingen,



*“There is a tendency to think that technology can solve everything, but sun energy and biological processes are good enough, so we base our development as much as possible on natural processes, instead of lots of lights indoors or hydroponic systems.”*

For this reason Kajodlingen and Stadsnära Odling have a vision to bring the natural process of soil production into the city to produce soil for urban farmers. This is beneficial as a way to recycle the nutrients in the city’s park and food waste in a closed loop ecological system. In their effort to map urban and peri-urban farmland to engage more individuals in food growing, the municipality is encouraging more sustainable urban food practice. By designing our urban landscapes to incorporate natural processes, materials and systems that mimic ecosystem services we can support more sustainable practices. Incorporating urban food production into urban design to fill urban voids and post-industrial ruins can have positive effects on urban ecology and aesthetics. Even though the urban farming initiatives here are in temporary post-industrial spaces, one informant from Stadsjord maintained that:

*“The garden develops in our hearts and in our minds so then we can prepare to take the garden experience with us and materialize it wherever we live. So we go into urban voids as long as there is a gap that is compliant and fitting so that the idea of the garden can grow strong even if you’re working with mobility and temporary efforts. The idea won’t be unstable, it will take a place in people’s hearts and minds”*

This quote suggests that the materialization of the garden and the bodily act of gardening has a lasting experiential effect that has its own agency to change individual practices. Once the individual engages in the garden, the experience can be taken elsewhere.

#### **7.1.4 Material Knowledge: Technological Landscapes**

Digital platforms and technological innovations are agentive in the transition to local and sustainable food. With the technological innovation of aquaponics, for example, Stadsjord offers a technical solution to environmentally destructive fishing methods and consumption practices. At the same time they are filling an urban void with a productive, closed system that can also make use of the city’s waste resources. As a criticism to aquaponics, one informant who worked in with green development in the

Västra Götland Region said that aquaponics seemed very “unnatural,” I questioned whether the way we fish the oceans or industrially produce other food products was very natural? Or whether the way we design our cities is natural? If a technological solution such as aquaponics can offer a more sustainable solution to destroying oceanic ecosystems then why not utilize and develop these systems? An answer to this might be a question of money, as aquaponic and other aquaculture systems are expensive to implement, costing around 500,000 SEK if an infrastructure is to be created solely for the purpose of aquaculture (Interview at Stadsjord, October 2017). However, if existing spaces are used, such as the abandoned slaughterhouse at Stadsjord, you can create technical systems that can be implemented anywhere as long as you have floor space, water, and a sewage system in a well isolated area (Lecture at Stadsjord, Wennberg, October 18, 2017). In a post-industrial city like Gothenburg, there are many abandoned post-industrial structures that could potentially be made into productive spaces that have the potential to feed urban dwellers. In response to the accusation of aquaponics being “unnatural” –the fish produced in the system are more natural than conventionally farmed fish due to the fact that they are not given antibiotics and they are not fed on industrially farmed animal protein. The same critic also maintained that the welfare of the fish was questionable due to the fact that they didn’t have much space, however, the species used in aquaponic systems such as Clarias and Tilapia thrive in dense environments(Sustainable Development Solutions Network Northern Europe 2017 ). By creating technological systems that mimic natural systems we can learn to understand ecological processes and circular systems. In this way technological innovations can help city dwellers think ecologically.

The implementation of aquaponic systems is not simple and it is important to do it right in order to maintain a balance of nutrients for the plants, clean water for the fish, as well as the correct ratio of fish according to the water quality. This requires specialized knowledge and frequent measurements of these variables, as one review of aquaponic water quality states,

*“Sudden changes in the fish stocking density, growth rate, feeding rate or water volume can elicit rapid changes in water quality; hence, regular measurement of those critical water quality parameters is essential. The deterioration of water*

*quality parameters affects fish physiology, growth rate, and feed efficiency, leading to pathological changes and even mortality under extreme conditions” (Yavuzcan Yildiz et al. 2017)*

In addition there is the problem of recycling the excess sludge water which should not be flushed down in the sewage system due to the high content of nitrogen which can be an environmental pollutant. This water should be captured and treated. At Stadsjord they are developing a way of capturing and drying these nutrients which can then be used as a garden fertilizer.

Thus the industrialization of aquaponic systems requires specialized knowledge, further development and research. It is not as simple of an investment for the municipality as mapping unused arable land to lease out to urban agriculture entrepreneurs. Yet, if aquaponics could be developed efficiently it has the potential create a lot of local and (more) sustainable food and protein options. One model does not exclude the other. As a representative from Foodmaker states,

*“I hope these things are happening at the same time, in parallel. There are those in the climate change debate for example that think that technical solutions will fix it all. There is that perspective for technical solutions that everything should be aquaponics, but I don’t think that’s the solution. Then you lose the social sustainability. Then it’s just another type of industry. But that’s another thing. We need industry. It’s not possible to have just small scale food producers, it won’t be possible to feed the world. There needs to be an industrial logic, but it must be better, more sustainable.”*

When it comes to food production, there is a need for diversified markets. Advocates for urban agriculture do not see urban agriculture as a better solution to rural agriculture, but as a supplement to a sustainable rural agriculture. Many of the urban farmers I spoke to during my fieldwork mentioned that they hoped to be “ambassadors” for sustainable rural food production by getting urban dwellers interested in food production and gain a sense of appreciation and respect for those who produce our food. The future of food needs sustainable largescale producers in the countryside, supplemented by small-scale intensive urban producers for niche markets, and urban technological systems such as aquaponics that have the potential

to be of industrial scale and provide more sustainable protein options (as well as vegetables) to urban dwellers. The future of industrialization must also take into consideration all sustainability indicators: the social, the environmental, and the economic. Industrialization of urban aquaponic systems has the potential of creating green jobs, and has a social potential to create its own “makers community” as part of the technological DIY movement.

