Food and non-food private sector engagement in the City Region Food System Rotterdam

with a focus on the supportive role of social housing corporations

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Abstract

The City Region Food System of Rotterdam is characterised by the paradox of being an international port – a gateway to Europe, particularly for fruit and feed – while at the same time having a small but prolific local food movement that consists of citizens and entrepreneurs who are motivated by environmental and social aims with strong local connections. Rotterdam is still largely supplied by supermarkets and conventional just-in-time distribution, a classical example of food system 2.0[1] and it is hard to see how this could change in the short term. Nonetheless, the more sectoral approach to food (production, processing, transport and retail) is making way for a more integrated approach to food (i.e. also considering environmental, public health, social justice, education, employment concerns as is characteristic of a more regionally embedded food system 3.0). This is reflected in the increasing participation of players that are traditionally not considered part of the food sector such as health organisations, schools, social housing companies, commercial real estate, innovative start-ups, proactive NGOs and social entrepreneurs.

Short supply chain initiatives

Rotterdam has seen an increasing number of short supply chain initiatives over recent years. Although these may have social and environmental motives their main driver is commercial viability and they aim to serve a growing niche market. Short food supply chains may involve direct sales on farm, online sales and box schemes, farmers markets, retail and catering (hotels, restaurants, public institutions and private companies).
There are several websites that show where to buy your food directly from farmers or growers in the Rotterdam city region. Farmers work on their own or as a cooperative.

Relatively new categories of direct supply are urban farms or urban production sites inside the city. Initiatives range from urban to peri-urban and from self-organised citizen initiatives to professional farmers.

The number of online shops and box schemes is rapidly increasing in the Netherlands and the Rotterdam city region, with new initiatives starting up, but also closing down, regularly. An increasing number of farmer and festival markets offer opportunities for organic local (and national) producers and traders.

In retail and catering, a current trend is the differentiation on the basis of provenance claims. This is expressed both in new catering concepts (e.g. a restaurant using produce from the region) and new product concepts (e.g. local product varieties or recipes). There are restaurants that have on-site production facilities to complement the products that they source locally. There are also urban farms that run a restaurant to market their products. There is a fast food (snack bar) chain that is trying to source potatoes for its world famous Flemish chips from the region. They recently introduced a new food concept where they cut potatoes without peeling them and serve the chips with home-made ragouts and sauces. Another project re-introduced a traditional dairy breed for meadows on peat soil in the Rotterdam city region. The meat is used in hamburgers served at snack bars in the region.

The high number of new initiatives seems to indicate, on the one hand, the opportunities that are provided by CRFS, and on the other, that start-ups in the food sector require founders with a strong drive as it is difficult to achieve financial viability in the early years. For the founders of more profit orientated initiatives such as Fenix Food Factory and Uit Je Eigen

[1] See page 11 for a further definition of these food system categories.

Stad en Rotterzwam, the balance between their ideals and financial viability (becoming independent of public or private capital inputs) is an ongoing challenge. Another tentative conclusion is that short food supply chains may benefit from sharing resources, infrastructure and knowledge with mainstream food supply chain players rather than attempt to compete with them. Additionally, logistical efficiency can be much higher when several local initiatives co-operate.

Non-traditional food actors

In general it can be stated that the increasing non-food private sector engagement in the Rotterdam CRFS is primarily driven by a wide range of urban motives. These motives range from improving social cohesion, improving public health and building a sustainable future to securing real estate value by providing a beautiful and appealing living environment. Several types of involvement on the part of these players can be distinguished, for example, providing access to financial support, land, financial and human resources, knowledge and expertise, networks and peer knowledge and initiating the development and delivery of projects.

For example, private funds from the Rotterdam region that support social, cultural and/or environmental goals have facilitated city food region initiatives through grant support. Typically they support events, delivery costs and investment in materials and consumables such as plants, containers or kitchens. The Dutch Rabobank (originally a cooperative with a focus on agriculture) offers regional funds (as part of their Banking4Food strategy) to support initiatives by local citizens and entrepreneurs who use food as a focus.

It is striking that social housing corporations (SHCs) such as Havensteder, Vestia and Woonstad Rotterdam, as well as commercial real estate developers, have played an important role in facilitating urban agriculture and food related initiatives by providing access to land and financial support. They own vacant land that is not immediately being developed (because of the economic crisis) and they have vacant office space. For urban food-related initiatives, access to (production/ retail) space is essential and access to temporarily unused land (or vacant office space) is one way to avoid the competition for scarce and valuable space in the city. Vacant land can be turned into a collective (edible) green space with possibilities for interaction. Vacant office space can be used as a neighbourhood restaurant that allows children to learn to cook. SHCs in turn appreciate the benefits of such initiatives as these urban CRFS activities have the potential to contribute to increasing social cohesion and the quality of shared and public spaces and to improving a perceived ‘sense of place’.

Commercial real estate developers also consider an (urban) farm as a facility for residential urban development, or even as a central force around which an area can be developed. The same mechanism can be observed in the way food distribution and retail is used as a driver for urban development. As high streets are under increasing pressure from online competition, retail property developers are looking to develop different shopping experiences. As demonstrated by the privately developed Markthal and Fenix Food Factory, food offers plenty of opportunities for an enjoyable shopping experience through smelling, tasting, touching and eating, all things that cannot be done through the internet. It is assumed that this will reflect on real estate value, i.e. increasing or at least maintaining value. Such initiatives also have the potential to extend the average time of residency for occupants in the neighbourhood. This point and the impact on real estate value both translate into savings and profits from a real estate point of view.

SHC/real estate supported projects involve Uit Je Eigen Stad (UJES), an urban farm on a derelict site in the Rotterdam area (SHC/real estate roles: site design, building services, pre-investment to be recovered through rent); Hotspot Hutspot, a pop-up restaurant that teaches children how to cook a meal from scratch (SHC roles: financial support, access to land and building space); Stadslandbouw Schiebroek, a network of urban gardens for residents in a social housing neighbourhood (SHC roles: access to land, water and hiring of a coordinator/coach) and the mentioned Markthal, a retail real estate project with a focus on food (real estate role: owner of the Markthal, renting out space). Their motives range from Corporate Social Responsibility, asset value addition to place making. SHCs often have a longer term relation with urban food initiatives than real estate agencies do. Most food-related projects, such as Hotspot Hutspot and Stadslandbouw Schiebroek supported by SHCs directly benefit their main target group; the tenants of social housing. A longer-term commitment, and one that combines different support strategies, seems to be the most successful.

There are also various private land owners who make some of their land available to food production or related activities. Inside the city, Trompenburg Gardens and Arboretum are planning to turn 1.2 hectares of its 8 hectares public gardens into a food forest in collaboration with, and initiated by, a group of social entrepreneurs.

Social care and rehabilitation organisations have been and still are involved in food-related activities as part of their work to help people heal or enable them to get back to work.

Although the active involvement of traditional utility companies (e.g. energy and water) in developing specific solutions to support short food supply chains has been limited, some innovative projects have emerged. Between 2006 and 2009 the energy company E.ON was a partner in a project that used waste heat from its plant in the Rotterdam harbour to grow tropical shrimps (Happy Shrimp). Other initiatives are developed around the safe re-use of food waste for human consumption. This is done by the Food Bank and also by pop-up restaurants such as Hotspot Hutspot. These initiatives target people with low income and they are therefore socially inclusive by design. Another initiative is the start-up Kromkommer that turns discarded (odd shaped and surplus) vegetables into products such as soups and they now also supply supermarkets.

This wide range of food system innovations also attracts engineers and consultants, such as suppliers of technological solutions as well as engineering firms.

Future roles of private sector

After the adoption of the New Housing Law in 2015, SHCs are demanded by the government to return to their core-tasks (e.g. providing social housing). Their future involvement may be limited to more socially and economically deprived areas, to maintaining current levels of involvement, or to co-sharing of support and responsibilities with other (municipal) actors. At the same time, and in the long run, a completely different approach to urban design and development may be needed, where housing, food production, waste recycling and energy production are all integrated at the local level.

Urban agriculture and urban food also do not fit the current way of accounting. The benefit of supporting urban agriculture is not officially valorised. SHCs would welcome further impact studies to back up evidence for supporting such initiatives. Partly as a result of this lack of data and information, it is left to engaged individuals in the organisations to support specific projects. SHCs supporting community gardens are also criticised for intervening cosmetically in the neighbourhood rather than solving the real problems at hand, such as renewing the stock of social housing. Closer engagement with the city's spatial (selecting the most appropriate locations) and food strategy would also be helpful in this regard. SHCs could involve urban agriculture and other local activities in closing loops in sustainable renovation efforts. The City of Rotterdam and SHC should develop common urban regeneration plans, including the use of urban agriculture as a regeneration strategy. They should coordinate their activities, their funding and the exchange of knowledge and experience with private property developers and the relevant municipal departments.

With respect to short food supply chains, demand in the Rotterdam city region is still growing. There is also a trend among short food supply chain initiatives to cluster part of their activities with other short food supply chain initiatives in order to become more efficient. Another trend for short supply chains is diversification of market outlets. For example, Willem & Drees products can be found in the supermarket, at train stations, at the Rotterdamse Oogst farmers' market and they can also be bought from their online shop and delivered home or delivered to customers' workplaces. Both the long supply chains as well as the shorter supply chains need to become more responsive to the market, less focussed on bulk and more on adding value, co-creation and the experience economy.

At the provincial level, short food supply chains are one of the priorities in the Provincial Rural Development Programme (the other priorities being closing resource loops and biodiversity). These are priorities favouring the further development of a CRFS. Such priorities however also have to be supported by the national programme, in order to benefit from European funding. Making rural funds available for CRFS development (as a kind of re-ruralisation of the city) could offer new possibilities for financing food-related initiatives in the Rotterdam region.

Public procurement may also offer new opportunities for city regional food production. In 2015, the city of Rotterdam in cooperation with the Province Zuid-Holland commissioned a study into the potential for growth in short food supply chains, and catering for institutional buyers (hospitals and homes for the elderly) was identified as a potential growth market.

There are also still potentials to be explored in the area of circular economy and closing resource loops (water, energy, waste) in local and regional agriculture. Another potentially promising link can be made between short food supply chains and the health sector. In the longer term, it is quite possible that health insurance companies will reward people with healthy eating patterns and a healthy lifestyle with lower insurance premiums, although, currently the scientific validation of such health claims is still being debated.

Private sector support would have more impact, if urban agriculture and food projects would be supported for longer periods of time and in a more coordinated manner. Real estate companies could integrate food production and waste recycling in their standard development strategies. Certification systems for sustainable building like BREEAM and LEED now include points for food production in gardens or on roofs and local waste processing with digestion or composting. A good score in turn gives access to green funding.

Future private sector roles are not limited to retrofitting and optimising the current city region food system. One could also look at the role of private sector players in redesigning the city region food system as part of a major redesign of the delta metropolitan landscape, in order for example to mitigate risks associated with climate change impacts.

Further development of the Rotterdam Food Strategy should include short as well as long food supply chains, it should engage food start-ups and established (multinational) companies, it should link a social agenda to an economic one. It should also include a spatial strategy of where to produce, process and distribute food for the local and export market. Urban food has become a city marketing tool. It also seems that investment funds are more actively looking at city regional food systems as a new investment opportunity. A policy environment that acknowledges the broader impact of food related activities and supports private sector players to actively engage in these activities could offer further opportunities.

1. Background and current context

The study is part of joint project between the RUAF Foundation and the Food Business Knowledge Platform. Working with local partners, the project aims to contribute to a better understanding of how different private sector players can shape or enable city region food systems (as opposed to a more national or international food supply system); and what business and policy environment is needed to better engage the private sector in building such city region food systems. Similar studies have been undertaken for Bristol, UK and the Quito Metropolitan District, Ecuador. An overall analysis report highlights findings of these three case studies, 19 smaller cases and a literature review[2]. This study specifically focusses on describing short supply initiatives and the engagement of non-traditional food sectors (focussing particularly on social housing corporations) in the Rotterdam CRFS.

1.1 General introduction -Dutch context for private sector participation

To understand the context of private sector participation in Dutch city region food systems, it is helpful to briefly consider private sector participation on three levels: Dutch society, the Dutch food sector and city region (food system).

Regarding the first point, the relationship between state, market and civil society is changing in the Netherlands. Under pressure from decreasing government budgets and a growing movement of assertive citizens, the relationship between the public and private sector is changing. Public sector responsibilities that traditionally included, for example, (health) care, energy production and management of public spaces management, are shifted to other stakeholders. The current Dutch policy environment aims to stimulate civil society and private sector players to take responsibility and assume a larger share of the tasks that were traditionally performed by the government. This ambition is summarised in the phrase '*participatiesamenleving*' (participative society), and is exemplified by bottom-up citizen initiatives taking over government tasks such as the management of public green spaces as well as the privatisation of public goods and services, especially at municipal level. The idea is that responsibility should be given back to civil society and private players and that this allows the government to focus on its core tasks and to function on a reduced budget. This national trend is also influencing governance at local (city region) level.

The Dutch food sector has traditionally been dominated by the private sector and the role of government has been limited to policymaking (specifically with regards to food security, food safety and public health). But the relationships are changing here too. A more integral approach to food widens the circle of players that are involved. 'If the sectoral approach to food (i.e. food production = agriculture, food processing = industry, food distribution = transport, and food selling = retail) is making way for an integrated, approach to food (i.e. food = environment + public health + social justice + employment + education + quality of life), scientific research and policymaking have to change accordingly (Wiskerke J. and H. Renting, 2010).' This is reflected in the growing participation of players that are not traditionally considered part of the food-sector (such as health organisations, schools, social housing and real estate companies).

[2] All case study reports and the overall analysis report can be accessed at http://www.ruaf.org/projects/role-private-sector-city-region-food-systems

At the city region level the latter trend becomes even more evident. This is because in addition to a more integrated approach to food, there is a trend towards more localised food and shorter food supply chains which demands reconsideration and re-organisation of the whole food chain. The city region food system perspective allows new private players to enter the food system and existing players to take on new roles.

