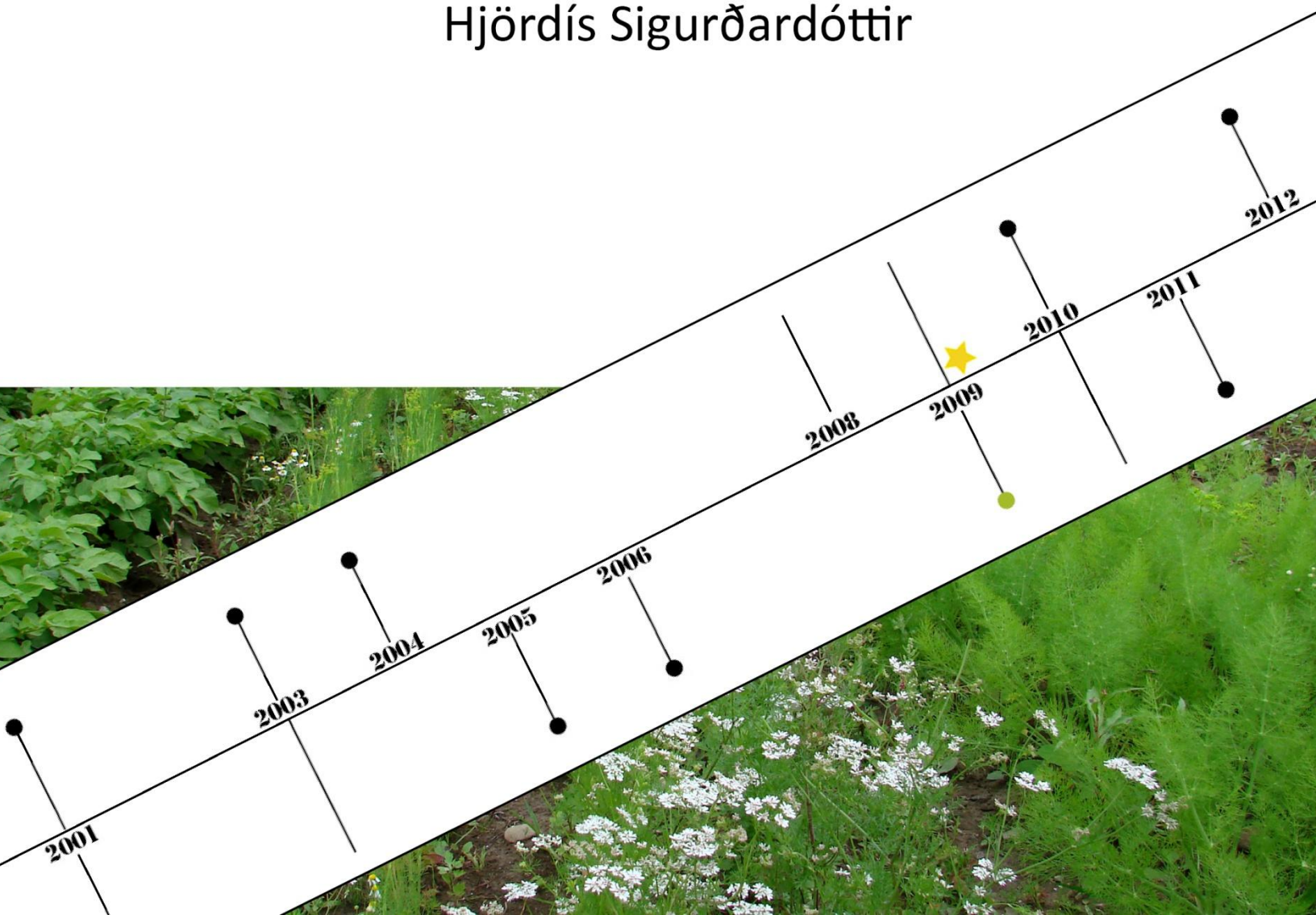
Urban agricultural development on unused terrain Highlights of the process

Case study research

Earthworks Urban Farm Detroit &
'Uit Je Eigen Stad' Rotterdam

Hjördís Sigurðardóttir



Landscape Architecture and Planning, Spatial Planning Specialization
Master Thesis (LUP - 80436, 36 ECTS) Land Use Planning Group

Master student: Hjördís Sigurðardóttir
Registration number: 690613762020

Thesis Supervisor, Professor Arnold van der Valk
Thesis Examiner, Assistant Porfessor Gerrit Jan Carsjens

The Netherlands: Wageningen University, February 2013

Abstract

A case study is used to show the process of implementing urban agriculture (UA) on vacated terrain. By applying a qualitative method and studying literature, two cases have been investigated - one is in Rotterdam in the Netherlands (entrepreneurship) and the other is in Detroit USA (community-based, subsidized agriculture). This research is a master's thesis done in a pragmatic way by questioning the features of implementing urban agriculture by highlighting the scope of the study linked with the supporting policies, agents involved, regulatory framework and the implementation characteristics. Illustrative tables are used to depict the cities draft food polices (themes) and supportive strategies. A diagram has been made indicating which government bodies are responsible for granting legal permits. Flowcharts have been designed showing timelines of the development processes in each case, the stakeholders involved and the UA functional characteristics. Comparing the cases depicts the vibrant character of urban agriculture and the variation of stakeholders involved, however, the initiative and the supporters' keen interest have been vital because the development in both cases originated at the grass-roots level and the cities' officials are paying close attention to it. However, when much needed financial or professional support comes from a higher level (national or state), legislation designed for the global market or the conventional food system can be a hindrance to the cities' further development in establishing (regional/local) food systems. In order for cities to build up their self-reliance on food economics and related activities, resulting in more sustainable food systems and habitable urban areas, general ethical changes need to be made. Consequentially, laws, regulations and levels of authority will have to be re-structured so that multi-functional landscapes incorporating urban agriculture are accepted without difficulty. This will encourage cities in the western world to develop a feeling towards global ethics in sustainability.

Preface

I have come a long way. My journey in recent years has been unusual, to say the least, and at times, demanding. I was raised on a farm in south-west Iceland, studied food science at the Icelandic University and worked in that field for approximately 10 years. I became more and more interested in alternative lifestyles, new ideas about food issues and the interaction of the environment and wellbeing. Weaving together dissimilar subjects and aspects has always fascinated me. In 2006 I got the opportunity to study again, and learned 'environmental and landscape planning' at the Icelandic Agricultural University. Many inter-related factors influenced my decision to go to the Netherlands and follow the master's degree course in landscape architecture and planning at Wageningen University. I moved with my four kids, which I am raising alone, to Wageningen the autumn of 2010. The last two and a half years have been busy, putting dissimilar pieces of the 'duty' puzzle together was like standing on the sidelines at a football match every Saturday, bustling around doing all the daily chores 7 days a week and managing to create a haven of 'peace' where I could study. When I chose the topic of urban agriculture as the title of my thesis it was an attempt to link my background in the food industry to the planning field. I decided to do an international study to broaden my horizons and learn more. I have certainly learned a lot, but at times I thought as if I were trying to 'eat an apple in one go'. I find the topic of urban agriculture interesting as well as complicated and it is even frustrating at times. I have personally experienced how easy it is to become isolated in various ways, both in daily life while doing a large project such as this and also being involved in certain topics, disciplines and concepts that build up and become constraining. I don't think I can successfully link my background to this study, but I believe that my approach to the topic of the thesis is wholehearted and my personal belief, that looking at things from a broad perspective is extremely important in life.

Table of contents

1 INTRODUCTION

KEY TERMINOLOGY: FOOD SYSTEMS, SUSTAINABILITY, UNUSED TERRAIN, URBAN AGRICULTURE, AND LAND ETHICS

1.1 WHY DO RESEARCH ON URBAN AGRICULTURAL DEVELOPMENT?

1.1.1 *THE RESEARCH PROBLEM*

When considering food alongside the earth's natural resources, people of all nations need to be aware of look more closely at the challenges they face from a much broader perspective, to act responsibly and cooperate with one another. Producing sufficient food for the world's population in a sustainable and ethically-sound way, is one of the key challenges for the coming decades (Wiskerke & Viljoen, 2012).

Recently, cities have become potential areas for cultivating food products by transforming unused land into productive areas. Agricultural practice in cities, usually referred to as urban agriculture, has been practiced for generations mainly as 'marginal' land use. Detroit in the USA is an example of this; a city with a lot of unused terrain and, to solve problems of urban decay, initiatives are being taken to cultivate food products on this terrain (Giorda, 2012). An interest in urban agriculture has also been aroused in Europe, and is perceived as an industry having a variety of beneficial aspects in a developed economy (van der Schans & Wiskerke, 2012).

In interdependent society networks, issues relating to food have various dimensions. The concept of urban agriculture is defined based on Mougeot (2000 p 11); "an industry located within (intra-urban) or on the fringe (peri-urban area) of a town, a city or a metropolis, which cultivates, processes and distributes a diversity of food and non-food products, utilizing human and material resources, products and services found mainly in and around that particular urban area for the benefit of that same area" .

The ***problem statement*** in this research is: Due to the lack of comprehensive and comparative case studies, the process of developing urban agriculture on unused terrain still has to be defined as to how it is supported by policy, governed by regulations, the agents involved and the characteristics of the site in question.

Therefore research was carried out in the form of a qualitative case study research on urban agriculture by comparing two cases; 'Earthworks Urban Farm' in Detroit, USA and 'Uit je eigen stad' in Rotterdam, The Netherlands.

1.1.2 *THE OVERALL CONTEXT AND ADDRESSING THE PROBLEM*

THE RELEVANCE OF URBAN AGRICULTURE FROM A GLOBAL PERSPECTIVE

A shift in urban land-use and food production is evident, when comparisons are drawn between past and present situations. Food has shaped people's lives throughout the ages in broad and narrow terms (Steel, 2008). From the outset, urban food development resources have been one of the main reasons for people choosing a place to live in. Steel claims that the roots to the origin of food and its cultural dimension seem

to have faded away and have been superseded by a fast modern lifestyle with questionable consequences that the western world has no option but to respond to. Nowadays, most urban residents depend on food transported from areas far away from their homes. Since 2007 more people have gone to live in urban districts than in rural areas and it is estimated that 6.5 of the 9 billion people in the world will be living in urban areas by 2050 (Wiskerke & Viljoen, 2012) As a consequence this scenario puts high demands on agricultural practices and natural resources. Growth in population and increasing consumption are placing extraordinary demands on agricultural practices and natural resources (Foley et al., 2011). The world's growing population is having to face challenges such as food quality and food security[1], unequal consumption[2] - global obesity and undernourishment as well as environmental damage (Morgan, K., Marsden, T., & Murdoch, 2006). These challenges have direct links with the concept of *sustainability...*

> *...sustainable development[3] is first and foremost about ensuring that everybody—both in rich and poor countries, nowadays as well as in future generations —can have their basic needs met. This must be obtained without jeopardizing the natural environment in which life here on earth is dependent. Furthermore, the decision-making processes leading to such a result must be democratic and legitimate (Næss, 2009 p 504)*

Sustainability, therefore, combines the ethical norms of welfare, distribution and democracy without overlooking nature's ability to resist man-made encroachments and environmental pollution.

Food-chain activities connect food production, processing, distribution, consumption, and waste management, as well as the associated regulatory institutions and activities is otherwise known as the *food system* (Pothukuchi & Kaufman, 2000). It is claimed that the dominant/conventional food system (Broekhof, 2010) is unsustainable (Morgan, K., Marsden, T., & Murdoch, 2006).

The regulatory framework for food designed for the global market insists on low prices, a long lifespan and acceptable standards of hygiene to ensure the safety of food being transported over long distances (Lang, 2010). Hence, year-round supplies and low prices [in the western world] are benefits of the conventional food system (Wiskerke, 2009). However, standards of hygiene seem to have a higher priority than environmental or nutritional issues do in developed economies. (van der Schans & Wiskerke, 2012).

The situation seems to be a dilemma on a global scale because more food has to be produced (on account of population growth) yet at the same time the system needs to become more sustainable[4] (Foley et al., 2011).

Pothukuchi & Kaufman (2000) were so convinced of the extreme importance of food systems to the health and vitality of communities that the *planning field* put them on the agenda. The modern concept that food only comes from rural areas to the city (or from other countries far away) has been challenged generally (Sonnino, 2009). A new food concept in geographical terms is forcing its way onto the scientific, political

[1] The World Food Summit of 1996 defined stable food security as *"when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life"* (WHO -World Health Organization, 2012a).

[2] Food is one of the primary requirements for all human beings along with needs for clothes and shelter. Ironically the western world suffers increasingly from obesity while people in other parts of the world are suffering from poor nutrition.

[3] Næss (2009) identifies the term of sustainable development with The United Nation's report 'a common future' dedicated to Gro Harlem Bruntland, the 1992 conference on Environment and Development in Rio de Janeiro, and the subsequent work of the UN Committee on Environment and Development.

[4] Sustainable development is first and foremost about ensuring that everybody in both rich and poor countries, now and in the future can have their basic needs met (Næss, 2009). See sub-paragraph 3.1.5. for further explanations on global ethics and sustainability

and planning agenda which is grounded in differing logistics and incorporates other values in comparison to the global food industry (Watts et.al. 2005 cited by Wiskerke & Viljoen (2012). Alternative food systems[5] challenge the normal standards 'for assessing value' (low price and priorities of convenience) along with new ethics[6] concerning food where producers insist on a direct link between food and the landscape (Lang, 2010).

The concept of sustainability has been incorporated into policy documents all over the world as a result of Agenda 21 (United Nations, 2006). From a global perspective sustainable development can be considered the 'global ethics of sustainability' incorporating 'distributive ethics' meaning that benefits as well as burdens are distributed (Næss, 2009). Therefore, bearing in mind the earth's limited resources to cope with the increasing global population, the developed (western) countries must certainly act in a responsible way. Focus must be expanded to include cities as part of the larger natural eco-system so that ambitious sustainable urban development projects can be effectively established on building sites to produce food. Furthermore, considering cities as potential areas in that respect, falls well within the scope of the elements outlined frequently in policy on sustainable urban development

THE RELEVANCE OF URBAN AGRICULTURE FROM A CITY'S PERSPECTIVE

The increase in urban population makes cities prime targets for planning strategies that aim to: eradicate hunger and poverty, improve livelihoods by stimulating local economy development in combination with enhancing food security and nutrition (van Veenhuizen, 2006). Demographical and spatial transformations of cities result in temporarily *unused terrain* which can be used for growing food and is the dynamic character in opportunities for evolvement. The significance of making use of such unused terrain for that purpose is even more valid when other 'resources' that cities have to offer are also taken into account[7]. Cultivating food inside cities has been considered for a long time as 'marginal' land use. In the past, unused public land in towns was known as 'the commons' (Bollier, 2002) and being a 'commoner´ was a participant in a group that grew food on this land (van der Schans & Wiskerke, 2012). Such areas nowadays are categorized differently and are therefore officially grouped according to their coded distinctions which define their function, development status, ownership etc. (Mougeot 1999).

Due to the financial and the real estate crisis in the western world, plots remain unused for longer than anticipated and temporary [even marginal] use is appreciated to prevent deterioration (van der Schans & Wiskerke, 2012).

It is claimed that urban agriculture is vital to sustainable food systems and its development can be seen as a strategy to improve a city's livelihoods in various ways (Wiskerke & Viljoen, 2012; Pothukuchi, 2011; Holland & Salle, 2010; van Veenhuizen, 2006 among others). A sustainable food system is a collaborative effort, involving citizens, who build a more self-reliant food process and improve the local economy (Feenstra, 2002). Key issues in sustainable food systems are; Improving access to a healthy diet, sustainable food production, direct links between farmers and consumers, job creation and re-investing financial

[5] Food networks, production, distribution and consumption are branches that want to provide non-technical sustainable alternatives to the conventional food system (S. Broekhof, 2010)

[6] The field of ethics (also known as moral philosophy) involves systematizing, defending, and recommending concepts for acceptable or unacceptable behavior (Fieser, 2009).

[7] Resources along with cheap terrain (building sites, roof tops, empty buildings etc.) are heat, organic waste and the people willing to work to create a 'common domain' for the residents. (Van der Schans, n d.; Graaf, 2012)

capital, improving working and living conditions for farmers and other citizens and setting up food and agricultural policies that encourage local food production, processing, and consumption.

The sustainable characteristic in urban agriculture comes from its multi-functionality (van Veenhuizen, 2006; Pothukuchi, 2009; Wiskerke & Viljoen, 2012). Urban agriculture can reduce global food shortage significantly and contribute to resolving this crisis in various ways (van der Schans, n.d.) The benefits that urban agriculture offer to a city are many and varied depending on the agents involved, their situation and perspectives – the urban poor, other classes of citizen, urban farmers and programs for sustainable city development (van Veenhuizen, 2006). Recognized types of urban agriculture can therefore be classified according to the agents involved and their situation (subsistence urban farmers; family-type (semi-) commercial farmers; and agricultural entrepreneurs) coupled with the operational aspects and the methods used (where/how).

According to van der Schans (n.d.) the development of urban agriculture is 'place-specific'. Graaf (2012) explains in general, how urban agriculture can provide 'a service to the city' by establishing another link in the food (nutrient) chain and also potentially reinforcing it in economical, social and environmental terms. A similar standpoint upheld by Smit & Bailkey (2006) outlines how community-based urban agriculture improves a city's community capital[8] and can contribute significantly to build up realization of a 'place' - or place-making[9].

The risks already known in urban agriculture concern contamination (van Veenhuizen, 2006). Other obstacles are high running costs and a challenge to integrating dissimilar disciplines into new design paradigm (Holland & Salle, 2010; van der Schans & Wiskerke, 2012)

According to Stierand (2012) two concepts having an holistic approach to create or influence urban food systems are: Food strategies (policies) and Food Policy Councils (FPC). Strategies whose aims and guidelines are for the development of urban food systems and FPC advise politicians and administration. The food policy councils act as networking agents having an important role in comprehensive food planning at the community and regional levels (Pothukuchi, 2009; Stierand, 2012). On account of policy development's multi-functionality in urban agriculture it cuts across the planning process by involving various agents, sectors and disciplines (van Veenhuizen, 2006).

Experts have introduced ways and means for the authorities to develop policy to support urban agricultural development. The American Planning Association (APA) have published guidelines for community food-planning (Pothukuchi, 2009) and van der Schans & Wiskerke (2012) demonstrate a model[10] for the

[8] In Community-based urban agriculture community capital has seven dimensions which are:
Human Capital (-resources): health, education, skills of the individuals involved; Social Capital: the strength of the groups, networks, the common viewpoints among their members, and linking up networks with different groups; Political Capital: the dynamics of group organization and leadership, and connections with government and supporting agencies; Cultural Capital: the value of a community's heritage, and how it is preserved; Economic Capital: investments, savings, contracts and grants; Built (-structural) Capital: the physical settings – land, housing, other buildings, infrastructure; Natural Capital: the local atmosphere, land, water, biodiversity, scenery.

[9] 'Place making' is a philosophy/idea and a tool for improving sites; it capitalizes on a local community's assets, inspiration, and potential, ultimately creating better public areas that promote people's health, happiness, and well-being (www.pps.org/reference/what_is_placemaking)

[10] This model is based on a brainstorming session in 2011 according to Van der Schans and Wiskerke (2012), attended by members of 'Think tank' a platform of civil servants who actively explore the potential of urban agriculture in and around Rotterdam Nl.

developed economies that maps out the policy dimensions for urban agriculture and its potential for the applicable policy to be incorporated into city's current policy frameworks. Furthermore, specific ideas have been introduced on how authorities can provide strategic support in developing urban agriculture on unused city terrain (van Veenhuizen, 2006; Mogk, Kwiatkowski, & Weindorf, 2011; Graaf, 2012). Van Veenhuizen (2006) mentions specifically how authorities can assist urban farms in various ways, Mogk, Kwiatkowski, & Weindorf (2011) specify ideas for integrating urban agriculture into the city of Detroit's legal framework and Graaf (2011) proposes mapping the potential for integrating specific urban farming operations within the city of Rotterdam.

If mixed land-use[11] is permitted which includes agricultural activities, there are many potential areas for urban agricultural development even in cities that have already been shaped by a compact city policy[12] such as Rotterdam (Graaf, 2011).

Local food and agricultural activities aim to create more sustainable communities (Holland & Salle, 2010). Holland and Salle (2010) describe Agricultural Urbanism (AU) as a framework and approach to integrate these activities and many other related ones into the current planning and design of metropolitan regions in such a way. Based on Holland & Salle's definition (2010 p 30) 'Agricultural urbanism' is a planning policy and design framework for developing a wide-range of sustainable food and agricultural system elements and integrating them into the community at multiple levels. AU refocuses all aspects of economic development, community identity, urban planning and design in food and agricultural systems. This integration not only makes food and agricultural systems more sustainable but also makes cities better places to live in. 'Agricultural urbanism' can 'gauge' to what extent cities are integrating the various elements of urban agriculture.

WELL KNOWN BARRIERS

Even though the benefits of developing urban agriculture seem clear, and more cities are incorporating the phenomenon into their policies, it is surprising how few examples materialize (van der Schans & Wiskerke, 2012). The legal framework might possibly be a barrier in seemingly lagging agricultural urban development, especially in developed economies (van Veenhuizen, 2006; Holland & Salle 2010; van der Schans & Wiskerke, 2012). However, its development seems to have thrived more in certain cultural contexts than elsewhere. In Detroit, a city in the USA there are many gardening and agricultural initiatives and powerful grass-roots and networking activities (Walker et al., 2011; Giorda, 2012).

In order to develop urban agriculture political influence, applicable resources, and more comprehensive plans are essential (Pothukuchi, 2009). Planners need to look at the food system holistically (production, processing distribution, retailing, consumption, and managing waste sites). Apparently numerous agents are involved in this 'scenario'. Experience in local food planning reveals that a community's economic

[11] The Smart Growth Movement illustrates mixed land-use as: residential, commercial and recreational activities in close proximity to one another, alternatives to driving, such as walking or biking, become viable. Mixed land-use also results in a more diverse and sizable population and a commercially viable base for public transport. It also enhances vitality and the possible security of an area by attracting more people and activities on the street. Pedestrians revitalize community life by making streets, public areas and pedestrian-oriented retail centers become places where people meet (Smart Growth on Line, 2012)

[12] The terms compact city and urban sprawl are completely opposite. A compact city, is more energy-efficient and there is less pollution because the residents live closer to shops and work and can walk, bike, or take transport. In the USA compact cities are also known as transit-oriented developments and neo-traditional towns and are promoted by the smart growth movement (Neuman, 2005)

activities and planning responsibilities are organized by traditional methods in all fields of discipline (Pothukuchi, 2009). Owing to its complexity, it is difficult to link it to an alternative food system, policy programs and activities. Experience has also proved that it is difficult to get the message of sustainability across to an institution with a variety of sub-divisions divided into various divisions and professions (Pothukuchi, 2011). Van Veenhuizen, (2006) claims that urban food systems and urban agriculture need to have a solid institutional base.

Even though the concept of urban agriculture is on the brink of being recognized as well as the potential of land use in cities becoming sustainable 'bio-regions', its progress is slow. Identifiable barriers are the legal framework, the current institutional structure and disciplines which have been designed for the conventional system. This indicates that there is a 'gap' between 'grass roots' activities, the applicable institutions and professions.

THE DECISION-MAKING PROCESS - MANY AGENTS WITH DIFFERENT VIEWPOINTS

Land-use planning is a goal-orientated forward-looking discipline that has, in accordance with the initiative of sustainable development been cooperating more and more with grass-roots agents, NGO's and communities so that many more agents with different backgrounds and perspectives are becoming involved. Generally, 'norms' and values affect people's decision-making particularly where ethics (or moral philosophy) are concerned, which involve systematizing, defending, and recommending the concepts of right and wrong behavior (Fieser, 2009). The broad definition of *'land ethics'* is the philosophy which guides decision-making when land is utilized or changes are made to a land[13] (Leopold, 1949).

When urban agriculture which has, until recently, only been 'marginal' land use, has begun developing within cities and policies are drawn up to approve that development, it attracts a wide variety of agents from different backgrounds whose global perspectives also vary. Their viewpoints on urban agricultural development might conflict due to a difference in the moral philosophy they uphold[14]. 'Marginal' land-use or a new concept such as urban agriculture is perceived from different aspects depending on the land ethics in force that influence the decisions to be taken in the process (Sigurdardottir, forthcoming). However, comparing urban agriculture's relevance in addressing common problems in urban areas and Beatley's (1991) set of ethical principles to guide land use policy, urban agriculture seems to correlate on the whole with 'ethical land use'. Yet judicial, a juristic aspects relating to agreements that must be kept might be problematic in this respect[15].

LACK OF PRACTICAL DATA

Even though there is a great deal of information on urban agriculture in planning literature (Broekhof & van der Valk, 2012), very few comprehensive and comparative case studies are available on the topic (Pearson

[13] Leopold (1949) re-conceptualized the idea of land - In his view the land was for life and for the source of life - for example soil, water, plants and animals. The harmony in the community – 'the ultimate good' is reflected especially in integrity, stability and beauty of the community (Shaw, 2005).

[14] Utilitarian ethics claim that an action is right if it results in consequences which maximize happiness (Brown, 2001). Utilitarianism has been criticized for being driven by economics (Driver, 2009; Beatley, 1991). Kantian ethics claim that actions are right if they are in line with moral rules and principles and are therefore rational (Brown, 2001). Ethics of virtue deem an action to be right if it is what a virtuous agent would do in the circumstances and then not necessarily according to what regulations and the law uphold. A libertarian agent who upholds freedom favors a re-distribution of power, supports the free market and communal co-operative activities(Vallentyne, 2011).

[15] Two of Beatley's (1991) ethical principles; relating to the required consistency between different jurisdictional levels and promises that must be kept.

et al., 2007; Broekhof & van der Valk, 2012). Pearson et al. (2010) consider that the gap in awareness on the topic of urban agriculture could be split into two categories; 1. Designing and testing policies and systems which will maintain urban agriculture (and its benefits) as part of the urban system and, 2. Research to assess the contribution urban agriculture can make to large cities, for instance; assessments should be made on how unexploited terrain can be cultivated. Examining the regulatory regime is essential especially for projects that are classified as economically important (van der Schans & Wiskerke, 2012).

THE SIGNIFICANCE OF THE STUDY

Apparently, cities are willing to learn from each other to understand more fully the phenomenon of urban agriculture (Sonnino, 2009). It was assumed that analyzing and comparing different developments in urban agriculture this research would give some insight into the agents involved, e.g. the city authorities, institutes with know-how, NGO's and the farmers themselves. As a result, new information from a case analysis in one's own city or elsewhere, could inspire and provide a deeper understanding of the development's progress, its influential aspects and establishment. Furthermore, new ideas for different approaches and perspectives could be developed alongside those already in existence. Pothukuchi (2009), states that planners should be more attentive to basic community needs, such as food, even though it may be difficult when their agencies are expected to do more with fewer resources. Sharing knowledge is one way of saving time and capital.

1.1.3 *THE OBJECTIVE*

The ***problem statement*** *of this research is: Due to a lack of comprehensive and comparative case studies, the process of developing urban agriculture on temporarily unused land is still undefined as to how it is supported by policy, governed by regulations, the agents involved and the characteristics of the site in question.*

Therefore, ***the objective*** of this research is as follows:

To shed light on two processes of development in urban agriculture on unused city land; how the process is supported by the local government, affected by regulations, different agents and the site in question.

The case studies function as examples of the process to implement urban agriculture on vacated terrain. It was assumed that comparing two dissimilar cases in different cities would result in an informative list of features in the development process (see section 2.1 on reasons for this case study, the cases chosen and why).

As depicted in figure 1, (three colored circles at the top) three main categories form the theoretical basis of this study; planning and food systems, urban agricultural land-use ethics and sustainability. These topics are all interlinked when developing vacated city terrain.

According to the study objective, the knowledge gained formulates the features of the process. Figure 1 (on the left), indicates, the four 'fields' information on the variables studied; local government, ordinances and regulations, the agents involved and the case location. As shown on the right in figure 2, the variables studied were; applicable policy, deeds and legal permission, agents involved and their role in the process, the characteristics of the location in question and the activities on site. It was anticipated that those variables would give some idea about the features of urban agricultural development on unused terrain.

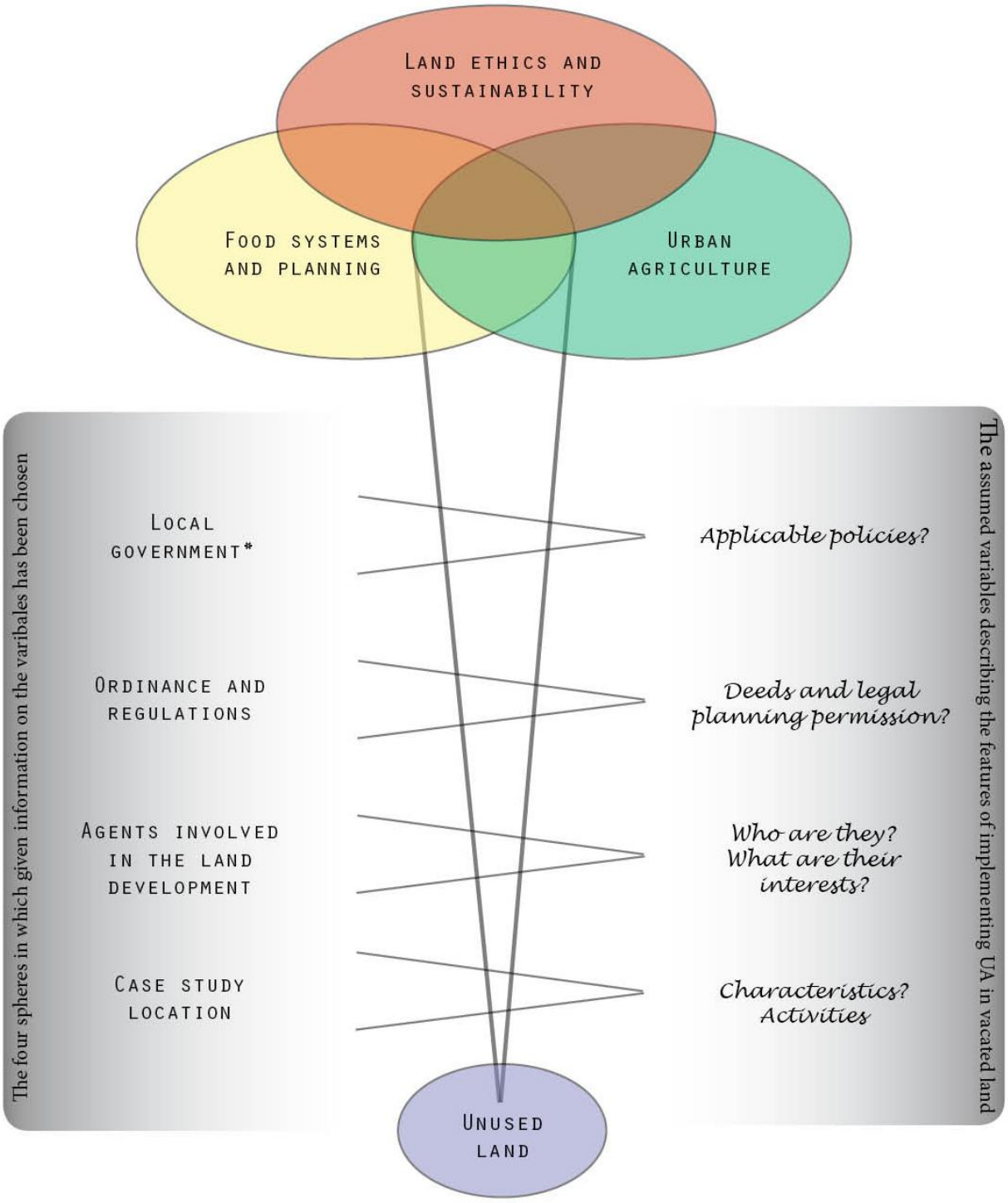


Figure 1 An illustration indicating the research focus of this study. It is assumed that land-use ethics and the concept of sustainability would reveal food planning features and urban agricultural activities from a practical standpoint. Four fields (on the left) give information on the variables studied; variables (on the right) are assumed will provide an idea of the features of the development process in the cases chosen. Here the municipalities are the local government in Detroit and Rotterdam .

1.1.4 *RESEARCH QUESTIONS*

The ***main research question*** is;

What are the main features of the process in cases where urban agriculture is developed in inner cities, and what can be learned from comparing two different processes of such development?

In order to respond to the main research question five sub-questions have been formulated with the aim of shedding light on the subsequent four 'fields' defined; applicable policy, legal permission, agents involved, the locations and the farm's characteristics. Finally, providing an answer to the fifth sub-question examines the lessons that can be learned from comparing the cases in question.

1. ***Has urban agricultural development been supported by local government policies and is this still the case?***
2. ***What legal permission is required to commence urban agriculture on unused terrain?***
3. ***Who are the main agents in the development of urban agriculture, what is their role in the process?***
4. ***How has the development of urban agriculture been conceived; how does it function and what does it look like?***
5. ***What can be learned from comparing the features of these two cases of urban agricultural development on unused city land?***

1.1.5 *THE STRUCTURE OF THIS REPORT*

In accordance with this introduction: Chapter 1, addresses the research problem and reviews the literature which enabled the research to be put into context, the objective and the research questions. The research design and methodology are outlined in Chapter 2. Chapter 3 consists of the theoretical framework - the literature providing the structure of the research. The results are explained in Chapter 4; separate sections for each case study (4.1 – The Detroit case study and 4.2 - The Rotterdam case study), answers to the sub-research questions can be found in sub-paragraph 2-4 tagged along introductory paragraph for each city. Chapter 5 is on the discussions and the responses given to sub-research question 5, on comparing the cases (the findings outlined in the results chapter) and ends with discussing strengths and weaknesses of the study. The conclusions in Chapter 6, clarify the response to the main research question. Chapter 7 includes suggestions for further study and finally the report ends with chapter 8 which are acknowledgements.

2 RESEARCH DESIGN AND METHODOLOGY

2.1 A CASE STUDY RESEARCH

2.1.1 *INTRODUCTION*

This chapter aims to demonstrate this type of exploratory research, which sets out to analyze the knowledge acquired in a specific context and the relevance of a case study (2.1.2). It then outlines the strategy selection and points out the location of the case study areas, their general societal characteristics from a land ethic perspective and also the kind of urban agricultural cases considered and why they were chosen (2.1.3).

2.1.2 *WHY DO SUCH A CASE STUDY?*

This was an exploratory case study which involved research that had to be carried out to solve a problem that had not previously been clearly defined and now gives some insight into a given situation. According to Flyvbjerg (2004) 'context dependent knowledge' needs to be researched and defined in a case study. An intensive analysis was performed on an individual unit with the objective of developing urban agriculture, to stress the developmental factors in relation to their context (Flyvbjerg, 2011). In this research a comparative case study was done on the literature available, along with a qualitative method approach. Two different areas were chosen for study and comparison. As many people as possible who are familiar with the cases in question and have developed an expert knowledge resulting from their experience were interviewed. By doing so, two things were achieved; developing the nuances of reality and creating opportunities for the researcher to develop his own skills (Flyvbjerg, 2004). The underlying aim therefore is to learn and not to prove anything. This study has been done from a pragmatic approach (Creswell, 2009) bearing in mind the scope of real global practice and problems and the consequences of actions in a society.

2.1.3 *SELECTING CASE STRATEGY*

WHAT, WHERE AND HOW?

The two cases in question are located in different countries - in Detroit in the United States and in Rotterdam in the Netherlands. Both cases have been developed with tremendous enthusiasm from the grass-root level (using bottom-up initiatives) for various reasons in a different cultural context. In the US the 'libertarian' view is common as the emphasis is on freedom, liberty and voluntary association (Thompson, 2010) which takes the form of a free-market or communal co-operatives (Long, 1998). In a 'libertarian' society the government plays an insignificant role (Vallentyne, 2011) which means that the authorities are rarely involved in private or organizational initiatives. The Netherlands is known as powerful welfare society. The general view in the Netherlands is probably more rooted in the 'utilitarian' and Kantian 'spirit based on rules and duty. In the Netherlands spatial planning and managing growth have a long-standing tradition (van der Valk, 2002). A strict adherence to compact city and restrictive building policies in open areas which has influenced spatial development and decision-making by consensus is dominant in planning style in the Netherlands.

Urban agriculture has been developing for many years in Detroit without much involvement from the authorities however, the city has now reached the development phase of creating a policy on urban agriculture. The phenomenon of urban agriculture in Rotterdam, on the other hand, has been developing

more so in recent years than in Detroit and the city authorities have just approved a policy on urban agriculture .

The project in Detroit is the 'Earthworks Urban Farm' and is located in the south-east part of the city in a neighborhood that has been suffering from distress and neglect. 'Earthworks Urban Farm' is a community-based urban agricultural project with educational and spiritually-based objectives which focus on soil-based cultivation and has a sound advocacy including networking activities. The project in Rotterdam known as 'Uit je eigen stad' is located in an old harbor area in the district of 'Delfshaven' - an area which is undergoing transition. 'Uit je eigen stad' is recently-established entrepreneurial urban agriculture (which began in the spring of 2012) operating soil-based cultivation activities and aqua-phonic (forthcoming), a restaurant and a grocery store selling local produce.

Both projects have developed on vacated terrain, categorized as industrial zones. In Rotterdam the farm has been implemented as a temporary development in an area for which the port authorities were originally responsible, but nowadays the farm rents the area and the housing facilities from the Housing corporation (Havensteder). The farm in Detroit has been developing for more than a decade in several private properties that the owners no longer use.

WHY THESE PROJECTS?

By making the right choice of case study and method, this can make a positive contribution to scientific development (Flyvbjerg, 2004). When comparing projects in different countries (with different cultural backgrounds) a paradigmatic strategy in case selection can lead to results which highlight the general characteristics of the societies in question. According to Flyvbjerg (2004) intuition is fundamental when identifying paradigmatic cases alongside acceptable reasons for the choice of project. Extreme circumstances often reveal more perspectives because they arouse more people to become involved which increases the basic knowledge of the activity studied. It was assumed, therefore, by choosing projects for urban agricultural development with differing aspects and in a different societal context - one in the USA and the other in the Netherlands, the research would reveal a greater variety of features from both sides. These features are, for example, agents and the basic know-how in the activity. The researchers' intuition and interest were also deciding factors in the area selection along with the potential to reach to the applicable interviewees.

2.2 WORKING METHODS

2.2.1 *INTRODUCTION*

This section outlines the working method and study process. The research is based on grounded theory as explained in paragraph 2.2.2, the framework of the general study process is based on references to literature, guidance which recommended applying codes to indicate the importance of information, interviewing and formulating the written report. The process undergone is clearly outlined in paragraph 2.2.3 both as a whole and subsequently in more detail for each sub-research question. Finally, the interviewees and their backgrounds are presented (see paragraph 2.2.4).

2.2.2 *GROUNDED THEORY*

The research was based on grounded theory[16] which is designed for case study research in which constant comparison is at the heart of the process (Dick, 2005; Creswell, 2009). According to Dick (2005) the research process, based on grounded theory is carried out in approximately three stages. The first consists of data-collection, note-taking, coding and memorizing that most often occurs simultaneously, secondly; organizing (sorting out-) the information and third writing the report. The first stage involves both reference to literature and performing interviews. However reviewing literature evolves throughout the whole study process as more theories emerge and the data extends. A 'Selective coding' procedure was used in this research, meaning that core-categories were defined. The four core-categories (variables) used are illustrated in figure 1. Sorting out the information involved defining the aspects of the core–categories, i.e. variables. Others emerged following the preliminary hypothesis and its orientation process as well as during or actually after doing the interviews. However, a theoretical lens (Creswell 2009 p.62) is used to provide the overall orientation for the study otherwise referred to as theoretical view, which was also the case in this research and often results in the build-up of the main sub-categories.

A schematic explanation of the general process can be found in the following paragraph and subsequently in a more detailed manner for each of the sub-research questions.

2.2.3 *GENERAL PROCESS OF THE STUDY*

The working method of this research is illustrated in Figure 2 (page 13). After making a summary of the hypotheses and conceptual notions from literature, the core-categories defined that were assumed to have given information on the features of the development process are the variables in the red and blue boxes in figure 2. Questions for the interviews were formulated and the interviewees were contacted. Three interviews were carried out in each case (6 interviews altogether); with policy maker(s), an expert in urban agriculture and the farmer or the farm manager. Interviews in the USA were performed by Skype but in the Netherlands they took place during meetings with one exception which was done mainly by e-mail. The same list of questions was used in both cases and a copy was sent to all the interviewees by e-mail a few days prior to the interviews. All interviews were recorded, checked for precision and sent to the interviewees with a few requests for further explanations, the responses of which were, in most cases, sent back by e-mail. When more information emerged from a particular case it was used to improve the list of questions and sent back to the applicable interviewee concerning the comparative case. This ensured case comparison consistency. Diagrams and illustrations were then made to reflect the main findings in a symbolic way. To ensure the reliability of certain findings which were presented, interviewees were asked to give feedback on the illustrations made. The literature study was performed in phases throughout the whole working period but more thoroughly so after the interviews and while the report was being written.

More detailed illustrations are indicated the analysis of each sub-research question in the subsequent paragraphs.

[16] Originally introduced by Glaser and Strauss (1967)

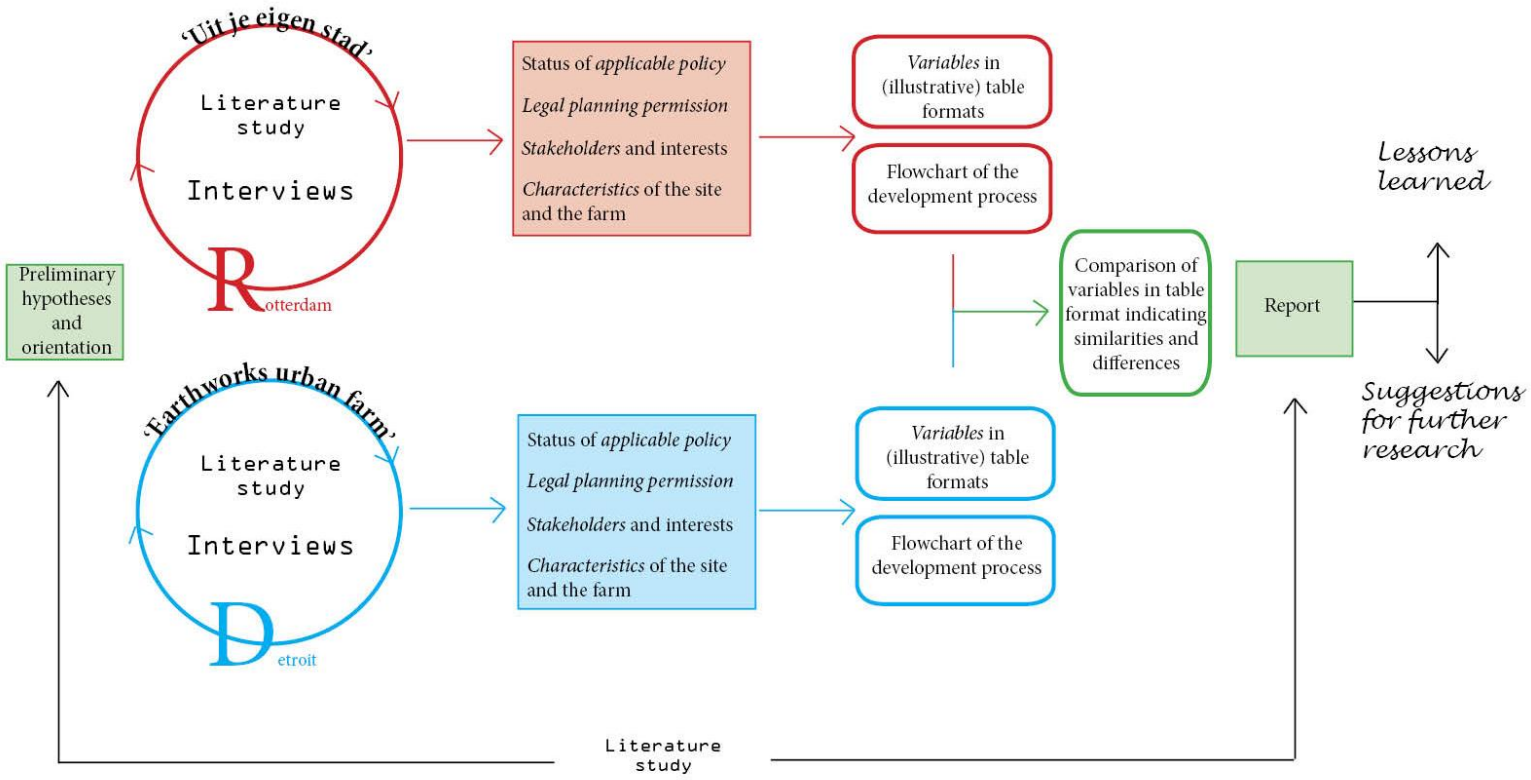


Figure 2 This illustration depicts the overall research method - the inputs and the outputs.

THE INITIAL SUB-RESEARCH QUESTION

Has urban agricultural development been supported by local government policies so far and is this still the case?

Policy maker(s) were interviewed by using partially-guided interview techniques. The interviewees gave primary information in answer to the first research question, signifying the city's support to the development of urban agriculture on unused terrain. To obtain certain information from the policy objectives, two 'checklists' were formulated to define the codes for the variable (supportive policy; key-category selection). Inspired by the theory on 'Agricultural Urbanism' by Holland and Salle (2010 pp30-35) the first one was defined to determine the main themes in city policy on urban agriculture. The policy themes were categorized as the 10 principles of Agricultural Urbanism (see Appendix 1). One of the principles (point 8) was improved after interviewing Professor Kameshwari Pothukuchi, (by e-mail dated 26th April 2012 followed by a interview on 27th April 2012) (see amendments in Appendix 1 – point 8). Interviewees had to choose optional answers to each of the principles on the list. An illustrative tabulated format was drawn up to summarize the importance of the *themes* in a particular city's policies. The table also contains practical examples suggested by the interviewees in the context of each principle. The second checklist was made (to define the codes for supportive policy also) summarized as strategic tools which can be used by cities to promote urban agriculture. It was mainly inspired by Mogk, Kwiatkowski, & Weindorf (2011) as well as by, van Veenhuizen (2006). The interviewees commented on each strategy listed and based on their answers an illustrative table was created to indicate the rating of each tool in policy development and its strategic use by the city. Again the interviewees gave practical examples to clarify their answers. See paragraphs 4.1.2 (Detroit), 4.2.2 (Rotterdam) and 5.1.2 (comparison). Figure 3 gives an overview of the necessary process to find applicable response(s) to the initial research question.

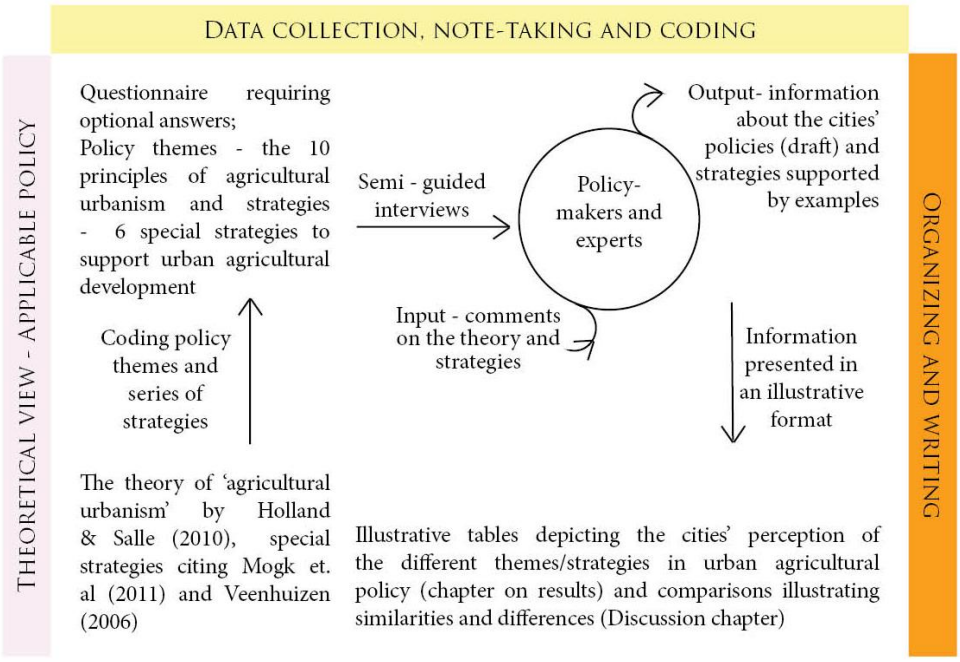


Figure 3 The method used to answer the initial sub-research question on applicable policy (pre selected key-category /variable). A theoretical lens (Creswell, 2009 p 62) **was used to orientate the theme coding. The text in the figure should be read starting at the paragraph in the bottom left-hand corner and then follow the arrows.**

THE SECOND SUB - RESEARCH QUESTION

What legal permission is required to commence urban agriculture on unused terrain?