*“We as consumers want to be a part of the production process. Aquaponics can create its own makers community. On the other side, Gothenburg is so small, but if you look at what is happening in Brooklyn with these large scale vegetables productions where they have rooftop gardens, aquaponics etc. in a much larger scale so that there can be more money and entrepreneurship around it, but also that they become community spaces.”* (Interview at Foodmaker, October 2017)

It seems to be generally accepted by the diverse actors I interviewed that urban agriculture has a positive social function. It is important however to be inclusive of different types of communities, and therefore have differentiation within the movement. A combination of community gardens, allotments, commercial gardens, and technical innovations offer opportunities for a variety of interests and personal preference. The most important, from a social practice perspective, is to get as many urban dwellers and consumers as possible closer to food production and to engage their bodies and minds in new practices. When I asked William from Kajodlingen if he thought that aquaponics could have a social function, he responded: *“Absolutely, I think the biggest thing is to get away from oil as much as possible. Don’t transport the stuff, produce it where it’s consumed.”* In this way urban agriculture has the synergetic effect of tackling social and environmental issues at the same time. The social effect is that of connecting consumers to food production which has the potential to change our food practices and habits. Environmentally urban farming offers green spaces for biodiversity, ecosystem services and eliminates the need for fossil fuel inputs in both the production and transportation process of the food supply chain. The struggle for the sustainability of urban farming lies in the economic potential, which the municipality is attempting to stimulate on some levels, but as Stadsjord holds,

*“The profitability that Gothenburg has set up fuels the doubt that urban food production can provide. There are way too small volumes that are selected from the municipality. If there was an effort to provide more food, with for example aquaponics, you could show that urban farming does not only have a social function, but also has the ability to provide food.”*

Thus there is a need for a broader understanding amongst stakeholders on the synergetic effects of urban agriculture and the benefits of having diversified urban foodscapes. In the next section I will discuss how digital spaces are rewriting the narrative of food through social media.

## **Digital spaces**

The internet has agency as a technological tool (materiality) in that it can influence the way we act through cognitive and experiential means. Our online life is a reality of its own, a digital *habitus*, in a sense. Through the internet we receive all sorts of cultural messages, values and commercial marketing. Instagram and Facebook are effective social networking tools for both business and leisure. For instance, Kajodlingen does all their marketing through Facebook and Instagram. In fact, four of the five restaurants I interviewed found out about Kajodlingen through Instagram. Through social media it is possible for producers and consumers to communicate almost directly, in their own words. It is more personalized than other types of marketing. One informant from Foodmaker described the importance in the urban food movement of “rewriting narratives” and changing the relationship to food. This is a lot of what urban agriculture is about and there are a lot of stories to be told about urban agriculture. The dissemination of these stories to the masses can be done through social media. Moreover, through Facebook movements like REKOring, producers and consumers can unite. The consumers through REKOring that answered the online survey and the cooks that I spoke to are interested in the story of food, who produced it, where and how? The internet has the possibility to share these stories and spread the movement. Similarly GrowGothenburg, with their interactive online map, link those who are looking for growing spaces, whether to grow commercially, communally, pedagogically or leisurely. These digital platforms are agents of societal change.

## 8 Discussion and Conclusion

Like social practice theory, the six pronged approach to sustainable diets recognizes that there are many factors that influence our food practices, spanning from the cultural/cognitive sphere, the material world and individual habits. In transition to sustainable diets, Mason and Lang hold that, “progress is dependent on how political processes manage four domains of existence: the material (the environment), the physiological (biological processes), the social (human interaction) and the cognitive or life-world (cognition and culture)”(4,2017). Governments and policy makers can facilitate a transition to more sustainable food practices by strategically working with these prongs through a practice theory approach. Through sustainable governance of the cognitive and cultural world of economics and politics together with the sustainable governance and design of the material world (natural and man-made environments), individual experiential habits and social values can also become more sustainable, healthier and of better quality. Thus the prongs of economics, environment and governance can be understood as a *habitus* which can be agentic in creating quality, health, and new social values when it comes to food practices.

However, food system change is dependent on a diversity of actors working for the same goal. Everyone must understand the benefits and potential of local supply chains for society and the environment. Despite the energy and engagement among urban food actors in Gothenburg, there are certain capitalistic industrial tendencies that create challenges for small scale urban food producers. From the information gathered through my fieldwork, most of my informants were positive to the development of alternative food networks in Gothenburg and felt that the municipality had come a long way in the urban food movement. There are certain advantages for urban producers that turn unused spaces into small-scale productive spaces for local consumption. However, when it comes to scaling up and being included in the market economy and the local food strategy for food provision and security, there are certain challenges, which I identified through communication with local producers. In this chapter I will discuss these challenges.