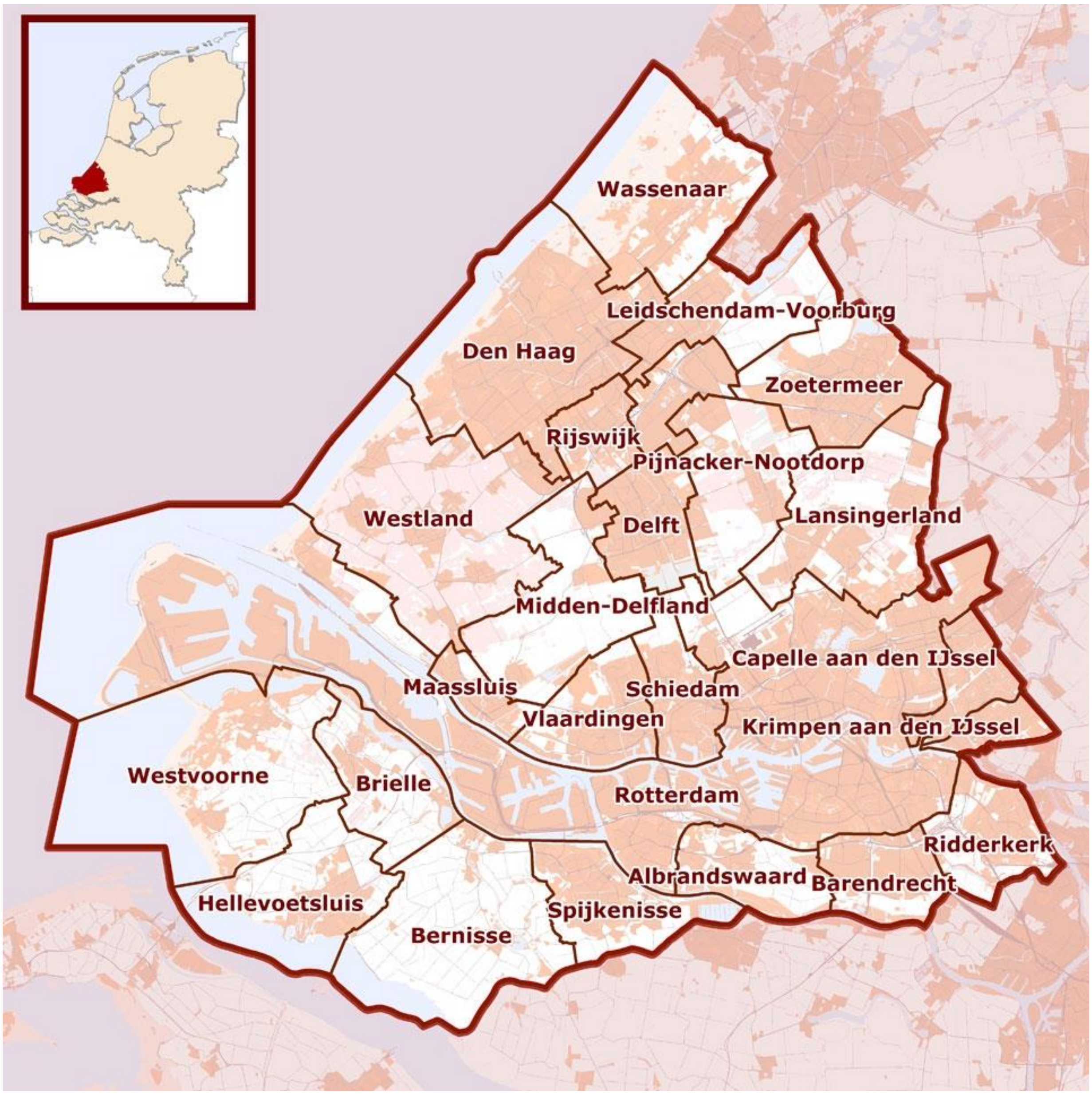
1.2 Introduction to Rotterdam City Region

In 2014 over 630,000 people lived in Rotterdam. The city is home to a large port which includes inland shipping with river barges that transport cargo from the port via the Rijn and Maas rivers across Europe.

Until recently Rotterdam was part of the city region Rijnmond (Stadsregio Rijnmond), a conglomeration of 15 municipalities which includes cities along the river Maas and also more inland focussed municipalities. Agriculture (or multifunctional agriculture) was part of the agenda of its Green Blue Structure Plan (Regionaal Groen Blauw Structuur Plan RGSP3[3]). The document argues that, despite the pressure on land, there is a role for city focussed agriculture in the region as it can deliver benefits for society, for example recreation and nature protection. It can also deliver on food production as urban dwellers increasingly demand transparency and provenance through short food supply chains (Stadsregio Rotterdam, 2011[4]).

[3] http://stadsregio.nl/regionaal-groenblauw-structuurplan
[4] See point 3.4.4 on page 17

Image 1: Metropolitan region Rotterdam The Hague (MRDH)



In 2015 the Rijnmond city region merged with The Hague city region (Stadsgewest Haaglanden) to form the metropolitan region Rotterdam The Hague (metropolitan region Rotterdam Den Haag MRDH mrdh.nl, see Image 1). MRDH is a collaboration between 23 municipalities, of which Rotterdam and The Hague are the largest. MRDH covers 990 km2 and has 2,500,000 inhabitants. The region produces 20% of the Dutch Gross national product. The increased level of collaboration at the enlarged metropolitan level is deemed necessary to increase economic competitiveness. Priorities for the food sector still need to be developed. On the one hand, the MRDH region may, as a net exporter of food to Europe, benefit from a wealth increase in Eastern Europe (and beyond). On the other hand, resource scarcity and geopolitical tensions may hinder international trade and encourage metropolitan regions to become more self-sufficient in food, reducing the potential for export.

Vereniging Deltametropool, an association of stakeholders that are active at a larger scale than MRDH, developed first proposals for the food sector (versestad.nl, www.deltametropool.nl). Quite recently, the Province of Zuid Holland also developed a ‘food policy'. This is a framework to guide the Rural Development Program (EU Common Agricultural Policy budget matched with Provincial funds) that they operate for arable farming and dairy (see www.zuid-holland.nl). For the greenhouse horticulture sector (which is mainly hydroponic), the Province of Zuid Holland developed another long term strategy to guide national and provincial investment in food related infrastructure (www.greenportwo.nl).

1.3 Characterisation of the City Region Food System of Rotterdam

The City Region Food System of Rotterdam is characterised by the paradox of being an international port – a gateway to Europe, particularly for fruit and feed – while at the same time having a small but prolific local food movement that consists of citizens and entrepreneurs who are motivated by environmental and social aims with strong local connections. Rotterdam is still largely supplied by supermarkets and conventional just-in-time distribution, a classical example of Food System 2.0 (Jennings S. et al., 2015) and it is hard to see how this could change in the short term.

Food system categorisation

The food system of any city across the globe, whether small or large, will always be made up by a mix of players and local, national and global food chains, combining different modes of distribution and consumption. According to Jennings, S. et al. (2015), authors of the publication "Food in an Urbanised World", three basic types of food and market systems can be distinguished, each offering specific opportunities for private sector engagement:

So-called food systems 1.0 are still characterised by a greater degree of local and national production, greater prevalence of small-scale producers and informal actors in the market chain and a greater share of consumption of relatively unprocessed foods. The private sector in a food system 1.0 includes a majority of small-scale producers, smaller local shops and local traders and a limited number of retail markets. Food systems 2.0 are characterised by a larger dependence on national and international trade, as well as by a more centralised, consolidated supply chain with greater global integration, reduced reliance on local production and greater consumption of processed foods. Such food systems are predominantly found in (more) industrialised countries and cities. Private sector players include larger farmers, large supermarkets, national and international processing industry and a wider variety of retail and catering businesses. Food systems 3.0 are more re-localised or City Region Food Systems (CRFS) that seek to foster a resilient balance of food supply from global and local sources, which is based on an awareness of the multiple food system outcomes for health, economic development and environmental sustainability. Such food system 3.0 offers (new) opportunities for smaller-scale producers (for example in urban and peri-urban agriculture and rural areas in the city region), alternative short supply chain enterprises, new food IT platforms linking producers directly to consumers and involvement of new private sector players like health or social housing companies sharing a vision for a healthier and more localised food system (Dubbeling M. J. Carey and K. Hochberg, 2016).

In this traditional trading nation, situated in the fertile estuary of the river Rhine, Dutch cities grew large through the trading of agricultural products, especially grain. The availability of fertile land close to waterways allowed for agriculture to remain regional in its use of natural resources. At the same time, with cities serving as logistic centres and drivers of demand, agricultural products were shipped all over Europe since the rise of the Hanse trade network in the Middle Ages. Rotterdam with one of the world's largest harbours is an extraordinary example of this. The interaction between local agriculture and international trade is illustrated by the following example when –some 100 years ago- the local Schiedam jenever (gin) industry produced waste that was nutritious for mid-Delfland cows (adjacent to Rotterdam), whose fresh milk was sent to the city and whose manure went to the sandy soils of Westland (located between Rotterdam and the sea) to nurture world-famous Dutch horticulture, which in turn produced fresh vegetables for the city. This localised system could never have existed without international trade in grains. It is interesting to note that the jenever production was fuelled by peat which was extracted elsewhere in the Netherlands and transported over water through the intricate Dutch network of waterways. In a way it foreshadowed food production in the Westland greenhouse production being cut off from local ties, which happened later - thanks to refrigeration and long-distance transport. In this sense, a food system 1.0 never really existed in the western part of the Netherlands.

Because of its port and the intricate Dutch waterways transport network, Rotterdam will to a large extent remain a food system 2.0. However, due to political and economic pressure on the one hand, and citizen movements on the other, Rotterdam city region may be moving a little towards a food system 3.0 (a more regionally embedded food system). For this reason the current Rotterdam food sector is quite diverse, with a large number of big players (large food production, processing and retail) alongside some innovative start-ups and a number of active NGOs and social entrepreneurs. At the same time, and as more city dwellers become more actively engaged in the food system, a more diverse set of private urban players and non-traditional food players also find their place in the City Region Food System (CRFS). These players include, for example, social housing corporations, real estate businesses, private land owners and care organisations that have become engaged in supporting the local food system whilst their main tasks remains the provision of housing, health care and other basic services for citizens.

2. Current state – General overview of private sector types and players that are currently engaged in the Rotterdam CRFS

2.1 General overview of types and players: food and non-food sector engagement in CRFS

Two distinctions can be made in regards to the type of private sector that is involved in the Rotterdam CRFS. First, there are the players that are traditionally considered part of the food sector. Second, the players whose primary purpose is not food centred but who are directly or indirectly related to the food system. The answer to the question, which players are part of the food system and which are not, has changed in recent years.

Traditionally, the food system included all players in the food supply chain from production to consumption, including all suppliers of inputs (e.g. fertilisers) and service providers. With the increased focus on a circular economy and aims to close material and energy cycles in society at large, and in the food sector in particular, water companies, waste collection, the recycling industry and energy companies are now also considered part of the food system (Van der Schans, 2011) as well as public health agencies that address obesity, malnutrition and other diet-related health problems (Lang, 2004; WRR, 2014).

Another example of the changing understanding of the food system is the growing interest in the relationship between food production, landscape quality and biodiversity. This involves new players from the tourist sector (e.g. nature conservation organisations). One example in the Rotterdam city region is Parc Buytenland, a large area of farmland that, as part of a compensation scheme for the seaward port industry expansion, will be transformed into a natural habitat and be open for recreational use.

Lastly, new players have entered the food system with the development of short food supply chains. In addition to a new category of social entrepreneurs and internet-based food businesses, there is currently a diverse range of private players (in and around the city), whom are indirectly related to food production, including social housing corporations and other real estate businesses, private funds and land owners that see food as one of the strategies to achieve their (sustainability) aims.

In the following section, short supply chain private players are discussed, followed by a discussion on other private sector engaged in the Rotterdam CRFS.

2.2 Overview of food sector private parties: short supply chain initiatives[5]

Several new and innovative players in the Rotterdam food sector are engaging in the promotion and stimulation of a more re-localised CRFS across the food chain (Van der Schans, 2012). Although many have social and environmental motives, their main driver is commercial viability and they aim to serve a growing niche market. They can be best categorised by their place in the food chain. Short food supply chains may involve direct sales on farm, online shops and box schemes, farmers markets, retail and catering (hotels, restaurants, public institutions and private companies). Of course the local and regional producers whose products are sold locally are also part of these short chains, as are their suppliers. In the overview below, we focus on the initiatives shortening the food chain from the producer to the client and the parties supporting these initiatives.

2.2.1 Direct sales in farm shops

Examples of on-farm sales include de Buytenhof. This social care farm is situated next to the previously mentioned Parc Buytenland and manages apple and pear orchards, beef cattle and pigs. Hoeve Biesland is another example of a social care farm with beef cattle grazing in nature reserves, dairy cows and an on-farm butchery and bakery.

Other farmers look for co-operation for their on-farm sales, for example, the dairy farmers of Midden Delfland cooperate with the greenhouse growers of the nearby Westland and the potato growers in Hoekse Waard using the pop-up shop Farm-I-See (located in an old pharmacy in a village close to the farms).

Landwinkel is a national cooperative of farm shops with 15 locations in the province of South Holland, three of which are located in, or closely to, the Rotterdam city region. This cooperative operates as a soft franchise where they sell their own produce but also some national complementary products.

There are several websites available for interested consumers that show where to buy directly from farmers or growers in the Rotterdam city region. For example, www.heerlijkvers.nl is a website run by local food enthusiasts with some public funding. The website is focussed on the wider Province South Holland region, which Rotterdam is part of. Another website (www.bijteun.nl) focusses on recreation in the countryside. It also includes green destinations in the city such as the Zoo. There is a search function for ‘buying at the farm’.

A national website, www.thegreenbee.nl, functions as a directory for farms, where consumers can buy produce, and an online shop. The following website included a map of all farmers (www.nederlandbloeit.nl) in the Netherlands, both conventional farmers

[5] For this report interviews were made with Erna Straathof, manager Liveability for Vestia’s 18,000 dwellings in Rotterdam-North and Mark van der Velde manager housing for Delfshaven, Centrum and Noord. Furthermore the report draws on conversations the authors have had in the last few years with a myriad of actors in the Rotterdam region. The case descriptions in Chapter 2.2 contain updated and edited versions of case descriptions from Supurbfood Work Package 2 by the main author (van der Schans, 2012).

producing for the international market and multifunctional farmers selling locally. This website was however abandoned on 2 April 2013.