The interviewees gave primary information in response to the question, especially the policy makers. Policy maker(s), experts and farmers were interviewed and open-ended questions were posed. Hypotheses and concepts from literature provided coding indicators for orientation within the legal framework. Two main aspects were used to generate response: the permission needed to implement urban agriculture in the city's vacated areas and which governmental bodies were responsible for it. Open-ended questions were posed using these two aspects. Subsequent to the interviews diagrams were made of the present governmental structure in both cities and the branches within them responsible for the necessary legal permits. Lists were also made indicating all the permits required for each particular project. See paragraphs 4.1.2 (Detroit), 4.2.2 (Rotterdam) and 5.1.2 (outlining the comparisons of both cities). A summary of each case was then prepared, regarding the permits that the farms had actually acquired, see paragraphs 4.1.3 Earthworks Urban Farm and 4.2.3 'Uit je eigen stad' and 5.1.3 on the comparison of the farms. Figure 4 gives an overview of the process used to elicit responses to the second research question.

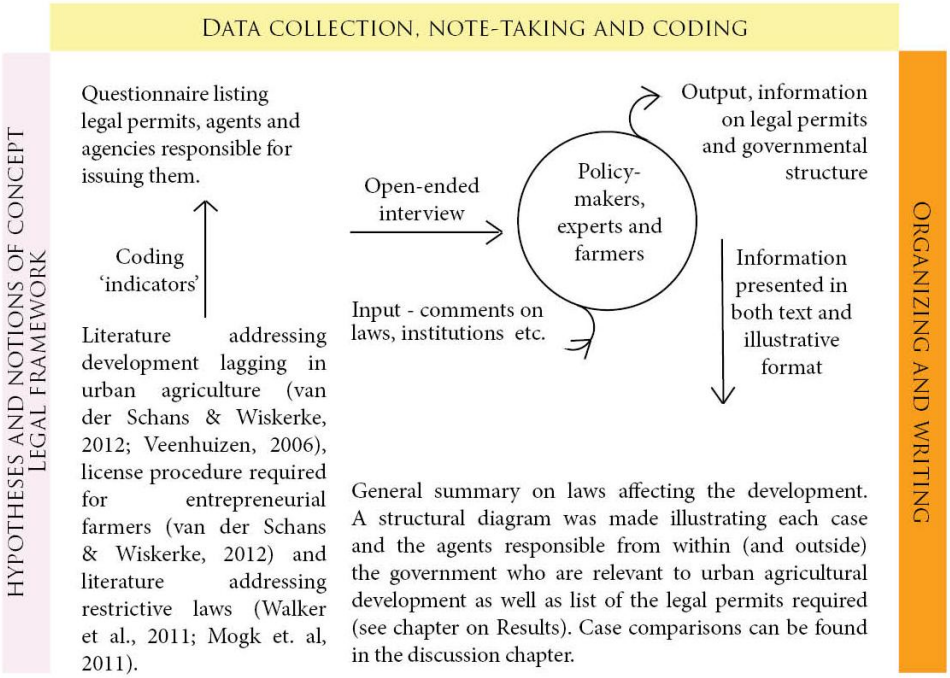


Figure 4 The method used to answer the second sub-research question on the legal framework (pre selected key-category /variable). Hypotheses and concepts from literature provided coding indicators for orientation within the legal framework. The text in the figure should be read starting with the paragraph at the bottom left-hand corner and then follow the arrows.

THE THIRD SUB - RESEARCH QUESTION

Who are the main agents in urban agricultural development and what is their role in the process?

Inspiration for this question were concepts obtained from literature on how agents influence the process of developing urban agriculture (see figure 5). It was considered necessary to define the two categories of agent involved; those who have an influence on policy in the city and the agents involved in the development of the farms under investigation. Therefore this question was answered in a twofold way; first, which agents are generally involved in urban agricultural development within city parameters, e.g. those who have an influence on policy and discourse, secondly, which agents were involved in each of the cases studied. Alongside reference to literature, all the interviewees were questioned about their experience in the development process. All the facts and figures were set out in a timetable. For the results emanating from the first part of the Detroit study, the main influential agents who worked on creating policies in the city, have been explained in text as well shown in a diagram symbolizing the agent-network relationship (see paragraph 4.1.2). For Rotterdam only the results emanating from the first part have appeared in text (see paragraph 4.2.2). For the case comparison see paragraphs 5.1.2). The results of the second part which describes the agents involved in the projects, has been summarized in table format and also as flowcharts depicting the development of the urban farm on the basis of timeline (see paragraphs 4.1.3 and 4.2.3). The agents were classified into five different categories; consultants or aspiring agents (professional), consultants who provided financial assistance, agents who facilitated various activities, co-workers or partners and founders. Each category of agent was defined by a distinct color in the pattern of the flowchart. For more details on case comparison in the second part, see paragraph 5.1.3). Figure 5 gives an overview of the process used to solve the third research question.

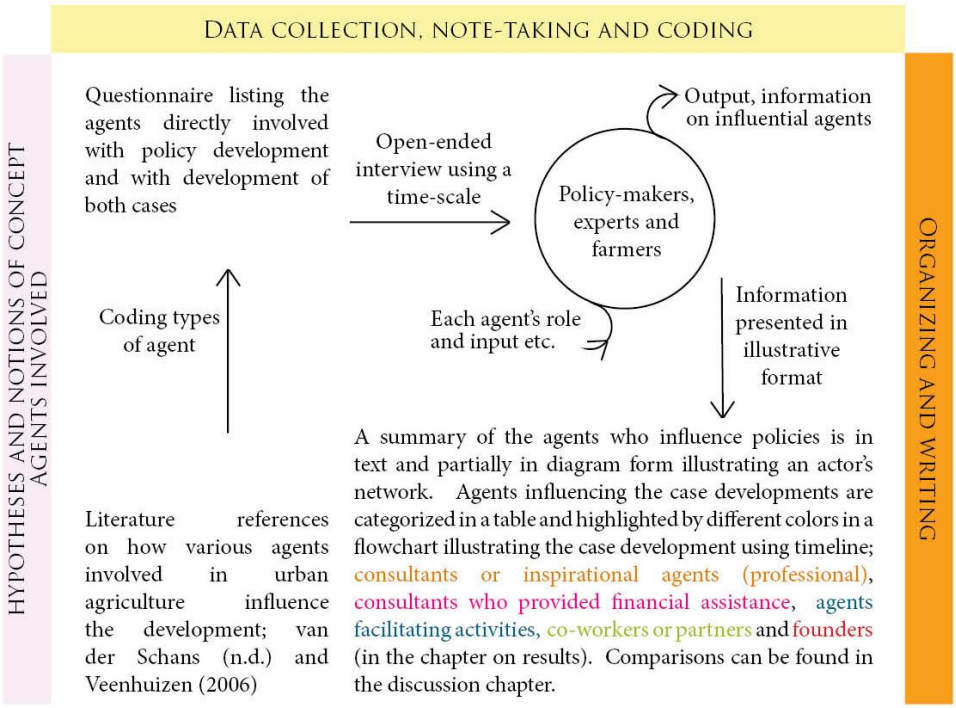


Figure 5 The method used to solve the third sub-research question concerning the agents involved in urban agricultural development (pre-selected key-category/variable). Hypotheses and notions of concepts from literature to determine the agents involved in urban agricultural development. Read the text in the figure starting with the paragraph at the bottom left-hand corner and then follow the arrows.

THE FORTH SUB - RESEARCH QUESTION

How has the development of urban agriculture been conceived; how does it function and what does it look like?

The farms' websites and other literature were consulted and semi-guided interviews with help of timeframe were carried out principally with farmers. Experts and policy-makers were also questioned about the farms. Based on hypotheses and notions of concepts from literature (see figure 6), two main categories were used as a guide to draw up a questionnaire the farms' development; the spatial context and how the farms function along with their characteristics. After organizing the information, sub-categories were created in order to present the findings regarding the locations[17] and the farms' functions and their characteristics[18].

Summary descriptions of each case were made along with, flowcharts using timeline (see paragraphs 4.1.3 (Earthworks Urban Farm), 4.2.3 ('Uit je eigen stad') and case comparisons can be found in (paragraph 5.1.3). Figure 6 gives an overview of the process in finding solutions to the forth research question.

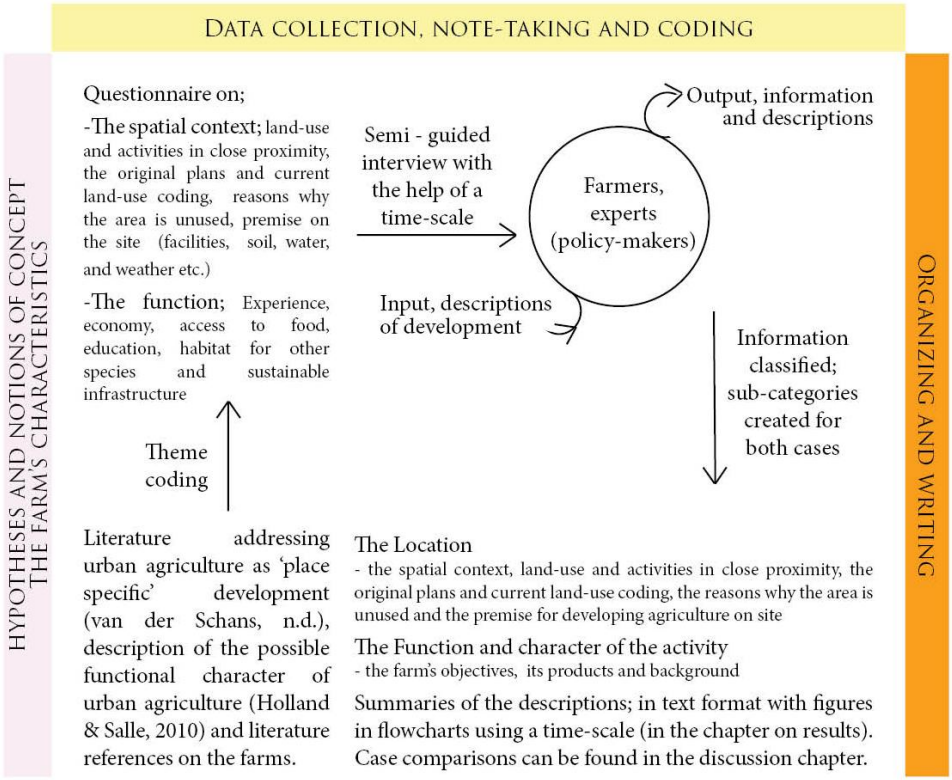


Figure 6 The method used to solve the forth sub-research question about the farms characteristics (pre-selected key-category/variable). Hypotheses and notions of concepts from literature to determine the spatial context (the location) and the farm's function. Read the text in the figure starting with the paragraph at the left-hand corner and then follow the arrows.

[17] According to Jan Willem van der Schans (n d) obstacles and opportunities in the physical environment and in the market sphere are important.

[18] It was necessary to determine the significance of the following factors in the farms' objectives; Experience, economy, access, education, habitat for other species and sustainable infrastructure (energy, water, waste) (factors listed in the review on the principles of Urban Agriculture by Holland and Salle (2010 p 30))

THE FIFTH SUB- RESEARCH QUESTION

What can we learn from comparing the features of these two cases of urban agriculture developed on unused city land?

Using the theoretical framework outlined in chapter 3 as a basis, the features of both cases their differences and similarities are considered in chapter 5. Theories regarding land-use ethics and the principle of global sustainability are used to help in understanding the results from a planning perspective and to draw general conclusions from the comparison. By this means suggestions have been given on what needs to be changed to transform conditions for sustainable food system developments within cities.

The main conclusions concerning the lessons that can be learned from this comparison are considered in chapter 6.

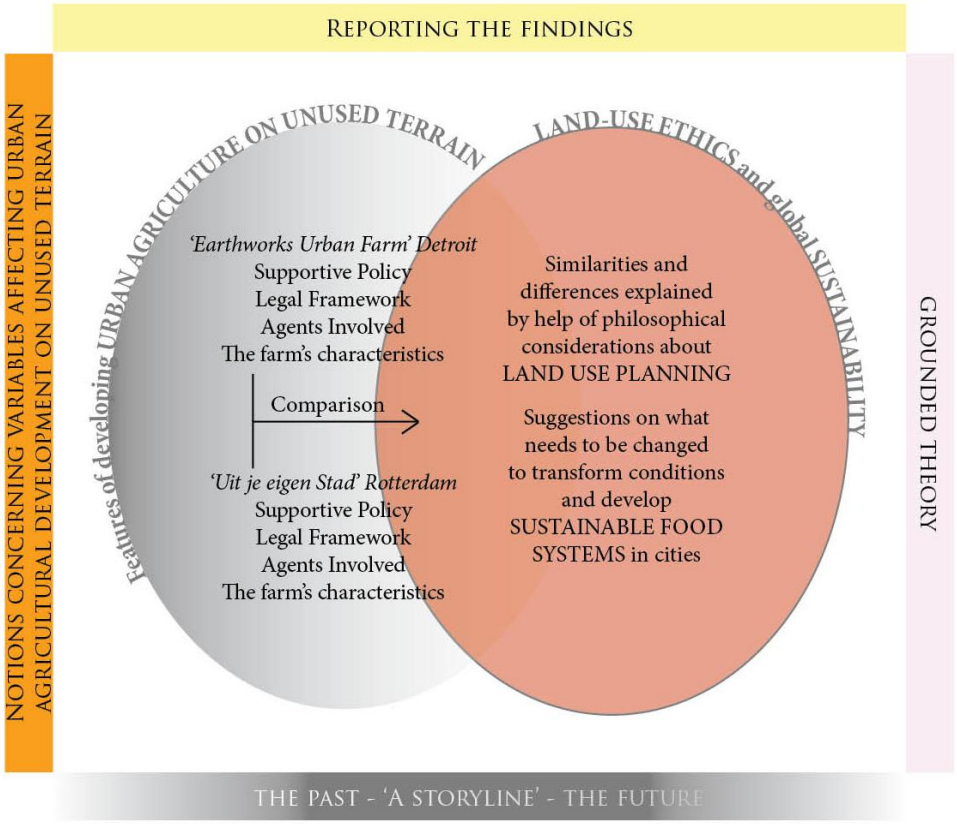


Figure 7 The approach on how the concepts in this research based on the variables examined, are interpreted and reported to build up a grounded theory. The key-words of the study are in capital letters.

2.2.4 *INTERVIEWEES*

In relation to both cases six interviews were conducted, three in each case with a policy maker (a planner/a designer) from the city government staff (one gave answers in Detroit and two in Rotterdam), an expert in the field of urban agriculture (one from each city) and the farmers in question (the farms' representatives). The interviewees and their backgrounds are presented in the following paragraphs.

IN DETROIT

Laura Buhl, a planner working in the City Planning Commission in Detroit city

Laura is from Oregon, in the northern part of the US. She gained her bachelor's degree in American studies at Mills College in California and her master's degree in community and regional planning at the University of Oregon, in her home state of Oregan. After living and working for number of years in Chile she returned to the US and worked as a rural planner for a County in Oregon. Four years ago, she moved to Michigan and became employed as a city planner at the city planning commission.

> *'...my focus is on land-use and I also have a keen interest in transportation, especially the active kind. So at the city planning commission I deal with re-zoning issues related to land-use. I make updates to the zoning ordinance and I also work on transportation issues. And one of the updates for the zoning ordinance... ...is urban agriculture* (Laura Buhl, personal communication, May 8 2012).

Professor Kameshwari Pothukuchi, at Wayne State University, a well-known expert in the field

Kami is an architect and planner by training. She has written several articles on issues relating to the planning field and food issues. Her interest in this topic started when in 1997 she, along with Professor Jerry Kaufman, carried out some projects investigating the links between food, in the community of Madison and also the region. These projects started as a result of a compulsory course in urban planning,

> *"we found many links with production, processing, distribution and hunger... and from that study the students, we wrote two papers insisting on the need for more planning involvement in the food systems. That helped launch me into more investigations on those links. I moved to Detroit in 1998 and continued that work. I looked specifically at the issues that were problems for Detroit and focused my research agendas on those issues"* (Kameshwari Pothukuchi, personal communication, April 27, 2012).

Issues such as a lack of fully serviceable grocery stores and urban agriculture have been topics of interest for Kami. She has been in collaboration with several groups in the field of urban agriculture and has helped, for example, when it comes to writing proposals for grants so they can expand their programs. *"I also became very interested in policy as a way to attract more integrated attention, focusing on food system issues"* (Kameshwari Pothukuchi, personal communication, April 27 2012). Kami has contributed to the creation of the Detroit Food Security Policy and the formation of the Detroit Food Policy Council in 2008 in which she has been an active partner.

> *"In the same year, 2008, I started a program called SEED Wayne – which is a Campus Community Collaborative – to build sustainable food systems on campus. I was trying to bring the same planning approach that we were talking about in communities and cities into institutions – to see how food can systematically be integrated into everything that the University does, whether it was teaching, research, engagement or operations"* (Kameshwari Pothukuchi, personal communication, April 27 2012).

Patrick Crouch, an urban farmer at Earthworks Farm, Detroit

> *I have been working for Earthworks Farm for the last 8 years. But I've worked on several small organic farms. So I've been farming for about the last 12 years. I grew up in a small town, I didn't grow up on a farm but I grew up in a community that was supported by farms. I'm also an artist but that doesn't fit my bill very well... method farming fits it much better...* (Patrick Crouch, personal communication, March 30 2012)

Patrick has been a representative in Detroit's Food Policy Council and has cooperated with other activist and non-profit groups as well as urban farms and has given speeches and advice on urban-farming methods etc. (Walker et al., 2011 and Patrick Crouch, personal communication, March 30 2012). He has also given valuable advice to the City Planning Commission on their work related to creating policy on urban agriculture (Laura Buhl, personal communication, May 8 2012)

IN ROTTERDAM

Arienne de Muynck, works for the City Development Department in the municipality of Rotterdam

Arienne graduated as a city developer from the Technical University of Delft (TU Delft) in 1994. She did her master's thesis on the contribution of urban agriculture at the Erasmus University and TU Delft in 2011. She worked for almost a decade at the Development Corporation of Rotterdam (OBR) as a project manager in various city development projects both in Utrecht and Rotterdam. In 2010-2011 she was nominated project manager and became responsible for the development of the area in which the urban farm 'Uit je eigen stad' is located Marconistrip/Marconi Freezone. At the moment she does not hold an official position in the Marconistrip/MarconiFreezone area except for preparing a zoning ordinance ("bestemmingsplan") covering the area in which the plot 'Uit je Eigen Stad is located.

> *'...right now I am a project manager at PMB Rotterdam, the project management-bureau of the City Development Department ("Stadsontwikkeling"), in the city of Rotterdam. At the moment I'm working on a project, which is called 'Rotterdamse Stijl': a project, in which a certain style with its own specific elements in an area open to the public in Rotterdam is being developed*. (Arienne de Muynck, personal communication, June 12 and 13 2012).

Kees van Oorschot, works as an adviser for the Municipality of Rotterdam

Kees, graduated as a landscape architect from the 'Academie van Bouwkunst', (Academy of Architecture) Amsterdam in 1996. In his previous job he designed streets, squares and parks. He has been working at the Municipality of Rotterdam for the past six years. In his job as policy-maker he has advised the city council, the aldermen and others in charge regarding public areas and their sustainability. Issues such as how should green areas in and around the city be developed are examples of topics he deals with.

> "*Most often I work on a regional scale, making policies on how to organize new green areas, how to maintain them and that kind of thing. And a special thing about my background is that I come from a farm - my father had a farm and my brother still runs that farm. For years I did nothing with that background of mine – I didn't work in agriculture, I didn't study agriculture, but now it's coming together, the fact that I have a farming background and that the city is developing some agricultural themes. So that's very interesting!"*(Kees van Oorschot, personal communication, April 2 2012).

Jan Willem van der Schans, at Wageningen University, is a well-known expert in the field

Jan Willem lives in Rotterdam and is an economist. He studied business at the Erasmus University in Rotterdam and did an MSc on the coffee industry and a PhD on fisheries (fish farming).

> *"... I'm a farmer's son – that is one thing which is important. I've worked with food... coming from a business school I always choose food issues. Fisheries are interesting because my PhD thesis was about 'the commons' - commons pool management... ....very similar to the concept of unclaimed land in a city. It used to be common land and probably it will again be common land... ... my whole career is about the commons'* (Jan Willem van der Schans, personal communication, February 2 2012).

Jan Willem works as a researcher at LEI an organization which is located in The Hague. LEI collaborates with many other research institutes and universities. Its most structural form of collaboration is with the Wageningen UR Department of Social Sciences and Wageningen UR Center for Development Innovation. He is doing his post doc at Wageningen University and is an external consultant and researcher in the rural sociology group. According to Jan Willem he is a mainstream thinker and has been involved in sustainable food development for quite some time and has also taken an active part in discourses on urban farming for about three or four years. He has given many presentations and workshops on urban agriculture and has also been actively involved with the press on the topic as well engaging in both the informal and formal development aspects of urban agricultural policy. After 2008 the 'green year' in Rotterdam he and a few of his friends established the activist group 'Eetbaar Rotterdam' (Edible Rotterdam) for the purpose of sharing their knowledge in urban agriculture. He was an idealist who established the official policy development group 'Think-Tank' at the Municipality of Rotterdam and has been a prominent member as an expert from Wageningen University.

> *" I have personal experience in urban agriculture as a bridge between cultures growing ethnic food... ok, if we all start to grow food together ... you would find we have some things in common"* (Jan Willem van der Schans, personal communication, February 2 2012).

Bas de Groot, an urban farmer at the urban farm - 'Uit je eigen stad' (From your own city)

Bas has working experience in health care where he worked for a decade with the mentally handicapped providing physiological support to farms referred to as, 'farming for health' or care farming. He has been educated in farming and has worked as a coordinator teaching health farming.

> *"..and I did some other programs... and one of which was urban farming - as a coordinator. I coordinated in some national programs with a few other schools like 'Windesheim'[19] and I had stakes in projects with my students as well, It was great... ...I decided to write my thesis about a small plot – which was 2000 m², and when I was writing it... I really liked it"* (Bas de Groot, personal communication, January 31 2012).

Bas is one of the founders of the advocacy group on urban farming 'Eetbaar Rotterdam' (Edible Rotterdam) that has held conferences on the topic etc. At 'Eetbaar Rotterdam' architects, members of the University and people working in the restaurant business among others shared their knowledge - "*It changed my way of thinking... in a way"* (Bas de Groot, personal communication, January 31 2012). Some things he considered to be impossible at first became worth investigating.

In 2009 Bas was introduced to the area 'Marconistrip' as a possible location to farm in the city. After receiving encouragement from various people, e.g. Will Allen from Milwaukee and making a trip to learn from Will in Milwaukee / US, he and some of his partners decided to start the project of 'Uit Je Eigen Stad'.

[19] There website: www.windesheiminternational.nl

His current partners are Johan Bosman and Huibert de Leede. Johan has a background in real estate and making-room is a personal interest of his. Huibert, comes from the section that works with big companies in orienting their transition, but his interest is of a more personal nature. A concept was formulated in which an urban farm is the pilot project, the aim of which is to replicate this in five cities over the next seven years having Marconistrip as its headquarters.

> *Although my background is originally in health care I have a fascination for farming. Farming is not only for feeding people in a physical way... its more for restoring them in a spiritual way. If humanity wants to have a really healthy way of earning a living – collectively – you need to connect with soil in such a way as an element that feeds us. So if people are not living near agriculture anymore and only in cities we have to move agriculture into cities. That's a bit idealistic.* (Bas de Groot, personal communication, January 31 2012).

3 THEORETICAL FRAMEWORK

3.1 SHIFTS IN URBAN LAND-USE AND FOOD PRODUCTION - GLOBAL PERSPECTIVE

3.1.1 *INTRODUCTION*

This chapter looks at the global perspective and opens with a general explanation on how urban development and its connection to food production has changed (sub-paragraph 3.1.2.). The majority of people who live in urban settings depend on food which is transported from areas far away from their homes. Consequently, this scenario puts a great deal of pressure on agricultural practices and natural resources (sub-paragraph 3.1.3). The world's population is constantly increasing and needs to face challenges in the form of food quality and security, unequal consumption, global obesity, poor nutrition and environmental hazards. This global dilemma means that more food has to be produced because of population growth, and at the same time food production needs to become more sustainable. Accordingly a new food geographical network is forcing itself onto the scientific, political and planning agenda which is rooted in different logistics and incorporates differing values to the food industry on a worldwide scale. (sub-paragraph 3.1.4) This source of development is rooted in the global ethics of sustainability (sub-paragraph 3.1.5) which, first and foremost is all about ensuring that everybody —in both rich and poor countries, as well as today's and future generations—can all have their basic needs met... .... without jeopardizing natural eco-systems (Næss, 2009). This 'challenging' concept of sustainability has been incorporated into policy documents all over the world. The 'distributive ethic' of sustainability requires that the developed (western) countries act accordingly and in a responsible way.

3.1.2 *DISCONNECTION TO THE ORIGIN OF FOOD AND POPULATION GROWTH IN URBAN AREAS*

Overall, the history of agriculture and city development are intertwined and one cannot exist without the other but over the last two centuries food production and city expansion seem to have developed independently (Steel, 2008). The urban food system has lost the impact it once had in food supplies by upgrading its position and delocalization, which has caused the local level to shrink because food policy governance moved to the national, European and global levels (Stierand, 2012).

Steel (2008) describes how food has, in both broad and narrow terms, shaped people's lives throughout the ages. From the outset of urban development, food resources have been one of the main reasons why people choose a certain area to live in. Steel argues that the origin of food and its cultural dimension seem to have faded on account of our fast modern lifestyle and has resulted in questionable consequences that the western world has to respond to.

Since 2007, more people have been living in cities than in rural areas (Wiskerke & Viljoen, 2012) and it is estimated that 6,5 billion of the 9 billion people around the world will be living in urban areas by 2050. Most people living in urban areas nowadays are almost entirely dependent on complex globalized food chains, production, processing and distribution. People in western countries take food for granted (Steel, 2008). In America, the average distance for transporting food from farm to fork is around 5000 miles (Martinez et al., 2010) Industrialized food production has resulted in producers and consumers being disconnected (Wiskerke, 2009).

3.1.3 *DEMANDS ON AGRICULTURAL PRACTICES, NATURAL RESOURCES AND UNEQUAL CONSUMPTION*

The chain of activities connecting food production, processing, distribution, consumption, and waste management, including the associated regulatory institutions and activities is known as food systems. (Pothukuchi & Kaufman, 2000) It is claimed that the dominant food system, otherwise known as the conventional food system (S. Broekhof, 2010) is unsustainable[20] (Morgan, K., Marsden, T., & Murdoch, 2006).

Increasing population and rising consumption are placing extraordinary demands on agricultural practices and natural resources - degrading land, water, biodiversity and climate-change on a global scale (Foley et al., 2011). Long energy intensive food chains requiring ten units of energy to produce only one unit of food energy, is one aspect of the conventional system that has been criticized (Steinhart and Steinard 1975 cited by McCluney, 2003) especially since the predicted shortage of fossil fuels and the resultant damaging effects on the environment had been borne in mind.

The conventional food sector, has been described as a productive global network system, that needs to react to challenges such as food quality and security, global obesity and environmental damage (Morgan, K., Marsden, T., & Murdoch, 2006). There is inequality in food consumption; while the western world suffers from increasing obesity[21], more than a billion people worldwide suffer from under-nutrition[22].

The regulatory framework for food has been designed for the global market (Lang, 2010) where low prices and a long lifespan are insisted upon and standards of hygiene, therefore, are a distinguishing factor for longer-lasting products to ensure the safety of food that is being transported over long distances. Hence, a year-round supply and low prices [in the western world] are benefits of the conventional food system (Wiskerke, 2009). Standards of hygiene seem to have a higher priority than environmental or nutritional issues do in developed economies. (van der Schans & Wiskerke, 2012). This aspect raises questions from a moral perspective.

Wiskerke and Viljoen (2012) indicate that contemporary urban food provisions may be perceived as the down side[23] of urban dwelling. Therefore, even though the connection to food growing is still unclear for many urban dwellers the linkage between urban land use and agriculture is interweaved.

In order to ensure global food security[24] and needs in the future, food production must increase considerably while tackling agriculture's negative influence on the environment (footprint[25]) at the same

[20] Definition of sustainability can be found in sub-paragraph 3.1.5

[21] Overweight and obesity have been defined as abnormal or excessive body fat that could impair health. Worldwide obesity has more than doubled since 1980 (WHO - World heath organization, 2012)

[22] Malnutrition occurs in people who are either undernourished or over nourished (The Free Dictionary, 2012) The major causes of under-nutrition are inadequate food consumption, lack of vitamins and minerals, a poor diet leading to micronutrient deficiency, and maternal under-nutrition coupled with inadequate child care and illness. Under-nutrition accounts for 11% of the global burden on health issues, leading to long-term ill-health and disability, which, in turn, affect education and development (WHO -World Health Organization, 2012b)

[23] The 'black list' is quite long; having created a downward spiral on farm family revenue, the loss of labor skills and competence, environmental pollution causing deterioration, waste problems, fossil fuel dependency, the negative impact on climate change, water stress, loss of (agro)biodiversity, decline in organoleptic quality and diversity, competitive issues over agricultural land, soil deterioration and health problems due to obesity or malnutrition (Wiskerke & Viljoen, 2012)

time (Foley et al., 2011). Progress could be made by limiting agricultural expansion, closing 'yield gaps' on underperforming areas, whilst increasing crop efficiency, improving diets[26] and reducing waste.

The situation seems to be a dilemma on a global scale because more food has to be produced (on account of population growth) yet at the same time the system needs to become more sustainable[27] (Foley et al., 2011). Wiskerke & Viljoen (2012) argue that the key challenge in the coming decades is how to feed the increasing urban population worldwide, in a manner that can be *"defined as socially, economically and environmentally sustainable as well as ethically sound"* (th & Viljoen, 2012 p 21). It has become clear that cities can play an important role in creating more sustainable food systems (van der Schans & Wiskerke, 2012).

3.1.4 *NEW FOOD EMERGING ON A GEOGRAPHICAL SCALE*

In the year 2000, Pothukuchi & Kaufman(2000) drew attention to the fact that planning on a global scale had overlooked food systems. According to Sonnino (2009) by confining the perspective of food provision to rural areas, the potentiality of developing urban areas for food production had not even been considered. In policy making, the western countries have been criticized for considering general agricultural and production policies instead of taking an holistic food approach (Mougeot, 2000). Nine years after the publication of Pothukuchi's and Kaufman's landmark article in 2000, food-planning in America is 'here to stay' and it is considered to contribute to objectives concerning improved health, ecology and equity within local communities (Pothukuchi, 2009).

The modern concept that food only comes from rural areas to the city (or from other countries far away) has been challenged generally (Sonnino, 2009). For a long time individuals and organizations at the grass-roots level have grown edible products inside cities. A new food concept in geographical terms is forcing its way onto the scientific, political and planning agenda which is grounded in differing logistics and incorporates other values in comparison to the global food industry (Watts et.al. 2005 cited by Wiskereke & Viljoen (2012).

Alternative food systems[28] challenge the normal standards 'for assessing value' (low price and high levels of convenience) along with new ethics[29] concerning food where producers emphasize a direct link between food and the landscape (Lang, 2010). Lang defines ethical food which covers a range of values each appealing to behavioral patterns and different tastes. It takes diverse forms including issues such as; animal welfare, sustainable agriculture, fair-trade, low waste systems and fresh local food. It is no longer

---

[24] "When all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life"(WHO -World Health Organization, 2012a)

[25] The ecological footprint is the measurement of humanity's demand on the Earth's ecosystem. It is a standard measurement of the demand on natural capital that may be contrasted with the planet's ecological capacity to regenerate resources (Ewing, Reed, Galli, Kitzes, & Wackernagel, 2010)

[26] For example refers to meat consumption (Foley et al., 2011).

[27] Sustainable development is first and foremost about ensuring that everybody both in rich and poor countries, nowadays and also that future generations can have their basic needs met (Næss, 2009). See further explanations about global ethics on sustainability in sub-paragraph 3.1.5

[28] Food networks, production, distribution and consumption are locations that want to provide non-technical sustainable alternatives to the conventional food system (S. Broekhof, 2010)

[29] The field of ethics (also referred to as moral philosophy) involves systematizing, defending, and recommending concepts for acceptable or unacceptable behavior (Fieser, 2009).

market forces that drive the restructuring of the food system. It is being shaped by values linked to the consumers' appeal for land and food.

Apparently, in the discourse about improvements on food systems the concept of sustainability is very important. The aim of the next sub-paragraph is to clarify the original idea of sustainability as a global ethic; an issue which matters to everybody living on earth.

3.1.5 *THE GLOBAL ETHICS OF SUSTAINABILITY*

DEFINITION

Considering the meaning of the words 'Sustainable development' they signify the kind of human activity that nourishes and perpetuates the historical fulfillment of community life as a whole here on Earth (Engel & Engel, 1990 p 10).

According to the United Nations human survival and well-being depend on the success of elevating sustainable development by applying global ethics. (United Nations report on Environment and Development, 1987 cited by Engel & Engel, 1990). The United Nation's 'common future' dedicated to "Gro Harlem Bruntland" is an holistic ethic in which economic growth and environmental protection go hand-in-hand around the world and take into account social attributes, principles of justice and human rights. Therefore it is quite common for those involved to refer to the three 'pillars of sustainability'; social, ecological and economical or 'people, planet and profit'.

Generally, sustainable development sets the agenda in policy documents by referring to the World's 1992 Summit in Rio de Janeiro (Sitarsz, 1993). Thousands of participants holding positions of authority at all levels in the international community, took part in the program 'Agenda 21', and adopted a unique global plan of action for sustainable development (United Nations, 2006). The Johannesburg Summit in 2002 presented concrete steps to identify quantifiable targets to improve the implementation of Agenda 21.

Næss (2009) interprets the term sustainable development along the lines of the Brundtland Commission's report, the 1992 conference on Environment and Development in Rio de Janeiro, and the subsequent work of the UN Committee on Environment and Development, in the following way:

> *'the concept combines the ethical norms of welfare, distribution and democracy while recognizing nature's ability to absorb humanity's encroachments and pollution is limited…. ….sustainable development is first and foremost about ensuring that everybody—both in rich and poor countries, nowadays as well as in future generations—can have their basic needs met. This must be obtained without jeopardizing the natural systems in which life here on earth is dependent. Furthermore, the decision-making processes leading to such a result must be democratic and legitimate* (Næss, 2009 p 504).

PROPOSED ACTIONS

According to the above definition, sustainability is about having balanced basic needs for everybody with natural resources from mother earth. According to Næss (2009) The Bruntland Report mentions food, water, clothing, shelter, work, energy and hygiene as being examples of what is termed 'basic needs'. This has two implications within the limits set by the earth's ecological carrying capacity[30];

[30] 'Ecological carrying capacity' is defined as the maximum number of individuals that a given environment can support without detrimental effects. (The American Heritage Dictionary of the English Language, 2009)

1. In order to secure the needs for future generations, present-day human beings must restrict their usage of the natural environment and consumption of non-renewable natural resources.

2. Resolving differences in the use of resources and materials between developing countries (they must increase their uses to meet their own needs) and industrial countries (they must attempt to reduce their usage of resources) if the environmental burden on the planet, as a whole, is to be kept within sustainable limits (Haavelmo & Hansen, 1991 cited by Næss, 2009).

Therefore, the concept of sustainable development comprises a strong element of distributive ethics - focusing on the distribution of benefits and burdens over time – across and within generations. Furthermore, the procedure leading to a sustainable outcome must be morally acceptable.

According to Agenda 21, the political system must secure its citizens' co-operation on decisions and emphasize the need for the support of grass-roots initiatives, give more power to non-governmental organizations and strengthen local democracy (Næss, 2009).

CHALLENGES OF SUSTAINABLE DEVELOPMENT

Kothari (1990) states that the fundamental challenge of sustainable development is the moral implication 'Sustainability has become everyone's 'catchword'...' (Kothari, 1990, p 28) and yet almost 20 years later, in 2009 Næss poses a critical question 'If Sustainability is Everything, Maybe it 's Nothing?' (Næss, 2009, p 503). As the Bruntland report was published in 1987, the concept of sustainability is a very common and important one in the rhetoric of administrators and planners. In other words it seems to be a much more discussed concept than we actually realize.

Verma (2009) points out the difficulties in having a substantive definition of sustainability. Some see it as energy efficiency, while for others it is all about clean fuel. Other sustainability concerns seem to be perceived as smart growth[31] or green buildings[32]. The message of sustainability is often understood as being two opposing forces – development versus conservation, present versus future and renewable versus fossil fuel. Verma (2009) supports a pragmatic[33] approach to sustainability – focusing on the meaning of the concept rather than its extent. Because it is more of a teleological[34] concept rather than a conventional reducible measurement, *'We must think of ethics of sustainable development as an instrument to implant the idea of sustainability, and merely as a normative guide to determine which course of action is the best one'* (Verma, 2009 p 46). Maybe Kothari (1990) is right. *The shift to sustainable development is primarily an ethical one* (Kothari 1990 p 35).

As mentioned in the previous sub-paragraph the goal of sustainable development, is included in most policy documents (referring to Agenda 21). However, to attain those goals many changes have to be made and unfortunately many planners believe that it is a very serious challenge for the profession to replace current

[31] 'Smart growth' is a design strategy consisting of 10 main principles; Varied (mixed) land use, compact building design, diverse housing opportunities, pedestrian neighborhoods, strong sense of place (powerful attraction), preservation of farmland, public areas and natural beauty, united community, choice of transportation, fair and cost-effective development methods and collaborative planning (www.smartgrowth.org).

[32] Buildings should be environmentally-sustainable, designed, constructed and serviceable to minimize environmental impacts.

[33] Doing the things that work all the time - being practical

[34] Teleos: in Greek means root: or "end, purpose" (goal). Teleological: A kind of belief in, or the perception of, purposeful development toward an end (The American Heritage Dictionary of the English Language, 2009)

resource-consumption and environmentally-damaging activities within their respective fields of sustainable development planning (Næss, 2009).

ELEMENTS HIGHLIGHTED IN POLICY DOCUMENTS

According to (Engel & Engel, 1990) ethicists in diverse centers of global culture are attempting to respond to the moral challenge of sustainable development in terms of emerging ecological views worldwide, although, it is evident that ecological vision is interpreted in the light of people's respective cultural traditions. However, according to Næss (2009) the following five elements are highlighted in most literature on sustainable urban development and spatial planning pertaining to wealthy industrialized countries [35]:

(1) Reducing energy consumption and emissions per capita in a given area[36] (city, municipality, or region)

(2) Minimizing conversion and encroachment on natural areas, ecosystems and soil resources for food production.

(3) Minimizing the consumption of environmentally-harmful produced materials.

(4) Replacing open-ended flows, where natural resources are transformed into waste, with closed loops which depend to a large extent on local resources.

(5) A healthy environment for the city's inhabitants, without pollution and excessive noise, which can adversely affect the inhabitants' health; one which has sufficient green areas for the population to experience and enable them to become emotionally connected with nature.

According to Næss (2009) sustainable urban development[37] requires considerably more ambitious policies than those currently in existence, in order to reduce energy consumption and pollution and thus protect natural areas and arable land. He is of the opinion that urban areas and a more effective utilization of building sites is a possible strategy toward this end. Recommendations from the Brundtland commission imply that the focus must be expanded to encompass the city areas also as a part of the larger natural ecosystem. Van Veenhuizen (2006) states that by supplying less durable products such as vegetables, fresh milk and poultry products, urban agriculture can, to a great extent, complement rural agriculture and upgrade the efficiency of national food systems.

Section 3.1 has brought to light that humanity is in a kind of dilemma, and needs to produce more food for the increasing population and also at the same time to develop ways to produce food in a more sustainable manner. Looking at cities as potential areas in that respect falls well within the scope of the elements outlined regarding policy generally on sustainable urban development. For example, by saving energy on transport, complementing rural agriculture and therefore decreasing pressure on the natural environment, ecosystems and soil resources for food production and recycling organic waste and offering access to a healthy green environment.

---

[35] e.g. OECD/CEMAT, 1994; UN/ECE, 1998; Næss, 1997 cited by Næss ,2009

[36] -down to a level compatible with the ecological and distribution criteria for sustainable development on a global level (Næss, 2009).

[37] According to sustainable development based on the Brundtland Commission's report and the processes in the UN Committee on Environment and Development.

3.1.6 *SUMMARY*

Linkage between urban development and food production has been changing globally. Whereas choosing where to live once depended on the proximity of food supplies, most urban residents nowadays depend on food transported from faraway places. This puts excessive pressure on agricultural practice and natural resources, as the world's population increases. Humanity faces challenges such as food quality and security, unequal consumption, global obesity, poor nutrition and environmental hazards. It is claimed that the current food-chain from production to consumption is unsustainable for the ever-increasing global population. Cities are potential places for producing food. Accordingly, an innovative food network with its varying logistics and differing geographical values, is forcing itself onto the worldwide scientific, political and planning agenda. More direct links between food and land are required. This scenario is influenced by global ethics in sustainability which, according to Næss (2009) uphold that the rich and poor everywhere; now and in the future should be nourished, without jeopardizing eco-systems. Although policy documents worldwide incorporate sustainable development, the developed countries, need to bear in mind the 'distributive ethics' of sustainability. Identifying potential city areas for agricultural use is a principle of sustainable urban development policy.

3.2 CITY DYNAMICS AND OPPORTUNITIES FOR URBAN AGRICULTURE

3.2.1 *INTRODUCTION*

This paragraph gives an overview of the section's main topics. It looks at a city's perspective and focuses particularly on unused terrain.

In sub-paragraph 3.2.2 explanations are given on how cultivating food produced inside cities is a response to their dynamic character and the possibilities that can result from this Demographic changes and spatial transformations can result in temporary unused terrain within them. The possibility of making use of them for growing food is even more promising when other types of resources that the city has to offer are taken into account. In the past such areas that were referred to as 'the commons' are now either typified as a public area or fall under different categories in line with land-use codes and regulations.

Sub-paragraph 3.2.3 focuses on the phenomenon of urban agriculture as a sustainable food system. The meaning of a sustainable food system can be explained by summarizing the key issues in which agents work toward a more self-reliant food economy locally (The significance of sustainable food systems). Then the concept of urban agriculture is defined based on Mougeot's theory (2000 p 11);

> *"an industry located within (intra-urban) or on the fringe (peri-urban area) of a town, a city or a metropolis, which cultivates, processes and distributes a diversity of food and non-food products, utilizing mainly human and material resources, products and services found in and around that urban area, and supplying human and material resources, products and services largely to that urban area"*

Following this (in the same sub-paragraph) the opportunities and risks are reviewed and distinct types of urban agriculture summarized. Urban agriculture may contribute to global food shortage and crises in various terms on a large scale(van der Schans, n.d.). From a city's perspective the opportunities are viewed in different ways depending on the agents involved, their situation and perspective (the urban poor, other classes in society, urban farmers and programs for sustainable city development)(van Veenhuizen, 2006; van der Schans & Wiskerke, 2012) The acknowledged types of urban agriculture can be categorized according to the agents involved and their situation (subsistence urban farmers; family-type (semi-) commercial farmers; and agricultural entrepreneurs), the operational activities and methods used (where/how). The risks, already known in urban agriculture, concern contamination (van Veenhuizen, 2006), expensive equipment (van der Schans, n.d.), generally challenge integrating dissimilar disciplines into new design paradigm(Holland & Salle, 2010)

After illustrating the concept of urban agriculture, ways are defined for supporting development within a city (Promoting urban agriculture). Two key concepts are recognized especially in respect of promoting urban agriculture; a food or urban agricultural policy and food policy councils (Stierand, 2012). The American Planning Association's (APA) objectives on community food planning are reviewed (Pothukuchi, 2009) and a (European) development model[38] that maps out the policy dimensions of urban agriculture for developed economies is also reviewed (van der Schans & Wiskerke, 2012). Other ideas on how the authorities can strategically support the development of urban agriculture on unused city terrain are then summarized.

[38] According to van der Schans and Wiskerke (2012) this model is also based on brainstorming which took place in 2011, with members of ‚Think tank' which is a platform of civil servants who are actively to exploring the potential of urban agriculture in and around Rotterdam

Following this 'design around food' and the idea of Agricultural urbanism (AU) is introduced as a framework and an approach to integrate (food) movements[39] and many other aspects into the planning and design of today's metropolitan regions in a manner that not only makes the food and agricultural system more sustainable but also the cities better places to live in.

At last the seemingly 'lagging development' of urban agriculture has been discussed as well as the acknowledged barriers and the need for research. Subsequently a brief review has been made on the concept of land ethics (Leopold, 1949) and then it's linkage to urban agriculture.

3.2.2 *DYNAMIC CHARACTER OF CITIES*

OPPORTUNITIES RELATED TO FOOD PRODUCTION

The dynamic character of cities is important in relation to food (van Veenhuizen, 2006) To begin with, cities are changing in relation to demography and habitability. The growing urban population is a challenge for the authorities who have to ensure there as they have to offer the availability of employment, public services and education as well as maintaining green areas and taking care of waste and water management. At the same time urban poverty and food insecurity [40] has been on the increase – which is the case in bigger cities both in the north as well as the south. This signifies that cities become principal targets for intervention and planning strategies that aim to: eradicate hunger and poverty, improve livelihoods by stimulating local economy development in combination with enhancing food security and nutrition. Thereafter, taking into consideration the dynamic spatial character of cities and how urbanization in the rural suburbs has had a direct influence of urban centers with subsequent consequences (van Veenhuizen, 2006). Buildings are constructed and demolished, power lines are laid and other infrastructure is put in place, traffic systems and industrial activities are constantly changing as are the demands for recreational facilities.

Due to the financial and the real estate crisis in the western world, pressure to urbanize farmland (otherwise known as the urban sprawl) is no longer an issue (van der Schans & Wiskerke, 2012). Plots remain unused for longer than anticipated and temporary [even marginal] use is appreciated to prevent deterioration.

Van der Schans (n d) points out that various opportunities for agricultural development inside cities, using various resources that cities have to offer; cheap land, heating, recycling waste, the number of people willing to work and, at the same time, creating a 'commons' just as citizens were used to in the past.

Above all, the dynamic character of cities, results in making use of dormant terrain (of various kinds) within cities which gives opportunities to the growing number of citizens, public authorities and organizations, for example, to grow food in sustainable way.

UNUSED TERRAIN

In days gone by open spaces in towns were called the 'commons' (Bollier, 2002). 'The commons' refers to a vast range of resources that citizens collectively owned and use. In the western world such areas had to be

[39] Movements that want to influence the present food system into more sustainable, healthy and just manner

[40] Food insecurity is defined by the US Department of Agriculture (USDA) as a 'lack of consistent, dependable access to enough food for active healthy living' (Walker et al., 2011 p 35).

more or less transformed; and were privatized or traded on the open market[41]. Being a 'commoner´ was a person who participated in a group that grew food on this city land (van der Schans & Wiskerke, 2012). Unused areas in a city are still considered to have potential in relation to food, e.g. to create a more sustainable food system.

There are different categories of contemporary, unused city land which are restricted by different regulations and plans depending on the type of land and the situation in question. According to the American Planning Association (2012) land in an urban setting can have five dimensions depending on; the activity under consideration, it's possible function, its structural character, development possibilities and ownership. For example a farming 'activity' (instead of residential or industrial) can be transformed into agriculture through a legal process, although it was originally designated for habitation or factories. The 'structural' dimension refers to the kind of structure that is on the site (housing, industrial buildings etc.) and the 'site' dimension infers whether it is developed or not. 'Ownership' more often than not refer to land in the public domain or privately owned (or even a mixture of both).

The foregoing description is generally along the same lines of the Mougeot's (1999), regarding the range of criteria and definitions of unused areas of land found in planning literature. The official land-use categories[42] (functional) are *residential, industrial, institutional (or community buildings), transportation, open green space* [public gardens], *recreational, infrastructure (and utility) etc.* Then areas can be on *on-plot or off-plot areas* and with *building on or open-space* [public areas] (development of the site). The type of tenure or whether the site is usufruct is also an aspect to be taken into consideration – cessation of lease, sharing, authorized or unauthorized - by personal agreement, legal or commercial transaction (concerning ownership).

Jacobs (1961) considered zoning ordinances as constraining or favoring mixed land-use and pedestrian friendly neighborhoods. Movements generally recognized all over the world, such as New Urbanism and the Smart Growth Movement, originated in the US, follow the same direction (Kelbaugh, 2002).

According to van der Schans & Wiskerke (2012) there is a growing interest in urban design that advocates diversity in compact cities[43] and pedestrian areas with a vibrant mix of uses for urban districts. well as movements as New Urbanism and Smart growth in the US. Because of the fear of suburban sprawl and the fragmentation of land, new concepts for efficient land-use have been developed in the Netherlands, i.e. multiple land use (van der Valk, 2002). This concept was a real eye-opener for Dutch planners who were dealing with compact city policy with its restrictive building policy for open areas In the Netherlands. Functionalism is no longer valid in the eyes of the new generation of Dutch planning professionals and an example of this is that the contrast between urban and rural domains has disappeared.

[41] According to Bollier (2002), this process – known as 'enclosure', is being criticized because it is only beneficial to the corporate class but not 'ordinary citizens' who also have legal or moral rights to ownership. People should start 'reclaiming the commons' is a statement made by Bollier.

[42] According to a quick scan on the internet 'traditional land use categories' are more or less the same in the US, the UK and Europe but wording and combinations differ.

[43] A city with short walking distances is considered to be a more sustainable type of urban settlement than an urban sprawl because there is less dependence on the car, requiring less (and cheaper) infrastructure per capita.