## 8.1 Economic viability in a Global Industrial System

It is less difficult to convince policy makers and governments of the social and environmental function of urban agriculture than to argue for its economic potential. Allotments are well established features of Gothenburg and are valued for their social and recreational functions (Berglind 2012). Pedagogical gardens are also becoming more common as green learning arenas for school children (GrowGothenburg 2018). Less explored is the ability for urban food production to provide and contribute to a sustainable local food economy and create green jobs. Community gardens work ideally in order to create social meeting places and stimulate green, social interactions. However, as one of my informants stated, “Why should we work ideally if we actually want to make a difference?” (Interview with Grow Gothenburg). This quote suggests that voluntary work outside of the economic system for charitable purpose does not have the potential to make a difference in the food system. In order to work for long-term change, urban food producers must have opportunities to be a part of the economic system. However, there is a challenge in being a small scale producer in a large-scale system. In the words of one urban food producer,

*“It is a problem that these small actors don’t earn enough money, so it becomes a negative culture. Urban farming is expected by inspired academics that can’t think of any other reason to do it than for one’s own self development. And this is true for the most, but it is irresponsible to let the programs that are about self-sufficiency dwell in this cultural climate, that it’s just cultural work driven by passionate individuals.”*

The word “ildsjeler” literally translated as “fire souls” was mentioned many times during my fieldwork to describe those who work with urban farming and food production. Another informant from Foodmaker stated that,

*“There is a lot of organic small scale farming that is really good, but it’s not always profitable. But then maybe there is something that is very profitable but not ecological. But what happens if they meet? They must meet if we are going to get progress in FN’s sustainability goals or tackle unsustainable consumption. It’s not always easy to get these two worlds to meet. They are often in different places, even mentally. This is a challenge. It’s not enough to be good at growing, you must also market and sell it and dare to get paid for what you do. These are the challenges in*

*small-scale food producers, who come from a “do-good” world, to take space and sell and get paid- dare to get paid.”*

Thus, there is a mental challenge for “ildsjeler” who want to make a change to take money in exchange for their services and their products. And those who try to take space may struggle to scale up and compete with conventional industries that have a lot of money, but are not sustainable. In what follows, I will discuss the market challenges I heard amongst urban food producers.

### **8.1.1 Eco-labelling/KRAV certification**

*“When we need to compete in the market with our urban produced cabbage or fish or whatever, it’s unfair because we have to compete with a bunch of bad products. So If I want to introduce a sustainable fish on the market, then I have to compete with an eco-certified fish which isn’t sustainable at all.”(Interview at Stadsjord)*

During my fieldwork several urban food producers mentioned the issue of eco-labelling and organic certification. Ecolabelling and KRAV organic certifications are costly for any producer, but especially for small producers. Many farmers who use ecological growing methods but aren’t certified may be even more “eco” logical than certified organic farmers. This view is highlighted by the above quote and Stadsjord’s view that fish produced in an urban aquaponic system are more sustainable than for example, eco-labelled Norwegian Lobster, which emits 3-4 times the amount of CO<sup>2</sup> and uses unsustainable methods such as trawling. As Wennberg writes in the Ocean Solutions Report 2017 about the Marine Stewardship Council,

*“While MSC is great in many ways, its labeling does not address climate issues at all. For instance, the first Norwegian lobster fishery that was MSC labeled was trawl-based which generates 3–4 times more CO<sup>2</sup> than fishing with pot traps. Stadsjord/Pond can present a fish produced in the city with a climate impact 10 times smaller than that of MSC-labelled Norwegian lobster.”(Wennberg 2017)*

Thus, labels can be misleading. Eco-labels are designed as a way to inform and assure consumers about the products they consume. However, in the case of urban food producers, labels are just another “middleman” in the way of linking consumers and producers directly. Blind faith in labelling without deeper knowledge about



production methods may be in the way of genuine change in the food system and consumer habits. In a way, Eco-labels, like neoliberals, assign the environmental responsibility to the consumer rather than setting environmental responsibilities for *all* producers and creating deeper structural changes. Eco-labelling has been criticized for being a form of greenwash marketing which does not comply in practice to the standards of the label policy initiatives (Zaman, Miliutenko, and Nagapetan 2010). Moreover, eco-labels may not be efficient in changing general consumption practices, but create a differentiated market for more environmentally aware or affluent consumers. There is a need for more radical change when it comes to corporate environmental responsibilities. As one of my informants from Foodmaker discussed,

*“Can we have well-informed consumers? ICA has made a trend report on how we eat and interviewed millennials about how we eat and what they see at both restaurants and stores. They say they shouldn’t have to make a choice between good or bad, but that there should just be good.”*

There would have to be a radical change in the corporate food systems to sift out food producers who do not live up to environmental and social standards. Ecolabels alone are not the solution to the problems of unsustainable production and consumption in the food system. Food produced locally, where the consumers can see and learn about how food is produced has, in my opinion, more agency in changing consumption practices than ecolabels. Urban producers should be valued for this and supported by their local governments. As one urban producer said,

*“It would be better if these labels weren’t necessary”*

Many small scale urban producers are beyond the standards of KRAV in terms of ecological thinking and creating sustainable solutions. This view was also echoed by one of the chefs I spoke to who said that many KRAV certified restaurants were far from having a holistic ecological ideology:

*“There are many restaurants that want to be KRAV certified, but they’re not even close in the thought process, they buy their milk ,stock, butter and base products organic, but throw so much away anyway.....They maybe buy organic but they waste*

*resources, whether it's money or nature's resources.*" (Interview at Trattoria la Stretta, October 2017)

Labelling and certification can, in some cases, create false consumer confidence. The standards of eco-labelling and certification are not made for the urban food producers presented here. In the following I will present another reoccurring concern I heard among urban food producers.