2.2.2 Direct supply by urban producers

More recently, urban farms or urban production sites inside the city also have become engaged in direct food supply. Eetbaar Rotterdam, an association promoting the professionalization of urban farming in and around Rotterdam, produced a map of all urban farming initiatives in the Rotterdam city region. Initiatives range from urban to peri-urban and from self-organised citizen initiatives to professional farmers. Examples of self-organised citizens are: Tuin aan de Maas, Gandhi tuin, Transition Town Bergweg and Transition Town de Esch. Examples of semi-self-organised initiatives are Hotspot Hutspot, Stadslandbouw SchiebroekZuid, Voedseltuin and Rotterdamse Munt. One example of a publicly organised initiative is Tuin Schiemond. Examples of entrepreneurial initiatives are Uitjeeigenstad (see also the box in Chapter 3) and Rotterzwam. The semi-self-organised initiatives are characterised by the involvement of paid professionals (often social entrepreneurs) who provide gardening and social training and assistance to volunteers. These social entrepreneurs have often played an important part in starting or developing the initiative and keeping it going. Both the entrepreneurial and the semi-self-organised initiatives can therefore be considered private sector initiatives.

Image 2: Rotterzwam entrepreneurs grow mushrooms on coffee waste collected by bike from local restaurants

Source: www.eetbaarrotterdam.nl/2014/03/er-groeit-eetbare-paddestoelen-kweken/rotterzwam/

There is a mutual influence between publicly organised initiatives and the semi-self-organised initiatives. Neighbourhood urban gardening was introduced by the Rotterdam municipality in the neighbourhood Schiemond before urban agriculture initiatives were popping up more or less spontaneously. This particular Schiemond project however showed the weakness of a top-down government-led approach. The subsequent bottom-up initiatives were more successful in terms of the participation of citizens and required a much lower budget, which seems in large part due to the involvement of engaged local professionals (Bronsveld, 2014). This success of bottom-up initiatives led government agencies and commercial social welfare organisations to actually copy this new bottom-up model, sometimes directly competing with the more spontaneously organised bottom-up initiatives that served as their inspiration.

2.2.3 Online shops and box schemes

The number of online shops and box schemes is rapidly increasing in the Netherlands and the Rotterdam city region, although several initiatives have disappeared as quickly as they started. Online shop Vers van de Kweker was originally set up by greenhouse growers in the Rotterdam city region (tomatoes, peppers, flowers, plants). At its peak it also included produce from arable and dairy farming, orchards and even fish products. But running an online shop with a home delivery system turned out not to be easy. It was not possible to grow into a profitable business (because of the required logistics) and the initiative did not continue. Online shop Bestel Vers, set up by an asparagus grower south of Rotterdam in the Province of Zeeland, was taken over by a Rotterdam based wholesaler and it also died a quiet death.

But there are still new initiatives almost every week, e.g. www.streekbox.nl,, or www.buurtboer.nl or www.dekrat.nl which has nation-wide coverage. www.rechtstreex.nl is a Rotterdam based initiative that is run by a former Unilever employee who started to sell local food from his basement and set up an online shop. The initiative now serves many people in and around Rotterdam. People order from the online shop and collect their produce at neighbourhood pick-up points where they can also sometimes meet participating farmers and exchange recipes. It is interesting to note that some of these box schemes do not only cater for home delivery customers but also small offices that do not (yet) have a canteen. This seems to be an emerging market in the Netherlands, which is also served by large supermarkets (e.g. Albert Heijn) offering online orders and home delivery.

Organic vegetable box schemes have been around for some time and are still doing well. In the Rotterdam region there is www.groentenabonnement.nl (an organic farm), www.bioaanhuis.nl (organic farm) and www.biologischgoed.nl (a cooperative of organic farmers).

2.2.4 Farmers markets

The number of farmers markets in Rotterdam is increasing. In fact, one could say the number of farmers food festivals is increasing because the official open air market sector is a strongly defended closed shop. It is almost impossible to introduce farmers as new trading parties, since they have no historical rights. Therefore farmers markets are called ‘festivals’ (cultural events). And indeed one could say that we are talking about cultural events. For example, www.rotterdamseoogst.nl started as a festival, then developed into a regular monthly and recently bi-weekly market and involves farmers and traders selling local produce and artists’ performances that focus on food in the widest sense. Another new market in Rotterdam, the www.moesdistrict.nl offers a place to farmers and designers and has come and gone. It is striking that the usual organic weekly market in Rotterdam (and other cities) is dominated by non-local organic producers and traders (i.e. the long organic supply chains). The festival markets that are mentioned above involve mostly (but not always) organic local producers and traders.

2.2.5 Retail

In retail a current trend is the differentiation on the basis of provenance claims. This is expressed both in new retail shop concepts and new retail product concepts. buiten010.nl is a new Rotterdam independent organic deli shop and restaurant with produce from the region. A much older organic shop (and restaurant) is www.degroenepassage.nl/gimsel_supermarkt.php which has twice been voted as the best organic supermarket in the Netherlands. They procure food from an organic wholesale trader, sourcing nationally when possible and globally when required. In the summer season they are also able to source local produce.

An example for a retail shop concept that is based on short (or at least more transparent) supply chains is www.marqt.nl. This business started in Amsterdam and has seven locations at the moment (three in Amsterdam, one in Haarlem, one in The Hague and two in Rotterdam).

Image 3: One of the Marqt shops in Rotterdam

Source: www.marqt.nl

The organisation of the supply chain was re-adjusted as the business expanded. The first Amsterdam location was supplied by a cooperative of farmers from the North of Amsterdam (Groene Hoed cooperative). The cooperative was restructured into a limited company called MijnBoer. When the company expanded (it supplied Marqt but also the catering sector) it selected suppliers from other regions in the Netherlands and worldwide (but always bypassing middlemen and where possible sourcing certified sustainable, i.e. organic or otherwise green labels). Finally MijnBoer was taken over by a conventional vegetable wholesaler (Smeding), now part of the Sligrogroup. The Rotterdam locations do not specifically source from the Rotterdam city region (although peppers are by chance sourced from a pepper grower in Pijnacker).

Two recent projects, the Markthal and the Fenix Food Factory, have introduced the concept of a covered market to Rotterdam, albeit in very different ways. The Markthal is a real estate project in the centre of Rotterdam that combines a space for some 80 food stalls with an apartment complex with 125 units. Although the complex was originally proposed as an upgrade of the open air market in the centre of Rotterdam, it gradually developed into an architectural icon with ‘blended’ functions. The market is in fact a food court (where people eat and taste rather than do shopping) or a food experience destination.

Fenix Food Factory (FFF) is a much smaller food court in the Katendrecht Rotterdam neighbourhood, now turned into a residential area that is attracting a higher income population to the south bank of the river. FFF is run as a cooperative, owned by several food start-ups that are all celebrating their passion for and craftsmanship of food. Although some stalls are sourcing locally (notably the shop run by Rechtstreex and the shop run by a cheese making dairy farmer), not all are doing so. Stielman coffee, for example, buys coffee at the international market and roasts and blends it locally, once again showing that a port city like Rotterdam will always combine a global perspective on food with local entrepreneurship and a local consumer base.

There are also in-store product concepts with a designated origin claim. An interesting and innovative fresh produce (potato, vegetables and fruit) wholesaler is Willem and Drees (W&D). They argue that Dutch consumers want convenience. So although farmers markets are nice, it is clear that most consumers will not abandon the supermarket. They therefore introduced an in-store product concept W&D that claims to source from within a 40 km radius of the shop. W&D also supply the catering market and more recently introduced online sales for individual consumers. In the Rotterdam region they have about 10 suppliers and a multitude of retail outlets.

In the organic food retail market there is strong competition between regular supermarkets which enter the organic market (with value for money propositions such as www.bio-plus.nl) and traditional organic food stores (‘natuurvoedingswinkels’). Interestingly local organic supply chains only play only a minor role in this repositioning.

2.2.6 Catering

The catering market includes restaurants, cafes, hotels, business canteens, health and education institutions and public authorities. There is an increasing number of restaurants that use short supply chains (or ‘transparency about origin claims’) as a distinctive feature. As previously mentioned the www.vandeboer.nl is a restaurant that uses local products (and also for zero waste). Villa Augustus is a restaurant that has production facilities on the premises to complement products that they source locally. There are also urban farms that run that run their own restaurants to market their products (www.uitjeigenstad.nl). Firma van Buiten, based in Delft (in the Rotterdam city region), uses a catering concept that works with care clients (participants) and uses local produce. In some cases they produce their own food, e.g. eggs from the self-initiated neighbourhood project Het Buurtkippenhok (Neighbourhood Chicken Coop). The Rotterdam Markthal and Fenix Food Factory have already been mentioned. Both are presented as ‘markets’ (hence retail) but could equally be considered ‘food court’ (catering). This ‘blending’ (or ‘blurring’) of food concepts is part of a dynamic urban environment where eating and shopping habits change rapidly and food entrepreneurs must respond accordingly. Or it could be said that urban food entrepreneurs change their offer rapidly and urban consumers will respond accordingly.

Image 4: Bram Ladage famous local fries

Source: http://ladage.nl/delft-de-hoven/

Interestingly, local sourcing is not a snobbish feature anymore that is restricted to upmarket restaurants or food courts. Fast food (snack bar) chain Bram Ladage is trying to source the potatoes for its world famous Flemish chips from the region. They are supplied by the local Novifarm, although the Novifarm potatoes are first bought by potato trader Heezen where they may be mixed up with potatoes from other sources. Ladage and Novifarm are working on shortening the supply chain (cut out the trader). They recently introduced a new food concept called *Bram's* where they cut potatoes without peeling them and serve the chips with home-made ragouts and sauces.

We also see conventional wholesalers setting up local-for-local concepts to supply the (more or less) conventional restaurant sector. Food logistics company Deli XL set up a platform where chefs and farmers (called 'specialists') meet and exchange products and recipes. It is interesting to note that the software used for the order system can prevent consumers from outside the region to order produce from a local specialist (if the local specialist does not want to sell outside of the region). Other conventional wholesalers have also experimented with local supply chains. Kruidenier Foodservice, for example, supports the Blaarkop project. This project re-introduced a traditional dairy breed for meadows on peat soil in the Rotterdam city region. These cows can feed on low quality grass that still grows when the ground water level is high. The cows are dual purpose which means they are suitable for both beef and dairy systems. Kruidenier was involved in selling the beef and also the lower quality meat cuts of the cows (e.g. Blaarkop hamburgers for snack bars in the region). Kruidenier was also involved in developing cow feed from horticultural waste aiming to reduce the amount of imported cow feed. Unfortunately the wholesaler Kruidenier went bankrupt during the crisis and is now trying to gradually recover.

Even though these examples illustrate large logistics players setting up local-4-local systems, sourcing restrictions may limit business opportunities. For example Eurest catering (part of Compass group) won the Rotterdam municipal catering contract on the premise that they would source locally. But Eurest could not order from the supplier Vers247 (that sources products locally) because the suppliers' business model at that time was restricted to only restaurant and hotel delivery.

2.2.7 Preliminary conclusions

Two tentative conclusions can be drawn from the overview provided above. The first is that start-ups in short food supply chains require initiators with a strong drive. It is not easy to make money in the early years of the start-up phase. People need to be motivated for other reasons. Grants cannot solve this because they may support initiatives that are designed to meet the criteria of the grant rather than the demands of the market. Vers van de kweker, which stopped when the grant ended, may be a case in point. Start-ups that are initially funded by family, friends and 'fools' (such as Willem & Drees) are more market focussed. They are eager to find and explore opportunities in the market (rather than acquire grants). This also means that they look for opportunities to 'mainstream' (i.e. extend the consumer base beyond the common niche) and will not deviate too radically from what is offered in the conventional food supply chain. As these initiatives grow they may need public funding to seize the opportunities that exist, whilst still holding on to the ecological and social ambitions that they want to accomplish.

Another tentative conclusion is that short food supply chains may benefit from sharing resources, infrastructure and knowledge with mainstream food supply chains, rather than compete with these. Willem and Drees are again a good example. Their wholesale trading company was set up by two former Unilever managers who brought their intimate knowledge of the retail sector, of distribution and marketing of fast moving consumer goods, to the business. They were also able to use their Unilever background to access venture capital to grow their initiative beyond the start-up stage (Anton Jurgens Fonds, impact fund of the founder of Anton Jurgens Margarine Factory, later part of Unilever). Another example is Leen Menken, a former logistics provider (from the Menken family who owned and operated dairy processing plants in the Rotterdam region) that is now using their logistical expertise to facilitate short food supply chains. By clustering several local initiatives (Willem and Drees, Streekbox, De Krat) they can achieve an efficiency with their logistics that each individual initiative would not be able to realise.

2.3 Overview of indirectly related private sector food players

In addition to the numerous (innovative) private sector short supply chain initiatives, a range of public and private sector players that are more indirectly related to the Rotterdam food sector can be identified. These include, for example, private players providing essential services such as water, energy, waste-water treatment, waste collection and recycling. There are also organisations that are connected to the food sector from a public health perspective by addressing obesity, malnutrition and other diet-related health problems (e.g. the municipal public health service GGD in Rotterdam and affiliated organisations).

Food production as a way of supporting the provision of green spaces and landscapes in and around the city involves yet another group of private sector players (design and planning, real estate). So does the use of this space for enabling people to meet and interact or participate in other ways (social care) or to learn about food, food production, nature and ecology (education, training). And finally there are private players that support food chain businesses in a financial and material sense (such as private funds or land owners).

In general it can be stated that non-food private sector engagement in city region food systems is primarily driven by a wide range of urban motivates, ranging from social cohesion, improving public health and building a sustainable future to securing real estate value by providing a beautiful and appealing living environment. Paraphrasing Wayne Roberts, first chair of the Toronto Food Council, ‘don’t ask what you can do for food, but what food can do for you (Roberts, 2016).’ However these motives are often mixed and a more practical way to categorise these players is by the nature of their involvement which ranges from financial support (e.g. funds) to initiating and executing projects (social entrepreneurs).

The following types of involvement can be distinguished, based on different types of ‘inputs’ provided to the city region food system:

- Financial support
- Access to land
- Access to resources
- Human resources
- Knowledge and expertise
- Access to network and peer knowledge
- Initiating, developing and implementing projects.

Table 1 gives an overview of players in the CRFS Rotterdam that were part of the study, highlighting both the nature of their involvement and their motives.