Research on potential areas (unused terrain) inside cities to grow food, reflects an increasing interest in the issue[44]. If a mixed use of land is allowed, even in compact cities such as Rotterdam there are many potential areas for growing food, not only on the ground, but in/on empty building(s)/sites and on rooftops (Graaf, 2012)

3.2.3 *URBAN AGRICULTURE*

THE SIGNIFICANCE OF A SUSTAINABLE FOOD SYSTEM

According to (Holland & Salle, 2010) a sustainable food production and agricultural system envelopes various alternative food-related issues that all have in common the idea of strengthening the local community through food issues[45].

Feenstra (2002, p 100) defines sustainable food systems as;

> *"A collaborative effort to build more locally-based, self-reliant food economies – ones in which sustainable food production, processing, distribution and consumption are integrated to enhance the economic, environmental and social wellbeing of a particular place"*

The system's goals have the following key issues;

- *Improving access* to a healthy diet
- using more *sustainable food-production in practice*
- creating more *direct links* between farmers and consumers,
- *creating jobs* and recycling financial capital
- *Improving working and living conditions* for farmers and other workers in the food system
- adopting *food and agricultural policies* that promote local food production, processing, and consumption.
- *Involving citizens* is considered to be crucial for the development and putting their '*creative talents*' together to come up with their own solutions.

Solutions to promote this development are: marketing programs and consumer education on regional and seasonal food, building up environmentally-friendly food locally produced and processed in schools, entrepreneurial community gardens or community-supported agricultural projects contributing to educating youth, linkage to sustainable agricultural programs in universities and local food policy councils that link communal food security with local sustainable farming systems.

It is claimed that urban agriculture is a vital part of sustainable food systems and its development can be seen as a strategy to improve a city's livelihoods in various ways (Wiskerke & Viljoen, 2012; Pothukuchi, 2011; Holland & Salle, 2010; van Veenhuizen, 2006 among others). Its sustainability is related to its multi-functionality (van Veenhuizen, 2006). The relevance of urban agriculture relating to sustainable development is illustrated in figure 8.

[44] For example; Mendes, Balmer, Kaethler, & Rhodes (2008) made a comparison of land use inventories to plan for farming inside Portland and Vancouver (urban agriculture - see the definition in sub-paragraph 3.3.4).

[45] These are, for example, urban agriculture, farmers markets and direct marketing for farmers, organic agriculture and permaculture, SPIN farming, food security, 100 miles diet, community supported agriculture etc. (Holland & Salle, 2010 p 13).

Because of being pressured by local poverty groups, urban farmers and NGO's, many city authorities have acknowledged the potential of urban agriculture and collaborate with other local stakeholders in an effort to maximize the benefits of urban agriculture and minimize the risks (van Veenhuizen, 2006).

Below is an example of the project, SEED Wayne at Wayne State University[46], on a community scale where the institution works with NGO's, farmers, and individuals to develop a sustainable[47] food system on a community scale and can therefore exert influence on the community in its location. The author points out that this reflection is based on the experiences programmed at the university as well as in the community and these cannot be generalized upon.

[46] Wayne State University is a nationally recognized metropolitan research institution offering more than 400 academic programs at 13 schools and colleges to nearly 32,000 students. Wayne State's main campus in Midtown Detroit comprises 100 buildings over nearly 200 acres; its five extension centers offer higher education to people throughout Southeast Michigan (Wayne State University, n.d.)

[47] SEED Wayne defines sustainability as the four E's; ecological regeneration, economic viability, social equity and democratic engagement (Pothukuchi, 2011)

The SEED Wayne program introduced by Pothukuchi (2011) gives an interesting example of an holistic attempt to build a community food system using all core functions and activities of Wayne State University in Detroit. The core activities are for example research, technology, engagement and operations. Pothukuchi calls this project a journey where the institution which is known for 'feeding minds' engages in offering individuals healthy feeding options. The project aims to create a sustainable food system that has four main goals; Increase the access to healthy food, shorten the distance between producers and eaters, building capacity – from individuals to regions and their links with community goals. The university has two farmers' markets, three campus gardens and a cooperation program with corner stores selling fresh local food (called 'Detroit FRESH'). These are examples of actions to increase access to healthy food. Programs that encourage and train young people to grow food act as mechanisms to shorten the distance between producers and consumers. Support to working farmers (Earthworks Urban Farm) to build passive solar greenhouses to grow organic products locally and supply soup kitchens does that also. Community goals that the sustainable food system can be linked to are issues such as public health and nutrition, a healthy economy and neighbourhood vitality, ecological health, social justice and democratic decision-making. Based on the experience of the program the following remarks can be considered;

- The Wayne State, administrators find it difficult to view the institution's activities holistically; they tend to place activities into pre-existing categories based on their best understanding of each activity. *"Thus each one sees the SEED Wayne "elephant" as having a limited perspective, based on their experience of its tail or leg"* (Pothukuchi, 2011 p 197)
- The diversity of goals makes it possible to fulfil the needs of SEED Wayne's participants and constituents where they have the resources at hand yet at the same time it makes communicating the sustainability message much more complex.
- Student participation faces some challenges
- The program benefits from partnerships with community-based organizations by gaining greater access to grass-roots networks and community residents and the partnerships with the university also benefit community organizations in many ways.
- Increased confidence among university administrators and community leaders is noticeable in their ability to comply with given commitments

DEFINITIONS, BENEFITS AND RISKS

Definition

Urban agriculture has been practiced for centuries, and is perceived as people within the city cultivating food products in their own backyards or in community gardens. Now urban agriculture is viewed in a much broader sense. Based on earlier clarifications urban agriculture is defined according to Mougeot (2000 p 11);

> *"an industry located within (intra-urban) or on the fringe (peri-urban area) of a town, a city or a metropolis, which cultivates, processes and distributes a diversity of food and non-food products, (re)using mainly human and material resources, products and services found in and around that urban area, and supplying human and material resources, products and services largely to that urban area"*

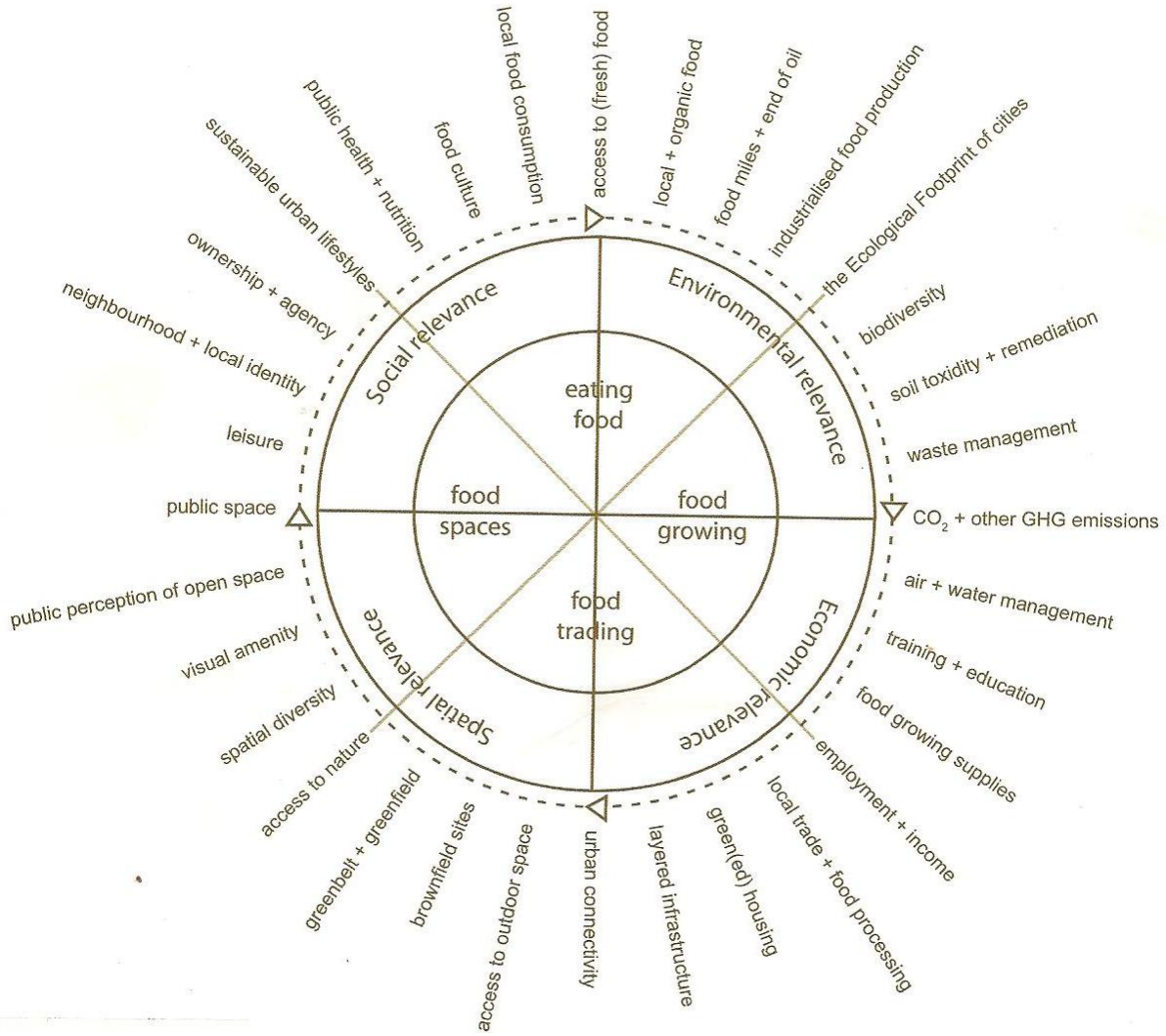


Figure 8 The relevance of urban agriculture as sustainable development (Cover illustration of the book on sustainable food planning, evolving theory and practice (Viljoen & Wiskerke (ed), 2012 based on Bohn & Viljoen, 2012).

Benefits

Urban agriculture deals with global food shortage, higher food prices, value crisis[48], climate change (CO_2 emissions)[49], heat island effects within cities, the financial crisis[50] and the real estate crisis[51] on a large scale. (van der Schans, n.d.).

The benefits of urban agriculture are its contribution in various ways to the varying dimensions of social-, economic-, ecological- and the spatial spheres of a city and therefore contribute to sustainable urban development (see figure 4 Viljoen & Wiskerke, 2012). Urban agriculture can be seen as a response to opportunities in urban dynamics from three main aspects, depending on the agents involved and their particular situation and perspective (the urban poor, other classes in society, urban farmers programs for sustainable development inside cities).

First of all; it's a *reaction to the urban poor and those without employment because of food insecurity/malnutrition* (van Veenhuizen, 2006). Such reactions are occasionally due to temporary crises because of natural disasters or war but are also, on the other hand, a response to certain structural problems within a city over longer periods of time.

Secondly; it is a *response from the urban poor as well as other social classes to opportunities and advantages that urban environment can provide for agriculture* - such as direct access to urban consumers and markets, the availability of urban organic waste and recyclable water, institutions close at hand that provide market information, credit and technical advice, new urban demands etc. According to van der Schans & Wiskerke (2012) the latest opinion, especially in the western world is that urban agriculture perceived as an industry, adds value to the quality of food rather than minimizing costs as is traditionally the case. These values are only visible in the short supply chain where food is directed to local markets for sale (rather than being sold for export) and ethnic food as well as forgotten types etc., are also produced).

Thirdly; the response of urban farmers and programs stimulates and enables urban agriculture to fulfill certain *functions required for sustainable city development* (van Veenhuizen, 2006). Some of these functions are local economic development, food supply, cooperating with urban greening programs and maintaining public green areas, as well as some recreational services, mitigation of patients or inclusion of socially-disadvantaged groups etc. According to van der Schans & Wiskerke (2012) urban agriculture is suitable for the social wellbeing of disabled individuals or as a nice change to experience green areas instead of an asphalt environment. Van Veenhuizen (2006) also talks about how recycling waste in relation to urban

[48] Lacking 'valued'food that is for example in short supply chains where the food is taken to the local market (rather than being exported) and ethnic food, dishes from times gone by etc .

[49] Scientists worldwide agree that excessive carbon dioxide emissions produced by industry are the root cause of 'Climate change'. Carbon dioxide, although not harmful in itself, forms a heat-retaining atmospheric blanket when produced in large quantities. Human beings burn fossil fuels to create energy, resulting in billions of tons of carbon dioxide being pumped into the atmosphere. Deforestation and climatic change happened very quickly, leading to global warming. A serious challenge for this and future generations is to reverse this (for more information see www.saclimatecrisis.wordpress.com).

[50] Financial crisis can be defined as a situation in which the intrinsic value of financial institutions or assets plummets rapidly (or were overvalued). A financial crisis is often associated with panic or when investors run to the banks, sell off assets or withdraw money from savings accounts fearing that the value of such assets will drop if they remain at this financial institution (for more information see www.investopedia.com)

[51] Real estate crisis: When demand for housing decreases or stagnates at the same time as supply increases, resulting in a sharp drop in prices the 'housing bubble' bursts. This results in various difficulties on the housing market that have been termed the real estate crisis (for more information see www.investopedia.com)

agriculture functions in sustainable city development. A typical method of recycling waste (material and energy) combines keeping fish in water in which lettuce is cultivated known as aquaponics[52] (van der Schans & Wiskerke, 2012). Another way that urban agriculture can benefit from urban environment dynamics is to use unused land and other available urban terrain such as rooftops and empty buildings. Even people who are willing to work in the city can be seen as a resource (van der Schans, n.d.)[53] and recreate 'the commons'.

Graaf (2012) summarizes in an illustrative way on how urban agriculture can incorporate the resources that a city has to offer *'in the service of a city'* (Graaf, 2012 p 536) and then contribute in various ways to the livelihood of the city with a *'spin off'* in an ecological, social and economical sense (see figure 9).

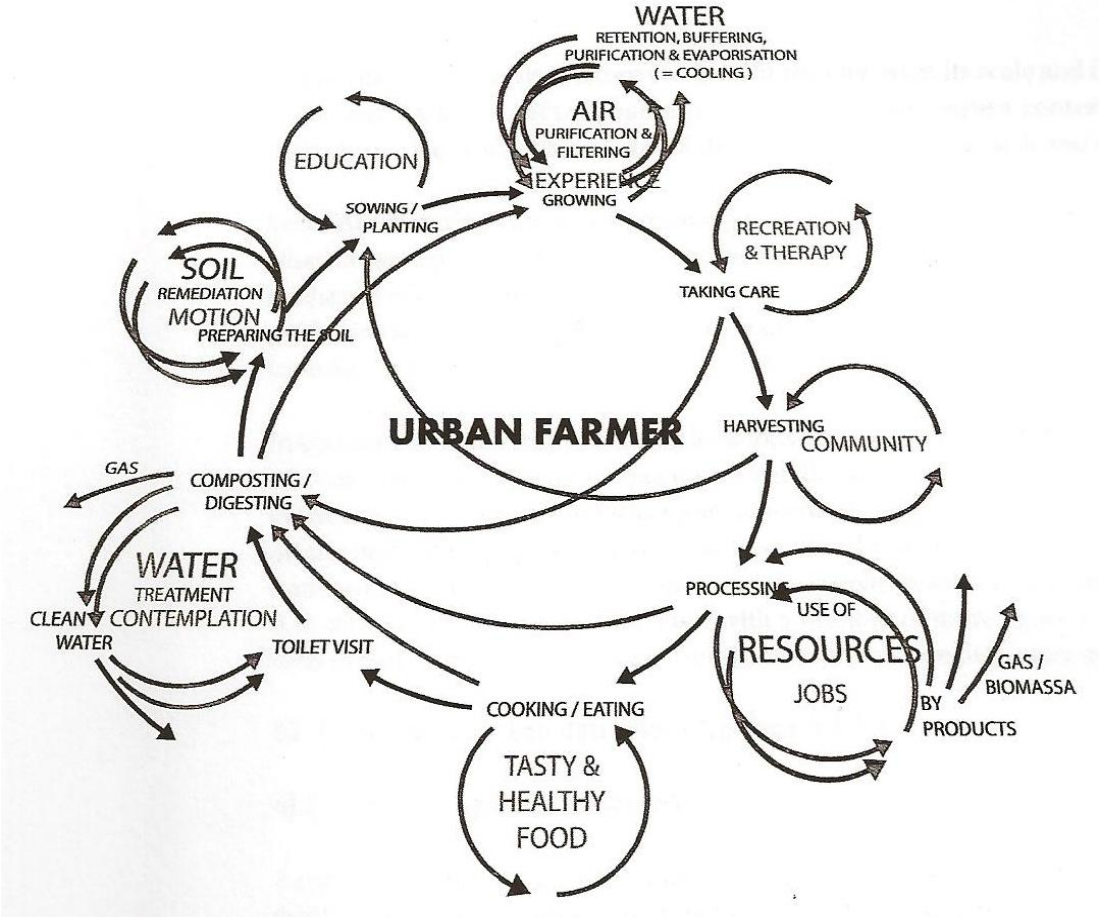


Figure 9 How urban agriculture can serve a city. The food (nutrient) cycle and its potentially economic, social and environmental spin off (Graaf, 2012 p 536 figure 42.1)

[52] Will Allen at Growing Power in Milwaukee is practicing this for example (www.growingpower.org)
[53] A written essay in Dutch for the activist group Eetbaar Rotterdam: www.eetbaarrotterdam.nl/downloads

As has been mentioned previously, urban agriculture, especially community-based urban agriculture[54] (CBUA) accommodates the marginalized in society and is important for building 'community capital' (Smit & Bailkey, 2006). The concept of community applies to cognitive understanding of a particular community – whether it is a prison or housing estate or people of a certain race or culture (it can be on various levels or even a whole city). *Community capital* is a concept, composed of seven dimensions all of which are equally important. In CBUA community capital is built up intentionally and also contributes to the realization of a 'place' - or place-making[55]. The seven dimensions are;

- Human Capital: well-being, educational background, skills of the individuals involved
- Social Capital: the strength of groups, networks, a common vision among their members, and the creation of bridging networks across different groups
- Political Capital: the dynamics of group organization and leadership, and the relationship with government and supporting agencies
- Cultural Capital: the values and heritage of the community, and the celebration of such
- Economic Capital: the investments, savings, contracts and grants
- Structural Capital: the physical settings – land, housing, other buildings, infrastructure
- Natural Capital: the air local people inhale, land, water, biodiversity, scenery
  (Smit & Bailkey, 2006 p 151)

Community capital - rich urban agriculture has shown how it helps disadvantaged groups[56] to integrate more positively into the urban network

Mougeot (2000) argues that while urban agriculture in the developing countries focuses mainly on securing food for everybody, activity in the north focuses more on healthy living standards. According to van Veenhuizen (2006) the actual situation in a city and the existing (policy) priorities shape what kind (type) of urban agricultural practices develop in the city. Bigger cities, for example, in the US deal with inadequate access to healthy food and are described as 'food deserts', and poor neighborhoods suffer from food insecurity (van der Schans & Wiskerke, 2012). Detroit is such a city (Walker et al., 2011). In Europe, for example, in Rotterdam and Amsterdam, access to food is not a problem, grocery stores are on every corner (van der Schans & Wiskerke, 2012) and there urban agriculture is considered to be an industry.

Possible risks

The risks of urban agriculture relate to humanity's health and the environment, which can be seriously affected if certain critical aspects are not taken into account as a result of insufficient proper and preventative measures (van Veenhuizen, 2006). The following are those concerning health;

Contamination;

[54] Certain forms of urban agriculture manifest a social structure that focuses mainly on creating stronger urban communities. It is characterized by the grass-root understanding of local needs and skills and their link to complimentary knowledge of urban agriculture's multiple functions in a successful way that, it gives participants a sense of shared accomplishment as to how the activity translates into something more encompassing (Smit & Bailkey, 2006).

[55] 'Place making' is a philosophy/idea and a tool for improving any kind of area; it capitalizes on a local community's assets, inspiration, and potential and ultimately creates good public areas that improve people's health, happiness, and wellbeing (www.pps.org/reference/what_is_placemaking)

[56] Disadvantaged groups such as immigrants, those with HIV-AIDS, the disabled, elderly people without a pension, and young people without employment etc.

- of crops with pathogenic organisms resulting from irrigation with water from polluted streams, water disposed of that has not been purified or unhygienic handling of products (during transit, processing and/or marketing)
- of water supplies (with chemicals, pesticides, water disposed of - contaminated drinking water)
- of crops due to the intensive use of agrochemicals
- of soil and products with heavy metals due to carbon emissions by traffic and effluents

Spread of;

- human disease caused by mosquitoes and animals that infect agricultural produce
- diseases transmitted to human beings by livestock kept in close proximity without taking proper precautions

van der Schans (n.d.) considers the obstacles of urban agriculture; the cost of preventing contamination, technical solutions regarding infrastructure for drainage systems and possible vandalism and theft. Holland and Salle (2010) consider the following challenges to implementation; Regulatory requirements and issues at multiple levels regarding purification criteria for reclaimed water, capital for district energy and dealing with biogas digestion, challenges to management and integrating disciplines and the latest paradigms outside of common practice.

Types of urban agriculture

Urban farming in and around urban areas comes in various forms and has diverse functions depending on its relevance to different stakeholders and locations. (Schiere 2006 quoted by, van Veenhuizen (2006). Jan Willem van der Schans (n d) [57] argues that in each urban agricultural project there is a mixture of influential factors such as; physical potential and constraints on site, opportunities and threats in the surroundings, market demands, community involvement, need for employment, financial possibilities and the personal interests and ambitions of the development's pioneers.

According to Van Veenhuizen (2006) urban agriculture can be categorized into three types: subsidized urban farmers; family-type (semi-) commercial farmers; and agricultural entrepreneurs. Such urban farming systems possibly have a specific role in each city at a certain time during development but support is necessary specifically for the first two. Pearson, Pearson, & Pearson (2010) categorize urban agriculture into three groups depending on scale; micro, meso and macro (small, medium and large) and indicate that ownership can be both public and corporate in all categories. They list examples of all of them; for instance micro as backyards, meso as community gardens and macro as greenhouses or commercial-scale farms (Pearson, Pearson, & Pearson, 2010 table 1 p 8).

Wiskerke & Viljoen (2012) state that a territorial approach implies the need to replace the universal scientific approach with that of an understanding which is 'place specific'. Graaf (2012) points out that when agriculture and urban conditions mutually influence one of these new types of agriculture emerge in accordance with changing dynamics. Graaf (2012) has typified urban agriculture that could apply to Rotterdam depending on the supply and demand of agricultural products within the city. Both agriculture and the city have needs that the other can offer one another. This idea of Graaf's (2012) is an attempt to create ideology for urban agriculture that is place-specific. See table in Appendix 2 that lists five of promising types; potential areas, sort of food production and the potential that each type has for the landscape.

[57] An essay in Dutch written for the activist group Eetbaar Rotterdam: www.eetbaarrotterdam.nl/downloads

PROMOTING URBAN AGRICULTURE

Reasons behind the movement for growing food

Pothukuchi (2009) reviews briefly the reasons behind the growth of this 'local food movement' in America and according to her they are mainly threefold. Firstly; arguments were put forward for more support in food planning (Pothukuchi & Kaufman, 2000) there as food is one of the people's basic needs, as well as dealing with various critics who oppose the global, industrial food system. Secondly; The growing national network in North America formed in 1996 around the community food security concept[58] that has been mobilized and is sustained by the Community Food Security Coalition and others such as national and regional advocacy organizations (Pothukuchi, 2009). And thirdly; many studies show relationships between the existing environment and high obesity rates in the US especially in poor neighbourhoods. Physical activity as well as diets, are important factors which have an influence on the existing environment.

The multi-functional character of food systems and new urban food needs that consist of issues especially related to self-reliance, sustainability, health and fairness, have dawned on local organizations and authorities (Stierand, 2012). Policies and projects that influence food systems are becoming bottom-up governance (see explanation in sub-paragraph 3.4.2) in which projects are multi-faceted and target several issues and problems. These projects vary in scale from focusing on a single plot, urban neighborhood or the whole city (or region) and function as reactions to problems and/or are opportunity-orientated where food systems have a strategic approach. According to Stierand (2012) two concepts having an holistic approach to create or influence urban food systems are: *Food strategies (policies)* and *Food Policy Councils (FPC).* Strategies express aims and guidelines for the development of urban food systems and FPC advise politics and administration on food issues.

Policy on urban agriculture (or food production)

With Toronto as the pioneer in the north, among others - New York, London and Amsterdam, have developed their own food policies, emerging as 'food chain participants', whose aim is sustainable development (Sonnino, 2009). Food policies introduce new ideas about the food chain and outline the differences in social economic and environmental relationships between food producers, retailers and consumers. Moreover, city authorities are willing to learn from one another. Places that reflect this emerging 'food chain' in cities, are private allotments, school or community gardens but there is also growing interest in city farming organized by professional farmers (van der Schans & Wiskerke, 2012)

In 2007, the American Planning Association (APA) approved and officially adopted a Policy Guide on community food planning (Pothukuchi, 2009). That step acknowledged how important food issues are considered to be in communities and regions, by the professional organization. The policy lays down two interlinked objectives for planners;

1. Help to build a stronger, more sustainable and self-reliant community by means of regional food systems.
2. Suggest ways in which the industrial food system is able to interact with communities and regions to enhance benefits such as economic vitality, public health, ecological sustainability, social equity, and cultural diversity (Pothukuchi, 2009 p 352).

[58] The World Food Summit of 1996 defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life" (WHO -World Health Organization, 2012a).

Having these two main objectives the policy guide comprises seven general policies. Pothukuchi (2009) summarizes many examples of the practice in the US (at various levels), that reflect what has happened in each policy category since its adoption by the APA. Without going deeper into that subject here the following are the seven general strategies that lead theoretically to the above-mentioned objectives of community food planning;

1. Comprehensive food planning at the community and regional levels... [Examples are given on different geographical scales
    - Regional Food System Plan
    - City food system plan and
    - Food policy councils (neighborhoods)]
2. ...Strengthening the local and regional economy by promoting community and regional food systems.
3. Food systems which improve the health and wellbeing of the region's residents.
4. Food systems which are ecologically sustainable.
5. Food systems which are socially equitable and just.
6. Food systems which preserve and sustain diverse traditional food cultures of Native Americans and other ethnic minorities.
7. Development of state and federal legislation which facilitates community and regional food chains (APA 2007 cited by Pothukuchi, 2009 p 352-364)

It is concluded that local food planning is 'here to stay' and has gained institutional support and momentum in realistic tangible ways.

Although access to healthy food is important in certain cities this is not the 'whole story' (van der Schans & Wiskerke, 2012). Van der Schans & Wiskerke (2012) have developed a model[59] (See figure 10) that maps out the policy dimensions of urban agriculture for the developed economy by adapting another model[60] developed by RUAF[61] (according to van der Schans & Wiskerke (2012) the RUAF model is based primarily on experience gained in developing countries). The illustration depicts the benefits which urban agriculture can bring into city life based on three pillars of sustainability; economy, social development and ecology. One way of using this model is as a tool to assist in integrating food policies with current policies in these categories.

[59] According to Van der Schans and Wiskerke (2012) this model has also been based on brainstorming sessions held in 2011 with members of "Think tank" a platform of civil servants who actively explore the potential of urban agriculture in and around Rotterdam
[60] See Van Veenhuizen (2006 p. 11)
[61] Research Institute on Urban Agriculture and Food Security - www.ruaf.org

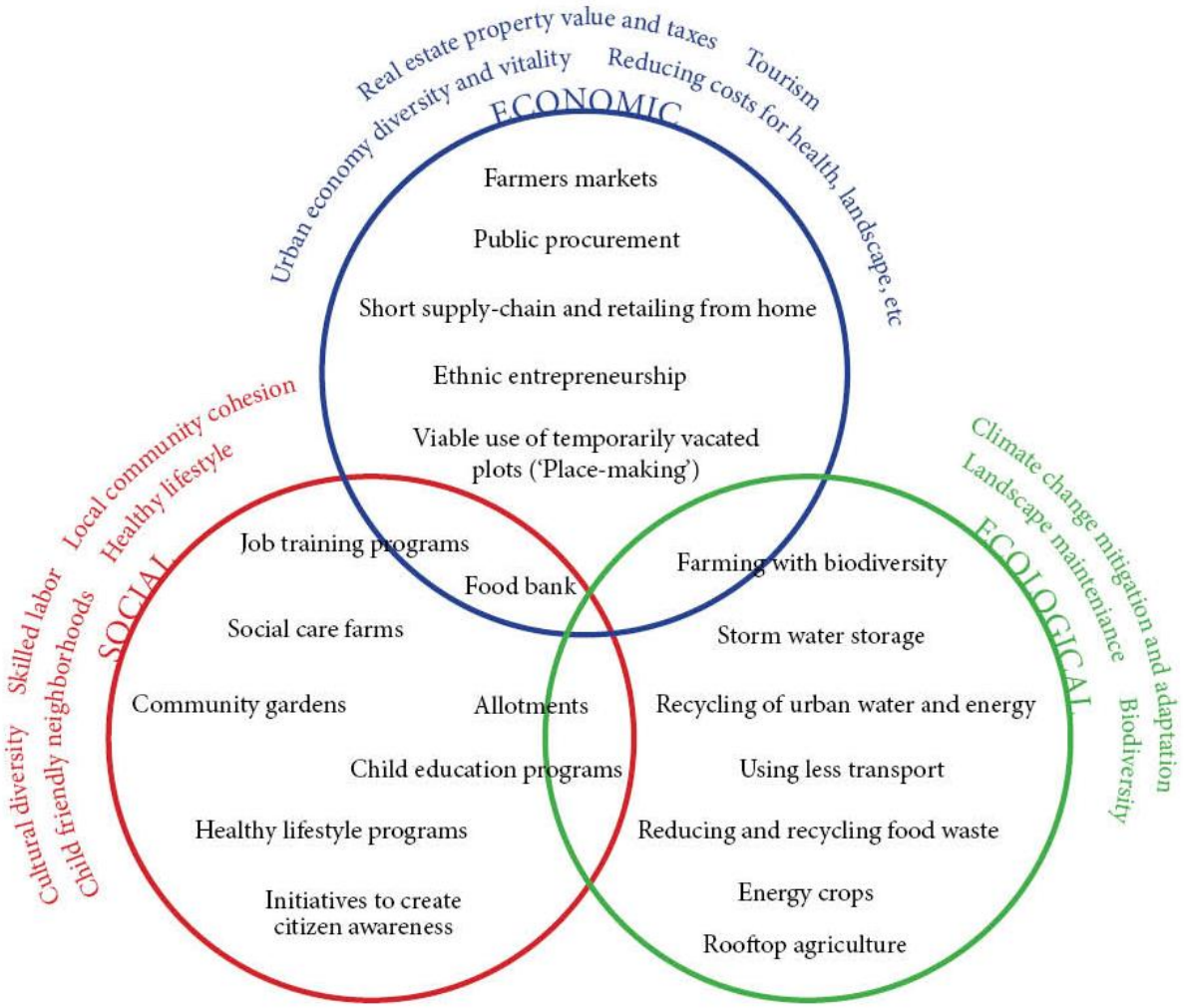


Figure 10 Manifestations and policy aspects of urban agriculture in the developed world. An improved illustration by the author according to (van der Schans & Wiskerke, 2012 Figure 21.4 p 251)

Van der Schans & Wiskerke (2012) questions why this development can provide so many benefits to urban development yet only a few practical examples have been systematically planned into the re-structured environment. The aspects depicted in the figure are many and diverse which are difficult for some to comprehend as a whole.

The ability to reflect on urban agricultural policy development due to its multi-functionality, plans on urban agriculture should include a variety of sectors and disciplines, e.g. agriculture, health, waste management, community development, maintenance of parks and natural surroundings among others (van Veenhuizen, 2006). Urban farmers, community-based organizations (CBOs) and non-governmental organizations (NGOs) should also be part of the planning process. The only way to develop a policy that is sound, comprehensive, acceptable and sustainable is by involving all of these stakeholders. In multi-stakeholder policy-making[62], usually a platform in urban agriculture or urban food policy is established involving all

[62] Multi-stakeholder policy-making methodology has been adapted by Local Agenda 21 and Sustainable Cities' Programs

stakeholders who are directly or indirectly linked to urban food production. Food policy councils are very important organizations which play a crucial role in stakeholder networking (Stierand, 2012). They develop policies and projects to influence the food system from the 'bottom- up' (see following sub-paragraph).

Mogk et al. (2011) have provided a review on how cities across the US have recognized the value of agriculture as an approved use of land in urban areas. Local governments have made a complete overhaul of their comprehensive plans and zoning ordinances to promote food production and permit agricultural activity. Other cities, have made amendments to their existing codes, which promote urban agriculture through community gardening, market-gardening, and other urban agricultural activities. Linked with the considerations of urban agriculture's significance in cities such as Detroit and dealing with various problems along with the opportunities which urban agriculture provides to vacated areas in the city, it is essential that innovative strategies be applied to address the issues of land use. Mogk et al. (2011) determine several possibilities, to address and promote urban agriculture in Detroit.

Based on what cities have been doing in the US, Mogk et al. summarize the regulatory framework to promote urban agriculture as an alternative means of using vacated terrain in the city of Detroit. The basic tools are as follows;

- by zoning ordinances for agricultural use (based on a view expressed in the Master Plan amendments for the purposeful intention of zoning ordinances)
- lower tax incentives (reducing the rate of tax or the amount levied for the project area, for example to its pre-development level) or by reducing tax assessments (provide targeted tax relief for those whose land is used for agricultural purposes by reducing the assessment value of agricultural land)
- reduce land prices/leasing options for city owned land (e.g. by giving flexible leasing options to community gardeners and other small-scale farmers)
- accelerate the process for granting permission and reducing costs for this

In relation to facilitating the access to land for urban agriculture, van Veenhuizen (2006) provides a list of essential tools. The ones that are not on above list provided by Mongk et al. are;

- the availability of an inventory of the vacated terrain (land and/or buildings) in the city
- being exempted from constraining rules or zoning codes
- by offering assistance (advice from experts to take necessary measures) by putting in place the required infrastructure such as adequate water supplies of the right quality including access to energy and soil

An inventory on mapping potentially vacated terrain for urban agriculture seems to be a good way of assessing the possibilities a city has to offer in the way of urban agricultural development. Even so, cities seem at first glimpse to have potentially compact agricultural areas which can be mapped. Graaf (2012) has illustrated potential areas for urban agricultural development within the 'compact' city of Rotterdam on a map, defining four types of urban agricultural practices that would be appropriate 'in the city'. Mesndes et al. (2008) made a comparison on the use of inventories of land to draw up plans for urban agriculture in Portland and Vancouver. They concluded that the process itself of making inventories of land for planning urban agriculture, governments would be able to increase institutional awareness and gain political support.

Food policy councils

It is now being recognized that food policy councils (FPC) play an important role in comprehensive food planning at community and regional levels (Pothukuchi, 2009; Stierand, 2012). It is estimated that there are approximately 40 local FPCs and 60 FPCs at the state, regional or county levels in North America (Stierand, 2012). Their presence in continental Europe is not as strong but is developing.

Food policy councils (FPC) represent a viable possibility to re-establish food policy at the local level, (Stierand, 2012). The FPC concept was developed in the US as part of the Community Food Security Movement in the 1980s in response to studies relating to food deserts. These days the aim of such councils is to identify and propose innovative solutions to improve local and state food systems and make them more sustainable and just. Stierand (2012) provides an overview of how FPCs developed over a period of time and how this is recorded in literature. According to Harper (2009) and quoted by Stierand (2012) the general functions of FPCs are; fostering discourse on food issues, coordination between sectors in the food system, evaluating and updating policies as well as lunching support programs and services, address local needs. One of the council's prime tasks is maintaining a networking system and instructing members about communication between various stakeholders. The general public is made aware of the facts by means of brochures, conferences and events. Enabling and empowering stakeholders so that they have a positive effect on the urban food system is their underlying principle.

Very few FPCs form part of public administration but rather serve as advisory groups (Stierand, 2012). Three organizational models between food policy councils and the government have been accepted as the norm: a governmental organization, a non-governmental organization and a hybrid model. The first one is the most legitimate and has a strong commitment in the field of food, however, NGO's have proved to be much more flexible and less bureaucratic. The hybrid model has some formal relationship with the government through funding and resources, yet retains an NGO non—profit status.

Case studies[63] reveal that FPCs have the potential to create the basic elements in urban food systems which were lost through up-scaling the food systems and in which steps were taken to localize food policies (Stierand, 2012). The following case study is an example of how important the FPC role is in bottom-up participatory planning.

[63] For example the case study on the Food Policy Council in Brighton and Hove – 'Food partnership in Brighton and Hove' (Stierand, 2012).

Peemoeller (2012) illustrates the 'progress through a process', preparing the food systems report for the Chicago Metropolitan Agency for Planning, a vision for 2040 – the first regional report of its kind. This report resulted from a partnership between a non-profit volunteer advocacy group (Chicago Food Policy Advisory Council – CFPAC) and the city of Chicago Department of zoning and Land Use Planning. The partnership was strategically chosen to balance resources that neither group had of its own. A wide range of participants were invited to participate in the community planning at the bottom-up process. This work which took 9 months involved the participation of 130 food system stakeholders both from the urban and peri-urban areas who make up the Chicago Metropolitan Region. Several valuable observations for the planning field could be interpreted as lessons learned from the planning perspective. The process necessitated a great deal of time and energy, for example defining the concepts of regional food systems led to a re-organisation of information etc. But in the end it all comes down to the value the report has for the stakeholders and its contribution to the process. It is a means of educating and informing regional citizens and policy makers. A vision for the future had been created that had not previously been attempted on a regional scale but its success will provide a long –term solution.

Designing around food - "Agricultural Urbanism"

A critical opinion is that planners and designers are sometimes 'strangers in the same room' (Wiskerke & Viljoen, 2012). Young designers are increasingly developing ideas to link food-related issues to urban design (Nasr & Komisar, 2012) Several cases reveal that planners have cooperated with designers in order materialize such plans but their integration into the everyday practice of planners and designers is lagging.

Local food and agricultural activities aim to create more sustainable communities (Holland & Salle, 2010). Holland and Salle (2010) describe Agricultural Urbanism (AU) as a framework and approach to integrate these activities and many other related ones into the current planning and design of metropolitan regions in such a way that not only makes the food and agricultural system more sustainable but also city-life more appealing. Agricultural Urbanism presents a structure to identify issues and opportunities along with ideas about other activities which can be undertaken on this journey. The definition of agricultural urbanism is;

> *"a planning, policy and design framework for developing a wide range of sustainable food and agriculture system elements into multiple community scales. AU refocuses economic development, community's identity, urban planning and design on all aspects of food and agricultural systems* (Holland & Salle, 2010 p 30)

They state that agricultural urbanism is an approach that encourages cities and regions to respond proactively to change as well as providing them with an opportunity to contribute to the development of more sustainable food systems. 'From field to fork' - the entire agricultural system is a unit of analysis for agricultural urbanism. Owing to the fact that so much attention was given to urban agriculture and farmers markets, the remainder of the regional food system was all too often overlooked and that is how - the theory - agricultural urbanism was born.

Agricultural urbanism consists of ten principles (Holland & Salle, 2010). Following these principles in any particular project, is "key" to reaching the goal of agricultural urbanism. The goals are as follows;

1. *Follow the integrated food and agricultural system perspective* - by promoting a wide range of food system elements in all community planning or projects. These food system elements are for example - production, processing, distribution, retailing, education, celebration, infrastructure, food security, etc.
2. *Enrich the experience of food and agriculture* – by using vacated areas and (place making) designing strategies to make food visible and enhance the experience of food.
3. *Build up the food and agricultural economy* – by increasing economic activity and the profile of the food system in community plans and projects.
4. *Increase the access to food* – by providing opportunities to grow, sell or process food in project-planning and design.
5. *Educate people about food* – by embedding formal and informal educational opportunities into planning design and community programs and therefore arouse lots of interest in all aspects of the food system in every-day life.
6. *Manage and support sustainable food systems* - by Integrating sustainable food system objectives and considerations into government policies, programs, institutional mandates and development plans. This includes integrating key food system stakeholders into the entire decision-making process.
7. *Providing food and habitat for other living species* by integrating them into the urban environment and, at the same time, considering the food and agriculture agenda whenever possible**.** Paying attention to the fact that birds and other creatures do not always integrate well with crops.
8. *Organizing food production by encouraging and maintaining partnership with organizations* to take responsibility for managing successful urban food systems, policies, programs and appropriate areas.
9. *Build sustainable infrastructure for food and agriculture* - by considering the needs of urban food systems and all the opportunities they offer to the community infrastructure and its system - addressing energy, wastewater and solid-waste management
10. *Bring food and agriculture to the foreground as a solution to climate change,* by a developing deeper understanding of how food and agriculture can contribute positively to climate imbalance and adapt strategies in this respect.

Transparency and a short and sustainable food chain formulate the idea Agricultural Urbanism. In order to implement the above principles of Agricultural Urbanism into city planning and design, strategies are necessary to deal with; food-production, -processing, -sales, restaurants, food services, food education and occasions for celebration (Holland and Salle 2010).

LAGGING DEVELOPMENT, BARRIERS IDENTIFIED AND THE NEED FOR RESEARCH

From the previous sub-paragraph city land is most commonly used in specific ways in accordance with land- use codes and plans that are based on codes which were devised in the past. Agriculture inside cities has, at least until recently, been considered a means of marginal land use' and not recognized as 'the norm' inside a city. According to Sonnino (2009) social scientists, planners and policy-makers can no longer

ignore the role or the potential of cities for designing sustainable 'bio-regions' and engage in building up environmentally–sustainable relations between urban, peri-urban and rural areas.

The legal framework might be a barrier in seemingly lagging development in urban agriculture – especially in developed economies (van der Schans & Wiskerke, 2012; van Veenhuizen, 2006). The global industrial market and regulatory systems are structured to maintain the current unsustainable food system (Holland & Salle, 2010). In order to develop urban agriculture political determination is needed along with the applicable resources, and more comprehensive plans (Pothukuchi, 2009). Planners need to look at the food system holistically (production, processing distribution, retailing, consumption, and the management of waste sites). Apparently there are numerous agents involved in this 'scenario'. Experience in local food planning reveals that that the community's economic activities and planning responsibilities are organized by traditional methods and disciplinary fields (Pothukuchi, 2009). Therefore, because of its complexity, it is difficult to link an alternative food system to updated policy programs and activities. Experience has also brought to light that messages concerning sustainability are difficult to explain to an institution that is sub-divided into various divisions and professions (Pothukuchi, 2011). Van Veenhuizen, (2006) claims that urban food systems just as urban agriculture need to have a solid institutional base. If that is the case, how best would it be to organize it?.

At the point when urban agriculture becomes increasingly important in many cities, it is also essential to get much more attention from planners and social scientists (L. J. Pearson, L. Pearson, & C. J. Pearson, 2010; Sonnino, 2009). Even though urban agriculture is theoretically well-documented[64] in planning literature, there is still a need for more empirical data, i.e. personal experience on urban agriculture and case study research (S. M. Broekhof & Valk, 2012)., especially where there are insufficient comprehensive and comparative case studies (van Veenhuizen, 2006; Pearson et al., 2007; Sonnino , 2009; Broekhof & van der Valk, 2012).

Pearson et al. (2010) consider that the gap in research on the topic of urban agriculture could be divided into two categories; 1. Designing and testing policies and systems which will maintain urban agriculture (and its benefits) as part of the urban system and, 2. Research on how to assess urban agriculture's contribution to large cities, i.e. topics such as increasing knowledge on how shifting cultivation to under-used terrain is managed (for instance areas between development opportunities). Studies of the regulatory regime should be carried out, especially in respect of projects that are classified as economically beneficial (van der Schans & Wiskerke, 2012). Land-use conditions, license, food safety rules, etc. change significantly when social initiatives or art projects become economically viable.

If the legal framework is a barrier in developing urban agriculture, it indicates that there is a 'gap' between 'grass-roots' activities and the applicable institutions and professions. Institutions, customs, laws, regulations and authorities are linked to the past and have been constantly evolving. When customs change and awareness increases, new needs and desires are brought into the open and develop. Institutions need to adapt and work on them. Events relating to a city's development connect the past with the future.

[64] normative descriptions on how urban agriculture/food systems "ought to" be

3.2.4 *URBAN AGRICULTURE AND LAND ETHICS*

WHY CONSIDERING ETHICS IN RELATION TO URBAN AGRICULTURAL DEVELOPMENT?

Rather than go too deeply into spectacular philosophical theories here, the purpose is to give a brief introduction to the subject. When interacting, it is quite usual for people to refer to ethics or changes to be made in an ethical way, especially when attempting to improve life in general. Most aspects in problems relate to ethics in one way or another. Moreover, this concept is also prominent in literature relating to planning issues.

Generally, 'norms' and values affect people's decision-making particularly where ethics[65] (or moral philosophy) are concerned, which involve systematizing, defending, and recommending the concepts of right and wrong behavior (Fieser, 2009).

Land-use planning is a goal-orientated forward-looking discipline that has, in accordance with the initiative of sustainable development been cooperating more and more with grass-roots agents, NGO's and communities (Allmendinger, 2009), thus many more agents with different backgrounds and perspectives are becoming involved. However, if there is a gap between reality 'work in progress' and what is legally permitted it indicates that institutions are unfamiliar with the development taking place. Urban agriculture within cities has only been 'marginal land use' until recently but its development depends on policies for its approval which involves various agents with different perspectives. Therefore discussions on the concept of land ethics are essential to understand in better present situation and shed light on what needs to be changed so new sustainable land-use development can successfully progress.

LAND ETHICS - CULTURAL CONTEXT AND INDIVIDUAL PERSPECTIVES

The broad definition of 'land ethics' is the philosophy which guides decision-making when land is utilized or changes are made to a land[66] (Leopold, 1949). When Leopold (1949) defined land ethics, he criticized the dominant individualistic economically-based ethics in land-use policies and argued for a more ecological approach[67] to be considered from more a holistic perspective. The main theories on land ethics are based on Utilitarianism, Kantism[68] , Virtue ethics (Brown, 2001) and libertarianism (Vallentyne, 2011).

Utilitarian ethics claim that consequences which maximize happiness are the result of the right course of action (Brown, 2001). Utilitarianism is at the root of decision-making in planning (Faludi, 1986) and has been for a long time (Jamieson, 2008). Utilitarianism has been criticized for being driven by economics

[65] Ethic is defined as the branch of knowledge that deals with moral principles (Oxford Dictionaries, 2012), and ethics are defined as moral principles that govern a person's behavior or the conducting of an activity. The field of ethics is also known as 'moral philosophy' (Fieser, 2009).

[66] Leopold (1949) re-conceptualized the idea of land - In his view the land was for life and for the source of life - for example soil, water, plants and animals. The harmony in the community – 'the ultimate good' is reflected especially in integrity, stability and beauty of the community (Shaw, 2005).

[67] He claimed that all forms of life have an intrinsic value and that the needs of humanity should not be considered to be more important than those of other living things (Shaw, 2005).

[68] Egalitarian ethics have also roots in Kantian philosophy, introduced by the American (Kantian) philosopher John Rawls, who favors equality whether that would signify equal entitlement to land and/or access to food – the fruits of the land (Thompson, 2010).

(Driver, 2009; Beatley, 1991) and overlooks the consequences it has for the least advantaged. Kantian ethics claim that actions are right if they are in line with moral rules and principles and are therefore rational (Brown, 2001). Ethics of virtue deem an action to be right if it is what a virtuous agent would do in the circumstances but not necessarily according to official regulations. A libertarian ethics upholds freedom and favor a re-distribution of power, supports the free market and communal co-operative activities (Vallentyne, 201). In libertarian societies the government plays an insignificant role.

In general, people act and make decisions with respect to what they consider to be valuable in their lives, however, such decisions differ from culture to culture, and also from person to person (Hofstede, 1991). Cultures and societies have developed their own rituals, systems and laws in accordance with their particular set of cultural values. In the same way, community residents around the world have their own distinctive viewpoints and perceive urban agricultural development differently. For instance in the US, together with utilitarian ethics[69] the 'libertarian' view is common[70] while the Netherlands is known as powerful welfare society. The general view in the Netherlands is probably more rooted in the 'Utilitarian' and Kantian 'spirit based on rules and duty[71].

Urban agricultural development could be economically and socially viable for communities who have little access to healthy food. However, authorities or agents responsible for the area in question, might from a utilitarian standpoint prefer to use the land for housing claiming that urban agriculture would not be as financially rewarding (Sigurdardottir, forthcoming). Kantian supporters who are in favor of a more just society[72] would propose that regulations be amended to recognize urban agriculture legally. If unused terrain in cities could be used for a more valid purpose than remain unproductive a virtuous agent would most probably take action in support of land use linked with the assumed value of the products regardless to rules or regulations. A libertarian agent would act according to his own desires and become involved in urban agriculture in collective ways if his activities did not blend with a libertarian market-orientated society (Thompson, 2010). Therefore, in libertarian societies, networking with NGOs and agents at the grass- roots level would most likely influence a 'bottom-up' approach in land-use planning (Sigurdardottir, 2013). Altogether, when urban agriculture which has, until recently, only been 'marginal' land use, has begun developing within cities and policies are drawn up to approve that development, it attracts a wide variety of agents from different backgrounds whose global perspectives also vary. They might have conflicting viewpoints on urban agricultural development due to a difference in the moral philosophy they uphold which could influence the development process of the activity.