### **8.1.2 Demolition Contracts vs. High rents**

*"If we were judged in a fair way, we could pay for normal rents of land and production spaces. If we had a market-economy model, then we could pay normal rents. But the whole situation is dependent on a political dimension and agenda."*

(Interview at Stadsjord, October 2017)

In Gothenburg there is an abundance of empty industrial areas and buildings. This creates opportunities for urban food producers such as Kajodlingen and Stadsjord to test their models and develop their knowledge and their markets with low rents and risk. This is an advantage, yet one concern is that it creates instability and uncertainty in the long term for urban producers. For example, Kajodlingen is now moving for the second time in three years and Stadsjord has moved their aquaponics system already once since 2015 from one building in the butchers quarter to another. Moreover, Stadsjord has had several different unused spaces around the city. It is characteristic of cities to be dynamic ever-changing spaces, and in one way it is positive that disused urban spaces are filled with creative, productive energies until remodeling, development, demolition, or building starts. However, I wonder if these initiatives can be integrated into the master plans of city planning? One of my informants was critical to the city's obsession with densification and building a compact city. This informant held that in many ways it is good because a compact city with a good transport system can reduce dependency on cars, yet they said that it is "important not just to talk about buildings, but about densification of meeting places and green areas" (Interview with GrowGothenburg) not only for their social factor, but also for their ability to have an ecosystem service for the neighborhood. Further they stated that, "for every neighborhood that is planned they should include a space that can provide some food for this part of the city."

A previously stated quote highlighted the belief that there would always be spaces for urban farmers, and that this was one of the advantages of urban farming: that you can enter an empty space for a short amount of time, but still have a large impact on many people. To restate this quote:

*“we go into urban voids as long as there is a gap that is compliant and fitting so that the idea of the garden can grow strong even if you’re working with mobility and temporary efforts. The idea won’t be instable; it will take a place in people’s hearts and minds”* (Interview at Stadsjord, October 2017).

On the one hand, the dynamic nature of urban farming and its ability to fill urban voids is one of the advantages of urban farming. It gives urban farming entrepreneurs a chance to test out their models without huge investments. One politician I spoke to said that those who prove to have models that work are more likely to be assisted in finding new spaces when it’s time to move. Kajodlingen is an example of this. Aside from unstable rental contracts and spaces, another challenge I gathered was being a small actor in a large system. In the following I will elaborate.

### **8.1.3 Being Small-scale in a Large -scale system**

Fortunately In Gothenburg there are networks such as GrowGothenburg, Foodmaker and Stadsnära Odling that catalyze those who are passionate about making a change through networking, training programs, and startup help. There exists support when it comes to access to land and access to knowledge, but there is a challenge when it comes to access to markets and making it economically viable within the dominant economic system.

In terms of scale, perhaps it is not necessary for urban agriculture to scale up to the size of industrial producers. One informant, Ulla Lundgren who works with the initiative Hållbar Mat (Sustainable Food) and has been involved in the local food strategy thought that urban agriculture should not be industrialized and that food produced in the city did not have the potential to provide enough to meet the food consumption in municipal cafeterias and schools, for example. She wondered if urban food production needed to scale up at all,

*“Maybe it shouldn’t be large-scale, but there should exist enough (small local producers) so that everyone has the possibility to buy from them, but there has to be an economy in it, you can’t produce things and give them away for free”*

Small scale producers cannot compete with the prices of industrial food. In the industrial world we are used to paying little for our food. Small scale urban producers, like small-scale rural producers, must charge more for the time and labor that is put into their production. As researcher and designer Paul de Graaf writes, “Agriculture is not a short-term, high-profit business, but one of hard work and hard-earned profit.....What urban agriculture needs, first and foremost, is the space to evolve as a practice” (in Miazzo and Minkjan 2013).

If urban agriculture is allowed room to develop as an economically viable food practice, it can have the potential to feed more urban dwellers. Until then, it serves a niche population and is not affordable or accessible to everyone and can therefore not be truly sustainable. For instance, the food sold via REKO ring is more expensive than the food in the supermarket, meaning that it is only accessible to those who can afford it. Ulla Lundgren hoped that urban farms would be more common so that people know they exist and when they can buy from them. At the moment there are so few commercial farms that there it is an exclusive form of consumption which not everyone can afford.

However, in contrast to industrial food, local food produced on a small-scale reflects the true costs of production. Those in the industrial world are used to not paying the full social and environmental costs of the food we eat. As Ulla mentioned,

*“The food we buy in the grocery stores is often too cheap, so we need to change the whole attitude that food should be cheap that there has been ever since Nixon said lower the prices of food which made way for this large scale industrial food production.”*

This quote resonates with a quote by economic scholar Olivier de Schutter who claims that,

*“Governments want to assure social peace by ensuring that households spend as little as possible on food. In the EU, for example, families pay 12-13% of their budget on food. Tomorrow, if families had to pay the actual cost of food, forcing them to pay the social, environmental and public health costs derived from current industrial farming system we’d have to raise that budget to 25-30% to feed ourselves and that would be politically intolerable.”* (Interview in Laurent 2015)

To achieve more sustainable diets, the economy of food needs to be reconsidered. In the absence of cheap abundant oil, the consumers of the future must become habituated to paying the true costs of food, which might influence our relation to food. As city planner of Amsterdam, Pim Vermeulen states, *“we should invest in, and profit from , a growing awareness among consumers of the origin, quality and cost of food”*(Miazzo and Minkjan 2013, 23). There is a need to restructure the economy of food in general. Pamela Mason and Tim Lang suggest that, *“If we want an ethical food economy, then workers in the food system need to be paid more. Probably the only way this can be delivered is by shorter food chains and more culinary emphasis on cooking rather than eating”* (2017, 251).