Table 1: Overview of non-food private players, the nature of their involvement and their motives

Nature of involvement	Private sector type	Private sector actors in Rotterdam	Motive
financial	Private funds	Volkskracht	social cohesion, empowerment
		Verre Bergen	education, empowerment
		Fonds Schiedam-Vlaardingen	public space improvement
		iFund	impact investment
financial; acces to land ; initiating	Social housing corporations	Havensteder	neighbourhood improvement
		Vestia	neighbourhood improvement
		Woonstad	public space improvement
financial; acces to land	Real estate developers	Dura Vermeer	Corporate Social Responsibility
		AM	placemaking
		Provast(Markthal)	real estate development
		CODUM/ZUS (Schieblock)	urban regeneration
acces to land	Land owners	Natuurmonumenten	multifunctional green space
		Trompenburg	attract new visitors
acces to resources / financial	Providers of essential flows	Evides	providing water
		ENECO	Green for red compensation for development infrastructure
access to (technical) knowledge, expertise	Engineers, consultants, architects& planners	Priva	innovation; learning; developing new business opportunities
		BAM	
		Tauw	
		ARCADIS	
		Rotterdam Metabolists	
acces to human resources; coaching; initiating ; acces to land	Care & reintegration organisations	De Stromen Opmaat Groep (Aafje)	Corporate Social Responsibility
		WMO Radar	reintegration, social work
		Pniel	social cohesion, empowerment
		Magis010	reintegration
providing a network; access to peer knowledge	NGOs	Slow Food / YFM	knowledge exchange, connecting, representation of shared interests, food literacy
		VELT	
		Eetbaar Rotterdam	
Initiating, development and execution; entrepreneurship	Social Entrepreneurs	Vakmanstad	education, empowerment; food literacy; health
		Rotterdamse Munt	empowerment; food literacy
		Voedseltuin	empowerment; food literacy
		Proefhof (Kook/Oogst met mij mee)	education, empowerment, food literacy
		Buurtlab	education, food literacy
		Rotterdams Forest Garden Netwerk	education, empowerment; food literacy; eco literacy
		Moestuinman	education, empowerment; food literacy; eco literacy
		Caroline Zeevat	food literacy, social inclusion
		Bob Richters, Mireille v.d. Berg	education, empowerment, food literacy, social design
		Ester van de Wiel	social design
		Rotterzwam	sustainability, blue economy
		Uit Je Eigen Stad	innovation; sustainable food system; food literacy

Each of these different types will be further described in the following chapter.

2.3.1 Private funds

Private funds from the Rotterdam region that support social, cultural and/or environmental goals have facilitated city food region initiatives through the provision of grants. The grant criteria sometimes shape the way initiatives are organised. Typically grants support events, operational costs and investment in materials and consumables such as plants, containers or kitchens. The Volkskracht Foundation has supported the Rotterdamse Oogst Festival and Market. Verre Bergen supports school gardens as part of the project ‘Rotterdam Vakmanstad’ and is doing so under the condition that the project is monitored by an academic external party. In another example, Fonds Schiedam Vlaardingen has been co-financing the realisation of urban food production projects like Stadslandbouw de

Ruytenburgh and Food Forest Vlaardingen. They have also provided smaller grants, for example, for installing water access for community gardens in the Moestuinen Vettenoordsepolder. The Dutch Rabobank (a cooperative with an agricultural background) provides regional funds to support initiatives by local citizens and entrepreneurs that use food as a focus (part of their Banking4Food strategy). This way Rabobank supports a range of local food related initiatives.

Recently a private impact investor (iFund Foundation) has funded the purchase and transformation of Tropicana (previously a tropical swimming paradise) for BlueCity010, a hub for Blue Economy entrepreneurs which was co-initiated by the urban agricultural initiative RotterZwam.

Image 5: Stadslandbouw de Ruytenburgh

Source: http://stadslandbouwvanruytenburch.nl/

2.3.2 Social housing corporations

Social housing corporations such as Havensteder, Vestia and Woonstad Rotterdam have played an important role in facilitating urban agriculture and food related initiatives through the provision of land and financial support. The nature of their involvement now and in the future, as well as their motives, are more extensively discussed in Chapter 3.

2.3.3 Real estate developers

In addition to social housing corporations other real estate players, mainly commercial real estate developers, have been involved in facilitating urban agriculture initiatives by providing access to property and land as well as financial support. They are further described in Chapter 3.

2.3.4 Private/collective land owners

This category encompasses land owners who make some of their land available for food production or related activities. Nature conservation organisation Natuurmonumenten (who owns 100,000 hectares nationally which accounts for 3% of Dutch land surface) took over 300 hectares of former farmland north of Rotterdam from the municipality. One of the requirements was to keep this land available for peri-urban agriculture (Van der Schans, 2011). Inside the city, Trompenburg Gardens and Arboretum are planning to turn 1.2 hectares of its 8 hectares public gardens into a food forest in collaboration with, and initiated by, a group of social entrepreneurs.

A private nature conservation organisation such as Natuurmonumenten is similar to public land management organisations such as Staatsbosbeheer and Groenservice Zuid-Holland. The Groenservice Zuid-Holland (GZH) is a semi-governmental executive organisation for several cooperating public Recreatieschappen that are responsible for the maintenance and management of large peri-urban recreational areas. Recreatieschappen are public boards to manage large areas of peri-urban and urban green space for recreational use by urban dwellers (there are thousands of hectares of recreational area in the Rotterdam region alone). As the budgets of these organisations are reduced, they are looking for innovative ways to manage their land and are trying to involve private initiatives. In their search for new functions and new users for the poorly used recreational areas, GZH recently made some land available for an experimental one hectare food forest. If this experiment is successful the idea can be applied on a larger scale.

Another example on a bigger scale is the earlier mentioned Park Buytenland, where the Province of South Holland, as a part of a compensation scheme following the expansion of the Rotterdam port area, bought up farmland to create a nature reserve that will also allow recreational use. After much public debate the Province is now considering to include farmers in the management of these areas. It is still not clear which requirements farmers will have to comply with (e.g. only sustainable and/or local food production?) and if the city of Rotterdam will be able to influence decision making (benefiting citizens who want production, recreation and biodiversity combined).

2.3.5 Providers and processors of essential inputs

Food initiatives require essential inputs, such as energy, water and nutrients. In the conventional food system these inputs are generally procured from industrial providers, organised centrally and offering standardised solutions. Water is the exception as this can be harvested (and stored) remotely alongside the centralised supply by water companies. In short food supply chains and more localised CRFS, we find food initiatives that try to start innovative partnerships with traditional and new providers and processors of essential inputs or become processors of these inputs themselves. The active involvement of traditional providers of such inputs, like energy and water companies, in developing specific solutions to support short food supply chains has still been limited. Most likely this is because of differences in scale which would limit economies of scale. But also it is not clear which (extra) value would be created if specific solutions would be provided (Supurbfood WP4, 2015). Over time however, it is becoming clear that energy and water, but also nutrients, can be supplied from and recycled to the urban metabolism[6] in many different ways (Van der Schans, 2015).

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[6] Urban metabolism is a model to facilitate the description and analysis of the flows of the materials and energy within cities.

In the circular economy[7], solutions are locally adapted and ideally work in two ways. Food initiatives consume energy and nutrients, but they may also produce energy and nutrients. The challenge is to close urban resource flows at the appropriate level. However, this is easier said than done. In 2006-2009 the Dutch electricity company E.ON was partner in a project that used waste heat from its plant in the Rotterdam port to grow tropical shrimps (Happy Shrimp). Although the project has been operational for several years, it suffered many delays and extra costs due to complex licencing procedures. In addition to that, the supply of waste heat was sometimes disrupted due to technical problems which left the shrimp growing business with an energy bill from conventional electricity suppliers that was far too high to be competitive. Happy Shrimp went bankrupt in 2009.

In 2013, in the context of a so-called ‘Green deal’, a study was done to assess the potential for closing resource cycles in a selected number of urban agriculture sites in the Netherlands. Some of those were located in Rotterdam. It concluded that we are only at the beginning of the stage where urban food growing is combined with the harvesting of urban flows. During the set-up of the city farm UitJeEigenStad (UJES) the potential was investigated to use waste heat from the nearby NUON plant. However, nobody wanted to invest in the necessary pipeline because the status of UJES was temporary. They only had a lease for five years with a possible extension of another five years, which is too short to pay back the investment in a pipeline. Later on, water treatment company Evides invited UJES to use the processed water (water from waste-water treatment plant that is further treated to meet certain criteria for reuse) from their own experimental water treatment plant in the area. This plant is an extension of a pilot treating sewage water for re-use in the greenhouse industry (Delft Blue Water). The water cleaning technology itself is capital intensive and centrally owned and managed (by a public private partnership that includes a water company and the public water management board, Hoogheemraadschap Delfland).

UJES always had the intention to close nutrients loops and other essential flows, both internally, as in their aquaponics growing system, and externally, by using waste heat from other companies, for example. In 2014 a start-up called Stadsgas, aiming to turn urban organic waste into gas by anaerobic digestion, took up residence in UJES. Another recent initiative, Broodnodig, wants to digest bread waste for gas production and has placed waste containers at strategic places in the city to collect bread that would otherwise be thrown away. Both initiatives aim to turn waste into a resource.

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[7] The ***circular economy*** is a generic term for an industrial economy that is producing no waste and pollution, by design or intention, and in which material flows are of two types: biological nutrients, designed to re-enter the biosphere safely, and technical nutrients, which are designed to circulate at high quality in the production system without entering the biosphere as well as being restorative and regenerative by design. This is contrast to a Linear Economy which is a 'take, make, dispose' model of production (https://en.wikipedia.org/wiki/Circular_economy).

Image 6: Recycling of bread waste

Source: http://broodnodig.co/

Another part of the circular economy is focussed on re-using, or rather preventing, food waste. This is done by the Food Bank and also by pop-up restaurants such as Hotspot Hutspot. They target low-income people and are therefore socially inclusive by the design. Another initiative is the start-up Kromkommer. They turn discarded (odd shapes and surplus) vegetables into products like soup. They are now supplying supermarkets such as Ekoplaza and Jumbo. This is a more upmarket approach.

In 2015 the municipality and a number of social entrepreneurs looked at the possibilities for neighbourhood composting but so far this has not been widely implemented. There are a few experiments taking place in the allotment garden complexes at the edge of the city. There are still legal restrictions for composting in public spaces and it is easier to deal with compost in a collective environment, such as these complexes, rather than at neighbourhood level (Cerrato, 2014). Large scale composting of municipal organic waste ceased when the bid for waste processing was won by a player utilising a newly built waste incinerator in 2010. However, in 2015 a pilot for the separate collection of organic household waste started and is currently being scaled up. The municipality collects this separated waste stream for processing by private waste companies outside the city. Urban agriculture initiatives use waste materials from municipal green space management, e.g. wood chips which can be ordered and delivered free of charge. Animal manure from city farms is also sometimes used (e.g. by the Voedseltuin).

2.3.6 Engineers, consultants, architects and planners

The traditional food sector is supported by a number of suppliers in regards to advice, consultancy and technology. Innovative projects form a breeding ground for new ideas and for new business opportunities. This attracts engineers and consultants, such as suppliers of technological solutions as well as engineering firms. PRIVA, the company that develops air conditioning technology for greenhouses but increasingly also for buildings sees the city as a potential growth market for their technological products and urban agriculture offers a testing ground. They are therefore involved in indoor and rooftop urban greenhouses worldwide. In Rotterdam, they supplied UJES with air conditioning equipment and they are one of the technological partners in the recently opened De Schilde rooftop farm in The Hague. In the development of UJES, engineering firms like ARCADIS and Tauw offered some of their services for free, just to take part in the project. The involvement of real estate developer and builder AM/BAM can also be seen in this light.

For architects and planners, food planning and urban agriculture offer challenges to re-design the city. Although these drawing board projects are often far removed from the practice of food-related initiatives, they offer a framework for new innovations and ideas. In this way, the public opinion, the professional debate and policy environment are all influenced. Two of the founding members of Eetbaar Rotterdam (Edible Rotterdam) were architects and planners (Cesare Peeren and Paul de Graaf). De Graaf, together with Eetbaar Rotterdam, undertook a study 'Room for Urban Agriculture in Rotterdam', parts of which were further developed in the Green Deal Urban Agriculture and the Vision on Agriculture for the City of Ghent in Belgium. Architects Van Bergen Kolpa developed several food-related urban and architectural designs as well as initiated the aforementioned Green Deal. 'Except Sustainability' has been working on urban agriculture concepts for several years. They developed a vision, together with social housing corporation Vestia, for sustainable renovation of a post-war housing area in Rotterdam, in which urban agriculture played a prominent role. All of the aforementioned architects share a view of sustainability in which circular economy and resource flows play a crucial role. These architects are part of an informal group called the Rotterdam Metabolists.

Commissioned by AM, architect Robert Winkel developed an urban design strategy for the Marconi strip of which UJES is part. Over the years a number of architects launched plans for urban farms, often including greenhouses, but most plans were not taken beyond the concept stage. An exception is Ingrid Ackermans, an architect by training who initiated Rotterdamse Munt, an urban herb garden and green house.

2.3.7 Care and reintegration organisations

The AWBZ (Law to cover exceptional health care costs) made it possible for care patients (or care clients as they were called) to spend their care budget themselves. To supply this market a range of day care initiatives was initiated, which include care farms. Although this law was recently changed, professional care and reintegration organisations have been and still are involved in food-related activities. Care organisation Stromen Opmaat Groep (Aafje since 2010) is one of those care organisations and was one of the private parties involved in the initiative Van Grond tot Mond (see Chapter 3). Together with the neighbouring primary school, the Pniel home for the elderly was a co-initiator of a small food forest garden which is used by the elderly and school children for educational and recreational purposes. Re-integration organisation Magis010 has recently been initiated by private social work organisations Incluzio and WMO Radar. Magis010 runs a vegetable nursery for long-term unemployed people and at one point provided seedlings to Uit Je Eigen Stad.

2.3.8 NGOs

NGOs promoting local food production and/or consumption, play a supporting role by organising activities, disseminating knowledge and making connections. Slow Food, which focuses on regional food products, has a department in Rotterdam, as has the Youth Food Movement (YFM). YFM functions as a network organisation for young food professionals who use practical action to draw attention to themes such as food waste. The VELT association is promoting organic gardening and offers a lot of practical advice to its members. Their courses are open to outsiders. VELT has a Rotterdam department as well. Finally, the association Eetbaar Rotterdam aims to promote and professionalise the urban agriculture scene through sharing knowledge as well as forming and representing a network of individuals working in urban agriculture and local food production, processing and distribution. Whilst the formal association is dormant and the representative function is reduced the network function and dissemination of knowledge is maintained through an annual festival ERGroeit.