URBAN AGRICULTURE - ETHICAL MEANS OF URBAN LAND-USE

Marginal' land-use or a new concept such as urban agriculture is most likely perceived from different aspects depending on the land ethics in force that influence the decision-making process (Sigurdardottir, forthcoming). However, from comparison of urban agriculture's relevance in addressing common problems in urban areas and Beatley's (1991) set of ethical principles to guide land use policy, it indicates, that urban

[69] which has been explained as being at the haet of th planning profession

[70] ...and generally put in practice by U.S. ranchers and farmers (Thompson, 2010). The libertarian view has been severely criticized because people who make egotistical decisions are often cause of major ecological disasters.

[71] In the Netherlands spatial planning and managing growth have a long-standing tradition (van der Valk, 2002). A strict adherence to compact city and restrictive building policies in open areas which has influenced spatial development and decision-making by consensus is dominant in planning style in the Netherlands.

[72] e.g. an Egalitarian

agriculture correlates on the whole with 'ethical land use'. Yet judicial, a juristic aspects relating to agreements that must be kept might be problematic in this respect[73].

3.2.5 *SUMMARY*

Cultivating food inside cities has long been practiced as 'marginal land use' and is now recognized as a response to the dynamic character of cities. Demographic and spatial transformations result in temporary unused terrain within them. The possibility of growing food is even more beneficial taking into account other city resources than inexpensive terrain (building sites, roof tops, empty buildings etc.) such as heat effects, organic waste and people willing to work. Areas once referred to as 'the commons', are now public areas yet most of them are categorized by different land-use codes and regulations according to their function, development status, ownership etc.

Urban agriculture is where agents work together on more beneficial food systems locally to improve people's diets, food-production, links between farmers and consumers, and reinforce the local economy. Key to improving living conditions are agricultural policies that promote local food production, processing, and consumption. The concept of urban agriculture is based on Mougeot (2000 p 11); "an industry located within or in close proximity to a town, city or metropolis, which cultivates, processes and distributes a diversity of food and non-food products, utilizing human and material resources, products and services found there, and largely supplying products/service to that urban area"

Urban agriculture could possibly resolve the global food shortage crisis on a large-scale. Urban agriculture's relevance in cities is its capacity to sustain urban development. It is an activity which can serve the city in multiple ways and improve the local economy. Urban agricultural activities can help reinforce a community's 'capital' in various ways, for example by helping groups to integrate more effectively into the urban network. Urban agriculture is beneficial to the urban poor, other classes in society, urban farmers and used by food programs on sustainable city development.

Well-known risks in urban agriculture are contamination hazards, expensive equipment and integrating dissimilar disciplines into the new paradigm.

The general situation at each time in a city and the existing (policy) priorities, influence the urban agricultural practices that develop in cities and projects are 'place-specific'. Categories of urban agriculture depend on the agents involved (subsistence urban farmers; family-type (semi-) commercial farmers; and agricultural entrepreneurs) their operational activities and methods. In developed economies, the process of issuing permits changes radically when urban agricultural projects become commercial. Possible exemption could be made in projects known as creative or social projects.

[...contd. on next page]

[73] Two of Beatley's (1991) ethical principles; related to required consistency between different levels of jurisdiction and commitments that must be kept.

Official urban agricultural policies and food policy councils characterized by networking and sharing knowledge, are two recognized key concepts, in promoting urban agriculture. When cities collaborate on urban agriculture they avail themselves of professionally reviewed community food objectives and/or development models based on policy dimensions in urban agriculture. There are special strategies to provide assistance in farming initiatives to lighten the financial burden from a legal perspective. Agricultural Urbanism (AU) is a holistic approach to integrate various aspects on food issues into city-planning, making the food system more sustainable and the city a more agreeable place to live in. It consists of 10 general principles for assessing where the city stands in relation to the phenomenon of urban agriculture.

The concept of urban agriculture is on the brink of recognition although progress is slow on land-use in cities as potential sustainable 'bio-regions'. Identifiable barriers are in the legal framework, the current institutional structure and disciplines applicable to the conventional system and its credibility.

Urban agriculture is perceived from different aspects depending on the land ethics in force that influence the decisions to be taken in the process. However, from comparison of urban agriculture's relevance in addressing common problems in urban areas and set of ethical principles to guide land use policy, urban agriculture seems to correlate on the whole with 'ethical land use'. Yet, judicial aspects relating to agreements that must be kept might be problematic in this respect.

4 THE RESULTS – THE STUDY AREAS

4.1 DETROIT IN THE USA

4.1.1 *INTRODUCTION*

LOCATION, AREA COVERAGE AND POPULATION

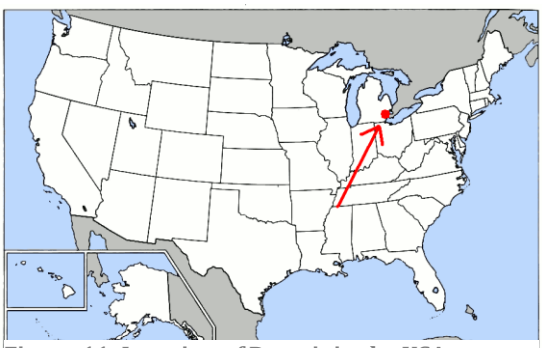


Figure 11: Location of Detroit in the USA
(www.upload.wikimedia.org)

The city of Detroit is located in Wayne County in the state of Michigan, close to the Canadian border (see Figure 11) In 2010 there were 713.777 inhabitants in the city itself, but the total number in the metropolitan area[74] was approximately 4,2 million people (U.S. Census Bureau, 2010). The population is predominantly African- American, in the region of 80% (Walas ker et al., 2011).

It is the largest city in the state of Michigan, covering an area of 370 km^2, 359 km^2 of which is land and the remainder 11 km^2 is water.

HISTORICAL SUMMARY - SOME IMPORTANT FACTS AND FIGURES

The intention is to typify the kind of city Detroit is in this paragraph. It is beyond the scope of this research to go into detail concerning the city's development from a historical point of view. The chapter opens with a brief summary of the city's development into a transportation hub and 'Motor city'. Nicknames or thematic consequences form the main part of this introduction. The reason why there is a lot of vacated terrain in the city has been reviewed and some facts are explained which are linked to urban agriculture.

A Settlement transforms into a transportation hub

The settlement of Detroit was founded by the French officer Antoine Laumet de Lamothe Cadillac, in the year 1701, on the banks of the Detroit River, which gives its name to the city (The Government of Ontario Canada, 2009). The settlement grew in importance as a trading and military post. The French Royal Court offered free land, farming equipment and transportation to families who were willing to move to Detroit. This caused a significant growth in the population and farmers were able to produce enough food supplies even for the outlying areas. The first farmhouse was built in Detroit in 1740 (Woodford, 2001).

After battles with Indians and the British, the settlement was taken over by the British in 1763. In 1771 the village had developed into a trading center, and the river became an important transportation artery. Small French farms and orchards were dotted along the river bank. In 1783 official records reveal that there were 2191 inhabitants in the village including 179 slaves. Until after the American Revolution (1775-1783) - British and Canadian administrators, farmers and traders competed for local dominance (The Government of Ontario Canada, 2009). The situation remained complex until 1791, because ownership of farmland was not always properly administered and facts concerning it were, therefore, unclear. In 1796 the Americans took possession of the town of Detroit and in 1815, after a battle with the British ('Surrender Detroit' in 1812-1813), it was registered as an American city (Woodford, 2001).

[74] Area constituting a large city or urbanized area, including adjacent suburbs and towns (The Free Dictionary, 2012)

Invention of the steam engine in the middle of the 18th century improved transportation significantly and was a first sign of the industrial revolution. Within a short space of time the city emerged as a transportation hub where shipping and shipbuilding played a vital role (Woodford, 2001).

From the passage of the Fugitive Slave Act in 1850 until the emancipation of the slaves (1863), Detroit served as a key point along the 'underground railroad' - a network of secret routes and safe housing to enable black slaves to escape to free states and Canada. Furthermore, many Detroiters volunteered to fight to support the Union in the Civil War and the fight against slavery. At that time the population census record was 45,619 (U.S. Census Bureau, 2010)

'Paris of the West' becomes 'Motor city'

During the late 19th and early 20th centuries, many of the city's 'Gilded Age' mansions and buildings were constructed. Detroit was referred to as the '*Paris of the West'*. At the beginning of the industrial revolution, manufacturing various types of food and related products boosted the city's development (Junior Worldmark Encyclopedia of World Cities, 2000) and the world's first visitors' bureau was established promoting the city's goods. In 1903 the '*Motor City*' – Detroit, put America on wheels when the Ford Motor Company was established and other automotive manufacturers such as Chrysler followed suit. Consequently, the population increased rapidly and many became part of the labor force.

In the early 1920s all kinds of other businesses developed, which enriched the citizens' lives alongside sports and arts (Junior Worldmark Encyclopedia of World Cities, 2000). In the mid-20th Century, Detroit was nicknamed *'Motown'* on account of the local record company which was known for its highly original sound of the pop music recorded there.

Economic boost and population growth

The effects of World War II and industrial diversification (such as salt processing, seed production and the manufacture of electrical machines), together with the automobile industry and various construction projects in the 1920s (such as building bridges and modern freeway systems) boosted Detroit's economy constantly (Junior Worldmark Encyclopedia of World Cities, 2000). Blacks and whites moved to the city in droves for employment in industry, but housing was not as easy to find. This development resulted in an enormous growth in population and spatial expansion of the city. Around the 1950s the city reached its population peak of 1,849,568 - that is more than six times the number of people who were living there in 1900 (U.S. Census Bureau, 2010).

Decline

Many people talk about the industrial decline in relation to Detroit

> *...and for sure that's part of it but until recent years the metropolitan population of Detroit was growing while the population of the city proper was shrinking. So the population of the metropolitan areas is growing – to me that means people are moving into the area.... at least they are not leaving, and there are also some natural increases as well.* (Laura Buhl, personal communication, May 8 2012).

According to professor Thomas J. Sugrue (Program 20D20, 2011), Detroit is an example of urban crisis where policy encouraged racial segregation and consequently led to an increased territorial expansion of the metropolitan area. Furthermore, discrimination in the housing market resulted in racial segregation. According to statistics, Detroit appears to be one of the most segregated areas in the USA. Approximately,

80% of the citizens are African Americans who live in the city but only a small percentage of them live in the expensive suburbs.

After World War II until the 1960s, there were more than 200 attacks on first or second generation African Americans who moved into 'white' neighborhoods (Program 20D20, 2011). Real estate agents discouraged black people from buying those properties and when black people moved into these neighborhoods, the white inhabitants sold their property below the market price and moved away – this has become known as 'the white flight'. All this played a significant role in hardening the hearts of the races that still exists in the metropolitan area today. Figure 12 shows the racial distribution within the Detroit metropolitan area.

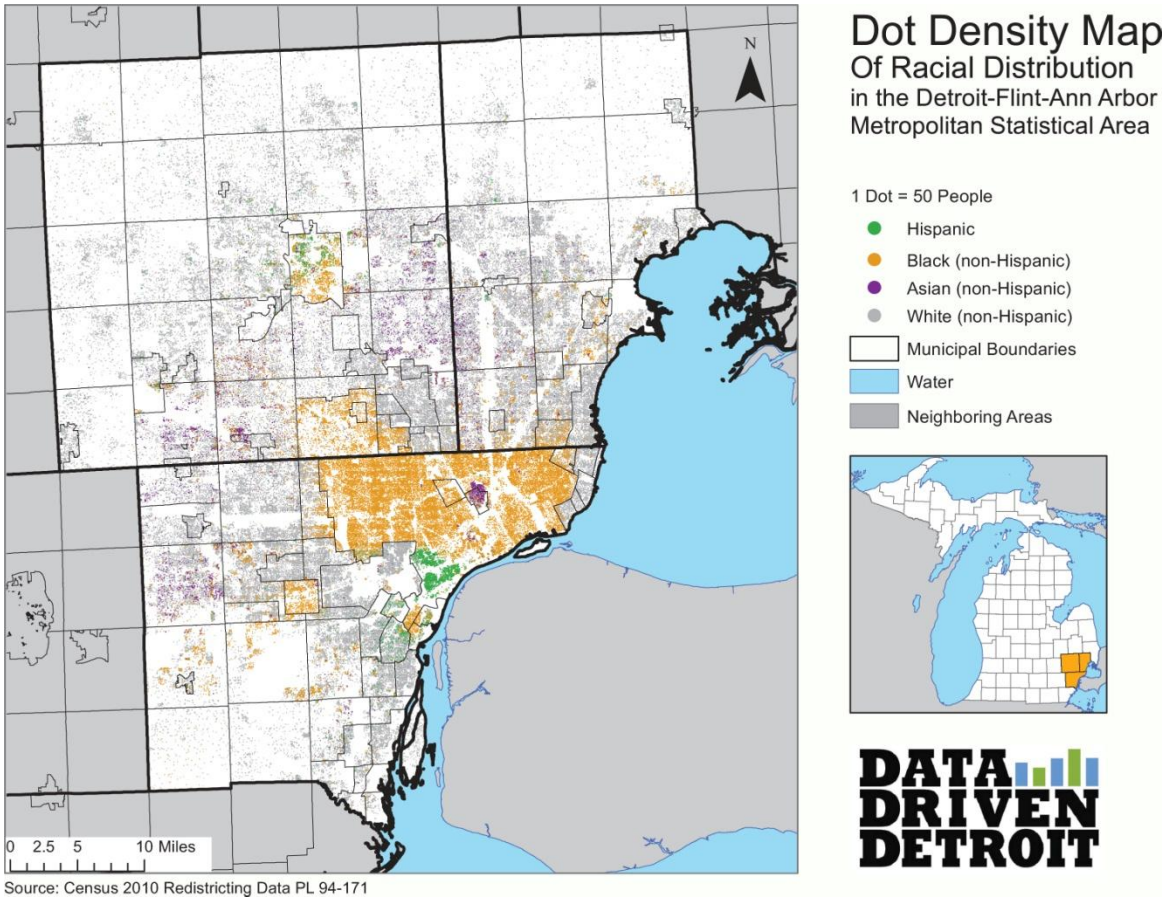


Figure 12 Racial distribution in Metropolitan Detroit. Data Driven Detroit 2010.

Detroit's population has been decreasing at a rate of about 200.000-300.000 people per decade during the last six decades. (U.S. Census Bureau, 2010). Industrial decline does not fully explain the reasons behind Detroit's problems.

> *"I believe that the main reason is suburbanization and urban sprawl, and then something that affected a lot of cities throughout the country during the post-war era is that people with resources who were able to purchase vehicles moved out into the suburbs leaving people with fewer resources in the city (..who tended to be African American...) and there's this spiral of decline. The city has a lower tax base and can't provide the services so people leave and then you know.. it just continues and is all compounded by racism... .... When certain other cities were able to turn that around - I mean a lot of cities declined in the 60s and 70s but they were able to turn that around for various reasons that*

probably have to do with their own unique situation. But whatever the reasons are, Detroit has not yet been able to do that' (Laura Buhl, Personal communication, May 8 2012).

According to Giorda (2012) three factors are the possible main engines of the consequent decay, that were particularly powerful in Detroit in comparison with other cities in the US: racial inequality, lack of coordinated economic planning at the regional and state levels and industrial driven infrastructure that favored massive car transport.

Suburbanization threatened farming activities

The second–ring suburb of Detroit, the city of Troy, Michigan, experienced an explosive growth in population in the mid-twentieth century – from 1960 – 1980 it increased by 245% (Southeast Michigan Concil of Governments 2002, cited by Norris et al., 2011). From 1950 – 1979, the state of Michigan lost a lot of agricultural land, amounting to some 34% - attributable mainly to residential development. This development was the cause of conflicts between farmers and non-farming neighbors. Concerns about the loss of farmland and agricultural production capacity led to the passage of the 'Right to Farm Act' (RTFA) in 1981 (*MICHIGAN RIGHT TO FARM ACT*, 1981). The act protects farmers who follow 'Generally Accepted Agricultural Management Practices' (GAAMPs), at the same time it protects their farms from nuisance complaints lodged by those who would otherwise create difficulties for the non-farming neighboring-land users. (Norris et al., 2011). Even though this Act was drawn up with the rural areas in mind, it applies to the whole of Michigan state, including cities, and consequently creates a complex legal situation when it comes to the development of urban agriculture.

SOME FACTS ABOUT THE CURRENT SITUATION

Economic crisis

Detroit has experienced some hard times in recent decades but the economic crisis that hit the country in 2008 made the situation even worse (Walker et al., 2011). Today, *'the city is under a great deal of stress, having laid off, or encouraged early retirement to a great many of its staff, in order to stabilize budgets'* (Kameshwari Pothukuchi, personal communication, April 19 2012).

Unused land (vacated terrain)

The decline of Detroit has led to a lot of buildings being abandoned and land unused (vacated terrain). According to Data Driven Detroit (2011) almost one third of its total area has been vacated or roughly 90.000 parcels out of the 340.000. The range of unused land inside the city is illustrated in figure 13 in which there is evidence of up to 60% deserted terrain. Laura Buhl, a city planner in Detroit, considers this rate to be somewhat exaggerated and claims that the most recent statistics pertaining to unused land in the city was 35 sq. miles out of a total of 139 sq. miles which includes public areas such as parks, etc… *'So it's probably closer to 25 sq. miles or so and that is really only one fifth of the city...'* (L. Buhl, Personal communication, May 8 2012). Logically, since people are moving away from the city, a huge amount of this unused terrain is residential, or it might even fall into other land-use categories such as commercial and industrial. Lots of institutional areas, such as schools, are empty. According to Buhl it is not known how much unused terrain is owned by the city, but according to a study carried out by Kathryn Colasanti, over 4800 acres [approximately 11.860 hectares] of unused land is publicly owned (Walker et al., 2011 p 14). Consequently the amount of vacated terrain in the neighborhoods is a blight on the community, due to social problems, vandalism and an increase in the crime rate.

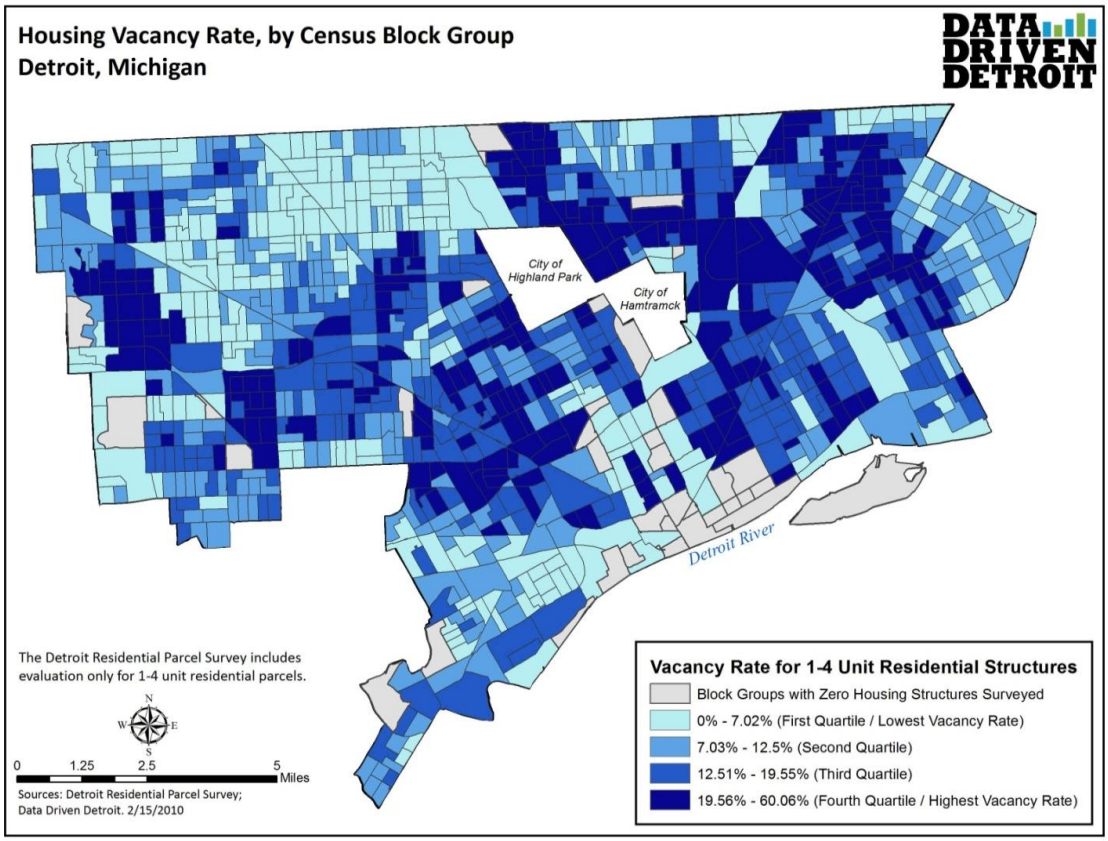


Figure 13 Vacancy rate in Detroit reveals a few vacant lots currently around 60%. (Data driven Detroit, 2000: www.detroitparcelsurvey.org/pdf/reports/DRPS_citywide_vacancy_housing.pdf)

According to the city's website the Detroit Planning and Development Department has mapped neighborhood clusters in their planning work (City of Detroit, 2012a). From those maps neighborhood vitality and land use are clearly marked and indicate the situation[75] in each cluster. A vast number of distressed areas in the city is clearly visible.

Health problems, unemployment and poverty

The rate of illness and related factors is much higher in Detroit and Wayne County than they are nationally. Lifestyle-related disorders such as obesity and diabetes are serious problems because one out of every three Detroiters is obese. (www.countryhealthrankings.org, 2010 cited by Walker et al., 2011) These disorders are risk factors for, among others, physical disability, cancer and heart attacks that were the major leading causes of death in Detroit in 2007. Unhealthy dietary behavior and physical inactivity among the youth is of special concern where one in every four high school students is obese. (Detroit Youth Risk Behavior Survey report, 2009 cited by Walker et al., 2011).

In Detroit, poverty and other indicators for rating community distress are much higher than the national average (Walker et al., 2011). According to Walker et al., the following facts outline the seriousness of the problem in 2009:

[75] The maps show spatially which areas are: stable, distressed, transitional, variable, commercial, government/institutional industrial or parks. The neighbourhood cluster in which Earthworks Urban Farm is located is number 4: www.detroitmi.gov/Portals/0/docs/planning/pdf/Neighborhood%20Maps/C4Map101a.pdf

- *The city's official unemployment rate was 28 percent, double that in 2000, and three times the national average.*
- *Median household income of $26,000 was two-thirds that in 2000, after adjusting for inflation.*
- *36 percent of individuals lived below the poverty line, a 40 percent increase per decade.*
- *31 percent of families with children had incomes below the poverty level— an increase of nearly 50 percent since 2000.*
- *More than four out of ten single-parent families had incomes below the poverty level.*
  (Walker et al., 2011 p 7)

Inequalities in the food retail environment and food insecurity

Not only did the population move outside of the city – but also the retail services as well. Especially in low income African - American neighborhoods, outlets selling healthy food such as fresh fruit and vegetables at affordable prices are scarce (Walker et al., 2011). In other words – access to healthy food is poor. On the other hand, fast food outlets – mainly selling high calorie cheaper food tend to be more common and at a shorter distance for the majority of residents (M. Gallagher (2007), cited by Walker et al. 2011 p 34). Roughly 550.000 Detroit residents live in areas in which they are at least twice as far from mainstream grocer as they are from outlets mainly selling calorie cheaper food of low nutritional quality - 'a fringe food locations'. This indicates inequality in the food retail environmnet and that makes it more difficult for low-income communities to purchase healthy food – which costs more than the national avarage.

Food insecurity is defined by the US Department of Agriculture (USDA) as a 'lack of consistent, dependable access to enough food for active healthy living' (Walker et al., 2011 p 35). In 2009 the level of food insecurity in Detroit was estimated to be more than 30%. A great many housholds having to deal with food insecurity accept assistance from nutrition assistance programs. One such program is the Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps (USA Social Security, 2012), which helps low-income people to buy food. Although it is a Federal government program, it is run by state or local agencies. Recent research carried out by M. Gallagher indicates the striking fact that the majority of retailers who accept food stamps are 'fringe food locations' where only little fresh or healty food is sold.

Motown becomes 'Grow town'

In recent years many initiatives at the grass-roots level, as well as non-profit organizations, have become aware of the opportunities for growing food inside the city and for fostering discourse about necessary changes in the city's food system (Walker et al., 2011). Individuals are working to solve deep economic, social, and/or environmental problems for themselves – in other words, self-determination (Sachs, 2011). It is a result urban decay and a lack of access to fresh food, that Detroit has become one of the largest food deserts in the US (Giorda, 2012). In Detroit there are currently 5 farms and more than 328 community gardens, 39 markets, 63 school gardens, 804 family gardens, all of which produce a total of more than 169 tons of vegetables. Institutional support has been minimal, with some exception. Wayne State University has been active in research on food issues and has engaged with community-based organizations that work on food related subjects. At the moment the city is developing a policy on urban agriculture.

A documentary on the urban farming phenomenon in Detroit, 'Urban roots', summarizes many of the new perspectives (Conners, Schmid, & MacInnis, 2009). These may well reflect a kind of wishful thinking. There is not the same need for housing, Detroit is now seen as '*city with possibilities*' where the wide open spaces are advantageous, the general way of perceiving urban and rural needs to change… *'you've got to switch*

your brain into thinking mode… farming is not only for the rural community… … young people see possibilities in restructuring a purpose' and will therefore be pouring into the city for that reason… *people will be involved in different activities such as* eco-villages and will try new ways of living… …and maybe in the next five or ten years Detroit will have many more small parcels of *urban farming kinds of businesses*… turning *'Motown to Grow town!'.* According to Ashley Atkinsson (2012),[76] more than one out of each 50 Detroiters will be engaged in growing their own food in family, school, community and/or market gardens across the city this year (Atkinson, 2012)

Not only is using the potential of Detroit for agricultural purposes visible at the grass-roots level, businesses such as Hantz Farm[77] have also capitalized on seeing business opportunities on a larger agricultural scale within the city boundaries (Giorda, 2012). According to the farms website it wishes to to transform 'blight to beauty' as vacated, abandoned properties are converted into fields for new agricultural production - a dream about making Detroit the world's biggest urban farm. Giorda (2012) argues that urban farmers in Detroit follow a story theme that describes the future of Detroit as a City of Gardens. But the investment actor Hantz Farm appearing on the scene has created tension and a possible change in the theme of the story for designing the future of Detroit.

The significance of urban agriculture for Detroit is obvious;

> *"It is not as if there are people lining up to develop other things on the land... open space uses, like urban agriculture are being recognized as very important for vacated land. So, you know... recognizing the value of urban gardens to an individual household's economy, to revitalize neighborhoods and more. ...there is so much vacated land..."* (Kameshwari Pothukuchi, personal communication, April 27 2012)

[76] Ashley Atkinson is the Secretary for the Detroit Food Policy Council and Director of Urban Agriculture and Open space at The Greening of Detroit.
[77] Hantz Farms website is: www.hantzfarmsdetroit.com

SUMMARY

People of French and British origin together with Indians formed a settlement on the banks of Detroit River. In the 18th century, Detroit developed into a transporation hub and a trading center and obtained American city status in 1815. During the Civil War in the middle of 19th century, Detroit served as a haven for black slaves who found safe housing. Many of the city's 'Gilded Age' mansions and buildings were constructed at the end of the 19th and the beginning of the 20th century and Detroit became known as the 'Paris of the West'. The effects of World War II and the industrial diversification (automobile industry and various construction projects) boosted Detroit's economy, causing the population to increase tremendously and the city's suburbs grew. The population reached its peak of approximately 1,85 million citizens by the 1950s and the transportation hub and trading centre gained renown as ' The Motor City'.

Factors influencing suburbanization exemplified Detroit's urban crisis, such as policies which encouraged racial segregation and inequity, a lack of coordinated economic planning and an industrial driven infrastructure that favored massive car transport. People with resources and most of the businesses relocated to the suburbs.

The city's population today is around 714.000 (less than half of what it was in the 1950s) yet there are 4,2 million people in the metropolitan area. Suburbanization threatened farming activities and the 'Right to Farm Act' (RTFA) was passed by the State in 1981. Nowadays, this Act is the cause of complex legal situations when it comes to the development of urban agriculture.

Suburbanization caused at least 25% of the city's area to become vacated terrain and neighborhoods suffered from a decline due to a lack of vital services.

The post-industrialized city of Detroit is one of the most segregated cities in the US, with approximately 80% African American citizens. Proportionally more people in Detroit suffer from ill-health, unemployment and poverty than on the national average. Access to adequate food supplies to ensure healthy living standards is down by 30% - indicating food insecurity.

Detroit city has had to deal with economic difficulties over recent decades yet the economic recession in 2008 made the situation even worse. In recent years many initiatives at the grass-roots level and non-profit organizations, have created an awareness of the opportunities for growing food inside the city by fostering discourses on necessary changes in the city's food system. Detroit has now been given the nick name 'Growtown'.

4.1.2 *POLICY FOR URBAN AGRICULTURE IN DETROIT*

This chapter provides insight into the first two sub-research questions and reviews the third one partially concerning the agents responsible for establishing urban agricultural policy.

> ***Has urban agricultural development been supported by local government policies and is this still the case?***
>
> ***What legal permission is required to commence urban agriculture on unused terrain?***
>
> ***Who are the main agents in the process and how do they influence policy making in the development of urban agriculture?***

GOVERNMENT SUPPORT

Applicable policy and perspectives in urban agriculture

There is no official policy on urban agriculture in Detroit. Nevertheless, in the 1970's the city initiated the Farm-A-Lot program allowing the residents to obtain a permit to farm vacated plots in their neighborhoods. Seeds and seedlings were provided and the land tilled (Detroit Food Policy Council, 2008). For several years a program called 'Adopt-a-lot program' has been run by the city (The City of Detroit: Planning & Development Department - Real Estate Development Division, 2004). This is how the city can promote the use of its own vacated lots "*...so if somebody wants to... you know, and there is a vacated lot near them... they can fill out this form from the city and get permission to use it. Usually they use it for gardening. But they could also use it for... ...flowers or as extra space*" (Laura Buhl, Personal communication, May 8 2012). Contracts are valid for one year, but there is no transfer of ownership. Bearing this program in mind, it is not entirely accurate to say that the city has no policy on urban agriculture but rather that it has no official policy. It is not clear how strictly the city adheres to the zoning ordinance to run this program... *'nobody has tried to analyze it ... you know... ...there is a lot of gardening, even farming activities in the city... , I would say the city 'turns the blind eye to these'* says Laura Buhl city planner at Detroit City Council (personal communication, May 8 2012). From her own working experience an enforcement code is applied in most U.S. states on a complaint-driven basis. *'So basically, all these people who are gardening or who have chickens and goats and what not... probably continue in this way unless somebody complains.'* (Laura Buhl, Personal communication, May 8 2012). The city has a practical understanding toward urban agricultural development but it is not legal (Laura Buhl, Personal communication, May 8 2012 and Kameshwari Pothukuchi, personal communication, April 27 2012).

The city is now advancing in terms of policy that is supportive of the kind of agriculture in place so far to benefit the city (Laura Buhl, Personal communication, May 8 2012 and Kameshwari Pothukuchi, personal communication, April 27 2012). In other words, supporting small-scale agriculture and adopting appropriate regulations to ensure that large-scale agriculture continues providing a service in these neighborhoods (Kameshwari Pothukuchi, personal communication, April 27 2012). In establishing this process the city is now taking its biggest step ever - by formulating ordinances that legally allow a certain amount of agriculture within the city (Laura Buhl, Personal communication, May 8 2012). According to Laura Buhl *'...we have been through a number of drafts, and have had an extensive number of meetings with a wide-range of stakeholders and experts covering a wider public spectrum in the process'* (Personal communication, May 8 2012). Professor Kameshwari Pothukuchi points out that *' the growth in urban agriculture over the last seven to ten years has continued despite the absence of these supportive frameworks*

or policies. So the grass-roots are really leading in terms of urban agricultural development right now and the city is sensibly following suit (personal communication, April 27 2012).

Destructive state law

One serous barrier in creating a framework for urban agriculture is a state law ' The Right to Farm Act' (RTFA) (Norris et al., 2011 and Walker et al., 2011), which has proved to be a dilemma for communities interested in urban agriculture. The law was originally enforced to set standards to prevent conflicts arising between farms and neighboring land-use non-farming residents. The RTFA has been amended three times to respond to the changing characteristics of farming. Arousing an interest in urban agriculture, including commercial activities linked to it are not allowed according to RFTA, which has raised questions about revising this state law (Norris et al., 2011). A lot of time has been spent trying to figure out what action to take because the state law confuses the authorities. However, *"I believe the city should go ahead and develop its own policies and standards; the Right to Farm Law was not intended for older cities like Detroit"* (Kameshwari Pothukuchi, personal communication, April 27 2012). Despite the percentage of population Detroit has lost, it is still more densely populated than many other cities in the U.S. therefore it needs to regulate urban agriculture at the local level to ensure the activities are appropriate in urban settings (Laura Buhl, Personal communication, May 8 2012). State laws pre-empt the city or local jurisdiction from passing regulations regarding farming ("MICHIGAN RIGHT TO FARM ACT," 1981 especially sections 4, 6 and 7). One important aspect of this law is that all agricultural practices must follow the standards of 'Generally Acceptable Agricultural Management and Practices' (GAAMPs) that are not appropriate in agriculture in an urban environment originally designed for rural use (Norris et al., 2011). Recently a little step forward was taken to solve this issue (Laura Buhl, personal communication, May 19 2012). The Michigan Commission for Agriculture and Rural Development voted to allow all municipalities with 100,000 inhabitants or more official exemption from the Act. This was done by introducing a rule that that GAAMPs' need not apply to municipalities of this size where zoning ordinance allows agriculture. The City of Detroit is not convinced that the Commission is authorized to exempt cities from the Act by applying this rule. Therefore the city wants to obtain a legislative exemption to the Act. *'We don't think this will happen any time soon because the Michigan Farm Bureau, a powerful lobbying group, opposes such a change. We don't understand their position… However, in the meantime, we will accept this small step forward and continue with our ordinance development* (Laura Buhl, personal communication, May 19 2012).

Draft Policy aspects and practical examples

Things in practice generally influence the creation of policies. To evaluate how the city promotes urban agriculture two aspects are considered: the work that is being done now on drafting a policy and what decisions linked to specific cases in urban agriculture or programs have already been taken. The ten principles of agricultural urbanism (Holland & Salle, 2010) were used to screen the information, illustrated by colored circles in figure 14. The colors indicate the priority of each principle from a policy perspective according to what has been done or discussed. The illustration shows on the one hand, which policy aspects applicable in Detroit have been included in the framework being developed and those that belong to other agents. In Detroit individuals, educational institutions and the private and the non-profit sectors are important agents in how the city is being influenced. The following sections summarize the aspects in Detroit's urban agriculture draft policy.

For Detroit City the most important principle currently being worked on is '**INTEGRATING SUSTAINABLE FOOD SYSTEM GOALS INTO POLICIES AND PROGRAMS**[78]. To deal with this the city is drafting special ordinances and in the process includes vital key food system stakeholders in all decision-making processes (Laura Buhl, personal communication, May 19 2012).

> *'...we have had open channels of communication with them from the very beginning and we continue to do so... ... we interact with stakeholders during meetings. Some of whom are: the Detroit Black Community Food Security Network, Greening of Detroit, Earthworks, Hantz Farms, Community Development Advocates of Detroit, Wayne State University (John Mogk [Law], Kami Pothukuchi [Urban Planning]), Michigan Department of Agriculture and Rural Development, Brightmoor Youth Garden (Riet Schumack), City of Detroit: Buildings, Safety Engineering, and Environmental Department, Law Department, City Council Research and Analysis Division* (Laura Buhl, personal communication, May 8 2012 and May 21 2012)

Laura Buhl points out that 'sustainable' is *" a sort of a 'squishy' word ' people think of as organic...* [79]

Three principles being worked on and, in some cases, with sample projects are:

- **INCREASING ECONOMIC ACTIVITY AND THE FOOD SYSTEM PROFILE**[80]
- **PROVIDING ACCESS TO GROW SELL AND PROCESS FOOD, AND**
- **ENCOURAGING AND MAINTAINING PARTNERSHIPS AND ORGANIZATION TO BE RESPONSIBLE**[81]

Increasing economic activity and the food system profile is facilitated by drafting a zoning ordinance to deal with barriers in legislation "...*we have to make it possible - with regulations, and then the private sector needs to step up and do that economic activity whether it's for business reasons or not*" (Laura Buhl, personal communication, May 8 2012)

Providing access to grow sell and process food is also being worked on, by drafting zoning ordinances which allow farmers markets[82] and farmers stands *"... a farm stand can establish itself on the farmer's property where the produce is grown and then sell it from there... even if it's in a residential area*[83]. Then the

---

[78] In 2007, The American Planning Association (APA) approved and officially adopted a Policy Guide on community food planning. The policy offers two overarching goals for planners;

1. Help build stronger, sustainable, and more self-reliant community and regional food systems.

2. *Suggest ways the industrial food system may interact with communities and regions to enhance benefits such as economic vitality, public health, ecological sustainability, social equity, and cultural diversity* (Pothukuchi, 2009 p 352).

[79] The city is restricted by the state law on pesticides which does not allow any local jurisdiction to pass more restrictive legislation regarding pesticides. If this state law is not amended the city will not be able to impose stricter measures outlawing pesticides.

[80] The aim is to increase agricultural economy in the neighborhoods

[81] Because the idea of food often falls between the cracks of typical governance and jurisdictional platforms. According to K. Pothukuchi (personal communication April 27 2012) this could be for example: a) building and/or 'repairing' a community through urban agriculture or b) building community self-reliance from market or state/government frameworks

[82] "*Well there are farmers markets sprouting up around the city... I don't know if they have permits or not, most of the time they are on paid parking lots... where, strictly speaking, they are not allowed to engage in a commercial activity but nobody says anything*" (Laura Buhl, personal communication, May 8 2012)

[83] Some of Detroit's single or two family residential zones are extremely restricted in terms of how much commercial activity is allowed (Laura Buhl, personal communication, May 8 2012). The city is therefore planning to allow the use of a lot of these vacated residential areas because there is not much access to healthy food. By allowing farm stands to sell produce in these areas will increase the access.

Adopt-a-lot program (see Government support on page 60) provides people who do not have access to land with their own lots.

Encouraging and maintaining partnership and that the organization[84] takes responsibility for managing successful urban food systems, policies, programs and physical spaces, is a principle being worked on. Mentioning that activist groups need to be initiated by the community and not by the city (Laura Buhl (personal communication May 8 2012) and referred to the city's recent support to one such group the Detroit Black Community Food Security Network (DBCFSN).

> *...now the city needs to let those groups do what they need to do, you know as long as what they are doing is beneficial for the community... we need to provide the framework so that they are able to grow their gardens and that sort of thing. And actually that particular group [DBCFSN] was allowed to adopt a piece of land in very large city park (Rouge Park). I guess they are encouraged in that sense... ... that it was approved by the city council* (Laura Buhl, personal communication, May 8 2012 and May 21 2012).

The city recognizes that urban agriculture can be a great way of building and repairing communities and can provide various opportunities for people (Laura Buhl, personal communication, May 8 2012 and May 21 2012). The city's role is to amend the zoning ordinances, by legalizing these activities and to provide access to land and so forth. However, the city does not manage these activities, itself but allocates them to private groups.

Below are some examples of the city's initiatives in **'INTEGRATING FOOD AND AGRICULTURAL PERSPECTIVES'**[85] while others are being worked on - notably in appropriate projects and programs being run by the private sector such as celebrations with food and educational issues... *...when somebody comes in with an idea in their head we are very open to that... ...you know, as long as it's legal and under a current code* (Laura Buhl, personal communication, May 8 2012). The city does not suggest or ask people to include food in their projects as it something that people should be interested in anyway. The Detroit Economy Development Corporation (DEDC), a quashed municipal entity (is not part of the city yet it provides much of its funding) for promoting food issues, such as a grocery program that aims to increase the sale of fresh food in neighborhoods in which liquor stores are dominant. The aim of this program is to promote a healthy lifestyle.

According to Laura Buhl (personal communication, May 8 2012) the Eastern market is one of the oldest markets in the country, which has been in operation for about 100 years. This market distributes and processes food and now they are looking at production. This project is a good example of the efforts being made to integrate food and agricultural perspectives into a city's community planning project. This is done by working with the city's planning commission to develop a master plan to enable the markets to expand and diversify food related activities.

---

[84] According to K. Pothukuchi (personal communication e-mail dated 26th April 2012 and interviewed on 27th April 2012) 'building and/or 'repairing' a community' and its self-reliance (using market or state/government frameworks) are aspects which could be included in this principle and pointed this out in relevant interviews.

[85] By promoting a wide range of food system elements in every community's planning or projects; such as -production, processing, distribution, retailing, education, celebration, infrastructure, food security, food safety, food justice and more (Holland & Salle, 2010)

The principle of **'USING DESIGN STRATEGIES – 'PLACE–MAKING'** [86] to create pleasurable areas linked to food, has been discussed but according to Laura Buhl (personal communication May 8 2012) the city is not directly promoting this but rather private agents who occasionally mediate with the city. For example, a very high building in the centre was torn down recently and the lot owned by the city was left vacated. It remained like that for some time until a prominent company downtown decided to establish a public garden there known as Lafayette Greens.

> *"They worked with the city to get permission to put a garden there. That's an example and it's a beautiful garden... they do grow food but it's designed to look attractive and grow food –so that it looks like an attractive edible gar*den. *You know... that was definitely a 'place-making' design strategy, not initiated by the city but the city facilitated it"* (Laura Buhl, personal communication May 8 2012).

The city had to ensure that they weren't going to sell food because that would contravene the 'Right to Farm Act' and make sure that the soil was not contaminated. The city does not have the resources for maintaining soil quality but it is in a position to facilitate private agents who wish that want to do so.

The principle of considering **'INTEGRATING URBAN HABITATS WITH OTHER SPECIES INTO THE FOOD AND AGRICULTURE AGENDA'** has only been discussed briefly (Laura Buhl, personal communication, May 8 2012). The discussions were related to points of view on preserving original landscapes. Detroit has more natural habitats now than it has had in the past 100 years.

> *"Urban habitats are important for habitation but not for urban agriculture... I mean, it's important for different reasons. So I don't know if there is something that we are going to tackle in the agriculture ordinance... ... we have discussed this previously in relation to other issues in order to allow people to maintain more natural habitats without getting a ticket, you know... "* (Laura Buhl, personal communication, May 8 2012)

Three principles on agricultural urbanism have not yet been discussed seriously in relation to Detroit's policy on urban agriculture neither have they been considered by other agents. These principles are:

- **EMBEDDING OPPORTUNITIES FOR EDUCATION ON FOOD INTO COMMUNITY PROGRAMS**[87]
- **CONSIDERING THE NEEDS OF URBAN FOOD SYSTEMS AND THE ADVANTAGES THEY GIVE TO A COMMUNITY INFRASTRUCTURE**[88] and
- **DEVELOPING A DEEPER UNDERSTANDING OF HOW FOOD AND AGRICULTURE CAN CONTRIBUTE AFFECT CLIMATE CHANGE POSITIVELY** [89]

Education on food is an initiative of the private non-profit sector "*...we do find it is appropriate* [for the city], *we just don't have the funds for it... ... I don't know how much the Health Department is doing on the subject of healthy food. I do know that there are some efforts within the public school system to integrate healthy food"* (Laura Buhl, personal communication, May 8 2012).

---

[86] To make food visible and enhance the experience of food (Holland & Salle, 2010). Place making is a philosophy/idea and a tool for improving sites; it capitalizes on a local community's assets, inspiration, and potential, ultimately creating good public spaces that promote people's health, happiness, and well being (www.pps.org/reference/what_is_placemaking)

[86] The aim is to build agriculture economy into projects or neighbourhood

[87] To provide the opportunity for more engagement in all aspects of food systems in daily life (Holland & Salle, 2010)

[88] Addressing energy, waste water and solid-waste management (Holland & Salle, 2010)

[89] Urban agriculture as a means of climate improvement and as part of adaptation strategies (Holland & Salle, 2010)

Considering the necessity of urban food systems and the opportunities they offer to a community infrastructure has not yet been discussed in relation to Detroit's urban agriculture policy. So far only its disadvantages have been discussed, for example run-off - especially with pesticide, agricultural waste and so on *"...we only think about the negative impacts that new uses could have so that's really what we focus on"* (Laura Buhl, personal communication, May 8 2012).

Developing a deeper understanding of how food and agriculture can have a positive effect on climate change *"is certainly what we as individual planners think about... ...stuff like this, but the city doesn't have any type of policy regarding climate change* (Laura Buhl, personal communication, May 8 2012). Neither has this issue really been thought about in relation to food and agriculture.

> "*We have been thinking about the benefits it can have in other areas such as access to healthy food, entrepreneurial opportunities, use of vacated land... but we haven't really gotten into a deep discussion about its impact on climate change* (Laura Buhl, personal communication, May 8 2012)

Figure 14 summarizes the information on Detroit's food policy aims (themes), screened by the principles of agricultural urbanism by Holland and Salle (2010).

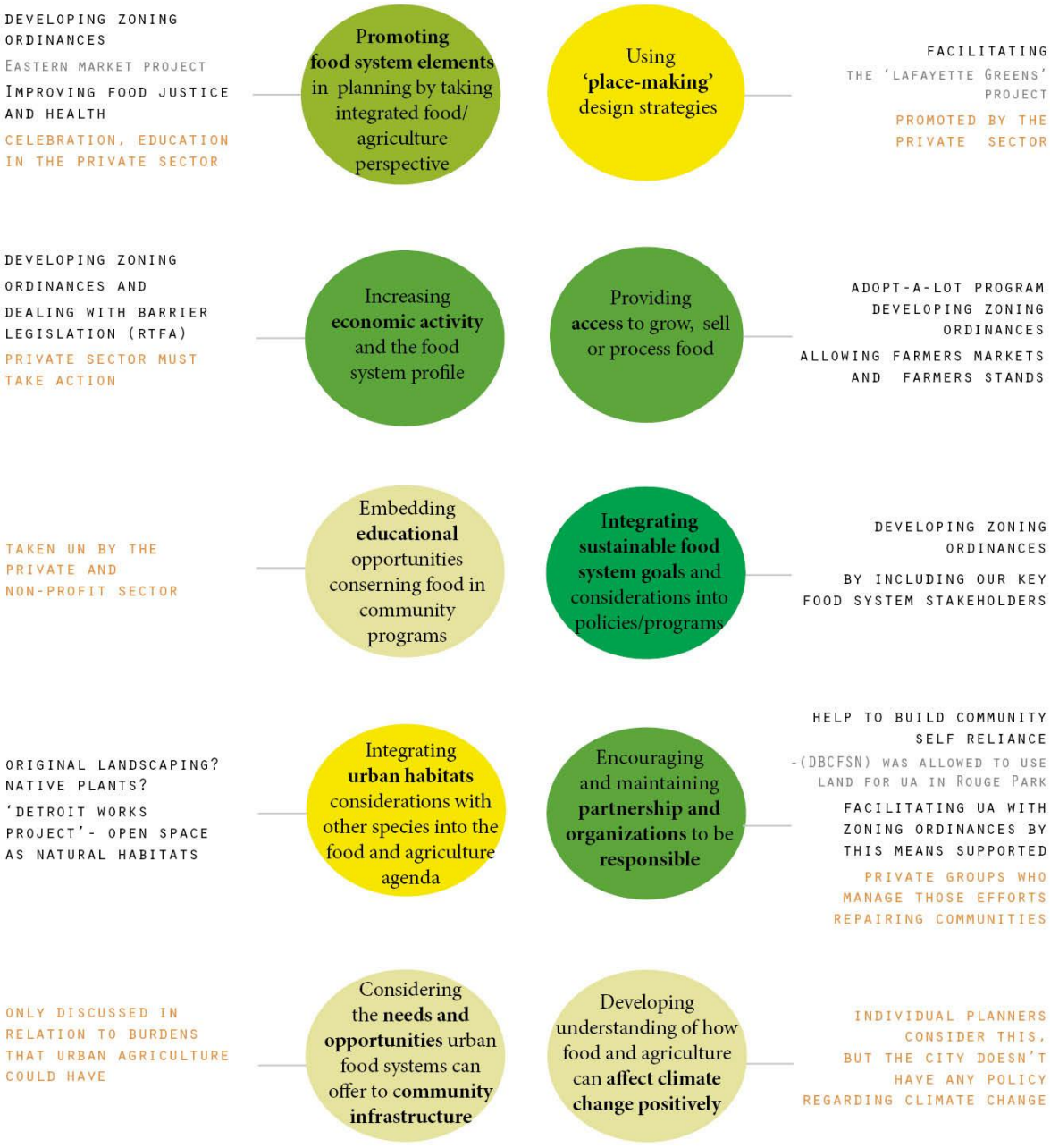


Figure 14 The goals of agricultural urbanism (Holland &Salle 2010) are used to screen, how the city supports urban agricultural development and how different teams have been allocated work on urban agricultural policy. By looking at one goal at a time by using optional answers (see the legend) the city planner Laura Buhl explained to what extent the goals are used or considered in a given situation. Alongside the circles (signifying each principle) are examples that were given in support of the answer chosen. The legend at the bottom give two more options (these are in parentheses) because the interviewees sometimes chose options 1-2 or 2-3 therefore they were added afterwards.