Though urban food production cannot feed an entire city, it can certainly help feed people in cities and provide jobs. There are examples of urban farms that produce a lot on a very small space with the right planning and materials. For example, Curtis Stone from Green City Acres in Canada managed to grow 50,000 pounds of food on less than one acre of land *“using 100% natural, organic methods and only 80 liters of gasoline “*(Green City Acres 2018). Green city acres, like Kajodlingen, focus on growing salads and other greens that do not require a lot of growing space and can be harvested many times. This is a logical and simple model for urban growers. The city is not the right place when it comes to producing wheat and potatoes and other produce that needs more space. There exist certain niche products that have an advantage when they are grown in the city, and salad greens are definitely one of them. The key with urban farming is to find certain niche markets within the city such as salad greens, microgreens, or table flowers, for example. As Jonas from Kajodlingen said, urban farming

*“can be complimentary, but we’ll never be able to feed a whole city with just 2-3 urban farmers. But it’s all about just getting started and showing that it’s possible. The market is very big and the trend shows that more and more are prepared to pay a bit more for local produce. And capitalism ,this political system we live in, we need to exploit it in a way by showing that we are also economically sustainable.”*

The dominating ideological narratives repeat that we need industrial agriculture to feed the demands of an exponentially increasing world population. However,

advocates of the smallholder movement would say instead that we need more people growing food on a smaller scale. Agroecologist Nick Green tells that:

*“The bulk of the world’s food comes from tiny farmers and they are much more productive....In terms of production, industrial famers are hopelessly inefficient, where they’re good is at producing money, where they’re bad is at producing food”* (Interview in Laurent 2015)

It is said that 75% of the world’s food production comes from small farms and 72% of the worlds farms are under 1 hectare (FAO 2014).With the right tools and design, smallholders have the potential to increase soil fertility, biodiversity, and grow food more efficiently on a smaller scale. As green says, *“If you let the people own the land and work the land they produce much more..... what you need is more work and less chemicals.”* (Ibid.) Industrial agriculture associates efficiency with monoculture and mass production, however much of the food produced industrially goes to animal feed and biofuels and is not distributed locally or efficiently to feed people (Laurent 2015).

Historically, it has taken a crisis or a “tipping point” to encourage people to grow food efficiently and in cities. We can look at Havana, Cuba for example, where citizens were forced to produce their food locally and organically due to a trade embargo imposed by the US (Rosset 2005). Similarly, the Victory Gardens in the US and the UK during the world wars were efficient in producing food for urban citizens. In the US for example, *“At peak production in 1944; twenty million victory gardens yielded 40% of the fresh vegetables produced in the US”*(Basset 1979 as cited by Hanna and Oh 2000). Detroit is a contemporary example of a post-industrial city where urban agriculture helps feed the citizens of Detroit. Urban farming doesn’t need to replace rural farming, but has the potential to help feed people if the circumstances allow. As Detroit farmer Malik Yakini puts it,

*“I think urban agriculture has great potential to help feed people in urban areas. I don’t think urban agriculture is going to replace rural agriculture and the two have to kind of work hand in hand. Both urban and peri-urban areas and rural areas all need to be producing food, but it seems that it makes sense since most of the world’s*

*population is concentrated in metropolitan areas, it makes sense that food is grown closer to where people live.” (Interview in Laurent 2015)*

In congruence with these views, I argue that we need more people growing food on a smaller scale, rather than more industrial scale farms. Urban agriculture, whether recreational or commercial has the possibility not only to inspire interest in sustainable food, but also offers spaces for experimentation and learning. The local food strategy could potentially lift the possibilities and create circumstances to encourage more people to produce food. As Stadsjord said,

*“In Sweden we are really good at big scale, we beat everyone, almost USA even. And therefore the food strategy needs to be a prerequisite to deepen the conversation about which scale we should produce at, by who, for who, in which scale in which economic structure”*

We need to rearrange our food system and our cities. Local food production can act as a tool to bring the majority of consumers closer to the food cycle and create green spaces with the potential to serve various ecosystem services. As Paul de Graaf writes,

*“Urban agriculture can be used as a tool for making new connections in the urban ecosystem, connecting realms such as health, food, energy, waste management and real estate, thus making the overall network more responsive and flexible”(Miazzo and Minkjan 2013, 35).*

Incorporating diversified models of urban food production in urban design is a way to *“re-organize existing elements in more resilient and adaptable ways”* (Ibid.). Urban agriculture is often a bottom-up initiative, driven by urban farmers themselves. As de Graaf writes,

*“Urban agriculture is opportunistic by nature. It adapts to the possibilities and limitations of the city. It is driven by bottom-up initiatives and the key designers are urban farmers themselves. Traditional top-down planning and design is not appropriate here: this is understood by municipalities that wish to facilitate and stimulate urban agriculture.”* (Miazzo and Minkjan 2013, 38).

In other words, urban agriculture is often a grassroots movement from below, however, municipalities and policy makers have the possibility to facilitate urban farmers, as “some aspect of ‘big picture’ planning is necessary to make the whole

more than the sum of its parts” (Ibid.). Mapping and local food policies can facilitate diverse forms of local and regional food production which can fill a variety of unused spaces, using untapped resources to meet diverse needs. In the case of Gothenburg, the upcoming local food strategy has the potential to be a facilitator in the proliferation and diversification of local food production. In the following I will discuss this.

## 8.2 The Local Food Strategy

There are many interests to be covered when it comes to creating a local food strategy. There are clearly environmental and climate targets to be addressed, yet there is still a strong agenda for economic growth. In order to achieve a sustainable balance of these interests and take into consideration regional and national affairs, the food strategy must be transdisciplinary and involve all actors in the food scene. One of my informants saw this as a challenge:

*“The challenge I see with the local food strategy is that they have a vision of working across disciplines, but it’s not rooted in all the actors that are very important in this movement, so there is a challenge in making a food strategy that is actually good”*  
(GrowGothenburg)

There is danger that too much focus on economic growth in the food strategy can cause a conflict in interests for environmental and social sustainability. For instance, one politician I spoke to mentioned that there is a contradiction in trying to create a local food supply chain and a self-sufficient city, while at the same time trying to attract international visitors through tourism. Similarly I encountered concern that the food strategy would be too focused on the social impacts of urban food production, on issues such as integration or education. Urban food producers are hoping that the food strategy will improve the circumstances for urban food producers and the availability of local sustainably produced food for all residents:

*“The food strategy needs to exist as a base for food issues, issues of urban food production, a strategic document which states who will produce what for whom and what is needed for a sustainable food chain. This needs to exist everywhere. And then we can’t confuse the issue of food with integration and social issues. These are very*



*important issues. But the issue of food and the food strategy needs to be for the entire Gothenburg and for everyone.*” (Interview at Stadsjord, October 2017)

As the food strategy is an assignment from the environment and climate department, creating a low-carbon, local and regional food supply chain that is resilient to pending environmental challenges should be the main priority. Making this food supply available to *everyone* is the social challenge, and bringing local sustainable food into the dominant economic system is the economic challenge. The other social benefits are positive side effects which make local food a better alternative to industrial food production. However, a local food strategy with too much focus on the benefits for social inclusion and pedagogical values risks losing the focus on local food production for its ability to provide food for citizens. As Stadsjord states:

*“It becomes a problem when the food strategy becomes synonymous with a social help program. It’s hard to take it seriously when it’s just a social program. ...the entire food strategy is just a social issue then it will neglect other issues and downgrade them. It has a social character but it’s also about nutrition, labor conditions, trade, climate, animal ethics, protein shifting, water use, the status of the ocean. It’s a huge issue!”* (Interview at Stadsjord, October 2017)

When the local food strategy is finished, it should act as a guide for politicians to promote the circumstances and availability of local food. As Stadsjord said, it will, *“guide city politicians to develop instruments that contribute positively to human health and the environment through the food produced, processed and consumed.”* (Interview at Stadsjord, October 2017)

A good food strategy may have the potential to fuel the political action for a local food supply chain. In the following, I will discuss the role of politics in this context.

### 8.3 Politics

One politician I spoke to from the Green Party said that there had been a positive development in the municipality in the last years. As an example, he mentioned the municipal property office (*Fastighetskontoret*) who *“have gone from being completely uninterested 6-7 years ago to there where we are today, so we have come a long way,”* referring to the project *Stadsnära Odling*. He himself wished even more

could be done to lift the engagement that exists in Gothenburg, saying, *“we are really spoiled to have such enthusiastic, engaged, and innovative businesses and people, so we don’t even need to think about what would be good to have, it just comes to us and we need to accommodate it.”*

In contrast to many other cities, the political will in local food movement in the Gothenburg is quite radical. However, though this is an obvious positive change, changes are still not occurring quickly enough to face the impending ecological challenges that we will likely face in our lifetime. It is the job of politicians to create policies and circumstances that support positive change. There are obvious steps being made by the Gothenburg municipality to support local food production, but these steps could be more drastic. As Stadsjord expresses:

*“It’s very ambivalent, but I think that the process is way too slow, they don’t use the potential that exists, and they betray those who actually believed that the politics are honest. When the municipality says ‘Now we are going to focus on urban farming’ then entrepreneurs think ‘now we are going to focus on urban farming’ and they use a lot of research to develop models and techniques but the city merely said ‘now we are going to focus on urban farming.’ They don’t have any intention or understanding for what they are expressing.”*

The fact that urban farming is finally being spoken about on the political level is a big step, but understanding through knowledge and experience is a step further for a stronger political movement. As one informant said:

*“To talk about something is one step, but I think they could take a step further.....There is so much more potential for urban food to be a source of food supply”* (Interview at GrowGothenburg, October 2017)

Where there is lack of political engagement, there is a lack of a deeper knowledge of the benefits of local food growing. Moreover, at the political level, changes occur very slowly. Another informant thought that the development in the politics of food had occurred “way too slowly” and described how political change “starts on a piece of paper and takes years before anything happens.” Stadsjord seems to agree:

*“Politicians say that they want to work with urban farming but they stick to small steps and nothing is happening. To do very little and act like you’re doing a lot is the worst. Then you might as well do nothing and wait until there is a revolutionary force that calls for something radical.”*

As my informant from the Green Party mentioned, the public engagement in the urban food movement is not an issue, it’s accommodating this engagement. This is the perfect example of how grassroots, bottom-up movements can put pressure on political agendas. In the case of urban food production, showing politicians that it can provide food and can be economically profitable makes it also politically viable to be taken as a serious alternative to the unsustainable corporate food system.

As economist Olivier de Schutter says,

*“Governments and Scientists unanimously agree that our current system doesn’t work and is leading us toward an impasse. But alternatives are emerging very slowly.”* (Interview in Laurent 2015)

Since the first environmental movements of the 1970s in Sweden and elsewhere in the world, when the impact of human activity on climate change and environmental pollution became popular political issues, very little has been done to counteract human exploitation and destruction of natural environments. As I’ve illustrated, much environmental destruction is due to the global industrial food system, which is ultimately intertwined with consumer habits, making them also unsustainable. In order to initiate a deep seated change industrial food practices, from production through to consumption, there needs to be more dramatic measures on a policy level. As Mason and Lang write,

*“As data on food’s impact on health, environment and society have grown, so attempts to achieve preventative change have followed. Some analysts argue that small changes are all that is needed, which over time give incremental benefits. Others argue that big rather than small changes are needed, that the environmental clock is ticking, and that there needs to be rapid systemic change”*(2017, 274).

In accordance with the latter view, I argue that changes need to be coordinated on a mass scale, but so far this is not happening. Current consumer eating practices must change, as

*“They are bankrupting healthcare and warping entire economies. But the usual approach is to adopt soft ‘below the radar’ nudge and advice techniques, when what is required is the reframing of the economy and setting tougher new norms for lifestyles” (Mason and Lang 2017, 250).*

This is congruent with the social practice approach that a change in practice is not merely a matter of individual behavior in the market. Demand is a result of what is available and governance and economics control what is available. There is a need for deeper transformation and decisions on a political and economic level. However, we have become locked-in the global industrial patterns of production and consumption which makes the emergence of alternatives difficult. In the following I will elaborate on this.