2.3.9 Social entrepreneurs

The category of social entrepreneurs covers a diverse group of socially motivated professionals who include artists, designers, gardeners, educators, philosophers and specialists, and for many of them, more than one of these labels apply. They are Rotterdam citizens and can be considered part of civil society, but at the same time they try to make a living from their activities. As mentioned in Chapter 2.2.2 this category encompasses entrepreneurial and semi-self-organised initiatives. Profit and non-profit activities are often combined. Many of them are self-employed, others work under an umbrella organisation (Skill City, Buurtlab, Proefhof) and/or in a shared location (Voedseltuin, Rotterdamse Munt).

Rotterdam SkillCity is an initiative initiated by academic philosopher Henk Oosterling to give children with a less advantaged background better employment prospects whilst also providing the city with plenty of well trained professionals. For them, growing and preparing food is an integral part of teaching physical integrity. This resulted in a number of school gardens and a programme for school lunches that are made with local produce.

Buurtlab is a foundation offering different services in the field of education, social cohesion and participation in the neighbourhood. Their activities include gardening and horticulture with children (COOLzaad, Smakelijke moestuinen). Sometimes they work in collaboration with other organisations (Ravottuh).

In the district Rotterdam-Noord, the Proefhof Foundation (initiated and led by Hans Kervezee) runs the projects ‘Kook met mij mee’ and ‘Oogst met mij mee’ (cook/harvest with me). Children from low-income neighbourhoods can learn here how to cook vegetarian food.

These foundations all work with self-employed professionals on a freelance basis. As mentioned above, these professionals also often develop their own projects. An example is Max de Corte who combines his work as coordinator at the Voedseltuin with his firm Moestuinman, which offers courses and services. Recently he expanded Moestuinman by including other freelancers.

Another example is allotment gardener and writer Caroline Zeevat who, as a coach and gardening expert, is hired by different organisations to set up and support neighbourhood gardens. She is best known for the project Stadslandbouw Schiebroek (see box in Chapter 3). Artist Ester van de Wiel sets up projects that often involve food production or processing. Both Zeevat and Van der Wiel have been working for Social Housing Corporations (Stadslandbouw Schiebroek and Nu Hier respectively).

Partners Bob Richters and Mireille van den Berg set up projects with a social and care function that include food from growing to preparation to serving (Hotspot Hutspot, see box in Chapter 3 and Natuurtalent). In this way, they also perform a service in the area of job coaching.

The social entrepreneurs described here are using urban agriculture and other food-related activities as a means to offer services to the city. Because of the relatively small-scale, localised character of these services, as well as the personal ‘pragmatic idealistic’ approach of these entrepreneurs, their work is not always recognised for their societal benefits, nor is it seen as part of the private sector. Formal structures don’t often recognise social entrepreneurs yet. Social entrepreneurs are, for example, denied access to the emerging ‘market’ for care or re-integration by formal procurement rules. This is because they lack a track record in social service provision or they lack the depth of required services, as they are specialising in skills training and do not offer other services such as personal debt restructuring, for example. In addition social entrepreneurs are also lacking the monitoring and evaluation structures to quantify and valorise their performance and which are required for outsourcing contracts (Bakker, 2016). However, these municipal contracts could offer a more reliable market-based source of income for social entrepreneurs (as opposed to relying on private funds or grants). In 2015, several social entrepreneurs in Rotterdam started discussions with the city to identify how to organise more structural access to municipal funding and the possible need to professionalise in order to meet legitimate administrative requirements of public funding.

The founders of more profit oriented initiatives like Fenix Food Factory, UJES and Rotterzwam can also be considered social entrepreneurs. Rotterzwam started growing mushroom on coffee waste in an abandoned tropical swimming paradise and recently co-initiated BlueCity010, a sustainable business incubator (see also Chapter 2.3.1). Although these entrepreneurial initiatives seem to more focussed on the commercial aspects than other social entrepreneurs, the balance between ideals and financial viability (becoming independent of structural public or private capital inputs) is a recurring challenge for all initiatives (Bakker, 2016).

2.3.10 Preliminary conclusions

It can be argued that social entrepreneurs form an important part of the urban landscape, not just in the area of food production but also in terms of social cohesion, social care and job coaching (Bakker, 2016). Projects by social entrepreneurs also attract volunteers who are able and willing to support the social entrepreneur in engaging the (usually disadvantaged) target group. This is the participative society at its very best.

It is however important not to promote this model as the alternative to providing urban welfare in the more classical sense (through public or private services that are properly financed and professionally managed). This type of project is not always suitable for some target groups, e.g. those with major disabilities, and this model therefore cannot be an alternative for the welfare system as a whole.

Social entrepreneurs engaging in the food system in Rotterdam are under constant pressure to apply for municipal and philanthropic funding, to engage in social media contests to win extra budgets or to cut back on their own standards of living to navigate periods of lack of funding (e.g. most social entrepreneurs are not properly insured nor save for a pension). It should also be noted that the more dependent an urban food initiative becomes on income from sales, the more restricted they become in terms of people who can participate. Thus social entrepreneurs are ‘competing’ over easy to engage target groups and they might also ‘compete’ over volunteers who are able and willing to work in this increasingly challenging environment.

3. Focus on social housing corporations

Looking at the different private non-food players and the projects that they are involved in, (see Table 1) it is striking that in Rotterdam social housing corporations (SHCs) often play an important role. The quality of the public space is an important factor in the value of real estate property and so is social cohesion and the well-being of its inhabitants, or in the case of SHCs its tenants. SHCs own vacant land that is not immediately being developed (because of the economic crisis) and they have vacant office space. For urban food-related initiatives, access to (production/ retail) space is essential and access to temporarily unused land (or vacant office space) is one way to avoid the competition for scarce and valuable space in the city. Vacant land can be turned into a collective (edible) green space with possibilities for interaction. Vacant office space can be used as a neighbourhood restaurant that allows children to learn to cook. SHCs in turn appreciate how they benefit themselves from such initiatives. In the following section the role of SHCs, their motives, ambitions and impact is further examined and where relevant compared to the role of other real estate parties such as commercial developers.

The links between social housing initiatives and local food production go back to the garden city movement. In Rotterdam this concept started in 1913 through an initiative by a group of industrialists chaired by banker K.P. Van der Mandele. As a member of the health commission, he examined the problems in public housing caused by the influx of farm workers who had left the countryside due to the crisis in agriculture. The poor housing that was built for these immigrants and the problems it caused, urged the well-to-do to take action. Inspired by Ebenezer Howards's ideas they decided to build Tuindorp (garden village) Vreewijk. Each house had a garden with space for vegetable production. These houses were designed as self-sufficient homes offering 'peace' (Vree) for the industrial working class. The desire to improve conditions for the working class was rooted in a combination of humanistic ideals and enlightened self-interest. This same mix is discernible in the current involvement of social housing corporations and other private real estate parties in the CRFS of Rotterdam. It should be noted that social housing corporation Havensteder (which is quite active in supporting urban agriculture in Rotterdam) is the descendant of the Garden Village Tuindorp Vreewijk which was merged and restructured several times before it finally became Havensteder's property.

Image 7: Garden Village Vreewijk

Source: https://www.flickr.com/photos/nai_collection/6828953183

A growing trend is that SHCs and real estate developers view (urban) farms as a way to enrich residential urban development or farms even become focal points for new urban development. In recent years the regional New Urbanism movement has included agriculture in its vision of a more localised and regionally diverse urban development (Arieff, 2010). In Rotterdam this consideration was one of the reasons why SHC Havensteder and commercial real estate developer AM got involved in the Uit Je Eigen Stad Urban Farm (see further the box below). The urban farm was considered as an instrument for ‘place making’. AM is currently building on this idea that urban farming can be a valuable part of real estate development for projects elsewhere in the Netherlands (e.g. Wickevoort).

The same mechanism can be observed in the way food distribution and retail is used as a driver for urban development. As high streets are under increasing pressure due to online sales, retail property developers are looking to develop more enjoyable shopping experiences and food offers plenty of opportunities for this (smelling, tasting, touching and eating, all things that cannot be done through the internet). The privately developed Markthal and the Fenix Food Factory back up this argument (see Chapter 2.2.5).

Underlying the involvement of real estate in the food system are two crises. First, the economic crisis that has hit the western world in 2008 put a lot of building activity in the Netherlands on hold (which in turn offered chances for temporary use of vacant space). The second is the crisis among SHCs that followed in the wake of the general economic crisis.

Since the mid 90’s the social housing corporations in the Netherlands have been ‘’privatised‘’. This has led to more freedom for SHCs to set their own priorities. This has opened up possibilities for new investments such as starting up business incubators at neighbourhood level and, unfortunately, also enabled speculation using the company’s equity capital (especially Vestia). These investments, coupled with the economic crisis (and in some cases corruption) brought some of the more ‘adventurous’ SHCs close to bankruptcy. Some of the more idealistic ventures also turned out to be financial failures such as the retro-fit of a former cruise ship (SS Rotterdam). The idea was that it would serve as a social venture project offering jobs and internships for local young people. The financial mismanagement of SHCs led to an intervention by the national government (SHC’s are still dependent on national tax money to achieve their goals). According to the government SHC’s should return to their ‘core tasks’, e.g. providing accessible, affordable and comfortable homes (Kesselaar, 2015). To what extend food-related activities are included in these core tasks is still a matter of interpretation.

In comparison to some of the previously mentioned initiatives the support for urban agricultural initiatives was relatively modest. However, following the new Housing Law (Woningwet) in 2015 (designed to tackle the SHC crisis) there have been discussions whether the relatively successful investment in urban agriculture can be considered a core task. So far, investment in food growing has been paid from the budget allocated for ‘Liveability’, a very general cover-all term that includes support for a wide range of neighbourhood initiatives from barbecues, education to (up to 2013) social ventures like the aforementioned cruise ship. The four cases below offer examples of SHC involvement in city region food production and retail.

Uit Je Eigen Stad

Uit Je Eigen Stad (UJES) is an urban farm on a derelict site in the Rotterdam area. Originally initiated by two social entrepreneurs, one of whom also co-founded Edible Rotterdam, whose intention was to develop a commercially viable farm within the 10-year lease period. They had hoped that this would serve as an international showcase of innovative (urban) farming practices and of direct contact between farm and city, between farmer and the urban citizen. This was not to be a social project, but rather a commercially viable, professionally run, urban farm. The location was designated a free zone by the municipality with extended legal possibilities for experimentation. The idea was embraced by different parties. Real estate developer AM asked architect Robert Winkel to develop a strategy for transforming the area from harbour to a housing district with the urban farm as a place-making tool for the first 10 years. The plan was not developed further by the municipality. AM and its mother company BAM stayed involved in UJES. Through subsequent stages of the project they contributed their building services free of charge and contributed financially to its 2011 crowdfunding campaign. A number of other engineers, consultants, architects and planners haves been involved at different stages of the project (see Chapter 2.3.6)

SHC Havensteder through the work of special projects director Jan van der Schans was a strong proponent of the project; working together with AM. Pre-investment by Havensteder in the site stimulated a positive sense of place ('place-making'). This benefitted the surrounding neighbourhoods (where Havensteder owned property) as well as opened up the development potential for a high-end housing area. Before the new Housing Law of 2015 participating in this kind of real estate development was common practice for SHCs to improve their financial position. Havensteder paid for the refurbishment of the buildings on site that were owned by the municipality and leased to Havensteder. This investment was considered a loan that UJES would pay back through the rent.

In 2015 UJES restructured its ownership. One of its three initiators left and the remaining two invited a restaurant entrepreneur to join them. This party became a 51% owner of the restaurant and a 49% owner of the garden. In 2016 the foundation UJES which operated the urban agriculture activities went bankrupt. By this time the operational involvement of Havensteder (or AM/BAM) was minimal. The urban farm is still productive, but less ambitious than originally envisaged (for example aquaponics was abandoned). Part of the garden is now rented out to hobby gardeners who are educated by professional growers. The restaurant is still there, and may expand to a second location as a lunch restaurant at Rotterdam Central Train Station.

Image 8: UJES

Source: Paul de Graaf

Hotspot Hutspot

The history behind Hotspot Hutspot encompasses the whole period of recent involvement of SHC Havensteder with food-related initiatives. It started with the Van Grond tot Mond (From Soil to Mouth) project. This was a partnership between four big private and semi-public sector organisations: real estate developer and constructor Dura Vermeer, care organisation Aafje (then called Stromen Op Maat Groep), Hogeschool Rotterdam (Applied University Rotterdam) and SHC Havensteder. The partnership wanted to operationalise their Corporate Social Responsibility and support through concrete action in the development of Rotterdam-South. This is one of the poorest urban areas in the Netherlands with all the social problems that this implies. After a long period the end result was Dantetuin: a community garden that children from the neighbourhood were invited to join. A dedicated employee of Havensteder undertook the day-to-day management of the garden. This project was the start of a longer involvement of Havensteder in food-related projects. When it was no longer possible to maintain the project internally, it was taken up by social entrepreneur Bob Richters and developed into the Hotspot Hutspot initiative.

Hotspot Hutspot is a pop-up restaurant that teaches children how to cook a meal from scratch with produce from container urban gardens and food left-overs from an organic wholesale market. Richters had previously been involved as a cook for the Havensteder garden harvest festival and he proposed to start a restaurant using the produce from the Dantetuin. Since then Havensteder supported Richters to run this neighbourhood initiative. Later both garden and restaurant were relocated in the neighbourhood to a more convenient location. In 2015 the concept was implemented in four locations: Lombardijen (Lomba); Schiebroek (Skibroek); Crooswijk (Krootwijk); Heijplaat (Heijprak), all sponsored by local SHCs in combination with ad hoc funding from the sub-municipal level (city district governments). In 2016 location Schiebroek discontinued because the application for a grant from the local citizens council (successor of the district governments but with less budget and authority at city district level) was turned down. Besides the financial support from the SHCs Hotspot Hutspot acquires funding from private impacts funds and prize money from several awards.

Image 9: Cooking with left overs in Hotspot Hutspot

Source: Hotspot Hutspot

Stadslandbouw Schiebroek

Arguably the most ambitious and most comprehensive project involving neighbourhood horticulture in Rotterdam is Stadslandbouw Schiebroek. This is a network of urban gardens for residents in a social housing neighbourhood, where participants increasingly also engage in catering, farmers market sales, etc. The SHC (Vestia) initiated the project, provided access to land (part of the openly accessible space in the area which they own) and resources (running water), and they hired a social entrepreneur (Caroline Zeevat) to involve and coach the local inhabitants to set up small vegetable gardens, thus financially supporting the development of the gardens.