Special strategies to support urban agriculture

Information about 'ways and means' (strategies) the city can use to support urban agriculture were screened by using a check list inspired by Mogk et al. (2011) as well as van Veenhuizen (2006) (indicated in the text with capital letters). The summary depicts how Detroit city prioritizes them in their work/policy draft to support urban agriculture. The seven categories of these special strategies are illustrated by colored circles in figure 15. The colors indicate the relevance of each category aspect according to what has been done and discussed.

As has been referred to often in the previous text, **DEVELOPING A ZONING ORDINANCE FOR URBAN AGRICULTURE** is indeed the strategy that Detroit city is working toward at the moment to promote and legitimize urban agriculture (Laura Buhl, Personal communication, June 6 2012). This is done by allowing certain types of urban agriculture within the existing zoning codes. Table 3, illustrates under what conditions (three different types; conditionally, by right and legislatively) are applied to each of the existing zoning codes (residential, business, industrial and special overlay)

It is usually in this direction that the city uses **LAND REDUCED IN VALUE/LEASING IT AS CITY–OWNED LAND OR ALLOWS A SPECIAL LAND–USE AGREEMENT** in support of urban agriculture (Laura Buhl, Personal communication, June 6 2012). Possibly the Adopt-a-lot program falls into that category because it does not lease or sell land, but gives a permit for the limited use of city-owned land which must be renewed every year. Lafayette Greens[90] (see paragraph on draft policy themes, AU-principle about place-making strategy page 64) does have a license agreement with the City which did not involve payment, but it can be terminated by either party after 30 days' notice and prohibits revenue generation, as does the Adopt-a-lot. The reason for this is that if people are making money by using city land then they have to pay taxes for it.

Aspects that have been discussed are:

- **SUPPORT THROUGH FINANCIAL BENEFITS SUCH AS LOWER TAX RATES**
- **BY ASSISTING (WITH HELP OF EXPERTS) OR FACILITATING THE AREA (E.G. WITH THE REQUIRED INFRASTRUCTURE SERVICES; SUCH AS WATER AND ENERGY SUPPLY, ENSURING SOIL QUALITY ETC.)**

Benefits through lowering tax have been discussed. "*...that would be something that the Planning and Development Department's Real Estate Division would have to develop and is more likely to happen if the Mayor took some initiative on the issue*" (Laura Buhl, Personal communication, June 6 2012). According to Laura Buhl, the 'City Planning Commission' could lobby for 'Planning and Development' by drafting a policy, and assist them in this task (figure 17 page 76 illustrates the difference between these government departments). This is likely to happen in the future, once the work on the ordinance has been done. *"We need to have some very serious discussions with the assessment division. Because tax inspectors decide tax rates and so on. So this has been discussed but we haven't come to any conclusions"* (Laura Buhl, personal communication May 8 2012).

Michigan State University (MSU) has an extension service providing assistance to farmers and others but these services are mainly for the benefit of rural areas *"...but we are certainly looking at linking up with the extension service in our area so that they can become more active in the city and help people with testing soil and things like that"* (Laura Buhl, personal communication May 8 2012). The city would not be responsible for any research but would have connections with the MSU extension service. It has not yet been decided

[90] Lafayette Greens website is: www.compuware.com/about/lafayette-greens/home.html

how much soil testing the city will require. The city will not pay for this service, but rather the MSU extension service or a non-profit group will take care of it and the grower will probably have to pay for soil testing. *"We have thought about ways to educate and provide services but whenever we think about that it has to be in a way that doesn't cost the city any money"* (Laura Buhl, personal communication May 7 2012). According to Kami Pothukichi (personal communication, April 27 2012) activities such as soil testing happen at the grass-roots level. For example, the Garden Resource Collaborative (GRC)[91] helps gardeners to have soil tested for led and other heavy metals. They collect samples and send them for testing to the lab in Massachusetts which is not very expensive. When the results come back the GRC helps by interpreting the tests for the gardeners.

REDUCING PERMISSION COSTS has been mentioned but not yet discussed with the appropriate divisions (Laura Buhl, Personal communication, June 6 2012). This policy would have to be implemented by the Buildings, Safety Engineering and Environmental Department - BSEED (which also includes Business Licensing). While we've discussed the possibility of reducing fees, nothing has been decided. "*I doubt that BSEED would be interested in lowering fees for permits because a large portion of their revenue is generated from them and they don't have enough staff to enforce the laws right now"* (Laura Buhl, Personal communication, June 6 2012).

Aspects that are considered inappropriate are;

– EXEMPTION FROM CONSTRAINING RULES AND ZONING CODES AND

–GIVING LAND AWAY[92]

Exemption from constraining rules and zoning codes is considered inappropriate there as the city is going in the opposite direction by expanding zoning codes for urban agriculture (Laura Buhl, personal communication, May 8 2012).

Even though ways have been discussed to enable growers to acquire land (without figuring it out how it would be used) it is most likely inappropriate there because the city needs to follow rules about selling land at the market price (Laura Buhl, personal communication, May 8 2012). On the other hand Laura Buhl points out, that it is debatable what the value of the land is.

[91] Garden resourch program website: www.detroitagriculture.net/urban-garden-programs/garden-resource-program/

[92] A suggestion made by K. Pothuckuchi during an interview.

Table 1 A draft zoning table that applies to primary uses [Residential, Business, Industrial etc.] (Laura Buhl, personal communication, June 6 2012*). C means it's allowed conditionally (subject to a special land use hearing and the imposition of conditions); R means it's allowed by right (basically what we call an "over the counter" sign off); and L means it's allowed subject to legislative approval (review by the City Planning Commission and approval by City Council). If a cell is blank then the use is not allowed in that zone. Three rows have been highlighted. This is because we haven't decided in which zones we will allow these as for primary use*. (City of Detroit - Use Table: Article XII. Use Regulations. Division 1. Use Table. Sub-division F. Other Uses)

Use Category	Specific Land Use	Residential						Business						Industrial					Special and Overlay											Standards
		R1	R2	R3	R4	R5	R6	B1	B2	B3	B4	B5	B6	M1	M2	M3	M4	M5	PD	P1	PC	PCA	TM	PR	W1	SD1	SD2	SD3	SD4	SD5	General (Art. XII, Div. 2) Specific (Art. XII, Div. 3)
Other Uses																														
Sec. 61-xx-xx Agricultural Uses (Ord. No. xx-xx)	Aquaculture										C	C	R	R	R	R	R	R	L				R						C	
	Aquaponics										C	C	R	R	R	R	R	R	L				R						C	
	Composting facility												C	R	R	R	R	R	L				R							
	Farmers market			R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	L	R	C	C	R	C		R	R		C	
	Hydroponics										C	C	R	R	R	R	R	R	L				R						C	
	Urban farm	C	C	C	R	R	R	R	R	R	R	C	R	C	C	C	C	C	L				C			C	C			
	Urban Garden	R	R	R	R	R	R	R	R	R	R	C	R	C	C	C	C	C	L				C			C	C			
	Greenhouse																													
	Hoop house																													
	Beekeeping																													

So the zoning ordinance that is being worked on applies to the primary ordinance. In Detroit's zoning ordinance (City of Detroit, 2012 p173) a further explanation is given on each land-use code - See Appendix 2

Figure 15 Indicates the motives being considered to promote urban agricultural development In Detroit. The color of each circle signifies a particular motive indicating to what level it has been adopted or discussed – the legend at the bottom gives a scale from no (red) – yes(dark green). There are examples of motives for each site or arguments given to support the answer chosen (Illustrated by the author according to Laura Buhl, personal communication May 8 and Jun 5 2012).

LEGAL PERMISSION AND FRAMEWORK

The city's bureaucracy is complicated, having two branches of government (Laura Buhl, personal communication May 8 2012). One is the mayor and the departments under him. Then there is the City Council which has various divisions under it. Both branches - the mayor and the City Council have to approve any legislation. *'So I'm a member of the City Planning Commission staff – and we advise the council. And then there is also a Planning Department and a Development Department. Both review certain site plans, and do some long-term planning and their department is under the mayor'* (Laura Buhl, personal communication May 8 2012). So both the Planning and the Development departments (under the Mayor) and the City Planning Commission (under the City Council) deal with site plan reviews. The city also has a Building Department – its full title is 'Building, Safety, Engineering and Environmental Department (BSEED). They carry out inspections and issue permits and they also come under the mayor. The City Planning Commission (which is under the City Council branch) prepare the zoning ordinances but BSEED enforce them. *' So we work with them when we write the zoning ordinances. And they issue permits for urban agriculture and also business licenses for any commercial ventures. So that's all tied up with the zoning ordinances'*. (Laura Buhl, personal communication May 8 2012). Figure 16 illustrates the basic structure of the Detroit government, how it is built up and the role the main planning divisions have in the structure.

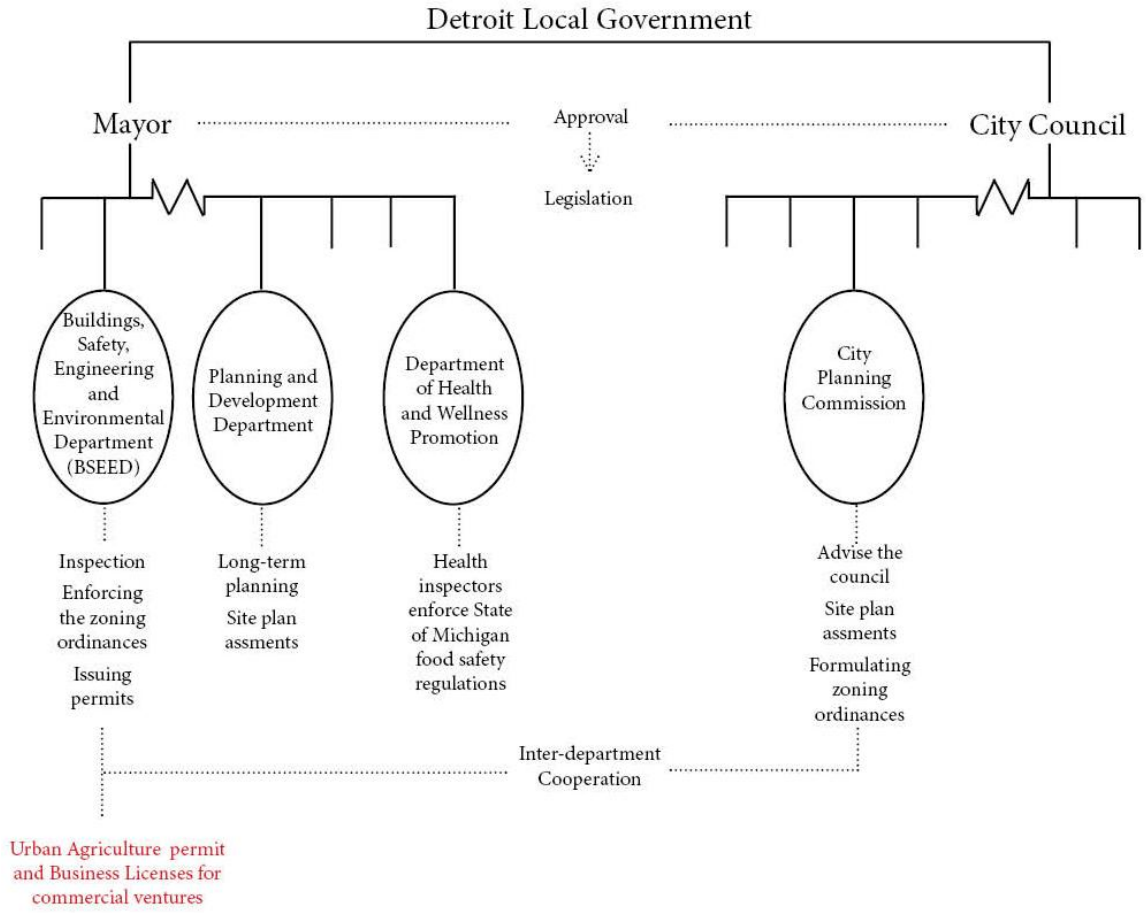


Figure 16 The basic structure of the Detroit municipal government and roles the main planning divisions have in it (illustrated by the author in line with information from Laura Buhl city planner (employee in the City Planning Commission), personal communication, May 8 and 6 June 2012).

According to Laura Buhl (Personal communication, 6 June 2012) 'the Department of Health and Wellness promotion' have health inspectors who enforce the State's regulations on issues of food safety. But in the latest budget cut this department will be eliminated and most probably a quasi-governmental entity which is not a part of the City will be established to take care of these issues.

NON-GOVERNMENTAL ORGANIZATIONS (NGO'S) SUPPORT

Many non-profit organizations and institutions have had a considerable influence on food related issues within the city creating a network of bodies pursuing, individually or together, changes within the city.
One of the pioneering bodies is 'The Detroit Black Community Food Security Network' (DBCFSN). According to their website, they are a union of organizations and individuals that have been working together (since 2006) to build food security in Detroit's Black community. (Detroit Black Community Food Security Network, n.d.). Their main purpose is influencing *public policy* and promoting *urban agriculture*. They also want to encourage *co-operative* buying, promote healthy eating habits and facilitate mutual support and collective action among members. Encouraging young people, in particular, to pursue careers in various food-related fields is also an important goal of DBCFSN. Together with their advocacy work they run 'D-Town Farm'. After being located on temporary sites, DBCFSN has since June 2008 been located in Rough Park, which is public land. It took two years of meetings with the City Council and government departments[93] to reach an agreement to use the site for an annual fee of $1 for a period of ten years.

The Detroit Black Community Food Security Network (DBCFSN)

In 2006 when with Mr. Malik Yakini Executive Director of the Detroit Black Community Food Security Network (DBCFSN) was in charge, the organization advocated that the city would develop a policy on food justice[94] (Walker et al., 2011). "*After 18 months of work and presentation, DBCFSN finalized the draft policy on food security for the city... ...I commented extensively on that...*" (Kameshwari Potukuchi, personal communication, April 27 2012). In March 2008, the city adopted Detroit's Food Security Policy. It was established

"*to affirm the City of Detroit's commitment to nurturing the development of a food secure city in which all of its citizens are free from hunger, are healthy and benefit from food systems that impact on their lives... … also the City of Detroit's commitment to supporting sustainable food systems that provide people with high quality food, employment, and also contribute to the preservation of the environment. This policy addresses the following areas:*

- *Current access to quality food in Detroit*
- *Hunger and Malnutrition*
- *Impacts/Effects of an Unhealthy Diet*
- *Citizen Education*
- *Economic Injustice in the Food System*
- *Urban Agriculture*
- *The Role of Schools and other Public Institutions*
- *Emergency Response"* (Detroit Food Policy Council, 2008)

[93] City's Planning, General Services and Recreation Departments (Detroit Black Community Food Security Network, n.d.)

[94] The DFPC defines Community Food Security as a "condition which exists when all members of a community have access, and are in close proximity to adequate amounts of nutritious, culturally appropriate food at all times, from sources that are environmentally sound and just" (Walker et al., 2011 p 23).

Detroit Food Policy Council (DFPC)

In 2008, inspired by other similar organizations in American cities, the DBCFSN with the support of the City Council, called for the establishment of the 'Detroit Food Policy Council' (DFPC) (Detroit Food Policy Council, 2011). A large number of representatives from mainly non-profit organizations participated in the session in which the initial draft report explaining Detroit's interest in the topic was presented[95]. Figure 18 depicts the bottom-up approach on the establishment of a food policy in Detroit. Many suggestions from that session were incorporated into the final draft. The body, established in February 2009, has proved to be influential in Detroit. According to their annual report their main goal is '*to produce and disseminate an annual City of Detroit Food System Report that assesses the state of the city's food system, including activities about production, distribution, consumption, waste generation, composting, nutrition, food assistance program participation, and innovative food system programs*' (Walker et al., 2011 p 5). The DFPC seeks to raise public awareness of key issues in the city's food system with this report and clarify relevant policies and programs from the federal level down to local community organizations and provide feedback on them. It is anticipated, therefore, that the result will be a better understanding of the food system.

[95] *Organizations represented at the session were Greening of Detroit, Detroit Agricultural Network – Garden Resource Program, Capuchin Soup Kitchen – Earthworks Urban Farm, Vandalia Gardens, SEED Wayne, The Farm, Multi-Cultural Minority Agricultural Initiative, Urban Agitropolis Project, Next Detroit Neighborhood Initiative, BECA Project, Alternatives for Girls, 4C of Detroit, Focus Hope, Great Lakes Bioneers Detroit, Restaurant Opportunities Center-Michigan, Hush House, Detroiters Working for Environmental Justice, Food System Economic Partnership, Eat Local Food, Be Fit Inc., WARM Training Center, Avalon Bakery, Goodwells Market, Consumers Unlimited, Save-a Lot, East Michigan Environmental Action Council, Associated Food and Petroleum Dealers, and Clement Carpentry. Detroit City Council Member JoAnn Watson attended as did representatives from Councilor Kwame Kenyatta's Office, and Mayor Kenneth Cockrel's Office* (Detroit Black Community Food Security Network, n.d.).

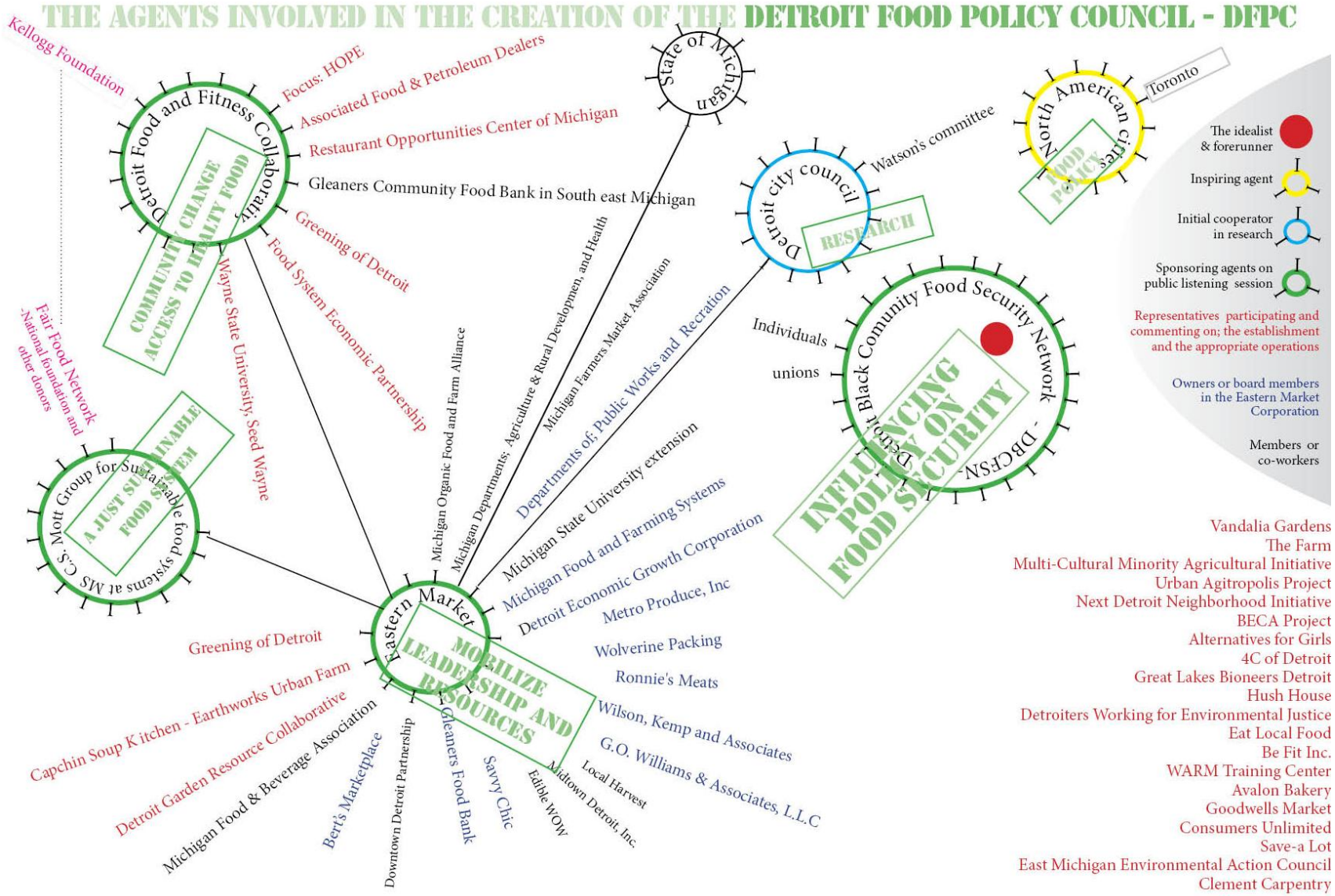


Figure 17 Illustration of the Detroit Food Policy Council and how it was established. Participants in the first meeting where the main purpose and action to be taken by the Council was discussed, are encircled in green. Organizations under their 'supervision' are placed around them. Legend of the illustration is on the right. The purpose of this figure is to show where the idea originated – to formulate a food policy - and the agents who supported it. The figure indicates the bottom-up influence in formulating a food policy in Detroit (Created by the author based on the DFPC website).

SUMMARY

Since 1970 official programs have been encouraging the temoprary use of vacated areas in the city. More recently the authorities have advanced by updating policies on urban agriculture. The city authorities have an understanding toward urban agricultural development taking place in the city although it is not yet officially legal. Adapting appropriate regulations to ensure that agriculture continues to provide recognized benefits to neighborhoods is considered crucial. The city is cooperating by following 'a path' created at the grass-roots level.

The city authorities are improving urban agricultural policy and at the same time a serious barrier State law 'The Right to Farm Act' (RFTA) has to be dealt with. Commercial activities linked to urban agriculture are not allowed in the city according to RFTA. The legal standpoint concerning commercial urban agriculture has improved slightly by amending one of the rules but the city wants to get approval at the State level declaring the legality of commercial urban agricultural activities in the inner city (e.g. revisit the RFTA).

The theme having the highest priority in the draft agricultural policy is the integration of sustainable food system goals and programs. Key food system stakeholders have been involved since the project began. Increasing economic activity, the food system's profile and access to food chain activities are themes being worked on. Partnership and organization that take the initiative to manage more successful urban food systems have been supported by installing a framework such as allowing use of city-owned land for farming activities. Certain agricultural projects in the city have integrated food perspectives, however, the private sector and non-profit organizations should also show an interest in elements such as celebratory and educational aspects related to food. Essential elements of the food system are improving health and food justice. The city has the same attitude toward urban agricultural projects that aim to improve the area (appearance etc. 'place-making') which must be taken on by the private or nonprofit-making sectors with the city's cooperation. Urban habitat considerations are not a priority in the policy but natural (native) landscape has been given some attention. Other aspects regarding educational opportunities needs in urban agriculture for infrastructure or its opportunities that it offers in that regard and its positive contribution to climate change have not been discussed openly.

The city's main supportive strategy in urban agriculture is to extend the existing zoning ordinance. Therefore the current zoning procedure will remain in force except for certain urban agricultural activities (10 categories) which will be merged into it. The city has made a special land-use agreements in particular programs or projects. Tax benefits have been discussed but are not yet official. Assistance with farming initiatives is provided by extension-services at the universities or non-profit groups at the grass-roots level. The city does not have a budget for assisting in farming initiatives but is willing to help agents that do. Lowering costs for legal permission has not been seriously considered and giving away land is deemed inappropriate.

Local governmental structure has two main branches; the mayor is in charge of one and the city council is in charge of the other. Both branches deal with developing plans and the zoning procedure but only the department run by the mayor carries out inspections and issues permits both for urban agriculture and commercial ventures. Health inspectors enforce health and safety regulations at the State level.

Many non-profit organizations have had a profound influence on food related issues in Detroit, by creating a network of bodies which pursue individually or together the changes within the city. One of the pioneering bodies is 'The Detroit Black Community Food Security Network' (DBCFSN) that took the lead in establishing a policy on food justice and later on the Detroit Food Policy Council (DFPC) in 2009. DFPC's main goal is publishing and distributing annually the City of Detroit Food System Report that assesses the state of the city's food system. The aim is to raise public awareness of key issues in the city's food system and clarify relevant policies and programs.

4.1.3 *EARTH WORKS FARM – DETROIT*

How has the development of urban agriculture been conceived; how does it function and what does it look like?

What legal permission was acquired [is required] to commence urban agriculture on the terrain?

Who are the main agents in the development of urban agriculture, what is their role in the process?

LOCATION

Spatial context, land- use codes and ownership

'Earthworks Urban Farm' is located in the south-east part of the city in a neighborhood that has been suffering from distress and neglect (City of Detroit, 2012a). Figure 19 indicates its location according to the zoning maps on the city's website (above) and its plots along Meldrum Street from a guide map of the Farm (below).

Figure 18 Location of the Earthworks Urban Farm. The city's zoning map (above) is divided into 72 parts on their website, Earthworks farm is on map number 29 (City of Detroit ITS/Communication and Creative Services Division, 2012) The Farm is located on Meldrum street (see the green square on the right at the top of the map) and has developed over a block and a half along that street as shown on the farm's guide-map below (Earthworks Urban Farm - Shane Bernardo, personal communication April 10 2012).

According to map 29 - the red zoning map above (City of Detroit ITS/Communication and Creative Services Division, 2012), the official land-use code on the site is either M2 and M3 which means - Restricted

Industrial District and General Industrial District (City of Detroit, 2012b). These are in fact mixed industrial and residential areas as some old residences are still there (Laura Buhl, personal communication May 8 2012). According to the city's zoning maps (City of Detroit ITS/Communication and Creative Services Division, 2012), land-use in the nearby neighborhood and the one that lies further north both have the same code. Two blocks to the east is a residential area and a cemetery to the west but beyond this the area that is planned for development. An area near the river in the south has been classified a special development (waterfront).

The operation covers 21 parcels of land spread out over a block and a half at the main site (Patrick Crouch, personal communication March 30 2012). The Farm owns four of them and the rest are owned by small businesses in the neighborhood or non-profit organizations. Almost all the land is privately owned, except for one piece which is owned by the city of Detroit. A local organization the 'Cleaners Community Food Bank' owns the biggest piece of land. Other owners of land are local businesses Delta Iron Works and JNR Packaging.

Reasons for vacated terrain and the premise for developing agriculture on site

Owners of land who had no need for it allowed Earthworks Urban Farm to use it as a gesture of goodwill, *"they do other things and happened to have extra land that they were willing to let us use... ... the owners of the land have been very cooperative*" (Patrick Crouch, personal communication March 30 2012). The Farm has no official contracts with the land owners.

FUNCTION AND CHARACTERISTICS

Objectives and products

Earthworks Urban Farms is not only a farm, but also a charitable organization run by the Capuchin Soup Kitchen which has its main location there (Earthworks Urban Farm, 2008). The farm's objective has been inspired by St. Francis and sponsored by the Capuchins of the Province of St. Joseph and other benefactors. *"Earthworks Farm seeks to promote sustainable agricultural practices, nutrition and care for the Earth. We strive for peace, respect and harmony between Neighbor and Nature"* (Earthworks Urban Farm, 2008)

> *"our objective is deeper than sustainable infrastructure and such things... what we focus on is food justice, ensuring that all people – regardless of their academic background – have access to the highest quality food. Seeing food as a human right and not just having it but having control over how it's produced and ensuring that it's done in a way that it will not harm others or the environment"* (Patrick Crouch, personal communication March 30 2012).

Social justice, connecting people to their environment and the food they eat and building communities are equally important for Earthworks Urban Farm (Earthworks Urban Farm, 2008). Its purpose is two-fold. Firstly to protect the environment and its inhabitants by showing them how to live in harmony with nature and build relationships which are of mutual benefit. Secondly, reflect on how the earth works and recognize its value as human shareholders in the natural economy of energy exchange (goods and services). Earthworks Urban Farm products are not only the physical type, i.e. vegetables; the farm provides an opportunity to experience how people engage with creation. *"We grow certified organic produce[96], we grow all kinds of fruit and vegetables... pretty much any kind which you can eat.... ... we also cultivate flowers and*

[96] "Organic" technically refers to any material that is carbon-based. Organically cultivated food follows a set of prescribed practices that differ in a number of ways from industrialized agriculture. Only farms that go through the certification process of their country or state can label their food organic (Watson, n.d.)

herbs... we also grow a lot of plants for other gardens throughout the city – in our greenhouse" (Patrick Crouch, personal communication March 30 2012) .

The reason for the choice of location

An opportunity to grow food on Church property (St. Bonaventure Monastery) and the concept of the Capuchin Soup Kitchen activities were the main reasons for developing the farm on the site (Patrick Crouch, personal communication March 30 2012). Testing soil at selected sites revealed that it was free of contaminants and its proximity to water sources was convenient and played an important role. In addition, the owners of the land were so friendly that they were willing to allow the farm to use the land.

History

In 1997, Rick Samyn, a Franciscan monk working at the Capuchin Soup Kitchen at Meldrum, started a garden on the Church property (Patrick Crouch, personal communication March 30 2012). Gardening fitted in well with the Capuchin Soup Kitchen's mission to feed the hungry, care for the poor and address causes of poverty, broken relationships and a wounded Earth (Earthworks Urban Farm, 2008). When the church was built in 1883, it was done so intentionally on the outskirts of the city of Detroit (Patrick Crouch, personal communication March 30 2012). The reason was to prevent the city's zoning procedure from dictating that it could not have livestock. As soon as the church was founded food was cultivated and animals reared.

In 1999, an important agent Gleaners Community Food Bank[97] (GCFB), also focused on food for poor people and offered Earthworks Urban Farm land for growing food (Earthworks Urban Farm, 2008), on the largest parcel of land the farm has ever had (Patrick Crouch, personal communication March 30 2012). GCFB had already initiated farming at the site and offered the original core group of Earthworks to help as volunteers (Earthworks Urban Farm, 2008). These neighboring organizations worked tirelessly in partnership to renovate the land, removing debris and depositing loads of compost. After restoration the land was ready for cultivating in 2001. At that time the US Government granted funds for the farm to build their first hoop house.

In 2001, Earthworks Urban Farm took the initiative to discuss with Wayne County Department of Health ways to increase the consumption of fresh vegetables among low income families (Earthworks Urban Farm, 2008). The farm became an active participant in a program called 'FRESH'[98] by hosting weekly markets at local clinics and FRESH sales. Some value-added processed products[99] were also sold and used to launch the concept of Earthworks Urban Farm publically.

The farm continued to form partnerships. In 2003 Earthworks Urban Farm started cooperating with the organization Greening of Detroit[100] and through this cooperation Earthworks Urban Farm was given

[97] The Gleaners Community Food Banks website is: www.gcfb.org/site/PageServer

[98] Project FRESH (for Women Infants and Children (WIC)) is one program the county offers to its WIC clients. Participants receive coupons for fresh, locally-grown Michigan produce purchased directly from the farmer (Earthworks Urban Farm, 2008)

[99] Value added" products such as canning tomatoes, pickled beets, jams beeswax hand balm (Earthworks Urban Farm, 2008)

[100] The Greening of Detroit is a non-profit organization established in 1989 to create more greenery in Detroit. In 2006, a new vision was adopted to further extend The Greening's mission to encourage residents to create a 'greener' Detroit through educational programs about planting, environmental leadership, advocacy and strengthening the community - For more information go to: www.greeningofdetroit.com

technical support (Patrick Crouch, personal communication March 30 and April 4 2012) and continues to do so.

In the same year 2003, Earthworks Urban Farm started working with a coalition within the Lutheran Church[101] known as WISE - Working in support of Enrichment. The program was funded by the State of Michigan. Its purpose is to educate youth and have a positive impact on young people and their families. *"It has opened them up to a new way of behaving with each other and has given them opportunities to explore our relationship with the land that sustains us"* (Earthworks Urban Farm, 2008).

In 2004, Earthworks Urban Farm was granted funds by the 'USDA Community Food Project'[102] to construct a 1,300 square foot heated greenhouse for growing vegetable seedlings (Patrick Crouch, personal communication March 30 2012; Earthworks Urban Farm, 2008). By this means the farm expanded its work and partnering even further. Over one hundred thousand seedlings are grown in this greenhouse every season, both for the farm's gardens and hundreds of local family-, community- and school gardens. This work is done in cooperation with the Garden Resource Program Collaborative[103] an organization in which the Earthworks Urban Farm is one of the founders (The Greening of Detroit - Urban Agriculture and Open Space, 2012).

In subsequent years Earthworks Urban Farm continued to be active in the discourse about food issues, giving speeches and so forth (Patrick Crouch, personal communication March 30 and April 4 2012). In 2006 they started their education and training program for adolescents. On a monthly basis, guests of the soup kitchen, neighbors and supporters, meet to discuss issues such as food justice, policy changes and program development with the aim of increasing access to healthy food (Earthworks Urban Farm, 2008).

In 2008 Earthworks Urban Farm partnered with the SEED[104] Wayne project coordinated by Professor Kameshwari Pothukuchi in which the Farm served as consultants in various programs and discourses, FRESH markets and growing methods (Pothukuchi, 2011).

> *"..when we think of programs within communities we always want partnerships with community-based organizations... ...that are already based outside the University. Because a lot of our work is on the east side of Detroit – that is the poorest part of Detroit. We were looking for other organizations that have a similar philosophy – similar models of what we are trying to do, similar activities. Earthworks is an urban agricultural project linked to food assistance programs – the aim is really to build a community's capacity and incorporate some elements of sustainability into what is essentially a charitable function. So, it's an organic farm linked to meeting the needs of the community rather than just selling products to middle and upper class people. And because their program philosophy is very similar to our goals and approach we reached out to them...they also had other partnerships... we thought that we had the resources so we helped build the greenhouse that is on campus, so we thought*

[101] Iroquois Avenue Christian Lutheran Church's WISE Coalition (Working in Support of Enrichment) to establish a youth program, Growing Healthy Kids, focused on nutrition and wholesome activities, including growing, cooking and eating home-grown food (Earthworks Urban Farm, 2008).

[102] USDA: The US Department of Agriculture's website www.sustainableagriculture.net reports news about grants and awards in the US

[103] For more information about Garden Resource Program Collaborative go to: www.detroitagriculture.net/urban-garden-programs/garden-resource-program

[104] The SEED Wayne program is an holistic attempt to build a community food system applying the core functions and activities of Wayne State University in Detroit (Pothukuchi, 2011) - See case description on page 33.

there would be mutual benefits in developing a partnership. And that's why we reached out to them when we were applying for the initial grant for the organization, we included them in other grants for projects and that's how the partnership developed" (Kameshwari Pothukuchi, personal communication, April 27 2012).

The passive solar greenhouse was built with money from 'Ford Motor Company Fund' that financed the SEED project.

Until, 2008 the farm sold their products at local markets but at that time Earthworks Urban Farm decided to use most of its food for meals in the soup kitchen. Besides promoting Detroit grown food' every week, they also serve fresh veggies during the growing season (Earthworks Urban Farm, 2008; Patrick Crouch, personal communication March 30 2012). "*...it was a deliberate decision to make more healthy meals than in the past*" (Kameshwari Pothukuchi, personal communication, April 27 2012). In this way the farm certainly influenced the community.

Earthworks Urban Farm participated in the establishment of the Detroit Food Policy Council, 2008 - 2009 (Detroit Food Policy Council, 2011) and has since been an active participant influencing policy-making on food issues in Detroit (Kameshwari Pothukuchi, personal communication, April 27 2012).

In 2009 the farm expanded their operation when the neighboring businesses Delta Iron Works and JNR packaging allowed them to use two lots each of their land to grow food on it (Patrick Crouch, personal communication March 30 and April 4 2012. In 2009 the magazine - 'Natural Home & Design' nominated it as one of the top 10 urban farms in America(Star, 2009)

In 2010, the farm initiated an 'Adult training program' entitled 'entrepreneurial agricultural training', which was made possible by a grant from the American Foundation (Patrick Crouch, personal communication March 30 and April 4 2012). The request for the grant proposal was made in partnership with their fellow organization The Detroit Black Community Food Security Network (DBCFSN). Earthworks Urban Farms has had a partnership with DBCFSN ever since.

In 2010, Wayne State University and the 'Ford Motor Company Fund' financed an Adult training program and provided funds for building another heated greenhouse (Patrick Crouch, personal communication March 30 and April 4 2012). This was done in cooperation with the SEED Wayne project (Kameshwari Pothukuchi, personal communication, April 27 2012). As well as assisting with grant applications the university helped the farm to develop more robust soil testing procedures (Patrick Crouch, personal communication April 4 2012).

In 2011 another 'Adult training program' was established, funded by the Kellogg Foundation together with small grants from the Erb Family Foundation[105] (Patrick Crouch, personal communication March 30 and April 4 2012). In the first two years eight adults were awarded an unofficial certificate for completing these programs. *"...it's a pretty positive program for us because we gave the people a grant for training..."* (Patrick Crouch personal communication March 30 2012).

In 2011 the Church of the Messiah, Genesis Hope allowed the farm to use their site for the farmers market (Patrick Crouch personal communication March 30 and April 4 2012) and in 2012 the Erb Family Foundation funded the development of a system to catch rainwater and use it for irrigation.

[105] The mission of the Erb Family Foundation is to nurture environmentally healthy and culturally vibrant communities in metropolitan Detroit and support initiatives to restore the Great Lakes Basin (www.erbff.org)

The program manager at Earthworks Urban Farm - Patrick Crouch, has been participating in the city's Urban Agriculture Working Group[106] and has provided valuable information about that work *"...we do listen carefully to his input ... ...we don't look specifically at Earthworks but we look at their experiences and listen to their points of view* (Laura Buhl, personal communication May 8 2012)

Future vision

The future for Earthworks Urban Farm depends on how the city will develop in the coming years. As has been explained, the city is preparing zoning codes for urban agriculture at the moment ... *" ...there will be ways for us to be legal and 'on the books'..."* (Patrick Crouch personal communication March 30 2012). According to Patrick Crouch the future is in some ways uncertain yet he does not doubt that there will be issues with 'Earthworks Urban Farm' having access to the land in the long term. The only sites on which they have put up any structures such as greenhouses, they own. *"I think it is actually kind of nice that we don't own them... because if the neighborhood changes then they can be used for other things, if necessary"* (Patrick Crouch personal communication, March 30 2012). According to Patrick they do not yet have a plan B if the farm has to be moved. They are only 'doing what is necessary' and he says that they will only 'cross that bridge' when they come to it.

I think we are doing a lot of really good things and will continue along the path that we are on. I think it is great that I can say, I think we are heading in the right direction... ...the main thing that we would do differently is - it took us a long time to reach the point of hiring people from the community that we directly serve" (Patrick Crouch, personal communication, March 30 2012).

PERMISSION ACQUIRED

There are no official contracts between the land owners and Earthworks Urban Farm, only the land owners' goodwill and the oral acceptance for the farm to grow food on the land (Patrick Crouch, personal communication, March 30 2012).

Regarding official permits for urban agriculture, *"...apparently there are no permits... no permits can be requested because the agreement is not legal* " (Patrick Crouch, personal communication, March 30 2012). The farm did apply for a temporary permit for the solar greenhouses which was granted. *"...we all know that this structure is permanent, but this is the nature of doing business in the city"* (Kameshwari Pothukuchi, personal communication, April 27 2012). Since then this permission has lapsed - so at the moment the farm is working in a quasi-legal situation" (Patrick Crouch, personal communication, March 30 2012).

Detroit's current zoning ordinance does allow a certain amount of urban agriculture, more precisely in some industrial and commercial zones, greenhouses and nurseries are allowed (Laura Buhl, personal communication, May 8 2012). As Earthworks Urban Farm operates in an industrial area it was easier for them to be granted permission for the greenhouses.

According to the draft urban agriculture zoning ordinance (see table 1 p 69) the industrial zone on which Earthworks Urban Farm is located (land use code M2 or M3) it will have permission by right for the following types of urban agriculture; Aquaculture, Aquaponics, composting facility, farmers market and hydrophonics but only conditionally (subject to a special land-use hearing and the imposition of conditions); urban farms and urban gardens.

[106] This group works on developing zoning ordinances for urban agriculture in Detroit - see chapter 4.1.2 Government support - especially table 7 page 73

The city cannot take into account the entity's mission in the application process for a permit, as the city does not include that in the zoning ordinances being developed (Laura Buhl, personal communication, May 8 2012). When somebody comes to the City Council for a permit, e.g. a greenhouse, the Building Department checks the list to see if it is allowed and which standards apply.

Even though Earthworks Urban Farm has had bees for more than 10 years, bee-keeping is, according to Patrick Crouch (personal communication April 4 2012) not yet allowed in the city. The legal standing of the processed food that the farm is selling (jam, honey, canned vegetables etc.) most likely falls under recently passed 'Cottages Food Legislation[107] ' (Giorda, 2012) which allows processing, storing and selling of small batches from individuals in an unlicensed home kitchen (Walker et al., 2011).
Professor Kameshwari Pothukuchi considers that Earthworks Urban Farm is and will be recognized as a legal entity without difficulty;

> *"Earthworks is such an important grass-roots resource, that when a policy is put in place, it will be "grand-fathered" in so that almost all activities will be considered legal or only needing minor formalities to be completed. The same applies to other farms in nearby neighborhoods"* (Kameshwari Pothukuchi, personal communication, April 27 2012)

AGENTS INFLUENCING THE FARM'S DEVELOPMENT

The government

At the national level the food policy could certainly be improved upon (Patrick Crouch, personal communication March 30 2012). Apparently the government supports mainly large crop growers who grow wheat and soybeans. Smaller ones who produce fruit and vegetables such as female and colored, farmers have lots of difficulties getting access to funding for starting up a business and need support. *"So I think a lot more could be done at the national level. If there is any support out there – it's usually very little"* (Patrick Crouch, personal communication March 30 2012).

> *"...relationship with the* [local] *government[108] is pretty minimal... it's a kind of the opposite of support. It's not necessarily hostile but they don't understand what we do... ... we have done everything ourselves or through other organizations that we cooperate with... ...The biggest improvement I would wish for from the government is cleaning the soil. That is what I wish the government would do for us..."* (Patrick Crouch, personal communication March 30 2012).

Other stakeholders

The Earthwork Urban Farm project relies on donations from the Capuchin Soup Kitchen and support from volunteers as well as materials from sponsors (Earthworks Urban Farm, 2008). Other stakeholders who have given the farm support are; the owners of the land they use, local universities and other non-profit organizations doing similar work (Patrick Crouch, personal communication March 30 2012). A lot of cooperation has been given by the 'Greening of Detroit', the Detroit Black Community Food Security Network' and also the local churches. *I would say that most of the partnerships and support that we've had is*

[107] Amendment to Michigan Food Law, Act 92 of 2000 - The Michigan Cottage Food Law, enacted in 2010 (Walker et al., 2011)

[108] Optional answers were: Positive attitude and willingness to collaborate; Financial support – in what way? ; Exception from rules or zoning codes - in what way? ; Advice from experts; infrastructure necessities such as, water of the right quality, accessibility to good quality soil, energy etc., Additional items – which ones?

from other organizations – although. we have received support from the National but not the local government (Patrick Crouch, personal communication March 30 2012).

Table 2 gives a summary of the main agents involved in the development of Earthworks Urban Farm.

Table 2 A summary listing four categories of agent who have been influential in the development of Earthworks Urban Farm; inspiring advisors or professionals, financial agents, facilitators and co-workers/partners. This information is based on the previous summary and is outlined in the next chapter; Development process - flowchart with a timeline. The color indicates the agent's category. The agents appearing in this table are not listed in order of importance and some of them appear in more than one column.

Advisors or inspiring actors (professional)	*Agents providing financial assistance*	*Agents facilitating an activity*	*Agents who are co-workers and partners*
Capuchin's Soup kitchen	*Capuchin's Soup kitchen*	*St. Bonaventure Monastery*	*Capuchin's Soup Kitchen, Meldrum*
Wane State University	*US Government*	*Gleaners Food Bank*	*Wayne County Department of Health*
Professor, Kameshwari Pothukuchi at Wayne State University	*The state of Michigan*	*Delta Iron Works*	*Lutheran Church - WISE project*
	USDA community Food Project Grant	*JNR Packaging*	*Garden Resource Collaborative; The Greening of Detroit, Michigan State University Extension, and the Detroit Agriculture Network*
	American Foundation	*Church of the Messiah, Genesis Hope*	*SEED Wayne project - Professor, Kameshwari Pothukuchi*
	Kellogg Foundation		*Wayne State University*
	Wayne State University		*The Detroit Black Community Food Security Network*
	Ford Motor Company Fund		*The Detroit Food Policy Council*
	Erb Family Foundation		
	others		

THE DEVELOPMENT PROCESS - FLOWCHART WITH A TIMELINE

Figure 19 - see next page.

'EARTHWORKS URBAN FARM' DEVELOPMENT DETROIT USA

LEGEND
Consultants or inspiring agents (professional)
Consultants who provided financial assistance
Agents facilitating activity
Co-workers or partners
Founder
Event on timeline
Location of the church
Address of Earthworks Urban Farm - Capuchin Soup Kitchen
Operation locations - color indicates when operation started at each site
Earthworks Urban Farm was named one of the Top 10 urban farms in USA

Discourse on food issues
DBCFSN - Detroit Black Community Food Security Network
Detroit Food Policy Council
Detroit city planning commission -Agricultural working group
Earthworks Urban Farm
Patrick Crouch

Building a community food system at Wayne State University
SEED Wayne
Pr. Kameshwari Pothukuchi
Teaching, research, community involvement, and campus operations
Earthworks Urban Farm
Consultancy

1883 — Building the church outside the city boundaries so that it could keep a stock without seeking sanction from the authorities

1929 — Capuchin Soup Kitchen

1997 — Friar at the church Soup Kitchen - Brother Rick Samyn, started growing fruit and vegetables on the church site

1999 — Cleaners Food Bank allowed to use part of the land to grow food on - the largest parcel of the farm

2001 — Started beekeeping

US Government granted funds for building the first hoop house, cultivating and transplanting throughout the city

Earthworks Urban Farm demonstrated the initiative to talk to the Wayne County Department of Health about ways to increase consumption of fresh vegetables among low income families. The farm became an active participant in a program known as 'FRESH'

2003 — The state of Michigan granted a small fund for a Youth training program. The farm did this in cooperation with a group within the Lutheran Church known as WISE

Earthworks Urban Farm began cooperatiing with the organization - Greening of Detroit which resulted in technical support for the Earthworks Urban Farm. This cooperation is still in force.

2004 — 'USDA Community Food Project Grant' funds to build a heated greenhouse. By this means the farm's work and partnering expanded further; over one hundred thousand seedlings were grown each season, for the farms' gardens, hundreds of local family, community- and school-gardens

2005 — Began selling honey and other products when making public speeches

2006 — Started education and training program for adolescents

2008 — With the forerunners DBCFSN, Earthworks Urban Farm participated in the establishment of the **Detroit Food Policy Council**, 2008 - 2009 and actively worked on influencing food policy issues in Detroit

SEED Wayne - Partnership and consultancy in various programs and discourse - FRESH markets and cultivating methods

2009 — Partnership grants to DBCFSN - the 'Detroit Black Community Food Security Network', , financed by Wayne State University and Ford Motor Company Found to build another passive hoop house on the basis of a temporary building permit

JNR Packaging granted permission to use their property for growing food on (4 plots)

Delta Iron Works granted permission to use their property for growing food on (4 lots)

2010 — American Foundation granted funds for an Adult training program

Wane State University developed more robust soil testing

2011 — Kellogg Foundation and Erb Family Foundation granted funds for another Adult training program (paid). Sixteen adults have followed a one-year course (eigth per year) and obtained an uncertified diploma upon completion

Church of Messiah, Genesis Hope allowed farmers to market their products

2012 — ERB Foundation, funds a system for catching rain water for irrigation

Future vision
Staying on the same track...
Wish that the city would keep the soil clean

Increasing consumption of fresh vegetables among the poor
Wayne County Department of Health
'FRESH project'
WIC - women, infants and children
Earthworks Urban Farm
weekly markets at local clinics and FRESH sales

Provides resources and support to urban agriculture initiative
Garden Resource Collaborative
Greening Detroit
Michigan State University Extension
Detroit Agricultural Network etc.
Earthworks Urban Farm
production of seedlings etc.

SUMMARY

'Earthworks Urban Farm' in the south-east part of the city is in a neighborhood suffering from distress and neglect. The farm is a non-profit making organization, run by the Capuchin Soup Kitchen located on a neighboring church site. It operates in an industrial area in close proximity to housing. It covers 21 parcels of land altogether measuring a block and a half. The farm owns four of them but the others belong to small businesses or non-profit making organizations. An opportunity to grow food on the Church site and the Capuchin Soup Kitchen concept were the main reasons for developing the farm there.

The project has educational and spiritually-based objectives that comprise social justice, by building communities, i.e. connecting people with the environment and food. The farm has nominated one of the top 10 urban farms in America.

Earthworks Urban Farm's products are not only practical sustainable agriculture, the farm enables people to experience a way of life involving interaction. The farm cultivates certified organic fruit and vegetables but also flowers and herbs as well as providing plants to other gardens in the city. They also make honey and jam.

After the church was built in 1883, cultivating food products became part of its activities which influenced its choice of location. In 1997, a fryer working in the Capuchin Soup Kitchen established a garden on the site. By negotiating with another non-profit organization - Cleaners Community Food Bank the Farm was fortunate enough to get the largest parcel and they cooperate in cleaning the soil etc.