### **8.3.1 Thinking globally, acting locally**

Olivier de Schutter explains that:

*“The real government advisors are big companies, and governments bow to their economic interests. That’s normal. How can you criticize a government for wanting to open export markets or for protecting its own economic players against those of other countries? The problem is that it is contrary to what democratic demands would like.”*

In relation to the global capitalist system, Governments often prioritize economic growth over social and environmental issues. Democracy is often corrupted by economic interests and politicians often do not represent the people. As written by Professor Meritt Polk,

*“Studies of political and administrative processes for visioning, consultation, and urban planning show a continued dominance of a neoliberal sustainability agenda where stimulating further economic growth is the dominant policy and planning*

*approach to addressing environmental problems”* (Culberg et al. 2014; Polk 2010 as cited in Polk 2015).

A member of parliament that I spoke to held that creating local food supply chains was not high on the political agenda as, “the conventional food industry is so strong.” Moreover, this informant explained that transport is the part of the food chain with the least amount of climate impact, accounting for only 20% of greenhouse gas emissions of which half are caused by consumers driving to and from the store. Production methods, on the other hand, specifically of livestock, have the most climate impact. The research program on Climate Change, Agriculture and Food Security writes that,

*“Agriculture makes the greatest contribution to total food system emissions—7,300–12,700 million tons of CO<sub>2</sub> equivalent each year, equivalent to 80–86% of food systems emissions and 14–24% of total global emissions”* (Research Program on Climate Change 2015).

Despite this fact, I interpreted this as a way of justifying the global food market. However, I thought to myself, transport still requires fossil fuels which are non-renewable and necessitates other unsustainable practices such as packaging and refrigeration. Moreover, transporting food products reduces their freshness and longevity, causing food waste. Another shocking statistic is that one third of the food produced globally is wasted. In low income countries 40% of food losses occur at storage, transport and processing levels, while in high income countries 40% of food loss occurs at retail and consumer levels (Research Program on Climate Change 2015). Local food is fresher and thus lasts longer without being wrapped in plastic, refrigerated and sent across continents. Not to mention the positive social and health effects of relating to food production and reducing the mental distance between food production and consumers. Therefore it makes sense to create policies that generate more local production and direct trade between consumers and producers.

This is not to say that local governments should cut out global markets, but suggests that there could be more focus on creating local supply chains, which has so far not be prioritized by many governments due to economic interests of export markets. In Sweden, for example, food trends up until the implementation of the National Food

Strategy was presented in 2017 showed that food was increasingly being produced further away and that less food was being produced in Sweden. The National Food Strategy aims to increase local and sustainable production, while at the same time generating economic growth and potential for export markets. In the short version of the Government Bill it is written,

*“Our aim in producing a Food Strategy is to foster a competitive food production industry in Sweden, thereby increasing innovation, employment, profitability, production and exports while achieving the relevant national environmental targets.”* (Government Offices of Sweden 2016/17, 9)

Hence, there could arise challenges in both increasing exports while at the same time cutting back on greenhouse gas emissions. Furthermore, the National Food Strategy claims that *“An agricultural sector able to compete on the global market and survive is essential to the sector’s contribution to the environmental objectives”* (Ibid.21). In other words, increasing environmentally efficient agricultural practices has the potential to be economically competitive in the global market, potentially increasing the availability of sustainably produced food. This strategy embraces the idea of *“thinking globally and acting locally.”* Through focusing on generating more environmentally efficient agriculture locally, Sweden can add more sustainable food in the global market and set an international example. The bill states, *“The solution is not to improve the environmental situation by reducing production but to increase the more environmentally-efficient production”* (Ibid. 21). Environmentally efficient production includes creating closed loop systems where no resources are wasted, as well as increasing technological and biological methods for sustainable crop, seafood and livestock production. Closed circular systems in agriculture can lay the foundations for circular economies, as written in the bill, *“There is great potential for the agricultural sector to contribute to such an economy”* (Ibid.). By focusing first on environmentally efficient agriculture nationally, Governments can have a global influence. When it comes to producing food in cities, urban producers should be equally valued for their ability to also contribute to the Local and the National Food Strategy as innovators within environmentally efficient food production.

The challenge in creating radical changes at a policy level arises from the fact that our governments and economies are “locked in” a national and global industrial

market. As Mason and Lang describe that even with a preparedness to make a change there is a cycle of “inertia at the policy level” (275) caused by an “(a) inaction by government, industry, media and civil society feeding, (b) low public awareness feeding, (c) low policy priority feeding, and so on” (Ibid.). In line with social practice theory, this statement recognizes the importance of material (technological, industrial), cognitive (knowledge production/conscious) and individual (civil society) action to achieve a deeper change in food production and consumption patterns

Another challenging issue is the agenda to attract tourists to Gothenburg. The Member of Parliament I spoke to mentioned this as one of the biggest challenges in creating a sustainable city,

*“It is the issue of climate, because all economic growth is connected to the climate, so with tourism the best and most effective way is to work in Asia and get tourists from China, which is positive, but a huge climate impact, so this is a big challenge.”*

Hence there is the usual challenge of balancing the agenda of economic growth while simultaneously trying to cut back emissions and promote environmental sustainability. In the words of Polk (et.al),

*“Despite the examples of different emphasis on social and environmental problems, much of the policy, planning, and actions taken in the Gothenburg region are still embedded in this status quo agenda. So far, however, the focus on economic growth in the region has neither been able to prevent environmental degradation and increasing resource use nor slow down growing social polarization and segregation. It is in the context of this failure of neoliberal approaches to solve pressing urban problems, that new ways of working together are attracting interest from the political and administrative organizations in the region.”(Polk 2015)*

A more transformative agenda would have to include knowledge and experience from various disciplines and practices to work toward a common goal of sustainable development where the wellbeing of the local people and the environment are put before economic profit from export markets. When it comes to the urban food producers presented in this study, it is obvious that collaboration, whether between the municipality and farmers, farmers and cooks or other actors in the food chain, can strengthen the transition to resilient local food supply chains. Political and administrative organizations can be instrumental in driving the development and

proliferating entrepreneurship amongst those who are creating alternatives for sustainable practice.