The project started when agricultural research network InnovatieNetwerk made a proposal to Vestia to commission urban development and sustainability consultants to develop a vison for sustainable renovation of the Schiebroek area in 2011. The resulting plan offered a blueprint for conversion of Schiebroek to a self-sustaining and sustainable neighbourhood, but proved to be too ambitious at the time. However, taking this sustainable vision for the area as a source of inspiration, Vestia asked gardener and writer Caroline Zeevat (see also 2.3.8) to work with inhabitants to set up gardens in the area's openly accessible space. The project developed over the years and now has over 40 allotment gardens. Besides the positive effects on the use and perception of open space and social cohesion, under the encouragement of Zeevat a group of women from the area started their own catering enterprise using produce from the area.

The project was supported throughout by Vestia. In light of the new Housing Law, however, a serious internal discussion took place about continuation of the project. This led to the decision to stop the project in its current form. It was, however, considered valuable enough for Vestia to actively explore other options for continuation. Vestia initiated a meeting with the municipality, the local citizens council (which manages a municipal budget for citizen activities) and social entrepreneur Caroline Zeevat to discuss a different division of roles, with SHC focusing on their core tasks and the municipality taking over other tasks. They proposed that SHC would support continuation of the existing gardens and Zeevat's role in supporting the gardening, as this fitted their renewed focus on social cohesion, safety and appearance of the area. Activities that encourage empowerment and learning of skills and entrepreneurship are now considered by Vestia to be municipal tasks. With Vestia covering basic expenses, Zeevat is now in the process of getting additional funding from the municipality (through the citizens council) for additional activities (excursions, meetings et cetera) that support the personal development of the citizens involved. This, however, has turned out to be a time-consuming activity. Twice a year the parties involved come together to evaluate to see if this new approach is working and if the project can be continued.

Image 10: Stadslandbouw Schiebroek

Source: Eetbaar Rotterdam

Markthal

The Markthal was a initially a public (municipal) initiative that was then handed over to a private real estate party (Provast) to develop. Provast in turn sold it to Corio, and Corio sold it to Klépierre (a French-owned commercial real estate company and European shopping centre specialist). The intention of the then municipal Rotterdam market manager was to improve the competitiveness of the open air market system vis-a-vis supermarkets and develop a modern covered market place. This Markthal was intended to be a showcase of fresh, healthy and affordable food. But after a change of local government, it was decided that the development and management of a covered Markthal was not a core task of the City anymore and the project was handed over to Provast. The original intentions were watered down. The Markthal is now run as a retail real estate project that still mainly focuses on food. This includes processed food as well as fresh produce and there are restaurants as well as retail. Processed food stalls and restaurants are doing much better than fresh produce markets stalls that aim to sell to consumers directly. This is because tourists grab a bite to eat, but don't shop for groceries or fresh meats.

From a series of interviews we did in 2015 among market stall operators, we learned that the biggest problem is not so much the rent per square meter but rather the obligation to remain open seven days a week from 10 in the morning until 8 o'clock at night (Fridays till 21.00 and Sundays till 18.00). This requires market traders to invest in extra staff, which makes it difficult for the typical family-run market stall that one finds in open air markets in Rotterdam, to survive in the Markthal.

There were some market stalls with a regional or local food orientation, but most of these had to stop their business as they did not have enough turnover to cover the costs of renting the market stall and hiring staff for the long opening hours of the Markthal. Cooperative Buutegeweun uniting farmers and fishermen from Goedereede, a rural area to the South of Rotterdam, already had to close in the first quarter after the opening of the Markthal. Cooperative Vers van de Teler, uniting grower organisation Van Nature and auction Zaltbommel, operated for several years but also had to close down recently. It should be noted that whilst some Van Nature growers are from the Rotterdam region, others are located elsewhere in the Netherlands, so strictly speaking this is not a pure local food supply chain.

Several market stalls still offer fresh produce from the region today. Natuurlijk!, for example, is a cooperation between a local grower of microgreens and some other parties providing fresh produce from the region, the Netherlands and also exotic fruits imported through the Rotterdam harbour. Lastly Flemish fries family enterprise Bram Ladage very successfully sells artisanal fresh fries in the Markthal. The potatoes are freshly peeled in the region and cut into Flemish fries by hand on the premises and sold directly to consumers who eat the fries in situ.

Image 11: Markthal

Source: website Markthal

3.1 Current roles and functions of Social Housing Corporations

As illustrated by these examples, social housing corporations support urban agriculture and other food-related initiatives by citizens and (social) entrepreneurs through providing access to land, investing in amenities and providing or paying for professional guidance (Kesselaar 2015). SHCs make their vacant building sites available for temporary use as community gardens, and financially support the creation of these gardens (Tussentuin, Nu Hier) or initiate them (Dantetuin/ Van Grond tot Mond). They also support more or less permanent regeneration of public green space (Food forest Kralingen, Stadslandbouw Schiebroek). In areas where they own property they support social entrepreneurs to set up gardens with inhabitants and to coach the inhabitants (Nu Hier, Stadslandbouw Schiebroek). The SHCs also maintain gardens with the inhabitants and develop other activities like cooking (Hotspot Hutspot). A different form of financial support was the pre-investment in the refurbishment of the buildings on site (Uit Je Eigen Stad). This comprised a loan that the initiative would pay back through its rent.

As combined land owner and financial supporter SHCs play a role in many initiatives and often collaborate with other private sector initiatives. Compared to their overall activities, the support of food related initiatives plays only a minor role both in financial terms and in their focus and policy. As one SHC representative said “we do not shout from the rooftops that we are into urban agriculture.” SHCs tend to be ‘reactive’, in the sense that they react to initiatives rather than actively initiating projects themselves. In exceptional cases like UJES and Stadslandbouw Schiebroek a more proactive approach has been taken. In this way, over the years, Havensteder has supported quite a number of food-related projects, mostly neighbourhood gardens, but also the pop-up restaurant Hotspot Hutspot.

In a number of cases SHCs team up with other real estate parties, such as in Van Grond tot Mond/Dantetuin. Dura Vermeer and Havensteder together started this project with two other parties in order to implement their corporate social responsibility (CSR) strategy. See also the box on Hotspot Hutspot above.

Real estate developer AM supported Uit Je Eigen Stad financially, but their investment was limited due to the fact that the municipality did not want to guarantee their involvement in the future urban development of the area. This was a “catch-22” situation where the party with means to invest in place making was not sure about sufficient return on investment and the party that was likely to benefit (the municipal land owner) did not have the money to invest. In another instance, the municipality (in cooperation with private developers) has invested in place making albeit on a smaller scale, by appointing artist and horticultural researcher Gina Kranendonk as ‘green curator’ in Park Zestienhoven. This is a high-end residential area development that has partly replaced and partly re-integrated an allotment garden complex and some agricultural land on the Northern fringe of Rotterdam.

Two other real estate projects with an urban agriculture component deserve a mention. Architects ZUS and real estate company CODUM initiated a re-use strategy for the vacant Schieblock building as part of the larger Luchtsingel project. This was a bottom-up urban redesign strategy to reconnect different parts of downtown Rotterdam with each other through the creation of a pedestrian walk way. In the context of this urban redevelopment strategy the Schieblock building rooftop was transformed into a rooftop garden. Architects and building owners worked together with the semi-governmental Rotterdam Environmental Education Centre (Rotterdams Milieu Centrum). The building has been successfully refurbished and transformed into a hub for creative entrepreneurs.

Image 12: Schieblock rooftop garden

Source: Marielle Dubbeling

The previously mentioned urban farmers of Rotterzwam started to grow mushrooms on ground coffee in the abandoned Tropicana building; a former tropical swimming paradise along the river Maas in downtown Rotterdam. In due course they gathered a group of Blue Economy[8] inspired social entrepreneurs and an impact investor stepped in to buy the whole building and transform it into a hub and accelerator of Blue Economy inspired initiatives. In both projects urban farming is part of a strategy to add value to vacant real estate and turn it into a business hub, and in both cases social entrepreneurs initiated this transformation.

3.2 Current reasons, drivers and motivates for SHC engagement in city region food systems

The involvement of social housing and real estate companies with the urban part of the CRFS is based on the premises that urban agriculture and food related initiatives help increase social cohesion, the quality of collective and public space as well as the perceived sense of place. Often it is assumed that this will positively impact real estate value (raising it or keeping it from dropping) and/or the transfer rate (prolonging the average time of residency for occupants) in the neighbourhood. Both of these outcomes equate with savings and profits from a real estate point of view. In our interviews with representatives of SHCs this was, however, not affirmed nor was it considered of vital interest. They confirmed that in general urban agriculture and other food related initiatives are considered to contribute to

[8] See further: http://www.theblueeconomy.org/

social cohesion, safety and the appearance of the area. But this did not lead to a prominent place for urban agriculture or food in the SHCs' strategic approach to neighbourhood revitalisation. Rather the generally held positive attitude towards urban agriculture and food allows individuals within these companies to allocate resources to an agenda that they are personally committed to. They can do this either through funding the development costs of neighbourhood initiatives (Tussentuin) or start-ups (UJES) or by paying social entrepreneurs to set up, support and/or stimulate such initiatives (Stadslandbouw Schiebroek).

The motives of private real estate developers range from Corporate Social Responsibility to place making. AM clearly believes that urban farming temporarily or permanently combined with residential housing adds value to urban development and makes it easier to sell the properties (see also De Muynck, 2011).

The difference between SHCs and most other real estate parties involved is that SHCs have a longer lasting relationship with their property. This seems the case for social enterprises such as Schieblock as well. Real estate developers want to create value in the relatively short term in order to make a profit. The crisis has forced real estate developers to at least partly reconsider this and develop a longer term view in the areas that they own.

As for their intentions to up-scale or broaden their engagement, the recent SHC crisis affects future engagement in the sense that there seems to be a consolidation and, in some cases, reconsideration of their current involvement. In the Stadslandbouw Schiebroek project, this has led to a different division of responsibilities between SHC, municipality and the social entrepreneur involved. While this new approach is still being tested, it could, according to the manager responsible for the project, be implemented in other areas that have similar characteristics and where guidance by a professional like Zeevat is needed, that is, areas with a socially vulnerable and economically deprived group of inhabitants. In other areas, they take the view that citizens should be able to initiate this kind of project themselves. At Havensteder, for example, they have no intention of increasing their involvement. They seem quite content with the current level of engagement in food-related activities as a means to realise their core tasks. In fact a term like urban agriculture is shunned ("as if we are going to feed the city') because it carries an ambition that SHCs do not want to carry and "there are more important and urgent challenges for SHCs such as overdue maintenance and low energy-performance of their housing stock" (statements from interviews held).

There are still opportunities to explore the relation between urban agriculture and real estate more systematically. SHCs in Rotterdam have been engaged and gained practical experience but more systematic and more strategic participation is to be welcomed (De Muynck, 2011). Current projects are not optimised e.g. they are not coordinated with municipal strategy for the area. Funding should be coordinated, but this is not done (for examples see 3.6). In the long run, a completely different approach to urban design and development may be needed, where housing, food production, waste recycling and energy production are all integrated at the local level. Without engagement from research and long-term engagement of impact funds with strategic vision, this will not happen automatically.

3.3 Impacts of current intervention

The benefits of investment differ from project to project and are dependent on the nature of the involvement. A longer-term strategy, with commitments for several years and combining different support strategies seems most successful. The project Stadslandbouw Schiebroek shows what an integrated strategy with different forms of involvement can offer. According to a recent student investigation, the project resulted in lower transfer rate, improved perception of openly accessible green space and it stimulated entrepreneurship among the inhabitants. These impacts are generally confirmed by our interviewees, although they do not prioritise producing more hard evidence on lower transfer rates or reduced costs. The SHC's team in the neighbourhood (estate managers) see anecdotal positive effects and this is enough. The value of investing relatively small sums of money in these initiatives is generally accepted and approved. Both would welcome further studies of the impacts of food-related initiatives but there is no urgency to commission these themselves.

The impact of temporary projects on speeding up real estate development seem to be significant as they do improve the perception of vacant lots. But there is no larger strategy behind this, e.g. by having a project rotate along different vacant lots in the area over time to distribute impact more widely and create a longer term perspective for the urban agriculture and food project. The place-making investment in Uit Je Eigen Stad has improved the perception of the location, but the influence on adjacent neighbourhoods is very limited. The Havensteder managers in the neighbourhood are hardly aware of the project, let alone the inhabitants. There has been positive influence on the perception of a wider group of customers and food-enthusiasts from the Rotterdam area, as well on policy makers and opinion leaders from Rotterdam and beyond (UJES has featured in many national and international press items, professional journals and research reports). Its restaurant is targeted at a more affluent middle class public, not to the average inhabitant with a low income from the surrounding neighbourhoods (these are among the poorest neighbourhoods in the Netherlands). This is, however, the exception. Most food-related projects, such as Hotspot Hutspot and Stadslandbouw Schiebroek supported by SHCs directly benefit their main target group; the tenants of social housing.

3.4 Risks incurred from current engagement

The unconventional nature of the engagement makes it more difficult for (employees in) SHCs to account for expenses on urban agriculture to controlling bodies (both internally to the management and externally to the Ministry of Infrastructure and Environment of which public housing is a part). Urban agriculture and urban food do not fit the current way of accounting. The benefit of supporting urban agriculture is not officially valorised. The discussion on this is still taking place, but seems to differ between SHCs and between different divisions within each SHC, and the areas and their managers responsible for projects of this kind. A meeting held by Eetbaar Rotterdam in 2014 showed that although officially lip service was paid to the importance of supporting initiatives like these, individual employees from SHCs expressed their doubt about whether this was broadly acknowledged in their organisation, particularly in light of the recent crisis. This lack of consensus leaves it up to engaged individuals in the organisations to support specific projects. However, the interviews showed that despite the latest developments, support of urban agriculture in its current form is still generally accepted as part of the core tasks, with a certain variation in the interpretation of how far this support should go. Financially this support is often relatively small and the benefits are clear for those engaged.