To reach the farms' objectives, networking activities and partnership that characterizes the historical aspects of the farm, are a means to that end. Projects that the farm has worked on in partnership with other agents are for example; finding ways to increase fresh vegetable consumption (with Wayne County Health Department), consultations on cultivating methods (with Greening of Detroit and SEED Wayne project at Wayne State University, coordinated by Professor Kameshwari Pothukuchi) and active participation in discourses on the development of urban agricultural policy (with Detroit Food Policy Council), The Detroit Black Community Food Security Network (DBCFSN) and the city's urban agricultural working group). Educational programs that have a positive impact on young people (in co-operation with the Lutheran Church) and 'entrepreneurial agricultural training' for adults (in partnership with DBCFSN on applications for grants) are important items on the farm's agenda.

The farm's perspective is one of humility. Although the city's initiatives in zoning procedures for urban agriculture are appreciated, it is also desirable that it takes responsibility for cleaning the soil. If the farm has to re-locate in the future this could be perceived as positive indicating that other activities are developing in that area.

To-date the farm has only obtained a temporary building permit for solar greenhouses. As Earthworks Urban Farm operates in an industrial zone it was not difficult to obtain this permit. According to the draft zoning ordinance on urban agriculture the farm should have no difficulty in attaining a permit for Aquaculture, Aquaponics, composting facilities, farmers markets and hydrophonics but as urban farms and urban garden certain conditions on land-use may apply (by land use hearing/imposition of conditions).

The farm has minimal contact with local government but they have approached the farm's manager for advice. It relies mainly on donations from the Capuchin Soup Kitchen, help from volunteers and materials from sponsors. Financial support was given by the US government, the State of Michigan, various foundations and Wayne State University. Others who offered assistance are the owners of the land, local universities and individuals within them and other non-profit making organizations.

4.2 ROTTERDAM IN THE NETHERLANDS

4.2.1 *INTRODUCTION*

LOCATION AND AREA COVERAGE

The city of Rotterdam is located in the province of South Holland (Zuid-Holland) in the Netherlands (see figure 20and 21). At the end of December 2011 there were almost 616 thousand residents in the city itself (Statline, 2012), but the total number in the outlying area were approximately 1 million at that time. The city is the second largest in the Netherlands according to the size of its population. The city's population is largely made up of people from other nations around the world who have different ethnic backgrounds. According to the Municipality of Rotterdam (2007)[109], 46% of its inhabitants have immigrant backgrounds[110]. The city is the second largest in the Netherlands covering an area of 319 km^2 of which is 206 km^2 land and 113 km^2 water (Statistics Netherlands - CBS, n.d.)

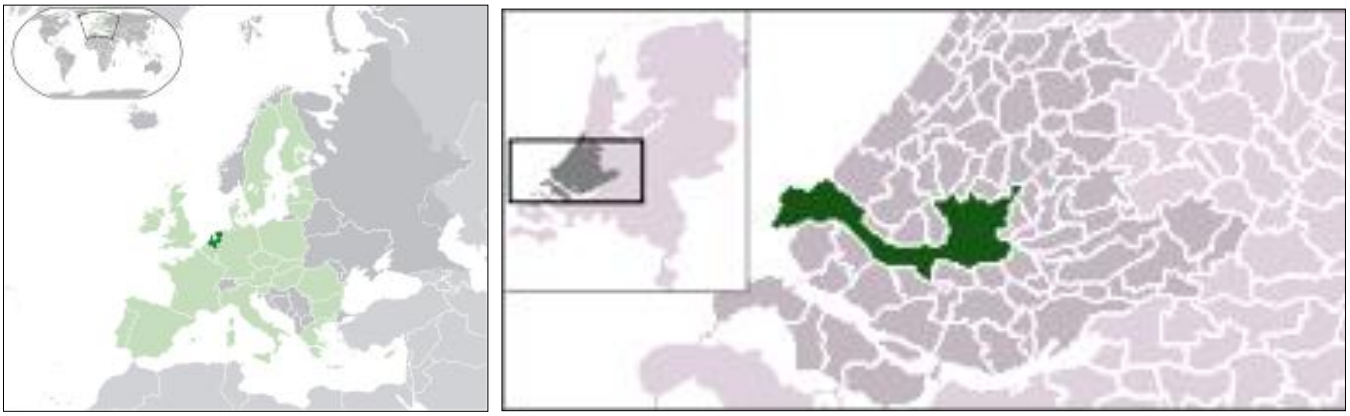


Figure 20 (on the left) Location of the Netherlands within Europe (dark green) Figure 21 (on the right) Location Rotterdam in Netherlands (source: www.en.wikipedia.org)

HISTORICAL SUMMARY - SOME MAIN FACTS AND FIGURES

This subchapter typifies the kind of city Rotterdam is. It is beyond the scope of this research to go into detail concerning the city's development from a historical point of view. The chapter starts with a short summary of the development of the city into 'The Gateway to Europe'. Nicknames or thematic incidences form the principle part of this introduction. A more recent planning concept towards a compact city has been illustrated giving some facts about the city's current situation as well as its citizens. There is a link to urban agriculture at the end of the chapter along with challenges requiring research and development.

A Settlement develops into a trading centre - "The Gateway to Europe".

A settlement on the riverbank of 'Rotte' can be traced back to the 9th century in accounts about battles with the Norwegians (TimeRime, 2010). A dam on the river – Rotte, or 'Rotterdam' was built in the 1260s and the settlement of approximately 2000 inhabitants which developed into a fishing hub was granted city

[109] Cited by Jansen, Gökce, & Wouden (2010)

[110] Since 2008 based on statistics, the relative percentages of inhabitants who have an immigrant background are; From Suriname (9%), Antilles (3%), Cape Verde (3%), Turkey (8%), Morocco (6%), other non-western countries (7%), other EU countries (6%) (Jansen et al., 2010 p 32)

rights in 1340, which meant that markets could be held in the city in an area which the stallholders would have to lease. Approximately 100 years later, an official city council was created under the leadership of Duke Philip de Goed. The River Rotte flowed into two other rivers the Nieuwe Maas and Schie, which served as a transportation link to other cities in the east. The population soon learned how to trade by shipping products and ports were constructed (Rotterdam Municipal Archives, n.d.). The following decades until around 1489, are typified by battles and power struggles, which resulted in citizens often suffering from hunger. At times food transport to the city was blocked. On or around the year 1500 the city, having a population of approximately 5000 inhabitants, really took shape and in 1562 after some resistance, a suitable location was found for the port along with appropriate deep water facilities (Maps of the Worlds, 2011). The first shipping warehouse was constructed in the middle of 16th century and at that time the port of Rotterdam developed slowly but steadily into a significant port – where ships would dock and Rotterdam became a trading centre. Rotterdam was registered as one of the six 'chambers' of the 'Vereenigde Oostindische Compagnie' (VOC) - the Dutch East India Company which traded goods in Asia, and is often considered to be the first international company in the world, (Koninklijke Bibliotheek - Nationale bibliotheek van Nederland, n.d.). For example, tobacco, tea and coffee were among the products mainly imported. According to (Steel, 2008) corn from the east was a vital export product and could be considered the backbone of the Dutch trading business and economic development. In the 18th century Rotterdam's role as an international harbor city became more important. The average number of ships calling at Rotterdam per year rose from 240 in the first quarter of the century to 321 in the third quarter (Rotterdam Municipal Archives, n.d.). Consequently the port developed by increasing the number of berths occasionally at the expense of sacrificing partial residential areas.

At the beginning of 18th century the number of inhabitants were more than 52 thousand (Statistics Netherlands - CBS, n.d.). Theatres were constructed, cultural activities were organized and retail shops were established (Rotterdam Municipal Archives, n.d.). A public transport system was established in the city in 1878 - at the outset using both horses and steam trams, and schools and hospital were also established. Problems of cholera infection resulting from polluted canal water had to be dealt with in early 19th century. Around a decade or so later in 1914 a modern neighborhood, in the form of a garden village was also constructed.

In 1862 the first petroleum was shipped into Rotterdam and storage facilities for large quantities were developed (Rotterdam Municipal Archives, n.d.) Because bigger ships began coming into the harbor area larger canals were constructed, for example the 'Nieuwe Waterweg' making it possible for larger shipping to transport coal and iron up the Rhine which had direct links with Germany. The importance of the harbor in the petroleum industry grew – for example Esso and Shell set up their businesses there. Owing to the relocation of petroleum storage and the establishment of refineries some rivers and canals were put to more general use commercially. Development of transporting cargo by train directly from harbor areas, which were generally owned by the municipality, was vital to securing a link with the hinterland of Rotterdam. In the early 20th century the city came up with the idea to design ports especially for industrial companies, such as ship repairers, who would be located as tenants - the first one was located in Waalhaven[111]. The Rotterdam Port website shows 'how the port developed from the old harbor in the east

[111] 'Waalhaven (310 ha) is the largest dredged port basin in the world. Until the 1990s, 'Waalhaven'- was primarily a trans-shipment port for bulk cargo and containers. It also served as a trans-shipment point… …Waalhaven currently

into the modern construction it is today(Rotterdam Municipal Archives, n.d.). The first standard metal container arrived from America in Rotterdam in 1966 (TimeRime, 2010) and 'Containerizaton' has since become an indispensable part of the harbor as well as part of the city's identity. In 1962 it became one of the world's busiest cargo ports and is still one of the world's biggest ports (TimeRime, 2010) and is considered to be the driving-force in the Dutch economy (Karakus & Bol, 2011).

The most significant growth, both in port activity and population resulted from industrialization and the opening of the 'Nieuwe Waterweg' – the population increased six times in size from 1849 -1925 (in 76 years) from 90,100 – 540,000 inhabitants thousand (Statistics Netherlands - CBS, n.d.)

World war II and rebuilding the city, 'Hunger winter and heart transplant'

In World war II, the German army attacked the Netherlands on May 10, 1940 (TimeRime, 2010). - Following bombing in Rotterdam the Dutch army was forced to surrender five days later after being threatened that other Dutch cities would be bombed. The heart of Rotterdam was almost completely destroyed in the attack - 900 civilians were killed and 80,000 made homeless. The bombing caused fires that spread throughout the city and the devastation was tremendous – 250 hectares were completely destroyed in the city centre.

The war years affected citizens lives hugely in all kinds of ways but as far as food is concerned the winter of 1945 has been labeled 'the hunger winter' (van der Velden, n.d.). During that period, thousands of people died from hunger, resources were scarce and transport of food to the city was non-existent. According to Velden (n.d.), stories about this experience have been passed on from generation to generation - throughout the years children in Rotterdam have been taught to value their food.

According to the Institute for Housing and Urban Develpoment (2012) the city of Rotterdam had to revive itself after the bombing - rebuild the center and rediscover its identity. Wider streets were built, the port infrastructure was extended and modern architecture flourished. Rotterdam was the first in the Netherlands to have an underground transport system (1968), and new skyscrapers transformed the traditionally conservative Dutch skyline. Therefore, Rotterdam acquired a new "heart", *"assembled from pieces from all over the world, resulting in a colorful and functional mosaic of people, buildings and businesses*" (Institute for Housing and Urban Development, 2012) .

According to Karakus & Bol (2011) Rotterdam has relatively less housing in the center in comparison with other Dutch cities and enough space for intensification due the design strategies being used at that time when the center was rebuilt. The expansion of the city took place during different strategic periods[112] due to national and local policies.

A difficult period: the idea of a compact city and tension between cultures

The period 1970 - 1985 was painful in the Netherlands characterized by economic and demographic tendencies especially for Dutch cities including Rotterdam (Delden, 2011). Financial crises (such as the oil crisis) hit the economy, unrest and agitation and demonstrations were common (TimeRime, 2010) and at the same time immigration increased. Due to the lack of interest on the part of the Dutch people to work in

---

forms part of the project 'Stadshavens Rotterdam', a project geared towards modernizing (port) activities (www.stadshavenrotterdam.com).

[112] During the post-war period low dense semi-urban style family housing (a garden city) was built around the old city (in the 50's-70's), and districts that were more dense with twisted streets (70's -80's) as well as the suburbs (95-present)

industry, a contract was drawn up with Turkey and Morocco to allow the immigration of labor. Streams of immigrants also came from Suriname - a former Dutch colony, following its independence in 1975 and the Surinamese nationals were able to choose whether to live there or in the Netherlands. Young families moved to new districts or other towns and people from Turkey and Morocco searched for cheap housing in the older areas. There was a vast number of economically inactive people, social costs escalated and the city's spatial development declined.

In 1983, the national government developed a strategic concept for urban areas, encouraging people with average and above average incomes to move to the city to deal with levels of unemployment and restore the city's tax system (Delden, 2011). The concept of a compact city policy was introduced at the national level. Even though the idea originated in Rotterdam, it is still not considered to be a very compact city[113] - being the least densely populated of the larger Dutch cities[114] (Karakus & Bol, 2011).

The first serious conflicts in Rotterdam, between immigrant workers and native inhabitants occurred in 1972. In the 1980's political parties that were against immigration, for example from Turkey, had far more public support at the national level, including Rotterdam (TimeRime, 2010).

In 2001 national support for a very conservative political party 'Leefbaar Nederland' increased a lot and also in Rotterdam, originally under the leadership of Pim Fortuyn, who later on established his own party in Rotterdam - 'LPF'.

> *As a local guy, he was anti-Islamist, and quite conservative... and he really went to the heart of people by saying 'the cause of all our problems was because the Muslims were competing with our nation and diverting the course of history and so on... ...nationally he became very well-known. And after an interview on TV he was shot... just two weeks before he was to become our prime minister. This was the result of tension in Rotterdam... ...there was tension between Christians and Muslims veering in this direction* (Jan Willem van der Schans, personal communication, February 3 2012).

Even though this story describes a very tense situation in Rotterdam, it is assumed that only a minority of the inhabitants were involved in it.

'The international town' and 'Rotterdam as multiple cities'

The Dutch writer Ferdinand Bordewijk gives a descriptive dialogue about the city, in his book 'Karakter';

> *'Rotterdam is the black sheep of our big cities,' he said. 'But nevertheless it's the best and is very proud of it. Don't you agree?' 'I think Amsterdam is more beautiful,' she replied. 'I don't. Rotterdam is precisely our city, simply because there's nothing particularly Dutch about it. Amsterdam is our national city and Rotterdam is our international city. I'm all for the international aspects, so that's why I like this town. It gets its character because of its connection with the sea. The sea has no borders – it is the only real cosmopolitan part of the world'* (Institute for Housing and Urban Development, 2012).

The city began to celebrate its diversity in the 80's with an annual carnival which has developed into a multicultural event (TimeRime, 2010). In 2001, Rotterdam was selected by the European Union, as the

[113] Developing services which matter most to residents and visitors, in close proximity and accessible on foot, by bicycle and public transport (Karakus & Bol, 2011) .

[114] Population density: 2883 inhabitants/km^2 (Karakus & Bol, 2011)

European Capital City of Culture[115]. The Rotterdam concept as the European Capital City of Culture was *'Rotterdam as multiple cities'* reflected in programs such as Fun Town, Home Town, Work City, Vital City and City of the Future - mainly initiated by private sector funding and institutions.

SOME FACTS ABOUT THE CURRENT SITUATION

Economic crisis

The economic crisis that has hit the western world has influenced discourses and actions instigated by the nation in the Netherlands. For instance the municipality of Rotterdam has had to lay off one third of its employees (Kees van Oorschot, personal communication February 6 2012).

The population of Rotterdam is relatively young and individualization is on the increase (Karakus & Bol, 2011) Even though there is still an economic crisis, it is assumed that during the period 2002-2020 relatively more floor space per person will be required for the construction of residential property. Nevertheless, the aim is still to make the city more compact. *"...even though there is a crisis the local government wants to press organizations to build more houses... ...apparently they still consider there is a housing problem in Rotterdam... ...some of the plots remain unoccupied on account of the symbolic pressure - houses should be planted here"* (Jan Willem van der Schans, personal communication February 3 2012*).*

Unused terrain

The present economic crisis has slowed down the pace of the building industry (Karakus & Bol, 2011), some developments are on hold and unused areas seem to be waiting expectantly for their role to be announced. It has become clear that no new spatial development projects will be launched in the near future. *"...there are a lot of plots within the city lying empty because there were plans to build office blocks or housing estates and these have been postponed for ten years or so..."* (Kees van Oorschot, personal communication February 6 2012).

The land reclamation in the North-Sea - Maasvlakte[116] - is also a relevant development in this context. The old industries will be moved out of the city to the Maasvlakte area and will leave a lot of unoccupied land – 1,600 hectares including the water, 600 hectares of land (Jan Willem van der Schans, personal communication February 3 2012).

Therefore, many disputable reasons exist for the relatively large amount of unused space in Rotterdam (compared with other Dutch cities) - the history of its spatial development (and strategies), the industry moving out of the city and a temporarily 'paralyzed' building construction industry.

The city authorities do not know how much unused terrain there is in the city, but mapping[117] it is being worked on by combining data from different sources (Kees van Oorschot, personal communication February 15 and June 12 2012). Regarding figures estimating vacated buildings the municipality knows even less. Although much of the unused land is privately owned some of it is owned by the municipality.

---

[115] Every year the European Union select(s) a city/cities as the the European Capital City of Culture (TimeRime, 2010). Cities in Europe can apply for being selected for nomination, which Rotterdam did in 1994 and was selected 7 years later.

[116] See history of port development over the years: www.portofrotterdam.com/en/Port/port-in-general/Documents/20100726_EN/index.html

[117] Potential areas for urban agriculture

Unemployment and health problems

The rate of unemployment in Rotterdam is 9,6% - the highest in the Netherlands which has a national average of 5,8 % (Mastrigt, Sman, & Toxopeus, 2012). According to the municipality of Rotterdam (2012) the status of Rotterdam inhabitants' health is worse than that of the national average – indicating a higher proportion of obese citizens because of unhealthy diets and too little physical exercise.

Lack of green verges and a link with the countryside

In many other Dutch cities such as Amsterdam, projects have been established to reconnect the city with the farmers outside the city (Jan Willem van der Schans, personal communication February 3 2012). The city of Rotterdam has no green verges like the city of Amsterdam - "green fingers" that are woven into the city. There is no easy and enjoyable way to visit the countryside on account of how the city is organized. Going from the city of Rotterdam to the farmlands - one has to pass through 'hostile cycling' areas, 'boring' suburbs, and then through the industrial zones before reaching the natural landscape and finally the farmers.

> *"…in Rotterdam we said – no, the farmers are too far away… …the idea of reconnecting Rotterdam with the countryside is not a good solution, we must also bring farming into the city …industry is moving out of the city so there are a lot of vacated plots* (Jan Willem van der Schans, personal communication, February 3 2012)

A vision of 'quality instead of quantity'

According to Karakus & Bol (2011) the city's spatial strategy for 2030 is '*to put quality before quantity'* (p 190). The aim is to make the city a more vibrant, complete, attractive and pleasant place to live in, therefore high-quality development is essential. The city needs to "buzz" with development and the social status of its citizens has to be strategically improved. By making the city a more attractive and healthy place to live in, people are more likely to move there (Rotterdam municipality, 2012). Making the city more sustainable is one of the ambitions of city's government officials.

In recent years, NGOs and experts have promoted active discourses on the potential of urban agricultural development in Rotterdam. For instance, Paul de Graaf, a member of Eetbaar Rotterdam[118] has made a map of the city's potential to produce food (Graaf, 2012; Graaf n.d.) - see figure 22

[118] 'EDIBLE ROTTERDAM' is an activist group that intends to organize a network around urban agriculture; initiatives which can produce mutual reinforcement, aiming for food becomes visible in the city yet again, see: www.eetbaarrotterdam.nl

Figure 22 A map of opportunity indicating potential areas for various types of agricultural development in the city (Graaf, 2012; Graaf n.d.).

One of Jan Willem van der Schans' opinions on urban agriculture, also based on personal experience, is that urban agriculture can be an effective tool for the city of Rotterdam to build *"a bridge between cultures which is what our city needs".* (Jan Willem van der Schans, personal communication, February 3 2012).

SUMMARY

A settlement on the bank of the River "Rotte" which developed into a fishing hub and was granted city rights in 1340 can be traced back to the 9th century. It flowed into two other rivers the Nieuwe Maas and Schie and became a transportation link to other cities in the east. Rotterdam evolved as an important trading centre for food products. In the following era the city really took shape. A public transportation system and other services were established. Growth in both port activities and population resulted from industrialization and the opening of new canals. The population increased six-fold from 1849 -1925 (90,100 – 540,000 inhabitants). The city became the 'Gateway to Europe' and was important for the petroleum industry and industrial companies. Ever since the first container arrived from America in 1966 'enormous containers' have been an indispensable part of the harbor and the city's identity. Rotterdam's harbor is one of the world's biggest ports and is a driving-force in the Dutch economy

The centre of Rotterdam was heavily bombed during World War II. Owing to a serious lack of food toward the end of the war 1944 became known as the hunger winter. In the following decades the city centre was rebuilt in modern style referred to as a new 'heart transplant'. Due to the design strategies at that time the city centre has relatively less housing in the center than other Dutch cities.

Times were hard in the period 1970 - 1985 owing to economic instability and demographic change. Financial unrest and demonstrations were commonplace at the same time and immigrants poured in from Turkey, Morocco, Suriname, and other countries. Young families moved away and the newly-arrived immigrants sought cheap housing in the older quarters areas. Toward the end of the twentieth century the national government developed a compact city policy and encouraged people to live in the cities. Despite that Rotterdam is still not considered to be compact in comparison with other Dutch cities.

Rotterdam is sometimes referred to as the international city. Its citizens have been aware of tension between cultures, especially the Muslim community and conservative groups. Even so, the city began to appreciate its diversity. It was voted the European Capital City of Culture in 2001 signifying *'Rotterdam as multiple cities'.*

Currently, there are approximately 614,000 residents in the city itself but around 1 million altogether including the metropolitan area. The city's population is largely made up of people from diverse ethnic backgrounds, i.e. approximately 46% .

It is unknown how much unused terrain there is in Rotterdam, but it is fairly obvious that there is a relatively large amount compared with other Dutch cities. The reason why there is so much land available for spatial development is because of the design strategies in place when the city was rebuilt after the war, the industry began moving away from the city and still is. The construction industry is temporarily 'paralyzed' because of the current crisis..

The rate of unemployment in Rotterdam is the highest in the country (9.6%) and the state of health of its residents is poorer than the national average, with indications of a higher rate of obesity due to unhealthy diets and too little physical exercise.

On account of its layout the city suffers from a lack of green verges and has poor links with the countryside. This gave birth to the idea that farmers could move into the city to make use of vacated plots and re-establish their connection with the city's inhabitants. In recent years, NGOs and experts have organized discourses on the potential of urban agricultural development in Rotterdam.

4.2.2 *POLICY FOR URBAN AGRICULTURE IN ROTTERDAM*

This chapter provides insight into the first two sub-research questions and reviews the third one partially concerning the agents responsible for establishing urban agricultural policy.

> ***Has urban agricultural development been supported by local government policies and is this still the case?***
>
> ***What legal permission is required to commence urban agriculture on unused terrain?***
>
> ***Who are the main agents in the process and how do they influence policy making in the development of urban agriculture?***

GOVERNMENT SUPPORT

Applicable policy and perspectives in urban agriculture

In the spring of 2012 a policy on urban agriculture was officially approved by the Council of Mayor and Aldermen (Kees van Oorschot, personal communication June 17 2012; Rotterdam municipality, 2012). It has taken the last two years to formulate this policy after going through several draft versions. (Jan Willem van der Schans, personal communication, February 3 2012).

Although the city did not have a policy on urban agriculture until recently a number of similar projects have been developing for quite some time now - *'realistic and full of ambition'* (Rotterdam municipality, 2012 pp 5 and 29-35). Most of these initiatives are non-profit community gardens or school gardens. The municipality has occasionally coordinated but the majority were initiated by citizens themselves. Uit Je Eigen Stad (From your own city) is the first entrepreneurial urban farm in the city, that began its operation the spring of 2012. The new city policy on urban agriculture the city welcomes both commercial initiatives and non-commercial projects.

he city has had policies on urban infrastructure and sustainability, and landscape around the city for quite some time *"these are kind of 'green policies' but they do not refer to agriculture very much"* (Kees van Oorschot, personal communication, February 6 2012). According to Alexandra van Huffelen, an alderwoman responsible for sustainable development, the city has great ambitions in terms of sustainability (Rotterdam municipality, 2012 p 5). Since May 2011, the Mayor, aldermen/alderwomen of Rotterdam have been aiming to develop cleaner, greener and healthier city which is a part of the city's sustainability program. Urban agriculture is one of the themes of the program. (Kees van Oorschot, personal communication February 6 2012). It was decided, therefore, that the policy on urban agriculture would be formulated and linked to the present environmental and sustainability policy.

Think Tank (Denk Tank) - exchanging knowledge on urban agriculture

The policy was formulated by a group, known as 'Denk Tank' (Think Tank)[119], some of government officials and others are civil servants (Kees van Oorschot, personal communication February 6 2012). At the outset, some city planners were not convinced that food production and city life could be linked (Jan Willem van der Schans personal communication February 3 2012).

> *"Then I said – let's go outside, it's already happening. So the first thing that the 'Think-Tank' did was to make a clear inventory of all the areas in Rotterdam where food was being produced... as well as rearing horses etc. The second thing that we needed to decide was... should we have food policy or*

[119] See points of contact in the policy document (Rotterdam municipality, 2012 p 40).

urban agricultural policy... ....I suggested that we make an inventory of all the policies that we had... of which there are a lot (Jan Willem van der Schans, personal communication February 3 2012).

By reviewing current policies on related issues and categorizing the impact on the pillars of sustainability in social, economical, and environmental terms, the additional themes proved that urban agriculture could improve sustainable development (Rotterdam municipality, 2012 p 10-12). Based on this concept, the main aspects the city aims to improve on are: health, stimulate a sustainable economy and environmental quality.

In Rotterdam's policy document on urban agriculture, alderwoman Alexandra van Huffelen explains her perception of urban agriculture as an important means for making Rotterdam a more attractive and healthier place [translated from Dutch by the author];

"It is my aim that a significant portion of the fruit and vegetables consumed by citizens 10 years from now, comes from the region. My dream is that we may see several urban farmers who have taken on the challenge to produce food for the urban dwellers. Furthermore I would like to see 10 of the mainly stony areas become significantly greener by introducing community gardens and growing vegetables in the schoolyards. By this method of greening, I expect the residents health in these neighborhoods to improve substantially because of better consumption habits and increased exercise " (Rotterdam municipality, 2012 p 5).

Draft Policy aspects and practical examples

Things in practice generally influence the creation of policies. Two aspects have been considered to evaluate how the city promotes urban agriculture: the current process on drafting a policy and the decisions linked to specific cases in urban agriculture or programs that have already been taken. The ten principles of agricultural urbanism (Holland & Salle, 2010) were used to screen the information, illustrated by colored circles in figure 23. The colors indicate the priority of each principle from a policy perspective according to what has been done or discussed. The illustration shows on the one hand, which policy aspects applicable in Rotterdam have been included in the framework being developed and those that belong to other agents. The authorities in Rotterdam really want to stimulate individuals or businesses that wish to initiate food projects in the city. The following sections summarize the aspects in Rotterdam's draft policy on urban agriculture.

The most important principles for Rotterdam in the city's policy on urban agriculture are:

- **TO ACTIVATE DESIGN STRATEGIES – 'PLACE MAKING'** [120] and
- **INCREASE ECONOMIC ACTIVITY AND THE FOOD SYSTEM PROFILE**[121]

Activating 'place-making' design strategies to make the city more attractive *"is really important for us"* (Kees van Oorschot, personal communication February 6 2012). The city wants to stimulate people to use unused terrain where old buildings have been demolished or sites where construction of new buildings have been postponed because of the economic crisis. There are several examples of such development in the city; 'Tuin aan de Maas' [The garden by the River Maas][122] started in 2008 in a proposed residential

[120] To make food visible and enhance the experience of food (Holland & Salle, 2010). Place-making is a philosophy/idea and an objective for improving sites; it capitalizes on a local community's assets, inspiration, and potential, ultimately creating attractive public areas that have a positive impact on people's health, happiness, and well-being (www.pps.org/reference/what_is_placemaking)

[121] The aim is to create agricultural projects in the neighbourhood and enhance the economy

[122] website: www.tuinaandemaas.nl

area but where construction has ground to a halt. 'Dantetuin in Lobardijen: van grond tot mond' ['Dante' garden in Lombardijen: from farm to fork][123] began in 2010 also on a vacated housing-construction plot. 'De Tussentuin in de Gaffelstraat' [The garden in between' at Gaffelstrat][124] was officially opened in May 2012 as a neighborhood initiative to make garden for pleasure and food growing. 'Voedseltuin voor de Voedselbank' [Food garden for the Food bank][125] is an example of a garden that serves both the food bank and contributes to a green network linking businesses, non-profit organizations, local residents and nature lovers. These are examples of the strategy to allow the public or the owners to use plots for food production *"...because it's not only the city that owns these plots, but more often housing corporations or developers who allow people to use them for agriculture"* (Kees van Oorschot, personal communication February 6 2012).

Jan Willem van der Schans considers that urban agriculture could improve the aesthetics of the environment substantially and is a suitable means of 'place-making' (personal communication, February 3 2012). Furthermore, if a public area is used to grow food products it is then privatized or partially used to create urban gardens which are for public access. Then its design is important so that hooligans will not be able to destroy any of it.

The city does indeed want to increase economic activity and the food system's profile *"...but we also want to emphasize that it's not only in the city's built-up areas but also in the polders and on the outskirts of the city"* (Kees van Oorschot, personal communication February 6 2012). The city of Rotterdam has some land in the north which was designated to be a business park combined with a new nature reserve (wetlands) some years ago. The local government wants to retain this area with some land for farmers who will produce food for city residents. *"So we are trying to rethink how we can organize that in such a way that their produce comes directly to the city and not via the very complicated system of distribution"* (Kees van Oorschot, personal communication February 6 2012). This idea has an important economical facet because with this kind of production the farmer's income increases. It is also important for maintaining the landscape. The farmers have small verges and if they distributed their products directly to the city their income would increase. Altogether *"...that's better for maintaining the landscape"* (Kees van Oorschot, personal communication February 6 2012).

According to Jan Willem van der Schans, increasing activity by means of urban agriculture *" really keeps things ticking right now.... "* (personal communication February 3 2012). The chancellor has to meet right-wing political opponents, who do not support social projects because they may be costly for the city, although they consider the economical ones more appealing. But from his own experience of urban agricultural projects, Jan Willem van der Schans, considers it risky to think in 'black and white' terms as social projects that are very appealing could also become economically viable. On the other hand economically viable projects could also become socially attractive.

The city has some examples of aspects where **PROVIDING ACCESS TO GROW, SELL OR PROCESS FOOD**[126] is being aimed for and in some cases is being worked on. The city has a market every Saturday in the peri-urban area, but selling bulk-products from the greenhouse area in 'Westland' - *It's very good, cheap food but it's not particularly biological nor is it specialized* (Kees van Oorschot, personal communication February 6

[123] website: www.lombaleeft.nl/index.php?option=com_content&view=article&id=30&Itemid=43
[124] website: www.tussentuin.nl
[125] website: www.voedseltuin.com/site
[126] The aim is to increase access to food

2012). The city is in the process of organizing a farmers' market in the city where more organic food etc. will be sold. The city is also trying to distribute regionally grown food via the government's canteens, but it seems to be somewhat of a challenge to make a deal with catering firms that serve food from round the area. *"This has some aspects of congruency with European rules about competitive distortion which state that you have to make a public announcement when you have a big contract for catering yet, it's about free market access to the market"* (Kees van Oorschot, personal communication February 6 2012). These rules are in opposition to the city's desire of stimulating the local food system by letting farmers from within a distance of no more than 50 km to provide their products to the citizens. All this has to do with everyone who produces food, having access to the free market, even those from Germany. Therefore there is no easy solution to this dilemma. *"We are still having meetings with people in our organization who are responsible for making contracts with our suppliers"* (Kees van Oorschot, personal communication, June 12 2012).

It can be said that access to food in Rotterdam is not a problem, in comparison with the 'food deserts' in Detroit (Jan Willem van der Schans, personal communication February 3 2012). But in the case of Rotterdam, urban agriculture will improve access to 'ethnic food' and increase the diversity of the food.

The following four aspects of urban agricultural urbanism in Rotterdam's policy are going in the right direction or in the phase of development;

- **'INTEGRATING FOOD AND AGRICULTURAL PERSPECTIVES'** [127]
- **EMBEDDING EDUCATIONAL OPPORTUNITIES ON FOOD INTO COMMUNITY PROGRAMS** [128]
- **MAINTAINING PARTNERSHIPS AND ENCOURAGING ORGANIZATIONS TO BE RESPONSIBLE**[129]
- **DEVELOPING A DEEPER UNDERSTANDING OF HOW FOOD AND AGRICULTURE CAN AFFECT CLIMATE CHANGE POSITIVELY**[130]

Integrating perspectives on food/agriculture and publicizing elements in the food system, is presumed to be the responsibility of City's Planning Department, depending on the importance each particular theme (Kees van Oorschot, personal communication, February 15 and June 12 2012). The city has to prioritize by choosing the most important ones due to downsizing in budgets and staff. According to the current policy on urban agriculture the three most important themes are; sustainable economy, attractive green areas in and around the city and improving health (Rotterdam municipality, 2012; Kees van Oorschot, personal communication, June 12 2012). Problems relating to distribution and education have also been considered significantly. The city's objective is to stimulate individuals or businesses who wish to engage in food system initiatives in the city. This could be done by giving information about the locations that are available, bringing producers and retailers into contact with each other, by organizing network-sessions and allowing use of vacated terrain.

Developing and integrating elements of the food system inside the city is more difficult than in the peri-urban area where the policy is more consistent (Jan Willem van der Schans, personal communication

[127] By promoting a wide range of food system elements in every community's planning or projects; such as production, processing, distribution, retailing, education, celebration, infrastructure, food security, food safety, food justice and more (Holland & Salle, 2010)

[128] The aim is to enrich people's experience with all aspects of the food system on a daily basis

[129] Because the idea of food often falls between the "cracks" of bureaucracy. According to K. Pothukuchi (personal communication April 27 2012) the aim of such a partnership might be: a) building and/or 'repairing' a community by means of urban agriculture or b) building community self-reliance independent from market or state/government frameworks

[130] Urban agriculture as a means of climate improvement as part of the adaptation strategy

February 3 2012). Food produced on the city boundary is still referred to as urban agriculture in Rotterdam. The alderwoman, van Huffelen, promotes the conception of urban agriculture systematically in this area. Linked to this is the need for the city to improve the transportation system and public procurement. In the inner city, urban agriculture in the inner city is considered by some government officials to be in competition with housing rather than a positive strategy as a redevelopment plan. In Jan Willem van der Schans' experience, some people who play a role in the decision-making process tend to think in monofunctional terms which makes it more difficult to implement food system elements into vacated terrain (personal communication February 3 2012).

Embedding educational opportunities on food into community programs is at the development stage which is difficult at the moment because of a cutback in budgets (Kees van Oorschot, personal communication February 6 2012). It is happening though but on a very small scale. An example of this is a food program (Eco-3) in primary school called 'Basisschool Bloemhof' [Public primary school][131] "*...It really exists but it is developing"* (Kees van Oorschot, personal communication, February 6 2012).

Jan- Willem van der Schans points out that due to current reductions in budgets, decisions at the district level are being taken to shut down school gardens;

> "*...there are teachers out of work now who have done a very good job teaching children to grow food for 30 years.... and we have volunteers from Transition town[132] who are paid 25 Euros on Wednesday afternoons for teaching children. And sometimes at the same location... ...so I'm very critical about this".* (personal communication February 3 2012).

It is in this manner that the city maintains partnerships and encourages organizations to be responsible (Kees van Oorschot, personal communication, February 6 2012). There are organizations such as 'Eetbaar Rotterdam' [Edible Rotterdam] in the city that were originally a pressure group whose aim was to promote the development of local food issues. The city has asked 'Eetbaar Rotterdam'[133] to develop an internet site in order to bring people together *"...one having a need for food, and another who can provide it and so on... so we asked them to set up an internet site where people could give their reactions, etc..."* (Kees van Oorschot, personal communication February 6 2012). According to Jan Willem van der Schans (personal communication, September 26 2012) 'Eetbaar Rotterdam' has not been able to do that yet.

The city is aware[134] of how urban agriculture can decrease criminality but for Rotterdam it's not their main concern (Kees van Oorschot, personal communication June 12 2012). As far as Rotterdam is concerned, the importance of building communities has more to do with social cohesion, where people from different backgrounds work together in a garden. Prime examples of that in Rotterdam are 'Tuin aan de Maas' [The garden by Maas][135] and Schiebroek-zuid[136].

In Rotterdam's Planning Department's point of view, it is considered rather inappropriate to encourage organizations or communities to become entirely self-reliant from the market, government frameworks or

---

[131] Website: www.bhof.nl and www.rotterdam.nl/smartsite.dws?id=1018016
[132] Transition Town Rotterdam, website is: www.transitiontownrotterdam.nl
[133] Eetbaar Rotterdam, website is: www.eetbaarrotterdam.nl
[134] The city authorities had a discussion with Wayne Roberts in Toronto in Canada about this issue.
[135] For more information go to: www.groeneloper010.nl/hotspots/tuin-aan-de-maas.html
[136] This is a project in which garden design played an important role in "rebuilding" a post-war neighborhood; Go to the following websites for information on this project: www.except.nl/en/#.en.projects.56-sustainable-schiebroek-zuid and www. inhabitat.com/schiebroek-zuid-project/

the main-stream food systems (Kees van Oorschot, personal communication, June 12 2012). However, if people want to do that, it's their responsibility.

Jan- Willem van der Schans points out that even though *"...food is an integrating force... but as it is, bureaucratic divisions in Rotterdam are really big at the moment"* (personal communication February 3 2012). Therefore food issues may easily 'fall between the cracks of typical governance and jurisdictional platforms'. People are not always aware of what their fellow employee in the next room is doing, and many people just think about *'their baby'* and have difficulty with sharing their ideas.

According to Kees van Oorschot, it is 'in direction' that the city is developing an understanding on how food and agriculture can benefit climate change (personal communication February 6 2012). All this has to do with reducing CO_2 emissions, and the city is really focused on that. Using food from the city and the area around the city would contribute to CO_2 reduction. Nevertheless, Jan Willem van der Schans points out that innovations such as power-plugs for the ships in the harbor area and formulating a policy on their use is mandatory and would contribute far more than urban agriculture in terms of lowering CO_2 emissions (personal communication February 3 2012).

The principle of considering **'INTEGRATING URBAN HABITATS WITH OTHER SPECIES INTO THE FOOD AND AGRICULTURE AGENDA'** has been discussed (Kees van Oorschot, personal communication, February 6 2012). A private organization, known as 'Bureau Stadsnatuur' has given advice on biodiversity. They have pointed out contradictions between making intensive use of plots and stimulating biodiversity. On the other hand, some food production in the city comes from permaculture (permanent agriculture) a method which is good for biodiversity. The issue of biodiversity is appropriate on the city boundary where agricultural maintenance can be combined with farming cows on a low scale and has a positive effect on biodiversity. At the moment, there is no policy in Rotterdam on considerations for other species when integrating urban agriculture (Jan Willem van der Schans, personal communication, February 3 2012). However, most initiatives concentrate on alternative food growing systems such as permaculture (permanent agriculture) and interests such as beekeeping.

The principles that the city has not considered to any extent or even think inappropriate at the moment are:

- **INTEGRATING SUSTAINABLE FOOD SYSTEM OBJECTIVES INTO POLICIES AND PROGRAMS**[137] and
- **CONSIDERING THE NEEDS OF URBAN FOOD SYSTEMS AND THE ADVANTAGES THEY GIVE TO A COMMUNITY'S INFRASTRUCTURE**[138]

The principle of integrating sustainable food system objectives into policies and programs[139] and subsequently including key food system stakeholders is, from the city's point of view, far too optimistic. *"Let's consider, for example energy suppliers or the port authorities... I imagine that these stakeholders could be involved in the decision-making process"* (Kees van Oorschot, personal communication, February 6 2012). Such objectives are too sophisticated for Rotterdam. For example, is food not already part of the

[137] This includes integrating key food system stakeholders into the decision-making process (Holland & Salle, 2010)

[138] Addressing energy, waste water and solid-waste management (Holland & Salle, 2010)

[139] In 2007 The American Planning Association (APA) approved and officially adopted a Policy Guide on community food planning. The policy offers two overarching goals for planners;

1. *To help build a stronger, sustainable, and more self-reliant community and regional food systems.*
2. *To suggest ways in which the industrial food system can interact with communities and regions to enhance benefits such as economic vitality, public health, ecological sustainability, social equity, and cultural diversity* (Pothukuchi, 2009 p 352).

Rotterdam Climate Office's sustainability project? *"Urban agriculture is part of it, because we are there but it's not an important issue*" (Kees van Oorschot, personal communication, February 6 2012) Jan Willem van der Schans is of the same opinion regarding the inclusion of key food system stakeholders

> *"...that's too much. If you do that it becomes the very center of your policy and that's not the case at the moment. And maybe it's not even our wish to do that... I don't know. It could be that we don't think it is appropriate. We think it is interesting and possibly an important development but making it central in all our decision-making; I don't think so.* (Jan Willem van der Schans, personal communication, February 3 2012)

The principle of considering the needs and opportunities that urban food systems can offer a community infrastructure has not really been considered as a goal or whether it is appropriate *"...but what we do know about this is that Paul de Graaf has made a study of it…..* …It's possible but it's not appropriate at the moment (Kees van Oorschot, personal communication, February 6 2012).

Jan Willem van der Schans thinks that this problem can be dealt with at a central point within the city structure;

> *..the funny thing is that the energy supplies and waste water services are in the hands of engineers whereas these are usually dealt with in centralized way. Urban agriculture gives 'more power to the people' and is decentralized... and engineers can't handle this... ...for an engineer, energy is easy to handle... food growing is not easy to handle. Therefore, all these theoretical ways of completing the circuit are practically impossible because the food system is out of control… … in the 19th century people began to focus on sewage and suggested that urban waste be centrally processed for reasons of sanitation. If we went back to decentralized circuits people would say 'it's not sanitary anymore'...* (Jan Willem van der Schans, personal communication, February 3 2012)

Community infrastructure systems are in competition with centrally planned infrastructure systems. A movement decentralized energy production and a number of different companies were establish who also have this problem so that they have to hook up to the net and negotiate with nationally registered companies. The same thing happens if someone starts collecting organic waste for composting in Rotterdam. That individual would be in direct competition with other waste collectors for the incinerator and the waste collector would make a loss. *"This is literarily what's happening. I'm not making this up..."* (Jan Willem van der Schans, personal communication, February 3 2012)

Figure 23 The goals of agricultural urbanism (Holland &Salle 2010) are used to screen how the city supports urban agricultural development and how different teams have been allocated to work on urban agricultural policy in Rotterdam. They look at one goal at a time by using optional answers (see the legend) the city advisor on policy issues; Kees van Oorschot and a member of 'Denk tank' (Think Tank - the policy council); Jan Willem van der Schans, explained to what extent the goals are used or considered. . Alongside the circles (signifying each principle) are examples that were given in support of the answer chosen. The legend at the bottom gives two more options (these are in parentheses) because the interviewees sometimes chose options 1-2 or 2-3 therefore they were added afterwards

Special strategies to support urban agriculture

Information about 'ways and means' (strategies) the city can use to support urban agriculture were screened by using a check list inspired by Mogk et al. (2011) as well as van Veenhuizen (2006) (indicated in the text in capital letters). The summary depicts how Rotterdam city prioritizes them in their policy to support urban agriculture. The seven categories of these special strategies are illustrated by colored circles in figure 25. The colors indicate the relevance of each category aspect according to what has been done and discussed.

The city will indeed make an **EXEMPTION FROM APPLYING CONSTRAINING RULES AND ZONING CODES** if necessary (Kees van Oorschot, personal communication, February 15 2012). However, the zoning ordinance is not considered to be a problem when it comes to developing temporary urban agriculture on vacated plots. For a long-term project they can be integrated in the usual way by adjusting the zoning rules to fit the situation. Two examples of this are 'Polder Schieveen'[140] in the peri-urban area north of Rotterdam and 'Uit je eigen staad' on the Marconistrip, Rotterdam.

The city tries to assist in the initiative **BY FACILITATING PEOPLE'S** involvement in urban agriculture and introducing them to other stakeholders, project managers, colleagues in their offices or experts who can give advice, etc. and a little financial help, if necessary (Kees van Oorschot, personal communication, February 15and June 27 2012). One of the main objectives of the city in this regard is connecting people with each other (networking) e.g. farmers and shop owners. *"Our alderman also tries to address some issues (such as strict rules) imposed by our national government*" (Kees van Oorschot, personal communication, June 27 2012).

Issues relating to water have been discussed, because most of the citizens' urban agriculture initiatives require water and they probably use drinking water *"so, after discussions our Think-Tank suggested that they use fire brigade supplies* [which is cheaper] *but the fire brigade refused... because they don't want lay people using their system... ...they claim that having outlets may fall into neglect* " Jan Willem van der Schans, personal communication, February 3 2012)

REDUCING LAND IN VALUE/LEASING IT AS CITY–OWNED LAND OR ALLOWS A SPECIAL LAND–USE AGREEMENT is discussed in some projects, but not in general. There is not a special policy on this issue *"...but I think it's necessary that we, as civil servants, should discuss this next year. At the moment it's not clear for people what they can expect from their municipality if they want to establish an agricultural project "* (Kees van Oorschot, personal communication, June 27 2012).

According to Jan - Willem van der Schans (personal communication, February 3 2012) it is absurd to try to make a profit out of urban agriculture when all the initiatives are doing is making use of 'vacated terrain' by converting it into an appealing area for visitors. The entrepreneur should be paid for his initiative instead of being charged.

DEVELOPING A ZONING ORDINANCE FOR URBAN AGRICULTURE, has not been discussed (as far as the interviewee knows) (Kees van Oorschot, personal communication, June 27 2012). The city has not experienced a problem regarding the zoning process;

[140] The concept of this development is illustrated in the following document on the municipality website: www.rotterdam.nl/OBR/Document/Gebiedsontwikkeling/10318%20Pure%20Polder%20eindverslag_small.pdf

"...if the projects in the city are situated in parks or other green areas (such as the Wollefoppen-project in Ommoord), they should be classified under the 'green' code. And projects situated on vacated building plots, are presumed to be temporary. We assume that all these projects have a maximum life-span of 10 years." (Kees van Oorschot, personal communication, June 27 2012).

The city's zoning plans are officially valid for 10 years and before a new zoning plan is made the plots can be used for gardens etc. on the basis of a temporary permit.

A a group of people are planning to develop an opportunity-design map for urban agriculture by surveying vacated terrain in the city (Kees van Oorschoot, personal communication, February 6 2012). According to Jan Willem van der Schans would *"that would be brilliant... where housing is a priority, or playgrounds have a priority... there is probably going to be some kind of map and we will see what happens"* (Jan Willem van der Schans, personal communication February 3 2012)

SUPPORT THROUGH FINANCIAL BENEFITS SUCH AS LOWER TAX RATES has not been discussed "*..because in general municipalities have only a limited means of collecting taxes in the Netherlands. Most taxes are imposed by the government but for a city such as Rotterdam taxes on real estate ownership are one of the few ways in which a municipality collects funds"* (Kees van Oorschot, personal communication, June 27 2012). This tax depends on the current value of the property and most initiatives for urban agriculture are not required to pay tax on real estate in which case there are no grounds for tax relief.

REDUCING PERMISSION COSTS has not yet been discussed *"... because as with taxes till now, most people don't need a permit for starting urban agricultural projects. The only exception, I think, is Uit je Eigen Stad"* (Kees van Oorschot, personal communication, June 27 2012). If it obvious that projects such as Uit Je Eigen Stad would have big problems to pay for these permits it could become an issue.

According to Jan Willem van der Schans (personal communication, February 3 2012) the cost for a commercial urban farmer (e.g. Uit Je Eigen Stad) it will cost a lot of money for him to obtain all the necessary permits.

"This all dates back to when city development was very hot and the city could be very bureaucratic which would slow down the process a little bit. But now we are in different situation, because if somebody wants to put some effort into city re-development you have to be very friendly and supportive... but they still have some of the old arrogant guy's... who feel like they don't know what is going on right now... and next week they will perhaps not have job anymore because the whole economy is bad. But this is still their approach" (Jan- Willem van der Schans, personal communication, February 3 2012).

GIVING AWAY LAND is considered inappropriate because the city has rules about selling land. It cannot treat some of its citizens more favorably by letting them have land for next to nothing while expecting (the traditional farmers or large enterprises) to pay the maximum (Kees van Oorschot, personal communication, June 27 2012). Regarding social projects there are sometimes reasons for making other choices.

Figure 24 Indicates the motives being considered to promote urban agricultural development in Rotterdam. The color of each circle signifies a particular motive indicating to what level it has been adopted or discussed – the legend at the bottom gives a scale from no (red) – yes(dark green). There are examples of motives for each site or arguments given to support the answer chosen (Illustrated by the author after interviewing Kees van Oorschot on February 6 and 15 2012 and June 27 2012).