The Gothenburg Spirit has changed in its nature through time. It began as charitable gestures from rich members of the community, yet during the heavy industrial period the Gothenburg spirit referred to the collaboration of industry and politics for economic purposes, “for better and for worse” as one of my informants expressed, as these interests were not always for the benefit of society or the environment. In a post-industrial transition to a sustainable city, local politics could shift focus from industrial collaboration to collaboration with small-scale sustainable food producers to stimulate environmental and social models that can also be included in the economic system. When it comes to sustainable food, politicians must take the lead in creating policies and circumstances for diversified local foodscapes that support the criteria for sustainable diets. This includes making unsustainable options less available and attractive. There is a need for more radical policy making. If we are going to change our food system it doesn’t make sense that those using unsustainable industrial production methods are receiving government subsidies, while those who are developing resilient local models struggle to compete in the large scale monopoly or are impeded by bureaucracy.

In Gothenburg, initiatives to create local food systems are largely bottom-up initiatives such as Stadsjord, Kajodlingen, and REKOring. While grassroots initiatives are effective in pressuring political agendas, Governments must take the lead when it comes to influencing national and global systems. Governments must think globally, but act locally. In the post-industrial transition to a “Sustainable City-open to the world,” the energy that sustains the citizens of Gothenburg- food- should be a top priority.

## **8.4 Concluding Remarks**

As I’ve illustrated in this thesis, with the example of Gothenburg, the transition to post-industrial food practices is a task that requires efforts from diverse actors throughout the food supply chain, and we are all part of the food chain, from production to provision and consumption. Human impact on the environment has been dramatic since the intensification of industry, agriculture, urbanization and



mass consumption. Incorporating food production in our urban environments and creating local supply chains can have a positive, synergetic effect on all four of these sectors; industry, agriculture, urbanization and mass consumption. Gothenburg is an example of a place in which urban producers are creating new practices in agriculture that are stepping away from the unsustainable habits of the traditional food industry. These foodscapes have the ability to change the patterns of urbanization, creating ecosystem services, circular economies and alternative consumption platforms for urban dwellers. Changing the food system and unsustainable consumption is not a task to be considered in isolation. Silo thinking and business as usual is not going to result in a deeper societal change. There is a need for cross-sector transdisciplinary knowledge and experiences, bridges between theory and practice, and a diversity of perspectives in order to achieve holistic long-term change. Diversity in food production and consumption will offer alternatives and promote changes to monoculture. This will need to be supported by a diversity of actors from all levels of society if a goal of sustainable living environments is to be achieved.

The case studies presented here demonstrate a circular economy in practice and offer economically viable alternatives that have the potential to change consumer practices. Moreover, these new practices have the potential to cross borders, as is evident from the REKO-ring movement, which was inspired by France, started in Finland, spread to Sweden and is now just starting up in Norway. Other cities can look to Gothenburg for inspiration on how to stimulate entrepreneurship around local food initiatives through collaborative efforts. There are urban voids to be filled and untapped resources to be recycled in all cities. The dynamic nature of urban food producers such as those presented in this study have the ability to fill these voids and utilize urban resources in innovative ways that can feed our bodies and our minds, inspiring more sustainable food practices.

There is evidence that once they get a foothold, new ways of growing, selling and buying local foods can be self-sustaining. As a result of municipal support, Kajodlingen was offered the chance to prove that there is a market potential for freshly harvested local greens through quality concerned chefs and conscious consumers. This season they have now expanded their production and are no longer dependent on municipal support. This shows that collaboration between

entrepreneurs and local politics has the ability to help small businesses get into the market. In the case of urban food producers, the market for quality, sustainably produced food will hopefully continue to grow enabling further development. In addition, the success of Kajodlingen has inspired others to develop commercial models for urban food production. The municipal support shown so far can be strengthened by making more unused urban space available for more technological innovation within urban food production and a strong local food strategy that puts productive urban foodscapes in the master plan of future development. Cities are centers for consumption and therefore any attempt to create a sustainable city should accommodate sustainable consumption options. Urban governance at the municipal level has the potential to exercise their political and economic power as “food chain innovators” with the ability to “transcend simplistic dichotomies between local and global scale and between urban and rural development”(Morgan and Sonnino 2010). Positive examples have the potential to spread nationally and internationally.

Further research on the subject could include quantitative studies to map how much food these urban producers have the potential to produce, how many jobs they can potentially create and how many Gothenburg consumers can be fed with urban food. The most challenging question is how urban growers can achieve a sustainable economy with the ability to scale up and invest in their own business while at the same time competing for premium urban land with economically stronger forces of urban development. Academic research consistently provides evidence on the social and environmental benefits of urban farming. More radical urban planning and policy making would need to consider the long-term social and environmental value of productive foodscapes rather than short term economic profits.



*Figure 12* The new and improved Kajodlingen production site at the old Götaverken shipbuilding pier, which is currently part of Älvstranden Development's River City Project.

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