Image 13: Expert meeting Eetbaar Rotterdam

Source: Jan Willem van der Schans

A more general risk for engagement in CRFSs that is mentioned in literature and societal debate, is the risk of gentrification. Rotterdam is focussing on upgrading its food system also as a strategy to attract higher incomes. But this may lead to a food system that is more socially exclusive (Cretella, 2015). Local food tends to be more expensive and therefore more exclusive, so the argument goes. A much debated case in point is the Markthal. It has been accused of being targeted at high income groups, in contrast to the outdoor market that serves the low-income inhabitants of Rotterdam (ruimtevolk.nl). In fact, however, the Markthal supplements rather than replaces the existing market, and there is some evidence that the open air market also benefits from clientele visiting the Markthal, as mentioned by some traders that were interviewed in 2015. It is true indeed that some market stalls in the Markthal are targeted at those with higher incomes, but there are also market stalls with a price level comparable to the stalls in the open air market. In any case the Markthal is about food experience more than about daily shopping needs. A large share of the turnover is consumption of food on site (in restaurants, bars and cafes) rather than the sale of (local) produce.

SHCs supporting community gardens are also criticised for intervening cosmetically in the neighbourhood rather than solving the real problems at hand, such as renewing the stock of social housing. This argument was voiced by local politicians when Hotspot Hutspot applied for a subsidy for its Schiebroek location. At times it is also argued that tenants should not be forced to pay twice for green amenities in the neighbourhood; once through the support SHCs give to social entrepreneurs (which, it is argued, is ultimately paid by the tenants themselves through the rents that they pay), and once through the support of the city (which, it is argued, is ultimately paid by local taxes). This argument, however, does not take into account that social entrepreneurs up till now are hardly making any money from their activities. In fact their impact is very effective given the support that they get, be it from SHC and/or the city (Bakker, 2016).

Self-organised community gardens can sometimes be socially exclusive in the sense that they are run by like-minded people (Bronsveld, 2014; Veen, 2015). However and when SHCs support social entrepreneurs they are explicitly asked to engage a wide range of inhabitants. These should preferably be their tenants, but that requirement is rather impractical as people spontaneously come and go, and social initiatives do not keep track of personal data such as who people rent their homes from.

3.5 Current policy environment, support measures and their influence

As mentioned earlier the new Housing Law passed by the national government orders SHCs to focus on their core tasks. How they do this and how this is interpreted in relation to urban agriculture activities, is still a matter of debate. While the law forces SHCs in some cases to be more strict about what activities they support (as in Stadslandbouw Schiebroek), in general it seems the existing level of involvement can continue. More ambitious projects like Uit Je Eigen Stad, however, seem to be an activity of the past.

At municipal level: the social entrepreneurs that execute and sometimes initiate the projects that are supported by SHCs are not yet acknowledged as a provider of services such as providing care, education and teaching skills. These services are relevant to the neighbourhood and its inhabitants but are now in a strict sense no longer considered SHC's core tasks. If some SHCs no longer see this as part of their activities, other parties will have to take on the support for social entrepreneurs. As stated earlier, the municipality has funding for care and for reintegration but these markets are hard to access for social entrepreneurs.

3.6 Private sector support needs for engagement

SHCs are currently not interested in increasing their engagement. However, their open responsive attitude towards food-related initiatives might be harnessed more effectively, if there was a comprehensive strategy in place on how to employ urban agriculture and other food-related initiatives in their neighbourhoods. Closer engagement with the city's spatial and food strategy would also be helpful in this regard (see also De Muynck, 2011). This would help them to support initiatives where they are most needed from their perspective, enabling them to better reach more people from their target group. This in turn would engage them more effectively in the emerging city region food system. Representatives of SHCs we spoke to, are interested in such a strategy but developing one themselves is not their first priority.

Current urban agriculture and food initiatives tend to have a bottom-up character. A group of local inhabitants, sometimes coordinated by a social entrepreneur, chose a place to grow food and chose a place to set up a (pop up) restaurant. But these places are not always the best locations that create the most impact with the least amount of effort. For example, the group of volunteers that became engaged at the Dante Tuin (Van Grond tot Mond) under the coordination of SHC Havensteder lived in the Dante street, a couple of blocks away from the vacant plot of land where the Dante tuin was created. As there was no direct and continuous supervision of the people engaged in the project, the garden needed to be fenced, significantly increasing the costs for Havensteder. This measure also went against the idea of intervening in open accessible space, rather than enclosing this space as an exclusive group of people hold the key to the garden.

Rotterdamse Munt (an urban herb garden that aims to integrate and activate different groups of women) chose a location that could serve as a bridge between a new and an old neighbourhood on the south bank of the river Maas. But the location was also a dyke, part of the Dutch water defence system. Significant investments needed to be made to make sure that tilling the topsoil for gardening would not erode the dyke. The initiators of UJES chose well in terms of the social impact of the project (an abandoned railyard in the middle of a port industrial no-go area was turned into a lively urban garden where children play and parents enjoy healthy food). However, the soil was contaminated and a layer of 40 centimetres of clean soil needed to be transported to the location. This meant it would be unlikely for the upfront capital investment to be paid back in ten years, let alone the five years that the farm had permission to stay. Hotspot Hutspot asked for municipal support for its Schiebroek location. One reason why this support was denied was that the local council was not sure what SHC Vestia was planning with that location. Vestia owns the real estate property in which the pop-up restaurant is located. There was no coordination between municipal or sub-municipal level and SHC Vestia and so grant support was denied and the location Schiebroek had to be closed.

Urban designer Paul de Graaf, in cooperation with urban agriculture expert platform Edible Rotterdam, did a study published in 2011 to match a range of urban agriculture types with the physical locations in the city of Rotterdam that would be most appropriate for these to flourish (taking into account certain physical and spatial criteria).The exercise was repeated by Vlad Dumitrescu in 2013, with a much more detailed set of data (Dumitrescu, 2013). The outcomes of this type of study have unfortunately not been used in Rotterdam to set up a comprehensive strategy for the city or for SHCs and the private real estate sector to coordinate their support for urban agriculture and food initiatives.

4. Future possibilities. Analysis and conclusions

4.1 Promising types of private sector engagement and private sector players

With respect to short food supply chains (Chapter 2.2), demand in the Rotterdam city region is still growing. In a recent study carried out for the Province of South Holland, some parties active in short food supply chains state that they expect growth rates of 10% or more. Open air farmers' markets such as Rotterdamse Oogst market get competition from indoor sales, such as Fenix Food Factory, Markthal and speciality shops such as Boerderijzuivel & Meer in Delft (set up by a trader at the open air Rotterdamse Oogst market who wanted to go indoors). Another indoor initiative is the pop-up shop from farmers and growers to the North of Rotterdam (Midden Delfland dairy and Westland horticulture) in Schipluiden: Farm-I-see (see Chapter 2.2.1).

There is a trend that farmers and growers who are orientated to the world market are now also exploring the potential of short food supply chains as a diversification from their main bulk food production operation. An example is Novifarm, where several families merged their land into a farm that comprises 750 hectare of arable land. This farm serves the world market with staples, but also the Rotterdam city region market with potatoes sold as Flemish fries by Bram Ladage (see Chapter 2.2). Another example is the 320 hectare arable farm of Jeroen and Melany Klompe (www.klompe.com), which is transforming from a commodity production farm to a farm with a very differentiated produce offering (e.g. quinoa and pink onions). It also has a vertical integration strategy whereby in addition to production, the Klompe family is also engaged in processing, packaging, branding, marketing and distribution. Previously short food supply chains were predominantly set up by multifunctional farms (Van der Schans, 2013). Today, short food supply chains are also set up by farms focussing singularly on the production of food.

There is also a trend among short food supply chain initiatives to cluster part of their activities with other short food supply chain initiatives in order to become more efficient. In general, one could say that mutual beneficial interaction between short and long food supply chains is increasing. They share logistical services, market outlets and primary production facilities. People may switch careers between the long supply chains and the short ones. For example, Willem & Drees, Rechtstreex and many more short food supply chains are in fact set up by employees that previously worked in companies with long supply chains.

For fruit and vegetable growers it has always been easier to form short food supply chains as this produce can be sold directly to end consumers without any need for processing (except perhaps cleaning and packaging). For dairy farmers and livestock farmers it has always been more difficult, as the raw milk first needs to be processed and livestock needs to be slaughtered and butchered. Processing facilities in dairy and livestock have been merged and centralised to support economies of scale. Quite interestingly, however, recently a trend is emerging that processing facilities downscale and are decentralising again. Examples include micro-breweries, mobile fruit juice pressing facilities, mobile slaughterhouses and even micro dairy processing facilities that use up-to-date technology for monitoring and quality control (e.g. pmdminidairy.com). Thus it becomes easier for farmers to add value to their products by including processing and distribution, potentially even marketing and sales at farm level, or work cooperatively with other farmers (e.g. dairy farmers of Midden Delfland). The latter jointly bought pasteurisation equipment and started to bottle and brand their own milk and market it directly to consumers in the Rotterdam area (www.delflandshof.nl).

Image 14: Local-to-local Delfland's milk

Source: http://www.delflandshof.nl/

Another trend taking place in the Rotterdam city region food system is a multi-channel approach. This is where many short food supply chain initiatives do not focus simply on either a farmers' market or an online shop, or on a business to business or business to consumer supply chain, but explore a diversity of outlets. Willem & Drees products can be found in the supermarket, at train stations, at the Rotterdamse Oogst farmers' market and they can also be bought from their online shop and delivered home or delivered to customers' workplaces.

Another trend, not yet explored to a great extent by short food supply chains, is that fast food restaurants are becoming increasingly unpopular and that so-called fast casual restaurants are becoming increasingly popular, particularly among millennials (Van der Schans et al., 2015). Lunch cafes like Hopper and Lebkov, restaurant chains like LaPlace and Vapiano all focus on healthy food made to order from fresh ingredients at the premises. Of these fast casual front runners, only LaPlace has been engaged in short food supply chains (through their preferred supplier Smeding/Sligro group).

Public procurement of local and sustainable food has not been on the agenda in Rotterdam for long. Rotterdam does not have a public school meal programme, but the canteens of the municipality are served by a commercial catering company on a contract that may last for five or six years. During the last tendering process, short food supply chains (less than forty kilometres) were specifically mentioned in the tender document. However, other criteria were deemed more important such as the requirement to employ a high percentage of people within the labour market distance of the municipal canteens. The company that won the contract (Eurest catering, part of the international Compass Group) ultimately did take into account short food supply chains, but not in a comprehensive way. They cooperated with

Willem and Drees to have their apples and pears on offer in the municipal canteens, but no effort was made to expand this to local cheese, dairy, bread, vegetables etc.). In 2015, the city of Rotterdam in cooperation with the Province Zuid-Holland commissioned a study into the potential for growth in short food supply chains, and catering for institutional buyers (hospitals and homes for the elderly) was identified as a potential growth market (Monteny and Van der Schans, 2015). Another potential growth sector identified is the catering of private companies in the port area, as part of more general corporate programmes to encourage healthy lifestyles among their employees.

There are two direct linkages between short food supply chains and other agendas that need to be mentioned: circular economy and health. As has been mentioned before, if consumers and producers of food live close together, this opens the possibility to close the resource loop of nutrients, organic matter, water and waste heat. There is still potential to be exploited in the initiatives already discussed before (circular production systems like aquaponics, mushroom growing on coffee waste, Stadsgas, neighbourhood composting, etc.). But apart from these intra-urban initiatives, we also believe there is potential for closing urban loops at the Rotterdam city region level. There is already infrastructure to harvest CO_2 from the port industrial area and use it in the greenhouses in the Westland area. There is also infrastructure under construction to harvest waste heat from the port industrial area and use it in the greenhouses in the Westland and Oostland areas, as well as in residential housing in Rotterdam and The Hague. There is also a promising opportunity to harvest nutrients from the urban sewage system and use them in the greenhouses near Rotterdam. This opportunity has already been identified by the water boards and sewage plants. There are also initiatives to harvest nutrients and organic matter from urban green waste and re-use it on arable land near Rotterdam. Decades of artificial fertilisation have left the soils with very little organic matter, thus decreasing soil quality (such as soil contamination, reduction in soil biota, etc.). Arable farmers are now experimenting with no till farming methods and also with collecting and composting urban green waste. For example, Jeroen Klompe is cooperating with Rechtstreex and Uit Je Eigen Stad. They collect kitchen waste from the customers they sell produce to and bring it back to their farmland. But larger scale solutions are needed to bring back organic matter (and nutrients) in the fields around Rotterdam. This offers new opportunities for private sector players.

Another potentially promising link can be made between short food supply chains and the health sector. In the longer term, it is quite possible that health insurance companies will reward people with healthy eating patterns and a healthy lifestyle with lower insurance premiums. Currently the scientific validation of such health claims is still being debated. More generally, food personalised to the needs and wants of specific consumers groups (such as families with small kids or people with cancer) is a promising way forward for short food supply chains in the Rotterdam City Region (Van der Schans et al., 2015).

Private impact funds currently have an ad hoc approach to the financial support of short chain and urban agriculture initiatives. They would have more impact if initiatives were supported for several years. This would allow those initiatives to focus on their primary objectives (such as providing access to fresh food for low-income city dwellers), rather than devoting a lot of time each year to extending or renewing their funding. Funds could also stimulate cooperation between initiatives. This would allow the funds to grant larger sums of money to these self-managing platforms, without having to monitor and control each and every project in detail.

Real estate companies could integrate food production and waste recycling in their standard development strategies. Certification systems for sustainable building like BREEAM and LEED now include points for food production in gardens or on roofs and local waste processing with digestion or composting. A good score in turn gives access to green funding.

The Timmerhuis building in downtown Rotterdam is a building where composting (as well as other sustainable behaviours such as car sharing) are rewarded.

Organisations managing parks and areas with a recreational and/or nature function, such as Natuurmonumenten, could take a more proactive role in creating multifunctional green areas around the city where agriculture is included as a means to manage and diversify these areas. Our reference points here are large agricultural parks such as Parc Agrari Baix de Llobregat near Barcelona or Parco della Risaie near Milan. Currently land management organisations in and around Rotterdam take inner city parks such as Central Parc NY or old country estates for very wealthy city dwellers such as Zuidwind estate in ‘s Gravenzande as their models for parks. However, the scale of the green urban and peri-urban infrastructure is much bigger than an urban park or peri-urban estate. Hence it requires a different method of planning and management.