LEGAL PERMISSION AND FRAMEWORK

In the Netherlands temporary interventions were defined as no longer than 5 years but according to Willem Korthals Altes, a Professor at TU Delft (personal communication, May 4 2012) this has changed in accordance with environmental laws[141] It is permitted to extend the license for an activity for a longer period of time if it does not conflict with 'good planning'. There is a freedom of establishment of business (undertaking) within the EU and Dutch planning regulations are open in relation to land-use classification. According to AItes it is not considered to be a problem if an agricultural project is established in the city in accordance with regulations, with the exception of the rules relating to production processes ('productschap') that are about professionalism in the sector. This has to be investigated, according to Altes.

The necessary permission depends on the character of an urban agricultural project. If it is a long-term development, includes buildings or has commercial aspects the procedure is more complex because more formal paperwork is required.

According to the information provided by Kees van Oorschot (personal communication, February 15 2012) the permits / licenses needed when establishing urban agricultural projects are listed in Table 5.

Table 3 Permits required for urban agriculture. If the development is long-term, includes buildings or is associated with commercial activities (points 2-5) the number of permits required increases.

1.	a clean soil declaration - a survey must be performed to show that the soil is of the right quality. The organization DCMR[142] operates at the regional level and deals with environmental issues such as soil quality.
2.	an official agreement with the land owner that shows permission has been granted to use the land for agricultural purposes - for temporary use the farmer agrees to leave the area if it is required for its designated purpose such as building.
3.	an official lease-contract is necessary for long-term use along the same lines as the agreement in point nr. 2
4.	a building permit is needed and other licenses required by building legislation if a farmer wants to build a greenhouse, a shed, a canteen for employees etc.
5.	quality, safety and hygiene rules must be obeyed when farmers are processing and selling food. These rules are controlled by a government official from the Food and Goods Authority. *"As far as I know, the municipality of Rotterdam does not have a role in that control system"* (Kees van Oorschot, personal communication, February 15 2012)

In order to indicate what permits are required and who is responsible for issuing them it is useful to know how the municipality is organized. However, it should be noted that, according to van der Valk (personal communication, June 29 2012) *"the issuing of permits is a complex procedure – and changes regularly over time also".* Figure 26 indicates Rotterdam's municipal organization, based on the most recent illustration

[141] - "Wabo" (General Provisions on environmental law), article 2.12 paragraph 2
[142] DCMR Milieudienst Rijnmond (environmenta service) web-site: www.dcmr.nl

(in Dutch) on the municipality's website.

From this most recent diagram it can be seen that before the City Council approves any legislation or policy, several branches need to handle relevant issues. The City Council consisting of the Mayor and aldermen/alderwomen discuss the issues with an advisory committee and civil servants. Under a board of directors there are five main departments and the 'Urban Development Department' is deals with issues relating to urban development in cooperation with the Social Development Department that is responsible for health and educational issues etc. 'The Urban Development Department' is divided into four sections; Real Estate, Spatial-Economical Development, Urban Design Department (where the interviewee; Kees van Oorschot works) and a Project Management and Engineering (the interviewee; Arienne de Muynck works). The Urban Design Department takes care of the following topics: long-term planning, site plan assessments, writing zoning ordinances and issuing *building permits*. The Socio-Economicl development department issues *urban agriculture permits* and *leasing contracts* for long-term developments.

Permits related to commercial ventures such as restaurants, are issued by the civil service (branch).

Inspection regarding environmental impacts and *soil quality* is taken care of by DCMR[143] - 'Dienst Centraal Milieubeheer Rijnmond', a central environmental management agency for the local and regional authorities operating in Rijnmond an extension of the 'Port of Rotterdam 'area.

Production for commercial purposes must be in accordance with the rules at the national level regarding quality, safety and hygiene [for example implementing 'Hazards analyses and critical control point' system - HACCP in the production chain]. The Netherlands Food and Consumer Product Safety Authority[144] (Nederlandse Voedsel - en Warenauthoritieit) carries out the controls for the whole production chain, from raw materials and processing aids to end products and consumption (Government of Netherlands, n.d.).

According to Jan Willem van der Schans it seems to be possible to start a project without applying for special permits or licenses as long as it's ART *...all artists and social projects... there is a social project and a friend of mine is running the restaurant in that project – they don't talk about HACCP"* (personal communication, February 3 2012).

[143] The tasks of the DCMR include industry regulation, monitoring and assisting authorities on developing environmental policy.
The DCMR has issued permits to virtually all of the 22,000 enterprises in the area and carries out more than 9,000 inspections to monitor compliance with the permit conditions. The organization supervises and monitors clean-up programs to minimize the impact of soil pollution, waste disposal and noise (www.dcmr.nl/en/index.html).
[144] Their website is: www.vwa.nl/English version: www.vwa.nl/onderwerpen/english/dossier/about-the-netherlands-food-and-consumer-product-safety-authority

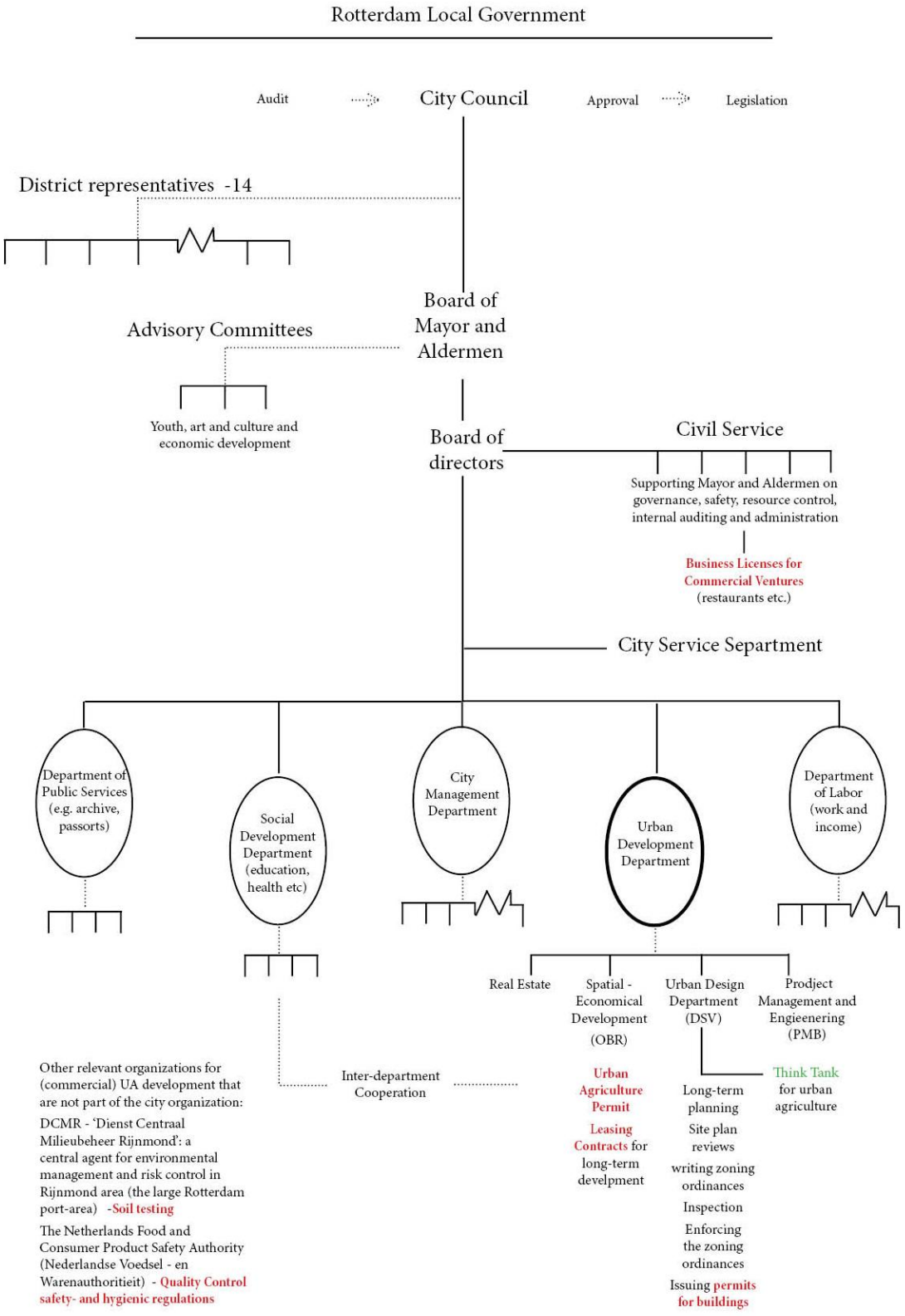


Figure 25 Structure of the Rotterdam Municipal Government and roles the main planning divisions have in it (illustrated by the author according to translation of information on the municipality's website and Kees van Oorschot explanations on its meaning (Kees van Oorschot works in the Urban Development Department, personal communication, June 21 and 27 2012).

NON-GOVERNMENTAL ORGANIZATIONS (NGO'S) SUPPORT

Several non-governmental organizations are operating in Rotterdam have been influencing the discourses about food production in the city (Rotterdam municipality, 2012 p 28-35). Along with several urban agriculture initiatives, three influential organizations are currently engaged in urban agriculture; 'Eetbaar Rotterdam' (Edible Rotterdam)[145], 'R'dam Oogst' (Rotterdam Harvest)[146] and Transition Town Network (Transition towns)[147].

'Eetbaar Rotterdam' is an organization that put urban agriculture on the city's agenda and was the first and the most influential in this regard (Bas de Groot, personal communication, January 31 2012; Jan Willem van der Schans, personal communication, September 26 2012)

The formation of 'Eetbaar Rotterdam', their goals, influence and vision

'Eetbaar Rotterdam' was initially formed by a group of people[148] who were all invited to one particular meeting in which they got to know each other (Jan Willem van der Schans, personal communication February 3 2012). It was in 2008 symbolizing the 'Green Year' in Rotterdam. The subject of the meeting was - can Rotterdam feed itself? It was debated whether the development of a more self-reliant food system was a good idea for Rotterdam.

> *...then some of the people invited there, were sticking together and saying... 'ok, the municipal government acted a little bit strange during that meeting... ' and we said...'no, it's a good idea, let's go ahead with this... let's share our knowledge about this...' That was 'Eetbaar Rotterdam'* (Jan Willem van der Schans, personal communication February 3 2012).

At that time a very conservative political branch was active in the city - 'Levenbaar Rotterdam' (livable Rotterdam) *...we chose our name as an ironic reaction to this movement because it's – anti-Islamic and all that... ...we are 'Eetbaar Rotterdam'* [edible Rotterdam] (Jan Willem van der Schans, personal communication February 3 2012). The city needed something which could unite dissimilar cultures and is common to all people such as growing food, having the potential to help bridge cultures, connect old and new areas and at the same time contribute to create 'places out of spaces'. Linked with the group's idea of the impact that urban agriculture could have on the city, the purpose of the organization itself was to share diverse ideas about urban agriculture, so for 'Eetbaar Rotterdam', and people from different ethnic backgrounds would be able to do that whereas like-minded people would not get so far. There are both laymen and professionals in 'Eetbaar Rotterdam' who have a diversity of expertise (Eetbaar Rotterdam, n.d.) who can provide politicians, policy-makers, entrepreneurs and residents with an access to a wide-range of knowledge about issues relating to urban agriculture.

During Rotterdam's "Green Year" researchers were commissioned to examine how valuable the green areas were for the city and its citizens etc. Because urban farming had never been part of the city's 'green program', the municipal government asked one of the founders of 'Eetbaar Rotterdam' - Jan Willem van der Schans to make a presentation and give a workshop on the topic. One of the core subjects that came out of the 'Green year' was urban farming.

---

[145] Their website: www.eetbaarrotterdam.nl
[146] Their website: www.rotterdamseoogst.nl
[147] Their website: www.transitionnetwork.org
[148] For instance Jan Willem van der Schans (economist and researcher), Bas de Groot (a farmer and later founder of Uit Je Eigen Stad) and Paul de Graaf (landscape arechitect and researcher) got to know each other there

Many presentations were given in subsequent years on urban agriculture by members of 'Eetbaar Rotterdam', for example to introduce ideas about using unoccupied land on the harbor site for urban agriculture to the port authority's (Jan Willem van der Schans, personal communication, February 3 2012).

Since May 2010 the organization has had a blog (Eetbaar Rotterdam, n.d.). They organize networking activities on urban agriculture initiatives which encourage and support those who take part. They also provide inspiring information regarding urban agricultural projects in Rotterdam and in other cities. 'Eetbaar Rotterdam' aims to have such an influence that food becomes more visible in the city and gives the citizens the opportunity to see and experience the food production process. In this way the association wants to contribute in a positive way to a healthy and sustainable society.

'Eetbaar Rotterdam' was formally established in June 2009 with urban agriculture as the cornerstone of the organization (Eetbaar Rotterdam, 2009). They see themselves as a progressive driving-force for urban agricultural development in a city which recognizes its values. Therefore it is the organization's main goal to have an influence on formulating a policy on urban agriculture for Rotterdam. According to Eetbaar Rotterdam (n.d.), there are seven important points listed below on which urban agriculture can have positive influence:

1. *Environment / Sustainability*
   - productive green space in the city which can lead to better urban living conditions
   - improve air quality by absorbing heat and enhanced water management
   - opportunities for closed circuits by re-cycling waste
   - reduction of food transport
2. *Economy*
   - a form of corporate social responsibility - generates economic, social and sustainable returns
   - job opportunities on the labor market
   - productive greenery has a value of its own
3. *Nutrition and wellness*
   - promotes healthy eating habits and exercise
   - combines entrepreneurship with a healthy lifestyle
4. *Spatial planning*
   - complements the current planning of the city
   - meaningful use of areas of relaxation and temporarily vacated land
   - can make the iconic buildings in the heart of Rotterdam more appealing
5. *Social*
   - provides opportunities for entrepreneurship, employment, training, rehabilitation and care
   - recognizes the uniqueness of different cultures and the production of ethnic crops
   - strengthens social cohesion
6. *Education*
   - provides students with opportunities in professional training
7. *Shrinks the urban – rural gap*
   - shrinks the gap between urban and rural areas

'Eetbaar Rotterdam' perceives opportunities in urban agriculture as becoming a trademark for Rotterdam, e.g. in a form of floating gardens, roof gardens, self-catering facilities and innovative buildings in closed circuits *"decorating the eatable Rotterdam skyline"* (Eetbaar Rotterdam, n.d.)

Since the establishment of the municipal 'Think Tank' on urban agriculture (see previous chapter and figure 25 where 'Think Thank' is shown in green letters), Jan Willem van der Schans, one of 'Eetbaar Rotterdam's founders, has been an active member of that group has had an influence on the newly approved policy on urban agriculture (Kees van Oorschot, personal communication, February 6 2012). Moreover the formation of 'Think Tank' was his idea (Jan Willem van der Schans, personal communication February 3 2012)

'R'damse Oogst'[Rotterdam harvest] developed into a festival organization

'R'dam oogst' was initially an idea of 'Eetbaar Rotterdam' (Jan Willem van der Schans, personal communication, September 26 2012). At first they established a foundation that ran a local restaurant called 'Van de Boer' [From the farmer]. The foundation went bankrupt but the restaurant still exists. Some of the original members behind the organization founded a festival organization 'R'damse Oogst' as it is known today. They organize activities and events connected with food grown in the region within a radius of 50 km from the city center. They also provide information on a variety of food initiatives within that region and look for new market locations and try out product-market combinations (R'damse Oogst, 2011).

Transition network in the spotlight

Transition Towns [as the Transition networks are sometimes called in the cities where the operate], came on the scene in Rotterdam 2-3 years after 'Eetbaar Rotterdam' (Jan Willem van der Schans, personal communication September 26 2012) They originate from Britain but have grown as an international movement whose aim is to encourage communities to become independent by creating a more resilient local economy which will lessen the need for long supply chains (Rotterdam municipality, 2012). By this means, the objective is to reduce CO_2 emissions and integrate food production, energy and materials into the ecological cycle. The branch in Rotterdam functions as a network by giving lectures, holding discussion evenings, organizes movie nights and information exchange on the internet. According to Jan Willem van der Schans (personal communication, February 3 2012) Transition Towns are extremely well organized and have increasingly taken over teaching agriculture at the district level due to downsizing in public schools.

SUMMARY

In recent years several urban agricultural projects have been initiated in Rotterdam even though the city's special 'green policy' did not touch upon the subject of agriculture very much. However, an official urban agricultural policy was approved the Spring of 2012. A view held by present coalition in Rotterdam, is to create a cleaner, greener and healthier city with more ambition for sustainability. Urban agriculture has now been merged into the current environmental and sustainability policy. A municipal branch, i.e. 'Think tank' made up of civil servants and a few external experts worked on this issue. Going through similar policies and assessing their impacts on the pillars of sustainability, brought to light the advantages urban agriculture could have on sustainable development. The city authorities were following what was already happening there. The aim, therefore, is to produce fruit and vegetables for the citizens in the region by transforming ten 'very stony' areas in the city into significantly greener plots by means of urban agriculture.

Design strategies for 'the creation of more green areas' ('place-making' strategies) and increasing economic activity are the themes with the highest priority in the new food system policy. People who wish to use vacated terrain for agriculture will be stimulated to do so, so that these areas will become more delightful. Urban agriculture is also thought of as the peri-urban area. Farmer's revenue will increase and the landscape around the city will be maintained. Aiming to provide access to grow, sell or process food is sometimes an issue. Increasing access to more specialized products (organic, ethnic etc.) is of special interest. The city wants to distribute regional grown food via the government's canteens, but this is a challenge due to European rules of competition within the European Union. A public announcement has to be made when making big contracts for food in the catering industry which causes a dilemma for local government that only wants to purchase regional food. Integrating food- and agriculture perspectives when prioritizing the elements in the food system's planning, is considered to be the city's responsibility in some cases, depending on the aspects involved. The focus should be on health; healthy living areas, the type of food consumed and lifestyles. Attaining this kind of development in inner cities is more difficult than in the outskirts because viewpoints from a mono-functional standpoint fear the competition that agriculture might create with the construction industry instead of seeing it as a positive redevelopment plan. Integrating opportunities for education around food in community programs is difficult because of recent cutbacks in budgets however there is some sign of improvement. The city wants to show its willingness toward responsibility by encouraging and maintaining partnerships with organizations. The quality of urban agriculture as a means of building communities and integrating social cohesion has been recognized and it is important for Rotterdam because of its citizens from different cultural backgrounds. However the city authorities have no desire to encourage the community to re-organize and build up self-reliance from the market or the conventional system. The city is developing an understanding on how food and agriculture can provide solutions to climate change. Adding urban habitat considerations to the urban agricultural agenda has until now only been a point of discussion. The idea of integrating sustainable food system goals into all policies and programs is considered to be too ambitious, because including all key food system stakeholders is too complex. Neither does it seem appropriate to consider the benefits that urban food systems can offer to community infrastructure. Structuring the order of subject matter and agendas within the city makes this ideology virtually impossible to achieve.

[...contd. on next page]

The city allows exceptions to constraints in regulations or zoning codes if necessary. Long-term projects would go through the normal procedure to adjust the zoning regulations in a given situation. The city is willing to assist people who have interesting ideas, either by subsidizing the initiative or networking. Reducing land prices and leasing options are discussed occasionally, but not generally. Introducing a zoning ordinance for urban agriculture has not been discussed yet. Vacant building sites are meant, only be used for a limited period of time up to a maximum of 10 years. The benefits gained by reducing taxes and lowering the rates for legal permits have not yet been discussed and giving away land is out of the question due to the rules governing the sale of land.

The permits and licenses required are in line with the attributes of an urban agricultural project. If the development is long-term, and includes buildings or has commercial aspects the permit procedure is more complex and requires more formal paperwork. The governmental structure is rather complex and different divisions/agencies are responsible for different permits (soil testing, landowner's permission, leases, legal permits required for building and quality-control regulations for safety and hygiene at the national level).

Three influential organizations are engaged in the discourse on urban agriculture. The action group 'Eetbaar Rotterdam' (Edible Rotterdam) has been active for the longest period of time and put urban agriculture on the agenda in Rotterdam in 2008. At that time it was important to find ways to unite cultures that were not alike, by searching for something that all the cultures had in common, such as growing food for the purpose of bridging cultures. Later the organization's main goal was influential in setting up a policy on urban agriculture for the city.

4.2.3 *UIT JE EIGEN STAD – ROTTERDAM*

How has the development of urban agriculture been conceived; how does it function and what does it look like?

What legal permission was acquired [is required] to commence urban agriculture on the terrain?

Who are the main agents in the development of urban agriculture, what is their role in the process?

THE LOCATION

Spatial context, land use codes and ownership

The plot occupied by Uit Je Eigen Stad is an area called 'Marconistrip' which is located on an old harbor and industrial quarter in the district, 'Delfshaven'. The location can be seen on figure 26. 'Marconistrip' is a temporary vacated area, between the harbor to the south and a residential area in the north. To the east there is a mixture of land use, e.g. three large office buildings from Rotterdam Municipality (Europoint) but industrial area continues to the west.

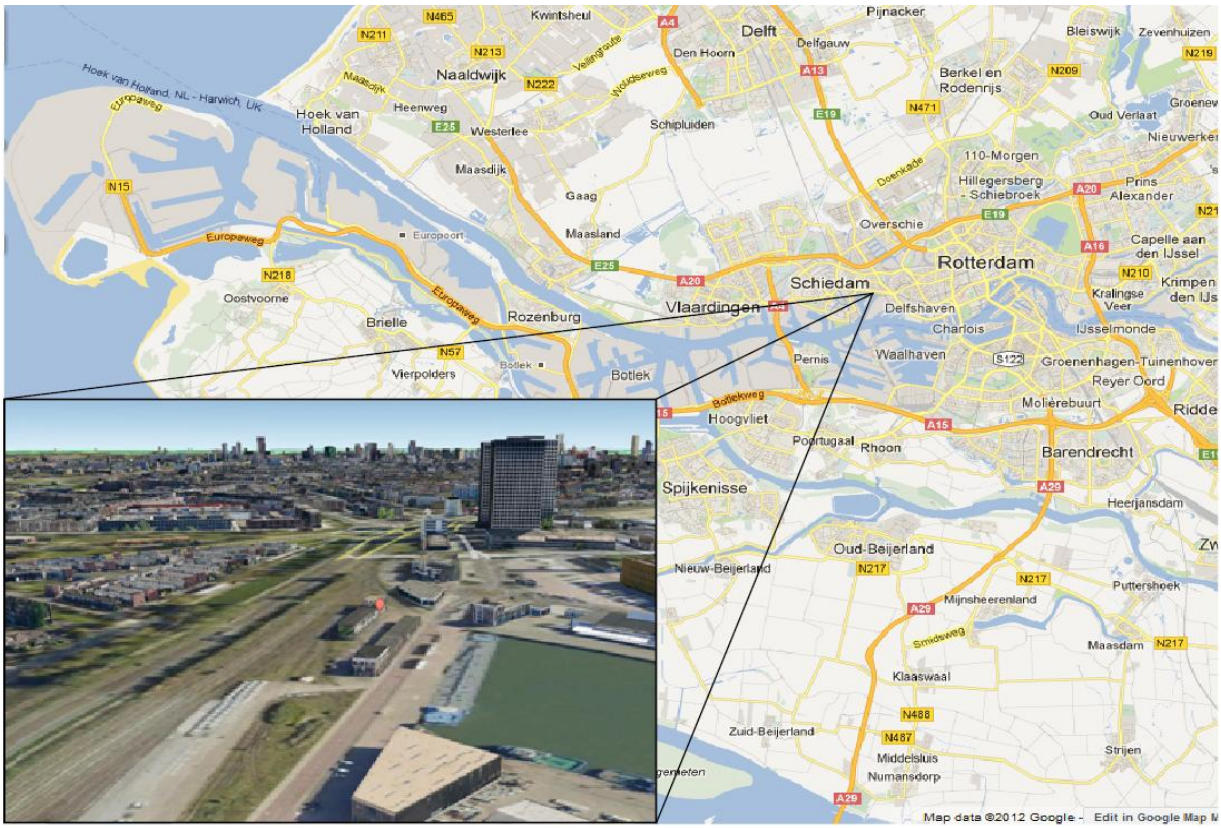


Figure 26 Map of Rotterdam and aerial photo showing the location of Uit Je Eigen Stad (dot) on Marconistrip (Marconistraat 39 3029 Rotterdam) (Google Earth, 2012).The land use code allocated to this plot is from a very old plan dating back to 1939 (Arienne de Muynck, personal communication, April 2 and June 13 2012). It stipulates that trade and industrial activities can be developed in this area as well as small shops or perhaps a café.

In 2007, the Port Authorities owned the area including the building (Jan Willem van der Schans, personal communication, September 26 2012) but in 2010 the Port Authorities handed the responsibility for the area over to Stadshavens, an organization which jointly represents the City of Rotterdam and the Port Development of Rotterdam (Jan Willem van der Schans, personal communication, February 3 2012).

A suggestion about putting a farm on this area was mentioned to the founder of the farm, Bas de Groot in May 2009 (Bas de Groot, personal communication January 31 and September 26 2012). He worked together with Antoine Miltenburg but at the beginning of 2010, Miltenburg decided to get involved with other projects. Currently, Johan Bosman and Huibert de Leede from Uit Je Eigen Stad are his business partners. Bas de Groot is a farmer, John Bosman has experience in the real estate business and Huibert de Leede has been involved the field of business transition processes.

Reasons for vacated terrain and the premise for developing agriculture on such a site

The area is undergoing transition which is very slow. (Arienne de Muynck, personal communication, April 2 and June 13 2012). Some plots and buildings in the area have been abandoned for quite some time. The building occupied by Uit Je Eigen Stad is located in a former railroad building which had not been in use for several years. Unfortunately, the site had been used by squatters for illegal activities.

The formal transition process in the area was initiated by local government at the beginning of 2011 but plans for the area had been developing since 2008 (Arienne de Muynck, personal communication, April 2 and June 13 2012; Jan Willem van der Schans. personal communication Februry 3 2012). Ideas for the 'Merwe-Vierhavens' quarter [149] which part of the 'Marconistrip' and a project called 'Marconi free zone' were made public. In May 2011 an official document approved by the Municipality stated that it would be preferable to develop urban agriculture in the area or use it for a creative activity such as art (Arienne de Muynck, personal communication, April 2 and June 13 2012). This was part of a 'place-making' strategy to make the area more attractive for the first pioneers there as the future plans for it were going to be residential (Jan Willem van der Schans. personal communication February 3 2012). The city had the desire to attract a particular group of citizens and urban agriculture was deemed to have the quality which would re-connect the neighboring districts. Along with this, Jan Willem van der Schans realized that there were opportunities for financing urban agricultural activities by transforming the real estate re-development plan into a 'place-making' concept. According to Bas de Groot, the founder of Uit Je Eigen Stad, the area was just what they were looking for;

> *...most of the unused industrial area is close to residential properties and it did not seem as though there were any prospects for the location, but there were... I mean it was not nice there because hookers here and drug addicts used to meet there... ...it was really a dead end. And if you gave it some scope... then the impact could be really big. So that's what we liked; we wanted to have an impact. And we just wanted to use the city as it is...* (Bas de Groot, personal communication, January 31 2012)

Including the urban farm Uit Je Eigen Stad , there are several creative initiatives[150] in the neighborhood nowadays.

[149] For more information go to: www.stadshavensrotterdam.nl/eng/merwe-vierhavens

[150] For example the artists: Florentijn Hofman: www.florentijnhofman.nl/dev/contact.php , Studio Wieki Somers: www.studiowiekisomers.com, de Fruitvis: www.fruitvis.nl

THE FUNCTION AND CHARACTERISTICS

Objective and products

The grand opening festival[151], took place on 22nd September 2012 and the farm Uit Je Eigen Stad was opened officially. At the same time a restaurant was opened in the old railroad building that had been completely renovated.

Uit Je Eigen Stad is a commercial urban farm where the experience is the most important aspect, *"... we are going to 'link economy with experience' but our focus is really on economics"* (Bas de Groot, personal communication, January 31 2012). Aesthetic appeal is considered to have a purposeful meaning and the owners want to focus on it, but more as a natural part of the development, not by investing in expensive professional design[152]. Education is also one of the farm's goals *"...the foundation's goal is to introduce agricultural production in the city for its inhabitants, that's just what we do and it is one of the reasons why we are here"* (Bas de Groot, personal communication, January 31 2012). The mission of the activity is to embed food into the city's network in a transparent, responsible and sustainable way with so that its many dimensions are considered to add value to city life and its environment ("Uit je eigen stad," n.d.-a).

Uit Je Eigen Stad grows crops in places where nobody expected them to be grown (Uit je eigen stad, n.d.-b). The farm runs a grocery store and a restaurant which prepares dishes from 'home grown' food. Products that they want to offer but are not able to grow, they buy from farmers just outside Rotterdam – good, healthy, locally-grown food. The farm also organizes 'harvest festivals, markets, workshops, children's activities and educational programs.

Fruit and vegetables are grown in beds of soil just outside in the garden [153] as well as in the greenhouse and in the hoop houses (Bas de Grote, personal communication, January 31 and July 10 2012). The farm keeps chickens[154] both for their meat and eggs and they also cultivate mushrooms, both types of which are grown in special rooms inside the building. The egg-laying chickens are also a part of the farm's business in growing crops. After the crops have been harvested, they use a movable cage in which there are chickens to harvest the rest[155]. The farm is going to produce fish and lettuce using a closed loop aqua phonic system, which is expected to start in February 2013.

According to Bas de Groot, the food market in the Netherlands is rather stable; people always want tomatoes, cucumbers and cabbage, but if they want to try something new they will do so during the weekend when there's enough time to cook. (Bas de Groot, personal communication, January 31 2012). Therefore, the farm has decided to grow other crops and will supply a bigger variety to the food market

---

[151] News and photos about the farm's development can be seen on the Face book website; e.g. the grand opening: www.facebook.com/media/set/?set=a.438288472889884.124055.170109009707833&type=1

[152] *"Every week I get phone calls or e-mails from at least two architects saying that they want to do something with us... architects are really expensive and they don't bring anything –it's my opinion, and it's hard... ...I know that they have inputs as well... but the amount they charge for their input is not value for money. Some sort of rooftop farming is being worked on in Rotterdam and I know that they will charge about 500.000 Euros for 500m² and the people who will work there as farmers will only earn 30.000 Euros, and the rest will go to architects. My opinion which is hard... is that architects are in a way demolishing urban farming"* (Bas de Groot, personal communication, January 31 2012).

[153] Four beds in seven rows

[154] Dutch chickens from North-Holland, reared since 1930 for the city of Amsterdam, especially for the Jewish community there. They were reared commercially until the 1960's and in a bigger way by only one person till the 1980's. They still have these same qualities; they lay good eggs and have high quality meat (a highly prized chicken)

[155] Then they have a really special diet

also. But their main customers are restaurants, *"we will produce a lot of crops for restaurants, because that is the aim of our business"* (Bas de Groot, personal communication, January 31 and July 10 2012). Tilapia and catfish are not very popular in the Netherlands but they will attempt to change that perspective by offering these types of fish completely fresh.

The fact is that when food is prepared in a special way it tastes better and this will make it more appealing. The farm focuses on quality and grows 'different types of tomato' but not organically 'all the time'

> *...we just decide to do what we think is right and organic is not our goal, but we think that's ok, because we use fish waste and that's not organic either because it floats in water. In this part of Europe you cannot grow vegetables in a way that is organic...* (Bas de Groot, personal communication, January 31 2012)

The reason for choosing this location

The site was shown to Bas de Groot in May 2009 by Jan Willem van der Schans, who said*; 'you have to farm – this is a good location; it's big – 6,8 hectares; here you can farm everything. I stood here with my bike and I said 'no way'..."* (Bas de Groot, personal communication, January 31 2012) *"It would have been brilliant if the farm had been a 'place-making activity'[156] for the future residential area"* (Jan Willem van der Schans, personal communication, February 3 2012).

In June 2009, a big conference 'Stroom[157] fooprint' was held there as the focus was quite theoretical (Bas de Groot, personal communication, January 31 2012; Jan Willem van der Schans, personal communication, February 3 2012) *"... we said you have to get some really practical guys over here, just farmers... ...someone from the real world"* (Bas de Groot, personal communication, January 31 2012). 'Eetbaar Rotteram' arranged this and Will Allen from Growing Power in Milwaukee USA and Paula Sobie a SPIN farmer who runs City Harvest in Victoria Canada, came to the Netherlands and gave speeches to the local government. "*...we also brought Will to this location and he said ' yea, this is great... just start, get some composting and begin... ... just do it! Then I thought, well ok maybe it is possible'"* (Bas de Groot, personal communication, January 31 2012 and July 29 2012). Later on, Bas de Groot decided to go to Milwaukee USA and work for several weeks at Will Allen's farm to learn how things were done over there.

Each of the three partners in Uit Je Eigen Stad are motivated by urban agriculture for different but related reasons so that they have combined their ideas to make a concept - to begin with, the location of Uit Je Eigen Stad. (Bas de Groot, personal communication, January 31 2012). Bas de Groot is fascinated by farming and has background experience and education in care farming. For Bas, farming is not only a means of feeding people in physical sense, it's also a good way to restore them spiritually.

> *"If humanity wants to earn a really healthy living... as a whole it needs to get in touch with the soil in one way - that substance is feeding us. So if people are not living near agriculture anymore, but only in*

---

[156] The area was going to be residential and the volume of housing so big there that the farm could easily be paid for - the "pro mille" or one tenth of the current price. The market price for farming operations was already much higher. This is the reason why van der Schans came up with this idea. It had the scale and the future to attract a particular group of citizens, which was a nice way of re-connecting the neighboring districts and so on (Jan Willem van der Schans, personal communication, February 3 2012).

[157] 'Stroom Den Haag' an independent foundation was established in 1989. It functions as a center for art and architecture with a wide-range of activities; from visual arts, architecture, urban planning and design, but the program focuses primarily on the urban environment (www.stroom.nl/paginas/pagina.php?pa_id=9487473)

cities then we have to move agriculture into cities. That's a bit idealistic" (Bas de Groot, personal communication, January 31 2012).

Johan Bosman has a background in commercial real estate business where he assisted, grocery shops, in particular, that focus on the mid-high level part of the market, to find the right location. His fascination for urban farming focuses on how urban agriculture can reinforce the city by 'place-making'; there are so many vacated sites, both buildings and plots where nothing is happening, and are wasting away. Huibert de Leede, has business background particularly in guiding big companies in a new direction. In the middle of Amsterdam, he has his own garden where he cultivates vegetables and has chickens therefore his interest is more personal.

History

A long time ago, the area used to be grassland, but in the 20th century it became the tropical food harbor (Bas de Groot, personal communication, 31 January 2012). A monumental building from the early 19th century is where tropical food used to be auctioned. Linked to the harbor activities a railroad building was erected at the location. Due to general changes in activities in the area it was used less and less until it became derelict in 2007. It was then used by squatters for illegal activities (Arienne de Muynck, personal communication, April 2 2012). At that time the Port authorities owned the area including the building (Jan Willem van der Schans, personal communication, February 3 2012).

A presentation linked to an explorative project on 'Merwe-Vierhavens' that includes the Marconistrip, was made by 'Eetbaar Rotterdam' for the Port authorities in 2008 in which the qualities of urban agricultural development were explained (Jan Willem van der Schans, personal communication, February 3 2012). In 2009, Jan Willem van der Schans, a researcher and one of the founders of 'Eetbaar Rotterdam', began to take the idea of an urban agricultural development on Marconistrip seriously. He designed an urban farm for the Marconistrip, with co-developers MEI Architecten[158] (architects), AM[159] (real estate developer) and BAM[160] (building and infrastructure company - AM is branch of BAM). At certain point van der Schans decided that it was wrong to continue that work without having a farmer as the key person in the development (Jan Willem van der Schans, personal communication, September 26 2012). That's how Bas de Groot became involved in the whole idea of a farm on the 'Marconistrip - Uit Je Eigen Stad and became the farm's founder.

This happened at the same time as a local government planning team were working on strategies for the area in question. They contacted the farmer - Bas de Groot, in October 2009 and became convinced that urban agriculture would be a good development (Arienne de Muynck, personal communication, April 2 and June 13 2012). DCMR, an environmental agency that assists all the municipalities in the 'Rijnmond' area[161] participated in the process as advisors as well as the 'Think tank' on urban agriculture[162] who were formally recognized by the Urban Design Department in Rotterdam who also participated in the planning work.

Most of the participants in the process had never heard of urban agriculture before.

---

[158] Their website is: www.mei-arch.nl/meiarchitecten/meiarchitecten_release-1.7.8/MainView.html#id=125
[159] Their website is: www.am.nl
[160] Their website is: www.bam.nl
[161] The large Port area of Rotterdam.
[162] 'Think Tank' - a workgroup and embryo of the municipality whose aim is to share ideas linked to urban agriculture, with external agencies and experts

"It was new for them and it took a long time to get these people to the right level, so they could give good advice... ... On one occasion I organized a meeting with about 10 people from the 'Ontwikkelingsbedrijf Rotterdam' [Department for Spatial-Economic Development-OBR], *'Dienst Stedenbouw en Volkshuisvesting'* [Urban Design Department - DSV] *and DCMR, a service which advises on environmental issues. During this meeting, Uit Je Eigen Stad announced their plans and the people were able to ask questions"* (Arienne de Muynck, personal communication, April 2 and June 132012)

The Social Housing Corporation - 'Havensteder' wanted to to use two abandoned buildings on the 'Marconistrip for temporary development, and one of them was the former railroad construction facility where Uit Je Eigen Stad now operates from (Arienne de Muynck, personal communication, April 2 2012). With Jan van der Schans[163] as project director of 'Havensteder' they made an agreement with BAM (building and infrastructure company that also participated in developing concept of a farm at the location a year earlier) to clean the area and take care of all the construction work financed by 'Havensteder' (Bas de Groot, personal communication January 31 2012).

From 2010 to 2011 two political decisions were made which had an effect on the planning process of Uit Je Eigen Stad.

First, a new coalition was formed in Rotterdam and the alderwoman Alexandra van Huffelen who was put in charge of the green areas, embraced the idea of urban farming which was a switch in perspective. Her forerunner liked the idea of city-oriented agriculture around Rotterdam but did not see the advantage of farming inside the city. Therefore, with the new coalition political support for urban agriculture increased.

Second, the Port Authorities made 'Stadshavens' an organization representing the City of Rotterdam and the Port Development of Rotterdam are both responsible for the area (Jan Willem van der Schans, personal communication February 3 2012). One and a half years later after the planning team had collaborated by working on plans for a farm on the 'Marconistrip', it became clear that these new stakeholders were not interested in urban agricultural development. They had bigger ideas for specific developments on the Marconistrip (such as construction of housing, office buildings , etc.) instead of 'small' temporary projects like urban agriculture so they opposed the issue (Arienne de Muynck, personal communication, April 2 and June 13 2012). 'Stadshavens' position at this point shows a traditional development perspective[164] (Jan Willem van der Schans, personal communication February 3 2012)

When the concept was introduced to 'Stadhavens' they admitted that they saw a lot of fresh fruit, happy people, nice children playing in gardens and so on - but reminded the audience that their office was about a city redevelopment, replying *'we talk about real estate'*. *"...we were too idealistic as group of people... "* (Jan Willem van der Schan, personal communication, February 3 2012). Following this presentation, Jan Willem van der Schans contacted the real estate agency CEO, one of the biggest real estate companies in the Netherlands and asked for an opinion on urban agriculture linked to a real estate redevelopment. *'I would prefer to redevelop a site where an urban farm has been rather than use a site that used to be a gas factory'* -

[163] Jan Willem van der Schans relative point of view

[164] For example that "*this area is going to be the clean 'tec-delta' so it will be technologically-driven industrial area with the Delta technology, water management etc.. This is going to be the proficient project in the Dutch economy ... we know how to deal with water in the densely-populated Delta areas and as... .. ... I was already in Think-Tank and the Delta guy was saying 'ok, how do people grow food in Delta areas ?* (Jan Willem van der Schans, February 3 2012)

was the chief executive's reply which was publicized by the media. Therefore, 'Stadhaven's perspective seemed contradictory and showed clearly how the concept of urban agriculture is viewed differently even 'through the same glasses'.

'Stadhaven's opposition was a great shock for the urban agriculture initiative. *"We had been having negotiations about this location for a year and a half... ...we almost decided to go to court"* (Bas de Groot, personal communication, January 31 2012).

The 'Planning team' negotiated with 'Stadshaven' for several months (Arienne de Muynck, personal communication, April 2 and June 13 2012). The compromise was to reduce the area from 3 to 1.8 hectares. The city of Rotterdam obtained the plot from the 'Stadshdaven'. In May 2011, an official policy document was created stating that, for 1 Euro, the building belonged from, that time on, to the Social Housing Corporation 'Havensteder' and there had to be a creative activity inside the building - ideally urban farming (Bas de Groot, personal communication, January 31 2012). The formal process, designating the area for urban agriculture continued with the local government, 'Havenstader' and Uit Je Eigen Stad (Arienne de Muynck, personal communication, April 2 2012).

In March 2012, Uit Je Eigen Stad were given formal permission to farm during the period 2013-2023 on the condition that they together with 'Havensteder' informed all stakeholders in the area about the activity. At least one stakeholder[165] objected to the permission, requiring representatives from Uit Je Eigen Stad to explain the farm's function and convince them that the farm's activities would not have a negative impact (such as odor, infecting their products) on the other stakeholders activities so that the objection could be withdrawn. It is questionable if the permission will remain valid until 2013 as it has been granted on the condition that none of the other stakeholder will object. Therefore the permission was given on the condition that 'Havensteder'[166] and Uit je Eigen Stad would inform the neighboring companies and inhabitants about the farm's activities. In the meantime the farm has permission based on current land-use codes, regarding trading and industrial activities.

> *"There were serious discussions among the people as to who is responsible for the permission... ... the Rotterdam municipality .... if the activity of urban agriculture were to fit in legally or not... ...Finally it was decided that it would fit in, because the local government wanted this activity... ...but it is potentially risky, and would not have any leverage in a legal process, if someone were to object to the permission"* (Arienne de Muynck, personal communication, April 2 and June 13 2012)

Financial matters were complicated for the farm initiative during this period and it was difficult to convince funding agencies or banks to lend money for this activity (Bas de Groot, personal communication, January 31 2012; Jan Willem van der Schans February 3 2012). Both unfamiliarity with the concept and uncertainty about the permission's time frame, had negative influence.

> *"Bas wants to have 15 years – he would get money easier from the bank. If this place-making activity had been formally recognized as real estate development then private capitalists would have jumped at*

---

[165] Total Produce is located at Marconistraat 19 3029 AE Rotterdam (Uit je eigen stad is located on Maronistraat 39 3029 AE Rotterdam) According to the company's website 'Total Produce' is Europe's premier provider of fresh produce. Growing, sourcing, importing, packaging, distributing and marketing over 200 types of fresh fruit, vegetables and flowers, the Total Produce group distributes some 250 million cartons of fresh produce to the retail, wholesale, food service and processing sectors across Europe annually (www.totalproduce.com/about.php?m=3) .

[166] The corporation who rents the building and the plot from the local government and who sub-rents it to 'Uit Je Eigen Stad'

this venture....but they haven't because it's unclear what's in it for them (Jan Willem van der Schans, personal communication February 32012)

In March 2012, Uit Je Eigen Stad decided to initiate a group funding, that resulted in about 600 people contributing to the foundation. One of the supporters was the real estate company AM (that had participated in the draft design of the farm's place-making function at this location 3 years earlier)

The construction company BAM, began to work on soil exchange in February 2012 followed by a soil test in April (Bas de Groot, personal communication, July 29 2012). But in June a special balancing of compost was implemented at the site. In April 2012, Uit Je Eigen Stad was granted a building permit[167] for a greenhouse and it was built by BAM a construction company. The first planting was done in late April with the help of volunteers (Bas de Groot, personal communication, July 9 2012) The first crop was harvested in June 2012 and the main customers are restaurants[168].

Financial issues were finally solved in June 2012, when Rabobank Rotterdam and The DOEN Foundation ('Stichting DOEN') provided loans for the initiative (Bas de Groot, personal communication, July 9 and July 29 2012).

During the period, May 2011 until February 2012, an initiative of 'Uit Je Eigen Stad' did an experiment on aqua-phonics in Utrecht which they intend to implement on the site ready for operation in February 2013 (Bas de Groot, personal communication , July 9 and July 29 2012) Following the advisory process with DCMR, the aqua-phonic system will begin operations once the official permit has been granted. The company Priva have offered to provide computer software for the system. Another future prospect is that the initiative hopes to enlarge the area for fruit production in the spring of 2013.

An official permit was granted by the Civil Service Administration and a restaurant[169] and grocery shop were formally opened 22nd September 2012. These activities are in line with the initiative's objective of being economically viable and business-orientated (Bas de Groot, personal communication, January 31 2012. According to Bas de Groot (personal communication, July 9 2012) volunteers have offered to participate in the farm's work more often than they had expected. They are usually better educated white women, who are unemployed and want to experience new things to broaden widen their perspectives.

Future vision

'Uit Je Eigen Stad' is a part of larger concept that the three partners visualize for the future (Bas de Groot, personal communication, January 31 2012). They see the urban farm as a pilot project and the idea is to do something similar in five other cities in the Netherlands. The farm would be the headquarters with combination of produce, a butcher, a restaurant and retail services etc. Then they aim to develop satellite locations with the prime goal of producing food for less investment. It depends on location as to what is suitable where.

'Uit Je Eigen Stad' is the first commercial farm to be established in Rotterdam and first of its kind in Europe (Leede, 2011). Its pioneer, Bas De Groot and member of the activist group 'Eetbaar Rotterdam' is

[167] Issued by the Department for Spatial Economy -OBR

[168] For example Hotel New York in Rotterdam (Bas de Groot, personal communication, July 9 2012) whose web-site is; www.hotelnewyork.nl/nl/eten-en-drinken/restaurant

[169] Go to the facebook site of uit je eigen stad: www.facebook.com/uitjeeigenstad?fref=ts

considered an icebreaker in his field and his hope is to influence and encourage people to take up similar (bottom-up) initiative within the city (Paul de Graaf personal communication October 28 2011)

PERMISSION ACQUIRED

The following summary shows when the important documents/permits/ licenses were created or issued (or will be created/issued) (Bas de Groot, personal communication, January 31, July 9 and July 29 2012.

1. In May 2011: an *official policy document* was created stating that, for 1 Euro, the building from that time on, belonged to the Social Housing Corporation 'Havensteder' and that it had to be used for a creative activity – ideally, urban farming An *agreement* was made in which states that 'Havnesteder' rents the building and the site to Uit Je Eigen Stad for farming activities.
2. In March 2012: 'Uit Je Eigen Stad' was granted a *formal permit for farming* (during the period 2013-2023) *on the condition* that they together with 'Havensteder' informed all stakeholders in the area about the activity
3. In April 2012: 'Uit Je Eigen Stad' was granted a *building permit* for a greenhouse, Issued by the Department for Spatial Economyj -OBR
4. In June 2012: *soil quality* was confirmed after it had been tested
5. In September 2012: *an official permit for a restaurant and a shop* was issued by the Civil Service Administration following the advisory procedure with DCMR, regarding;
    a. safety
    b. restaurant
    c. farming activities
6. In February 2013: a special official permit for the aqua-phonic system will be issued following advisory process with DCMR
7. Spring 2013: Permission will be applied for to enlarge the area for fruit production

AGENTS INFLUENCING THE FARM'S DEVELOPMENT

The government

> *In the first place, I don't trust the government... and I still don't trust them... ...there are different power structures within the government that work together but sometimes they work against each other. The bigger the location or the city is – the more difficult this is. Because you never know if the person you speak to is the one who decides... you never know"* (Bas de Groot, personal communication, January 31 2012)

This experience is based on the unexpected objection to 'Stadshaven' leading to an enforced compromise that involved reducing the size of the land that the farm could operate on.

According to Bas de Groot, the willingness for the government to advise and facilitate an activity really depends on the individual. Arienne de Muynck is such a person who has been able to speed up the process. After all, the local government has given its support by demonstrating a positive attitude and the willingness to collaborate on the development by providing financial assistance and allowing

'Uit Je Eigen Stad' to use the location without charging full city rates[170] *...because it's a bit ridiculous to pay for this location in a way* " (Bas de Groot, personal communication, January 31 2012). The government is facilitating the activity also by creating a zoning code for this location as urban farming from 2013-2023) *"As far as I know it will be the first location in the Netherlands especially zoned for urban farming"* (Bas de Groot, personal communication, January 31 2012). The farm needs to pay for everything as far as infrastructure is concerned.

Other stakeholders

Eetbaar Rotterdam helped indirectly by putting urban agriculture on the agenda *"...that was what I did before... I was one of them""* (Bas de Groot, personal communication, January 31 2012). 'Uit Je Eigen Stad' has had a lot of help from the Social Housing Corporation - Havensteder, which became their landlord in the process *"...we are just renting the building for one euro for the next ten years and they provide the soil and the greenhouse and re-construct the building... ...the deal is that we pay them back in ten years ...so, it's a really good way of doing finance"* (Bas de Groot, personal communication, January 31 2012). The corporation takes the risk to invest in 'Uit Je Eigen Stad' which uses the investment and pays back the funds that were spent on it.