Image 15: The Milan Parco della Risaie area

Source: http://www.parcodellerisaie.it/it/l-area-del-parco/

Social entrepreneurs as a group of professionals delivering services could make more efforts to quantify and validate their impact on various city related themes, such as social cohesion, public health, job coaching, water buffering, urban heat island mitigation etc. In fact the goal could be to have certain interventions being accredited by professional organisations in the relevant fields, such that impact is more predictable, more standardised, and it becomes easier to reward the interventions as they deliver social and/or ecological services that are highly appreciated by urban stakeholders.

If the value of ecosystem services of food-related activities like urban and peri-urban agriculture were to be accredited (as is already happening in some cases) this would stimulate wider implementation.

4.2 Future roles for the private sector

Up until now we have discussed the role of private sector players in retrofitting and optimising the current city region food system. To describe possible roles in the future, we could also look at the role of private sector players in redesigning the city region food system as part of a major redesign of the delta metropolitan landscape, in order for example to mitigate risks associated with climate change impacts. One can think of trends such as rising sea levels, increased water buffering capacity to cope with floods, increased salinisation of the soil. But there are also trends in technology that are relevant. All monitoring and control will be digitised, allowing for more automated production, harvesting, processing and distribution of food. Due to increased resource scarcity there should also be a more intimate relationship with the urban metabolism (waste heat, water and nutrients). City dwellers could potentially engage in the city regional food system both as consumers as well as producers (of food, of energy, of clean water, nutrients, organic matter, etc.). Traditionally the functional and spatial aspects of these roles are separate. The producers are in the countryside, consumers are in the city, both are separated by a potentially quite long (but in any case anonymous) supply chains. Private parties such as architects and sustainability consultants are already visualising this new delta metropolitan productive landscape (http://www.biorizon.eu/news/video-towards-a-sustainable-economically-resilient-and-more-beautiful-dutch). This approach to urban development was also proposed in the Rotterdam Atelier at the Architecture Biennale Rotterdam in 2014 and in the work of the Rotterdam Metabolists such as Except.

SHCs could involve urban agriculture and other local activities in closing loops in sustainable renovation efforts. Procurement of local food, locally provided care and public green space management could offer opportunities for social entrepreneurs that work with urban agriculture and short chain initiatives to take on new roles as care providers, and nutritionists. It could also offer opportunities for social entrepreneurs as providers of public landscape design, creation and maintenance.

Agrarian urbanism(farm-based urban development), could become more important in future developments. Here food production, processing and distribution are used as a structuring force in urban development.

4.3 New/additional reasons for private sector engagement

Policymakers and professionals in urban planning and design are increasingly paying attention to the sustainable development of the built environment and cities as a whole. This is reflected, for example, in the aforementioned movement for integrated urban development and circular economy. City regions play an important role in the world economy and city regions are increasingly competing, not just on their natural resources and/or economic characteristics, but also on social and ecological performance. The quality and diversity of the city regional food system is increasingly used as an asset to be celebrated and to be nurtured in this global competition between urban areas. Urban food has become a city marketing tool. Whereas previously cities were competing for the creative classes or for highly developed service industries (such as high finance), today cities seem to embrace more concrete productive work that is of daily relevance to everybody, such as growing, processing, distributing and serving food. Interestingly the CRFS may be an economic activity that is socially and culturally embedded and (therefore) perhaps able to bridge the gap between the very rich and the very poor, perhaps even better than other economic activities can do (haute finance, haute couture, etc.). See also the manifesto for a fairer more grounded city (https://www.theguardian.com/cities/2014/sep/24/manifesto-fairer-grounded-city-sustainable-transport-broadband-housing)

Related to this, it seems to be the case that investment funds are more actively looking at city regional food systems as an investment opportunity. For one thing it is clear that increasingly complex financial products are a high risk category that many investors are more and staying away from. Food may be a low revenue investment, but it is a secure investment as everybody must eat and (agricultural) land in or around cities will be in high demand as cities attract more and more people. Investment funds are also increasingly constrained by ethical standards that limit their potential to invest in (warfare, child labour and exploitation of women, etc.). Large sums of capital (e.g. from pension schemes) are on the move and projects in city regional food systems seem an interesting socially accepted (perhaps even welcomed) alternative. Building on this is the development of new pension schemes investing in local projects with a long-term return that pay (partly) in kind. In the Betuwe area this kind of alternative pension fund is being investigated.

4.4 Support needs for new private sector engagement

Currently the City of Rotterdam supports two networks in relation to food: the Regional Food Council and the Rotterdam Food Cluster. Although these networks have a different origin and approach (the Food Council mainly engages the bottom-up social movement related to food, the Food Cluster engages food companies in and around Rotterdam), there is also overlap. Unilever, for example, is a member of the Food Council. In order to avoid confusion for external parties, but also to avoid competition for public attention, competition for attention from local politicians and for internal funds there should be a comprehensive approach toward food initiatives and food companies. This would involve a further evolvement of the once adopted Rotterdam Food Strategy in the light of the priorities of the present local government. This new Food Strategy could for example talk about public health in relation to food, but also about job opportunities and the attraction of food (related) companies to the Rotterdam region.

A new Food Strategy should include short as well as long food supply chains, it should engage food start-ups and established (multinational) companies, it should link a social agenda to an economic one. It should also include food production as well as processing, distribution, consumption and waste. It should make more explicit where long and short food supply chains can benefit from each other. For example, short supply chains may function as an innovation laboratory for longer ones, longer supply chains may absorb employees that were originally attracted as volunteers to food through short food supply chains, etc.

Both the long supply chains as well as the shorter supply chains need to become more responsive to the market, less focussed on bulk and more on adding value, co-creation and the experience economy. Short supply chains may be more capable of adapting to this new competitive environment. Clustering advantages need to be explored and nurtured (such as logistical services but also technological or financial services). The Food Strategy should promote an open climate of innovation that is market driven, rather than technologically dominated and that includes and reinforces the social values around food.

Potential conflicts (for example over space, access to funding or markets) should be addressed and priorities should be made explicit. There should also be a spatial strategy that explains where the city region promotes food production for the world market and where it stimulate food production with multifunctional benefits for the region and the city. This also affects where and how city dwellers can access the countryside and where and how food that is produced there can enter the city and be distributed to consumers. More active engagement with iconic projects such as the Markthal is needed as well as with the agricultural parks in development to the South and to the North of Rotterdam (Park Butenandt, Polder Schieveen, Midden-Delfland, etc.).

To engage new private sector stakeholders that potentially benefit from the services that food-related activities offer (besides production, processing and sales of food) an organisation that represents social entrepreneurs and their initiatives and valorises and accredits the benefits of these services (such as care and public green management) should be set up. Financial and legal support in starting up such an organisation and providing a back office could strengthen the network that is strong on initiative but has limited finances.

The valorisation and accreditation of services would help the players in this network to access tenders for rendering these public services; an issue that already has the attention of the municipality (Bakker, 2016). A project that plants fruit trees around sports facilities to improve a healthy nutritional lifestyle went through this process of accreditation and is now being widely implemented by municipalities that want to fight obesity.

In the case of the sustainable renovation of the housing stock, particularly those houses owned by SHCs, new ways of financing sustainable measures and integrated solutions are needed (e.g. pre-financing home ownership through insurance like structures). The City of Rotterdam and SHC should develop common urban regeneration plans, including the use of urban agriculture as a regeneration strategy. They should coordinate their activities, their funding and the exchange of knowledge and experience with private property developers and the relevant municipal departments.

At the provincial level, short food supply chains are one of the priorities in the Provincial Rural Development Programme (the other priorities being closing resource loops and biodiversity). These are priorities favouring the further development of a city regional food system. Two issues are worth highlighting here. First, even though the Province aims to support short food supply chains, the Netherlands as a whole has not prioritised this issue in the National Rural Development Programme. This means that Provinces cannot draw from the full range of measures to support short food supply chains. In fact they can only support the setting up of a short food supply chain initiative (making the business plan). They cannot contribute to its execution or to its expansion. This is problematic because in an urbanised Province such as Zuid-Holland, short food supply chains have been around for some time and new initiatives are set up quite easily with so many consumers close by. The challenge is that we are now moving to a stage where initiatives need to grow to become profitable, but unfortunately it is exactly this kind of growth that cannot be supported with Common Agricultural Policy (CAP) money. The Netherlands and Denmark, both countries with an export orientated agricultural sector, are the only two countries in the EU that have not prioritised short food supply chains, and therefore cannot activate the most appropriate measures to support them. The Netherlands is considering resetting the priorities of its National Rural Development programme. This will require a formal notification to the Commission before the end of 2016.The same situation exists in the field of agroforestry. Even though there is growing interest in edible forests in the Netherlands (and in the Rotterdam city region, as discussed before) the measures supporting agroforestry in the CAP are not activated by the Netherlands. Hence edible forests lack support from Brussels.

The second comment is about the organisation of the execution of the National Rural Development Programme. This is now managed by the Provinces (as these have the funds to co-finance the budgets coming from Brussels). But Provinces tend to focus on rural issues solely and they are not always best placed to connect rural development to the needs of the city. In the Netherlands (and elsewhere in Europe) we have a situation that regional authorities control the Rural Development Budgets from Brussels, but cities are becoming increasingly ambitious in intervening in the food system (even though they have only small budgets allocated to this). Farmers often argue that if city dwellers ask for extra services (like recreation, education, landscape management) they should also pay extra for them. The point, however, is that city dwellers already pay for the services provided by farmers as Rural Development money is coming from tax budgets. As most people live in cities it is, therefore, primarily urban money that is paying for Rural Development Programs already. If this is the case, it would be more appropriate to give cities a more prominent role in the CAP and it would be prudent for Provincial authorities to consult with cities more closely (cities as representatives of the taxpaying citizen but also as representatives of the money spending consumers). The Province of Zuid-Holland is doing just that, but we must be aware that this depends on the good will of civil servants rather than the formal set up of the CAP system. Making rural funds available for CRFS development (as a kind of re-ruralisation of the city) could offer new possibilities for financing food-related initiatives in the Rotterdam region.

4.5 The different ways private sector engages and possible synergies

The notion of a city region food system is at the moment not actively pursued by the municipality of Rotterdam. As shown in this report, there is however, a wide range of private sector players and departments within the municipality that are pursuing aspects of a regionally or even locally oriented food system.

The example of private real estate and social housing corporations shows that players for whom food production is not a core task, can be valuable partners because of shared interests. It also shows how in CRFS, the value of agriculture/food production is no longer measured only in the food produced but in a spectrum of services to the city. The involvement of new private sector players in building city region food systems can be explained by a growing awareness of these benefits and of practical ways to valorise them. This is also a key to encouraging further engagement.

It is interesting to consider that the notion of a CRFS connects a lot of different parties, but that for most of these parties, food is not a first priority. Somehow food is a powerful way to connect these diverse parties, but it cannot be expected that these parties will produce an overarching strategy that stretches beyond their own interests. SHCs show interest in how to engage food-related initiatives in the strategic development of the neighbourhood or district, but at the same time admit they have more important things to focus on. This is confirmed by the focus on core tasks promoted by the national government. SHCs are focused on what is going on in their neighbourhood and they see urban agriculture and other food-related projects in that light. They operate on a different scale and with a different focus than the city region food system. The same is true for a lot of the other non-food private players. In fact, the same can be said of most of the (inter)nationally oriented food sector players that are based in Rotterdam. In their case, they are less committed to the city region scale because they can move their operation elsewhere if necessary. Companies with a place-based background, however, particularly family businesses that have a history in the area are more likely to innovate at the city region scale. Kruidenier Food service is an example of this, as is the earlier mentioned Bram Ladage with his locally sourced Flemish chips. These companies operate within market circumstances, but their commitment is not just to profit, but also to the environment and to the city region that they are part of. Inspired by local initiatives they have the ability to scale up innovations from a micro-(neighbourhood) level to a regional scale. In many ways they function in the way the Dutch food system worked before industrialisation, somewhere between a food system 1.0 (the traditional food system orientated towards local and regional supply and demand) and 2.0 (the current food system orientated towards world markets).

The food and non-food players discussed here have different priorities but share an engagement with the city region scale. At the same time there is a demand for a more localised CRFS. This demand is on the one hand ,driven by national policy goals with regards to sustainability, and on the other hand by a growing movement of citizens and a growing market demand. Although the citizens in this movement as well as the consumers that demand local food represent a niche, this niche does not necessarily consist of a well-to-do elite alone as some people claim. In fact there are several niches from social housing tenants participating in neighbourhood gardens, to a creative class of pragmatic idealists to third generation family businesses. Synergies between these different private parties can benefit the establishment of a city food region. A supportive policy environment would enable these parties to become part of the same story.

4.6 A supportive policy environment

A CRFS presupposes an integrated whole. To have a diversity of private parties be part of this whole, demands a common narrative that gives each part its place. This narrative does not have to be a shared vision, but should give room to the constituent parts to pursue their own priorities in a way that their activities and the beneficial side-effects (a diversity of ecosystem services) are supportive of the development of the city and its food system. A policy environment that acknowledges the broader impact of food related activities and stimulates private parties to actively engage in these activities and benefit from their services, could offer such a narrative meeting ground. The recommendations in this section could help shape such a narrative.

The municipality of Rotterdam has repeatedly stated that it wants to put local food on the agenda. Local food and urban agriculture were embraced as part of the solution to sustainable development of the city by the previous cabinet member for sustainability and public space (Cretella, 2015). With the instalment of a new administration and a different cabinet member, this ambition is not entirely thrown overboard, but the emphasis lies more on social entrepreneurship (at city level) and on food as a major economic sector for the Rotterdam region. This in itself is a change. However because of this, the initiative has shifted from one department (urban planning) to another (economic development). Even though at city level departments should be able to integrate, a municipality the size of Rotterdam is so big, that departments tend to be inward looking and isolated. These silos of departmentalisation have as a consequence that a change in political emphasis on the subject of food translates to a form of administrative memory loss with different civil servants setting different priorities.

However, in the current narrative of a skill-based future economy, local and regional food-related activities might have an important role. As long as the municipality does not have a consistent and comprehensive vision for a CRFS, the flexibility of private sector players to carve out their own role in the current policy narratives is still necessary.

5. References

Note: For this report interviews were conducted with Erna Straathof, Project Officer Liveability for Vestia's 7,000 dwellings in Rotterdam-North and Mark van de Velde Housing Manager for Delfshaven, Centrum and Noord. The report also draws on conversations the authors have had in the last few years with a myriad of players in the Rotterdam region.

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