Several businesses have also proved to be complementing the development process *"...I'm especially happy with the cooperation we have in the business"* (Bas de Groot, personal communication, January 31 2012). A big construction company BAM have built everything and have given a discount for that work. Support has come from other businesses[171] in terms of test set-up of lights. The company Priva[172] a world leader in setting up greenhouses also offer a computer system free-of-charge and maintenance with the greenhouse The international seed company Ensa has also been supportive by offering seeds. It is the aim of these businesses to get a good name and they also want to learn from others so that they can create new products - 'Uit Je Eigen Stad' demonstrate new products and they are given a new image.

It was difficult to find stakeholders who would finance 'Uit Je Eigen Stad' *" ...for us the crises are really helping us with the location – paying nothing or little for the location but they are not helping us with financing... because banks are not very helpful at the moment"* (Bas de Groot, personal communication, January 31 2012) Following the crowd resulted in 600 people contributing to the fund (Jan Willem van der Schans, personal communication, September 26 2012) and when the permission was granted Rabobank and the DOEN foundation provided loans (Bas de Groot, personal communication, July 29 2012)

When looking back at the overall process, Bas de Groot considers that in general, nothing would have happened without three very helpful individuals who have provided support and assistance in various ways (personal communication, July 9 2012). These individuals are; Arienne de Muynck at the Project Management and Engineering Department of Rotterdam (PMB), Jan Willem van der Schans, a researcher at Wageningen University, a member of 'Eetbaar Rotterdam' and a participant in Think Tank on urban agriculture and Jan van der Schans chief executive of 'Havenstader' the social housing corporation.

[170] The normal annual rate per hectare within city is 17.000 Euros, instead we pay 1700. And now we are trying to get it down to one Euro for the total period so that we save 17.000 Euros, that's what we are trying to do now. So the normal rate for the land is 17. 000 – now 1.700 – hope 1 Euro (Bas de Groot, personal communication, January 31 2012.

[171] Companies such as; Philips provide lighting which they own and take care of – both in the greenhouse and the chicken pen.

[172] Priva really interested in Acua-phonics – combining vegetable growing and fish production (Bas de Groot, personal communication, January 31 2012). Their website is: www.privagroup.com/en

Table 4 A summary listing four categories of agent who have been influential in the development of 'Uit Je Eigen Stad'; inspiring advisors or professionals, financial agents, facilitators and co-workers/partners. This information is based on the previous summary and is outlined in the next chapter; Development process - flowchart with a timeline. The color indicates the agent's category. The agents appearing in this table are not listed in order of importance and some of them appear in more than one column.

Advisors or inspiring actors (professional)	*Agents providing financial assistance*	*Agents facilitating activity*	*Agents that are co-workers and partners*
Jan Willem van der Schans, researcher at Wageningen University and economist at LEI, den Haag	*The Social housing Corporation 'Havensteder' by financing & cleaning of the site*	*'Eetbaar Rotterdam' the urban agriculture activist group*	*Bas de Groot, founder*
Will Allen, an urban farmer at Growing Power in Milwaukee USA	*Crowd funding ~ 600 people and organization, who are of the real estate company AM*	*Planning team of different government officials (Arienne de Muynck speeds things up)*	*(Antonie Miltenburg)*
DCMR - Environmental agency for all the municipalities in the Rijnmond area - advisors	*Rabobank Rotterdam*	*'Think Tank' on urban agriculture*	*Johan Bosman*
	'Stichting DOEN' (The DOEN Foundation)	*Social Housing Corporation 'Havenstader - Jan van der Schans*	*Huibert de Leede*
	Priva will provide computer software for the aqua-phonic system	*The local government*	*Social Housing Corporations 'Havenstader - Jan van der Schans*

THE DEVELOPMENT PROCESS - FLOWCHART WITH A TIMELINE

Figure 27 - see next page

‘UIT JE EIGEN STAD’ DEVELOPMENT ROTTERDAM NL.

LEGEND
Consultants or inspiring agents (professional)
Consultants who provided financial assistance
Agents facilitating activity
Co-workers or partners
Founder
Event on timeline
Event in the near future
Marconistrip
Former food auction area near the old harbor
Former rail track is now the current location of the farm (UJES)
UJES was voted the second best city initiative of the year

Former rail track facility occupied by squatters who engaged in illegal activities.

The Port Authorities owned the area including the building.

‘Eetbaar Rotterdam’ the urban agriculture activist group was established and they put urban agriculture on the “map” in Rotterdam. The group was formally established in 2009.

Jan Willem van der Schans, designed an urban farm for use on the Marconistrip. The co-developers were; **MEI Architecten**, **AM** (real estate developer) and **BAM** (building and infrastructure - AM is branch of BAM)

J.W. van der Schans renounced this work and went in search of a farmer

Will Allen from Growing Power in Milwaukee USA visited the Marconistrip with Bas de Groot and said “Just do it!”

Jan Willem van der Schans showed the site to the farmer Bas de Groot

Antonie Miltenburg a partner until Jan.11

Johan Bosman became a partner

Port authorities made **Stadshavens** responsible for the area. An organization representing both the City of Rotterdam and the Port Development of Rotterdam

A new coalition was formed in Rotterdam - **Counsellor Alexandra van Huffelen** embraced the idea of urban farming.

UIT JE EIGEN STAD Foundation

Stadshaven opposed the idea. They wanted bigger, permanent structures on the Marconistrip (such as housing, office buildings, etc.) instead of “small” temporary developments like urban agriculture - “we want real estate”.

Huibert de Leede became a partner

A written policy was established declaring that, for 1 Euro, the building belonged to the Social Housing Corporations ‘Havenstader’ from May 2011 and had to be used for a creative activity - ideally urban farming.

Group funding resulted in ~ 600 people contributing fund, AM (the of the real estate company) was one of them.

UJES obtained *formal permission for farming* (during the period 2013-2023) providing that they, together with ‘Havensteder’, inform all the stakeholders in the area about the activity.

The first crop harvested, restaurants are important customers

Financing is clarified;
Rabobank Rotterdam provides a loan
‘Stichting DOEN’ (The DOEN Foundation) provides a loan

In the spring of 2013 UJES hopes to extend the area to include fruit production

IN 20TH CENTURY

2007

2008

2009

2010

2011

2012

2013

MAY · JULY · AUGUST · FEBRUARY · MARCH · JULY · JANUARY · MARCH · MAY · MARCH · JUNE · FEBRUARY · APRIL · SEPTEMBER · FEBRUARY · OCTOBER · APRIL

Long ago the area used to be a grassland, but in the 20th century it became the tropical food harbor.

The early 19th century monumental building is where the tropical food was auctioned.

Urban agriculture became one of the core concepts, the thematic ‘Green Year’ in Rotterdam.

Eetbaar Rotterdam gave presentations to the Port Authorities - introducing ideas in urban agriculture in an area known as ‘Merwe-Vierhavens’ which includes the Marconistrip

The researcher and one of the founders of ‘Eetbaar Rotterdam’, Jan Willem van der Schans were inspired to create an urban agricultural development on the Marconistrip

A Planning Team made up of Government officials drew up a temporary plan for the Marconistrip.

Convinced that urban agriculture would be a good idea, the team contacted Bas de Groot (founder of UJES) in October 2009

DCMR - Environmental agency for all the municipalities in the Rijnmond area - advisers

‘Think Tank’ – a working group was formally established and acquired government recognition in 2010 – an embryo municipal branch – which shared ideas linked to urban agriculture, with external agencies and experts

An introductory meeting on urban agriculture was organised by Arienne de Muynck

The Social housing corp. - Havensteder’ decided to develop two abandoned buildings on Marconistrip (temporarily). With Jan van der Schans as project director of Havensteder they made an agreement with BAM to clean up the area and take care of all construction work financed by Havensteder.

The ‘Planning team’ negotiated with **Stadshaven.**

A compromise was reached to reduce the area from 3 hectares to 1.8 hectares and the city of Rotterdam took over the plot from Stadshaven.

UJES do experiments in aqua-phonics in Utrecht which they intend to implement on site - ready to begin operations in February 2013.

UJES obtained *building permission* (from the Department for Spatial-Economical Development - OBR)

BAM (the constructor) started building the greenhouse.

Planting in late April with the help of volunteers

The official opening of a restaurant and grocery store; *permission granted by the Civil service administration department* - following the advisory procedure with DCMR

The permits required are:
- *safety*
- *restaurant and sales*
- *farming activities*

The aqua-phonic system will begin operations when *official permission* has been granted following the procedure with DCMR,

Priva will provide computer software for the system

Meetings & E-mails
A Planning Team;
Urban Design Department (DSV)
Think Tank
A part of Rotterdam City Council
Department of Spatial - Economical Developm. (OBR)
Bas de Groot
DCMR advising on environmental issues

Introducing urban agriculture
Arienne de Muynck project manager
Will Allen from Milwaukee USA gave advice
Jan-Willem van der Schans Presentations/Workshop
Local Government Project-Management Department (PMB)
Stadshaven responsible for the area

SUMMARY

'Uit je eigen stad' is the first farm of its kind in Europe. It is located in an old harbor and industrial quarter called 'Marconistrip' that has been undergoing transition for some time. It is run by the founder and two partners of his. The farm is in close proximity to residential areas, institutions and offices. It operates on 1.8 hectares [4 Acres] of land inside an old railway yard that had not been used for several years Squatters occupied the area using it for illegal purposes. The land-use coding for the area covered trade and industrial activities and was out-of-date. An organization representing both the city of Rotterdam and the port development of Rotterdam known as 'Stadshavens', has been responsible for the area since 2010, but the port authorities used to be in charge. The main reason for developing the farm at this location was inspired by agents who encouraged the founder to follow his dream and begin using this rundown area for urban agriculture which could have positive impact.

'Uit je eigen stad' is a commercially-run urban farm in which offering different experience is the driving force behind making a profit. The aim is to get agricultural production into the city for its residents and connect consumers with producers. Therefore education an important part of the farming objective which adds value to city life in a transparent, responsible and sustainable way. Aesthetics are considered purposeful but more of a natural part of the development than a major investment in design.

The farm cultivates vegetables, mushrooms, keeps chickens, runs a store and a restaurant selling 'home grown' food. Products that they want to sell but are not able to grow, they buy locally. The farm also organizes harvest festivals, markets, workshops, children's activities and educational programs.

At one time the area used to be grassland, but in the 20th century tropical food was shipped into the harbor hence the links with food-related issues on the site.

The idea of developing urban agriculture at the location is linked to exploratory project for a large area that included the 'Marconistrip'. Agents from the activist group 'Eetbaar Rotterdam' presented the qualities of urban agriculture to the Port authorities. Jan Willem van der Schans - a researcher and one of the founders of 'Eetbaar Rotterdam' designed the concept of an urban farm with other agents to transform the 'Marconistrip' and in 2009 and at a later date informed another founder Bas de Groot about it. At the same time a group of local government planners were working on strategies for the area in question and contacted the farmer about it in October 2009.

Their aspiration of establishing an urban farm on the site after a long and complicated decision-making process had finally been achieved. DCMR, an environmental agency and the 'Think tank' committee on urban agriculture were formally recognized by the Urban Design Department in Rotterdam almost at the same time and participated in the project from the outset. Presenting the concept was time-consuming because the participants were not aware of the concept of urban agriculture. Later the social housing corporation 'Havensteder' actively participated by assisting and funding the re-development process as well as, with another agent, took care of cleaning the area and doing all the construction work together with another agent.

[...contd. on next page]

The process was given a lot of political attention. Until now the political viewpoint on agriculture in the city had been quite conservative but a new coalition was elected and perspectives changed. The counselor in charge of the natural environment, embraced the idea of urban farming. A new organization was given responsibility for the area. After more than eighteen months of collaborative planning on the farm, the new stakeholders preferred a more permanent development such as real estate rather than a 'small' temporary development in urban agriculture. It took a considerable amount of time and compromising to solve the issue, which resulted in a smaller area being allocated to the farm than was initially planned.

In March 2012, the farm was granted a permit for farming (during the period 2013-2023) in accordance with the existing regulations on urban agriculture on condition that they, together with 'Havensteder', keep all stakeholders in the area informed about the activity. Local government representatives in Rotterdam responsible for granting the permit had to carefully examine the legal aspects and discuss them as if the process were potentially legal. This permission was granted even though it was considered to be risky. At that moment attaining funding for the farming initiative was complicated because it was difficult to convince investors and financial institutions to invest/approve a loan in a project they knew very little about. Group funding and help from volunteers proved to be crucial until a bank loan was approved by a bank and foundation.

In the autumn of 2012 the farm opened a restaurant and a grocery store and began providing educational activities on a regular basis. Plans for the future are to start aquaphonic cultivation in 2013 and get permission to enlarge the area for fruit production. 'Uit je eigen stad' is part of a larger concept to develop farms at other locations with the prime goal of producing inexpensive healthy food.

The policy to develop urban agriculture is interwoven with the process on obtaining permission for the farm. An official policy was the first reliable step in the farming initiative. It stated that the building belonged to the Social Housing Corporation 'Havensteder' and had to be used for a creative purpose, ideally urban farming. Subsequently an *agreement* was signed which states that 'Havnesteder' rented the building and the site to 'Uit je eigen stad' for farming projects. The farm was then granted a permit with a disclaimer for introducing the activity to the neighborhood. The legal status of the permit was discussed at length and the fact that the area was coded as industrial facilitated issue of the permit. The farm preferred to obtain a permit for 15 years but was only granted one for 10 years. *Building permission* was granted for a greenhouse; the *quality of the soil was confirmed after* testing and *an official permit was granted to open a restaurant and a shop.* In the future the farm needs to obtain *an official permit for the aqua-phonic system* and permission to enlarge the area for fruit production.

A willingness on the part of the government to advise on facilitating activities would only be done on an individual basis. However, the local government collaborated on the farm initiative and facilitated the development by allowing the farm to use the location without charging the full city rates and agreed to provide the forthcoming zoning classification on urban farming for the next 10 years. 'Eetbaar Rotterdam' helped indirectly by putting urban agriculture on the agenda. The social housing corporation 'Havensteder', have proved to be very important in the process both in terms of financing and as facilitators. Several businesses have also provided assistance in the development process

5 DISCUSSIONS

5.1 COMPARISON OF CASES

What can be learned from comparing the features of these two cases of urban agricultural development on unused city land?

5.1.1 *THE PAST LAYS THE FOUNDATION FOR THE PRESENT AND FUTURE GENERATIONS*

Cultivating food inside cities has long been practiced as 'marginal land use' and is now recognized as a response to the dynamic character of cities (van Veenhuizen, 2006). Demographic and spatial transformations result in temporary unused terrain within them.

Both Rotterdam and Detroit developed along the banks of a river, which served as a transportation route and over the course of time, trading reached a level of international importance. In the latter half of the twentieth century Rotterdam became one of the world's largest ports and Detroit was famous all over the world for its car industry. Global incidents have had different effects on the cities such as the World War II. While the war was causing Rotterdam to have a 'heart transplant' its citizens were also experiencing hunger and devastation. At the same time, Detroit was blooming with vitality in various aspects and soon became recognized as 'motor city'.

Both cities have faced serious challenges in demographic terms. White people in Detroit with resources were often racist and moved out of Detroit causing a decrease in the population. The city currently only has half the number of residents it had in the 1980's. Racial segregation is still a problem in the city of Detroit and 80% are African Americans. Rotterdam has been experiencing a lot of inter-cultural tension in recent decades and 46% of its inhabitants have different ethnic backgrounds. The majority of those immigrants also have different religious faiths compared to the Dutch inhabitants. At one time young people with resources would move out of Rotterdam but nowadays the city is inhabited by relatively young, 'individualistic' people. More people in Detroit suffer proportionally from ill-health, unemployment and poverty than they do on the national average. There is a shortage of food of around 30% to ensure a healthy, active lifestyle which is an indication of food insecurity. Rotterdam's citizens' health is also worse than that of the national average. It has a higher proportion of obese citizens on account of unhealthy diets and too little physical exercise.

The state of the economy in Detroit city has been unstable for several decades but the recession in 2008 made the situation even worse. Rotterdam has also been seriously affected by the current downturn in the economy. Unemployment is very high in Detroit and in Rotterdam it is the highest in Netherlands even though not as high as in Detroit.

Both cities have developed spatially insofar as they are now attractive areas for urban agricultural development. Together with other factors which have influenced the urban crisis in Detroit is an expanse in suburbia which has left at least one fourth of the city as unused terrain and causing some neighborhoods to suffer from neglect. Even though the National Compact City Policy adopted in the 1980's has had an influence on Rotterdam's development it is not as compact as other cities in the Netherlands. Due to strategies used to rebuild the city after the war and how the older areas were slowly transformed due to relocation of activities linked to the port, it has been acknowledged that there is relatively more unused

terrain in Rotterdam, than in other Dutch cities. Furthermore, a lack of green verges and no easy ways of reaching the farmers outside the city makes urban agriculture even more relevant to Rotterdam.

Urban agriculture has been described as an activity in which agents cooperate to create more beneficial food systems and improve people's eating habits, food-production, links between farmers and consumers, and reinforce the local economy (Feenstra, 2002; van Veenhuizen, 2006; Pothukuchi, 2009 and 2011.) The possibility of growing food in cities has been described as positive especially when taking into account resources such as inexpensive terrain (building sites, rooftops, empty buildings etc.) heat, organic waste and people willing to work (Van der Schans, n.d.; Graaf, 2012)

Various benefits in developing urban agriculture have already been documented. It has been pointed out that urban agriculture can contribute to solving the global food shortage crisis on a large-scale (Van der Schans, n.d.) and is relevant to a city's capacity in sustaining urban development (Wiskerke & Viljoen, 2012). This activity can serve the city in numerous ways and improve the local economy. Urban agricultural activities can help communities to sustain their 'resources' (Smit & Bailkey, 2006) and help groups to integrate more easily into the urban network. Urban agriculture is, therefore, beneficial to the urban poor, other classes in society, urban farmers and is part of the food programs on sustainable city development (van Veenhuizen, 2006).

Recent decades marked by urban crisis and economic challenges caused Detroit to turn into a "blossoming garden" by using farming initiatives which have been developing in the city now nicknamed 'Grow town'. The opportunities resulted from lots of vacated terrain and people who were willing to work. The main benefit of developing a sustainable food system in Detroit is to solve problems relating to food insecurity because many poor families have little or no access to healthy food. They have health problems on account of poor nutrition and obesity is prevalent especially in distressed neighborhoods. As was the case in Detroit, the 'birth' of urban agriculture comes at a time of crisis and is especially relevant for the urban poor even though other agents also become aware of the same opportunities and advantages it has.

Due to the financial and the real estate crisis urban agriculture has become relevant for Rotterdam since the housing market is at a temporary standstill leaving more areas waiting to be developed. The recent agricultural urban development in Rotterdam has been driven by the ideology to reconnect consumers with producers (the city's inhabitants and the farmers) along with its ability to add value to the range of food and the environment in general. Its characteristic to serve as a bridge between cultures is also beneficial.

Developing the local food system in Detroit and Rotterdam is a contrasting aspect within cities which is important in the global network business. However, it can be concluded that the opportunities for urban agricultural development within them are of a historical nature. Both Detroit and Rotterdam have such backgrounds that they are particularly interesting areas for urban agriculture. The current state of affairs in both Detroit and Rotterdam determines which urban agricultural activities are beneficial to them. The past sets the scene for current and future projects.

5.1.2 *APPLICABLE POLICIES*

POLICY THEMES, STRATEGIES TO SUPPORT URBAN AGRICULTURE AND THE AGENTS INVOLVED

Official urban agricultural policies and food policy councils, characterized by networking and sharing knowledge, are two of the key concepts, in promoting urban agriculture (Pothukuchi, 2009; Stierand, 2012). When policy-makers work on new urban agricultural policies they can use professionally revised community food objectives (Pothukuchi, 2009) and/or a model based on planning for urban agriculture (Van der Schans & Wiskerke, 2012).

In Detroit, official plans have been used to encourage the temoprary use of vacated areas in the city since 1970. Recently the authorities have produced a more clearly defined policy on urban agriculture. City officials now have a better understanding of the urban agricultural development taking place however, it has not yet been authorized. Adapting appropriate regulations to ensure that agriculture is beneficial to neighborhoods is vital. In a way the authorities are following 'a path' which has been created at the grass-roots level. Many non-profit making organizations have been influential on food-related issues in Detroit, by creating a network which pursues individually or collectively the changes to be made in the city. 'The Detroit Black Community Food Security Network' (DBCFSN), one of the pioneering bodies, took the lead in establishing a policy on food justice and later on the Detroit Food Policy Council (DFPC) in 2009. DFPC's main purpose is to publish and distribute the City of Detroit's Food System Report on the state of the city's food system to raise public awareness of the key issues, and clarify relevant policies and programs at all levels (Walker et al., 2011).

The authorities in Detroit are currently working on an urban agricultural policy on which ' The Right to Farm Act' (RTFA), approved by State law is proving to be a barrier which has to be dealt with. According to RTFA commercial activities linked to urban agriculture are not allowed in the city. From a legal standpoint commercial urban agriculture improved slightly when the rules were amended, but the city wants decisive 'action' at the State level to legalize commercial urban agriculture in the inner city (e.g. amend the RFTA).

Several urban agricultural projects have been developing in Rotterdam recently, although the city's special 'green policy' touch on the topic of agriculture. However, an official urban agricultural policy was approved the Spring of 2012 (Rotterdam Municipality, 2012). The objectives of the present political coalition in Rotterdam is to develop a 'cleaner, greener and healthier city' with more ambition for sustainability. Urban agriculture is now featured in the current environmental and sustainability policy. The aim is that in ten years' time more regional fruit and vegetables will be consumed by the citizens after transforming the 10 most 'stony' areas in the city into significantly greener plots by means of urban agriculture. 'Think tank', a municipal embryo, consisting of civil servants and temporary external experts worked on this issue. After reviewing similar policies and assessing their impact on the pillars of sustainability, the contribution that urban agriculture could make in sustainable development emerged. The city officials were keenly following what was happening. Along with the city's officials three other influential organizations have been engaged in discourses on urban agriculture. The activist group 'Eetbaar Rotterdam' (Edible Rotterdam) has been active for the longest period of time and put urban agriculture on the 'map' in Rotterdam in 2008. At that time it was important to find ways and means to unite cultures that were not alike, by searching for something that they all had in common, such as growing food to bridge the cultural gap. Later the organization's main goal was influential in setting up a policy on urban agriculture for the city.

By following the grass-roots agents, the cities have been creating policies on urban agriculture. In Detroit an NGO and the Food Policy Council have played an influential role in that area which originally required more justice in the food system in the city. Subsequent to the NGO, 'Eetbaar Rotterdam' put the phenomenon of urban agriculture on the 'map' and the municipal embryo 'Think Tank' with governmental status, was taking the lead in creating urban agricultural policy. This difference indicates that the local government in Rotterdam is more dominant than in Detroit. In Detroit, adapting appropriate regulations to ensure that agriculture can have legal status in urban areas is crucial. In Rotterdam the policy on urban agriculture was created by merging it with the current sustainability plan using a model based on policy criteria in urban agriculture. In contrast to Detroit, the city's Food Policy Council, consisting largely of a network of NGO's and non-profit making organizations has had profound impact in establishing a policy on urban agriculture.

Agricultural Urbanism (AU) is an holistic approach to integrate various aspects on food issues into city-planning making the food system more sustainable and the city a more agreeable place to live in (Holland & Salle, 2010). It consists of 10 general principles or themes which can be used to assess where a city stands in relation to the phenomenon of urban agriculture. Figure 30 depicts a comparison between the cities policy teams screened by the ten principles of agricultural urbanism. It shows the similarities and differences in both cities perspectives on urban agriculture.

In Detroit the theme having the highest priority in the draft agricultural policy is integrating the sustainable food system's goals and programs. Key food system stakeholders have been involved since the project began. Increasing economic activity, the food system's profile and access to food chain activities are themes being worked on. Partnership and organization initiative to manage urban food systems more successfully is supported by a framework of city-owned land for farming activities. Certain agricultural projects in the city have integrated food perspectives, however, the private sector and non-profit organizations need to be involved in the celebratory and educational aspects related to food. Improving health and food justice are the food system. The city has the same opinion of urban agricultural projects that aim to improve the area (appearance etc. 'place-making') which must be dealt with by the private or nonprofit-making sectors in cooperation with the city. Urban habitat considerations are not a priority in the policy but the natural landscape has been given some attention. Other aspects such as providing education, needs and recycling possibilities in the infrastructure of urban agriculture, and how it can benefit climate change have not been discussed openly.

In Rotterdam, design strategies for 'the creation of more green areas' ('place-making' strategies) and increasing economic activity are the most important themes in the new food system policy. People who wish to use vacated terrain for agriculture will be stimulated to do so, so that these areas will become more delightful. Urban agriculture is also thought of as the peri-urban area. Farmer's revenue will increase and the landscape around the city will be maintained. Aiming to provide access to grow, sell or process food is sometimes an issue. Increasing access to more specialized products (organic, ethnic etc.) is of particular interest. The city wants to distribute food grown in the region via the government's canteens, but this is a challenge due to rules of competition within the European Union. Large contracts for food in the catering industry have to be made public which causes a dilemma for local government that only wants to purchase regional food. Prioritizing the integration of the food and agricultural elements in the planning system is considered to be the city's responsibility in some cases, depending on the aspects involved. Sustainable food economics should focus on the citizens health; healthy living areas, the type of food consumed and

lifestyles. Attaining this kind of development inside cities is more difficult than on the outskirts because mono-functional viewpoints fear the competition between agriculture and the construction industry rather than seeing its positive aspects as a redevelopment plan. Providing educational opportunities on food in community programs is difficult because of recent cutbacks in budgets however there is some sign of improvement. The city wants to show its willingness in this respect by encouraging and maintaining partnerships with organizations. The importance of urban agriculture as a means of building communities and creating social cohesion has been recognized by Rotterdam because of its citizens from different cultural backgrounds. However the city authorities do not wish to re-organize the community so that it becomes entirely self-reliant. The city is developing an understanding on how food and agriculture can provide solutions to climate change. Adding habitat considerations to the urban agricultural agenda has until now only been a point of discussion. Integrating the sustainable food system's goals into the policies and all the programs is considered to be too ambitious on account of the number of key stakeholders involved. Neither does it seem appropriate to include the benefits that urban food systems can offer to community infrastructure. Structuring the subject matter into the city's programming seems virtually impossible to achieve.

Increasing economic activity and raising the food system's profile is considered to be an advantage for both cities, to enable them to grow, sell and process food yet on both sides, laws and people in high positions are barriers in this development. Both cities consider healthy food an important element on which they have to focus. Encouraging partnership and organizations to be responsible is important for both cities although from different aspects. For Rotterdam, improving social cohesion among people from different cultural backgrounds is important while the authorities in Detroit prefer partnerships with organizations for improving food security. One of the key issues in Rotterdam's urban agricultural policy is to improve the city's aesthetics by applying 'place-making' strategies whereas Detroit's objective is to integrate sustainable food system goals into the appropriate plans and programs. These differences reveal the benefits of urban agriculture as perceived by both cities and they also demonstrate the positive impact considered of urban agricultural development.

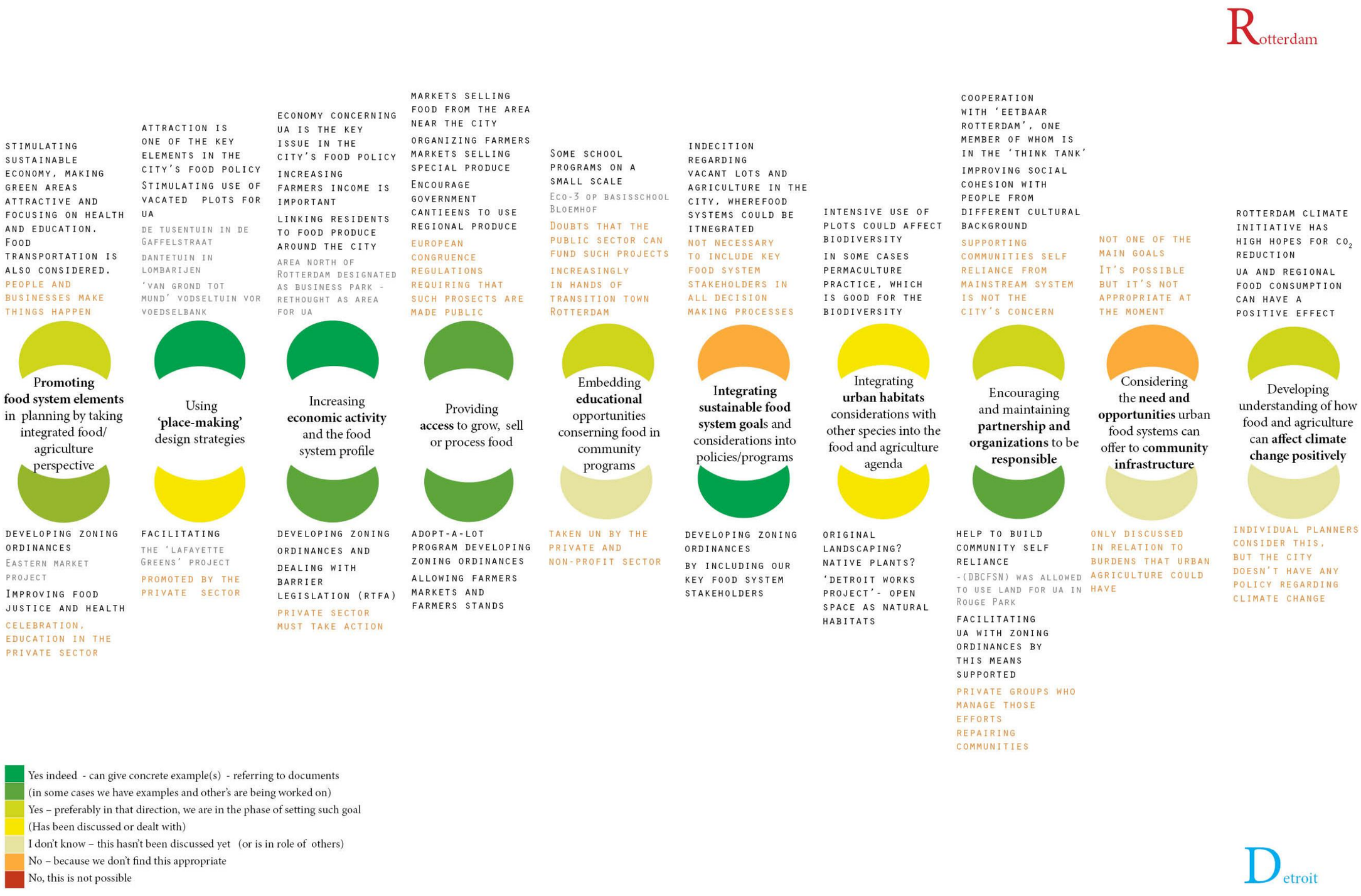


Figure 28 Comparison of the city's policy/contents of draft policy. The diagram reveals how the cities see the principles/themes of agricultural urbanism and what they emphasize and what not. Arguments are supported by taking examples in practice. The color given to each principle indicates at what rate that particular principle is included in the city's policy/draft policy or if it's considered appropriate. - according to the legend at the bottom left-hand corner - Green means yes indeed and red no - certainly not (Illustration developed by the author following interviews with Laura Buhl (Detroit) and Kees van Oorschot (Rotterdam))

Special strategies have been explored to assist farming initiatives and lighten burdens from a legal perspective (both financial and otherwise) (van Veenhuizen, 2006 and Mogk et al., 2011). Figure 31 depicts a comparison between the strategies the cities are using or are considering to promote urban agriculture.

Detroit's main strategy in support of urban agriculture is to extend the existing zoning ordinance. Therefore the current zoning procedure will remain in force except for certain urban agricultural activities (10 categories) which will be merged into it. The city has made special land-use agreements using particular programs or projects. Tax benefits have been discussed but are not yet official. Assistance with farming initiatives is provided by extension-services at the universities or non-profit groups at the grass-roots level. The city has no budget to support farming initiatives but is willing to help agents that do. Lowering costs for legal permission have not seriously been considered and giving away land is deemed to be inappropriate.

Rotterdam allows exceptions to constraints in regulations or zoning codes if necessary. Long-term projects would have to go through the normal procedure and zoning regulations might be adjusted in a given situation. The city is a willing to assist people who have interesting ideas, either by contributing small funds to the initiative or encourage networking. Reducing land prices and leasing options are discussed occasionally, but not generally. Introducing a zoning ordinance for urban agriculture has not been discussed yet. Vacant building sites can only be used for a limited period of time for urban agriculture - up to a maximum of 10 years. The benefits gained by reducing taxes and lowering the rates for legal permits have not yet been discussed and giving away land is not permitted due to the regulations governing the sale of land.

The city's main strategies to promote urban agriculture are contrary in some aspects. While Detroit is developing an ambitious zoning ordinance for urban agriculture Rotterdam would rather make exceptions to the current zoning system unless projects are designed as long-term projects. Urban agriculture in Rotterdam therefore is considered as a temporary development. Other strategies are only used by the cities in exceptional circumstances.

Rotterdam

Developing zoning ordinance for urban agriculture	Financial benefits through tax relief	Reducing land prices/leasing for city owned land or agreements for special land-use	Reducing costs for permission	Being exempt from constraining rules or zoning codes	Facilitating/ preparing the area in various ways with the assistance of experts	Giving land away
HAS NOT BEEN DISCUSSED - ZONING IS NOT A PROBLEM. ALL AU PROJECTS IN THE CITY CAN BE CLASSIFIED UNDER THE 'GREEN' CODE OR FOR TEMPORARY DEVELOPMENTS UP TO A MAX OF 10 YEARS (ON VACATED BUILDING PLOTS)	HAS NOT BEEN DISCUSSED THE MUNICIPALITY IMPOSE FEW TAXES- MANLY ON REAL ESTATE. UA INITIATIVES ARE NOT TAXED THUS NOT ELIGIBLE FOR TAX RELIEF	SOMETIMES THERE ARE NEGOTIATION ABOUT REDUCING LAND PRICE AND LEASING OPTIONS - FOR EXAMPLE 'UIT JE EIGEN STAD' IT IS IMPORTANT TO DISCUSS THIS ISSUE THERE IS NOT A SPECIAL POLICY ON THIS	HAS NOT BEEN DISCUSSED. MOST PEOPLE DON'T NEED PERMISSION - 'UIT JE EIGEN STAD 'IS AN EXCEPTION. IT COULD BECOME AN ISSUE IF PROJECTS HAVE REAL PROBLEMS WITH THIS	ZONING RULES ARE NOT CONSIDERED A PROBLEM FOR TEMPORARY USE OF VACATED LAND. FOR LONG STANDING PROJECTS THEY CAN BE INTEGRATED BY AMENDING THE ZONING TO TAKE ACCOUNT OF NEW SITUATION. THIS WAS THE CASE IN 'POLDER SCHIEVEEN' AND ON MARCONISTRIP - 'UIT JE EIGEN STAD'	THE CITY TRIES TO FACILITATE PEOPLES INITIATIVES IN URBAN AGRICULTURE BY ADVISING THEM TO NETWORK WITH OTHER STAKEHOLDERS OR COLLEAGUES I.G. FARMERS AND SHOP OWNERS ALDERMEN TRY TO OVERCOME ISSUES IN STRICT NATIONAL GOVERNMENT REGULATIONS SOMETIMES SOMETIMES GRANT A SMALL AMOUNT OF MONEY PREPARING LAND OR GETTING EXPERT ADVICE THE FARMERS RESPONSIBILITY	IT IS NECESSARY TO CONSIDER THIS FOR SOCIAL PROJCETS THE CITY HAS CERTAIN REGULATIONS ON SELLING LAND AT MARKET VALUE - GIVING AWAY LAND AND ASKING OTHERS FOR THE MAXIMUM (TRADITIONAL FARMERS OR BIG ENTERPRISES) DO NOT APPLY
EXPANDING THE ZONING CODES TO USE THE LAND FOR URBAN AGRICULTURE	HAS BEEN DISUCSSED BY THE PLANNING COMMISSION BUT NEEDS TO BE DISCUSSED WITH THE TAX ASSESSMENT DIVISION THE PROBLEM IS THAT DETROIT DOESN'T HAVE A SOLID TAX BASE..	ADOPT-A-LOT PROGRAM PART OF ROUGE PARK FOR DBCFSN AND 'LAFAYETTE GREENS' PROJECT WHO WERE ALLOWED TO USE THE LAND IN LINE WITH SPECIAL AGREEMENTS	HAS BEEN MENTIONED BUT NOT DISCUSSED SERIOUSLY	THE CITY IS WORKING IN ANOTHER DIRECTION - BY EXPANDING THE ZONING CODES TO ALLOW URBAN AGRICULTURE	THE CITY NEEDS TO FACHILITATE AND COORDINATE MORE THIS IS IN THE DISCUSSION PHASE MICHIGAN STATE UNIVERSITY HAS AN EXTENSION SERVICE – TO PROVIDE ASSISTANCE TO FARMERS, RUN BY MSU OR NON-PROFIT ORGANISATIONS (GREENING OF DETROIT)	THE CITY HAS CERTAIN RULES ABOUT HAVING TO SELL LAND AT MARKET VALUE... OF COURSE IT'S ALWAYS DEBATEABLE WHAT MARKET VALUE IS

- Yes indeed - can give concrete example(s) - referring to documents
- (in some cases we have examples and other's are being worked on)
- Yes – preferably in that direction, we are in the phase of setting such goal
- (Has been discussed or dealt with)
- I don't know – this hasn't been discussed yet (or is in role of others)
- No – because we don't find this appropriate
- No, this is not possible

Detroit

Figure 29 Comparison of strategies that both cities use to promote urban agriculture. Colors of the circles signify to what level a strategy has been adopted or discussed – the legend at the bottom gives a scale from no (red) – yes(dark green). Examples of strategies for each city or arguments given in support of the answer chosen (Illustrated by the author following interviews with Laura Buhl (Detroit) and Kees van Oorschot (Rotterdam))

LEGAL PERMITS AND FRAMEWORK

Land-use planning involves setting objectives and agreeing on how they are to be met. Planning is forward-looking, considering alternative methods and constraints before taking the right course of action. At the local level which incorporates cities, objectives focusing on the community's benefit must align with regional, national and global plans and policies. The concept of urban agriculture is on the brink of recognition although progress on land-use in cities as potential sustainable 'bio-regions' is slow. Identifiable barriers are in the legal framework (van Veenhuizen, 2006; Holland & Salle 2010; Van der Schans & Wiskerke, 2012), the current institutional structure and disciplines applicable to the conventional system and its credibility (Pothukuchi, 2009).

In Detroit, the local governmental has two main branches; the mayor is in charge of one and the city council is in charge of the other. Both branches deal with developing plans and the zoning procedure but only the department run by the mayor carries out inspections and issues permits both for urban agriculture and commercial ventures. Health inspectors enforce health and safety regulations at the State level. Until recently a special agency took care of this on behalf of a local government department. In Rotterdam, the permits and licenses required are based on the attributes of an urban agricultural project. If the development is long-term, and includes the building of premises or has commercial aspects the permit procedure is more complex and requires more formal paperwork. The governmental structure is rather complex and different divisions/agencies are responsible for different permits (soil testing, landowner's permission, leases, legal permits required for building and quality-control regulations for safety and hygiene at the national level). Regulations concerning quality, safety and hygiene are being controlled at the national level and are enforced by special agencies

As has been mentioned already the Detroit city authorities have spent a lot of time trying to make changes in the State law 'The Right to Farm Act' to ensure that commercial urban agriculture is legally recognized in the city. A legal barrier in Rotterdam is due to the rules of competition within the European Union. Big contracts for food in the catering industry have to be made public, which causes a dilemma for local government that prefers to set an example by purchasing regional food in support of the local food system.

Even though the governmental structure is said to be complex in Detroit it would appear that in Rotterdam it is even more complex. The multi-functional character of commercial urban agriculture requires the assistance of many government departments to ensure that an agency adheres to hygiene and safety regulations. Van Veenhuizen (2006) is most probably right when he claims that urban agriculture needs more solid institutional base or 'institutional home' as he puts it. The well-known risks in urban agriculture are levels of contamination, expensive equipment and integrating dissimilar disciplines into the new paradigm (van Veenhuizen, 2006; Holland & Salle 2010). It is crucial that commercial urban farms take steps to prevent contamination, especially when it has been made public. Having an 'institutional home' for urban agriculture would make it easier for employees to enforce hygiene and safety regulations and therefore minimize the risk of contamination as well as, pointing out inexpensive ways to solve problems which could emerge as disciplines in the process.

Some laws in both cities are proving to be an obstacle in developing sustainable food systems such as urban agriculture. Apparently such laws are designed for producing conventional food, separating rural food production from urban consumption and governance of markets on a large-scale. According to Pothukuchi (2009) a political will is a necessary premise to veer the general perception in the direction of local, sustainable food systems. This is presumably correct because changing laws at the State or European level definitely needs a different mind-set in politics.

5.1.3 *THE FARMS*

THE LOCATIONS

Areas once referred to as 'the commons' (Bollier, 2002), are now categorized differently by land-use codes and regulations according to their function, development status, ownership etc. land use, ownership etc. (Mougeot, 1999).

'Earthworks Urban Farm' in the south-east part of the city is in a neighborhood suffering from neglect. The farm is a non-profit making organization, run by the Capuchin Soup Kitchen located on a neighboring church site. It operates in an industrial area in close proximity to housing. It covers 21 parcels of land together measuring a block and a half.

Uit je eigen stad' is located in an old harbor and industrial quarter called 'Marconistrip' that has been undergoing transition for some time. It is run by the founder and two partners of his. The farm is in close proximity to residential areas, institutions and offices. It operates on 1.8 hectares [4 Acres] of land inside an old railway yard that had not been used for several years. Squatters occupied the area using it for illegal purposes. The coding for land-use in the area permitted trade and industrial activities but was out-of-date.

Earthworks Urban Farm owns the four parcels of land on which it operates, but the other parcels belong to small businesses or non-profit making organizations. The area that 'Uit je eigen stad' is operating on has been controlled by an organization which represents both the city of Rotterdam and Rotterdam port development known as 'Stadshavens' since 2010, yet the port authorities used to be in charge.

For 'Earthworks Urban Farm', an opportunity to grow food on the Church site and the Capuchin Soup Kitchen concept were the main reasons for developing the farm there. The main reason for developing 'Uit je eigen stad' on the 'Marconistrip' was inspired by agents who encouraged the founder to follow his dream and begin using this rundown area for urban agriculture which could have positive impact.

Both farms are operating on industrial areas in close proximity to housing. In both cases the areas in question were suffering from neglect and decay and the farming initiative was an opportunity to make use of them in a positive way. Earthworks urban farm covers several parcels of land owned mainly by small businesses that do not have any use for the area. 'Uit je eigen stad' is located on a particular plot of land that a prestigious organization is responsible for.

THE FUNCTIONS AND CHARACTERISTICS

Categories of urban agriculture depend on the agents involved; subsistence urban farmers; family-run (semi-) commercial farmers; and agricultural entrepreneurs (van Veenhuizen, 2006) their operational activities and methods (Graaf, 2012). A farm's functional character is reflected in the aspects emphasized such as; experience, economy, access to food, education, sustainable infrastructure, natural envrionment (Holland & Salle, 2010) whose aim is food justice (Walker et al., 2011). Urban agricultural projects generally aim to stabilize the community in various ways (improving community "capital") for example by encouraging social cohesion, improving the citizens awareness about health and the aesthetics of the community (Smit & Bailkey, 2006).

'Earthworks urban farm' has been operating for 15 years. It is a project with educational and spiritually-based objectives that concern social justice, connecting people to their environment and the food they consume and building up the community. The people are being shown the meaning of a balanced relationship between environment and inhabitants. The farm has been nominated one of the top 10 urban farms in America. 'Uit je eigen stad' is a commercially-run urban farm in which a variety of experience is the driving force behind making a profit. The aim is to get agricultural production into the

city for its residents and connect consumers with producers. Therefore, education is an important part of the farming objective which adds value to city life in a transparent, responsible and sustainable way. Aesthetics are purposeful and are more of a natural part of the development project than a major investment in design. 'Uit je eigen stad' is the first farm of its kind in Europe

Earthworks Urban Farm's products are not only benefits of practical sustainable agriculture, the farm also enables people to experience a way of life through interaction. The farm cultivates certified organic fruit and vegetables but also flowers and herbs as well as providing plants to other gardens in the city. They also make honey and jam. 'Uit je eigen stad' cultivates vegetables, mushrooms, keeps chickens, runs a store and a restaurant selling 'home grown' food. Products that they want to sell but are not able to grow, they buy locally. The farm also organizes harvest festivals, markets, workshops, children's activities and educational programs.

Both farms want to have an impact on the environment by offering people a chance to experience what they consume, whereas the emphasis lies on the consumers' linkage to farming activities and the environment. Offering opportunities in education are therefore important characteristic of both farms. 'Earthworks urban farm' wants to re-build a broken community and make it more meaningful and 'Uit je eigen stad' stands for transparent networking in society. The major difference between those projects, is that 'Earthworks' is a subsistence urban farm and non-profit charity organization and 'Uit je eigen stad' is an agricultural entrepreneur that must make a profit.

LEGAL PERMISSION

In developed economies, the procedure to grant permission changes drastically when urban agricultural projects become commercial (Van der Schans & Wiskerke, 2012). Possible exemptions could be made in cases where projects involve a creative or social aspect.

To-date Earthworks Urban Farm has only obtained a *temporary building permit* for solar greenhouses. As Earthworks Urban Farm operates in an industrial zone it was not difficult to obtain this permit. According to the draft zone ordinance on urban agriculture the farm should have no difficulty in attaining a permit for Aquaculture, Aqua-phonics, composting facilities, farmers markets and hydrophonics but certain conditions on land-use may apply to urban farms (land-use hearing/imposing conditions The policy to develop urban agriculture in Rotterdam is interwoven with the process on attaining permission for 'Uit je eigen stad'. An official policy was the first reliable step in the farming initiative. It stated that the building belonged to the Social Housing Corporation 'Havensteder' and had to be used for a creative purpose, ideally urban farming. Subsequently, an *agreement* was signed which states that 'Havnesteder' rented the building and the site to 'Uit je eigen stad' for farming projects. The farm was then granted a permit with a disclaimer for introducing the activity to the neighborhood. The legal status of the permit was discussed at length and the fact that the area was coded as industrial provided a sound basis. The farming initiative requested a 15-year permit but was only granted a permit for 10 years. *Building permission* was granted for a greenhouse, the *quality of the soil was confirmed after* testing and *an official permit was granted to open a restaurant and a shop.* In the future the farm needs to obtain *an official permit for the aqua-phonic system* and permission to enlarge the area for fruit production.

For both farms it is legally advantageous to develop in an industrial area. This fact raises questions regarding possible contradictions between what is allowed more easily in accordance with the planning regulations on one hand, and at the state level regarding hygiene and safety on the other The farms have already acquired permits indicating the difference between the 'paper-work' required for both non-profit and commercial projects and/or those in a different cultural context concerning land-use ethics. However, when urban agriculture is legally recognized in Detroit's zoning ordinance the

situation will probably change in accordance with the type of farming activity (e.g. hydrophoics, market farming, gardens etc).

AGENTS WHO INFLUENCE THE FARM'S DEVELOPMENT

It has been pointed out that various agents involved in urban agriculture influence the development (van Veenhuizen, 2006; Van der Schans, n.d.)

'Earthworks urban farm's contact with local government is minimal. In recent years it has proven to be more the other way round in that local government approached the farm's manager for advice. 'Uit je eigen stad's experience of willingness on the part of the government to advise or facilitate activities would only be done on an individual basis. However, the local government collaborated on the farm initiative and facilitated the development by allowing the farm to use the location without charging the full city rates and agreed to provide the forthcoming zoning classification on urban farming for the next 10 years

'Earthworks urban farm' relies mainly on donations from the Capuchin Soup Kitchen, help from volunteers and materials from sponsors. Financial support was given by the US government, the State of Michigan, various foundations and Wayne State University. Others who offered assistance are the landowners, local universities and other non-profit making organizations. 'Eetbaar Rotterdam' helped 'Uit je eigen stad' indirectly by putting urban agriculture on the agenda. The social housing corporation in Rotterdam - 'Havensteder' have proved to be very important in the process both in terms of financing and as facilitators. Several businesses have also provided assistance in the development process. Three individuals are considered to have had major influence in making it possible to realize the farm; the person in charge of the project at the project management and engineering department of Rotterdam (PMB), a researcher at Wageningen University (as well member of 'Eetbaar Rotterdam' and participant in the Think Tank on urban agriculture) and the chief executive of 'Havenstader' - the Social housing corporation. The farm was 'injected' with group- funding from 600 individuals and received loans from financial institutions.

Both farms are a bottom-up initiative development, the idea emanating from the grass-roots' level. However the process of establishing the farms correlates with a completely different link to the local government. Permission granted by the local government in Rotterdam was key to get 'Uit je eigen stad' in operation, while 'Earthworks Urban Farm' has been developing its activities for almost 15 years without any intervention from the local government. In both cases cooperation with universities and their staff have been crucial the universities act as a kind of bridge between the authorities and agents at the grass-roots level. The role of the Social housing corporation in Rotterdam as financier and facilitator of 'Uit je eigen stad' seems a particularly interesting paradigm for other cities to look into. As a substance and non-profit making farm 'Earthworks Urban Farm' relies on sponsors and volunteers. Originally, sponsoring (group- funding) and volunteers were needed for 'Uit je eigen stad' while their concept was being considered by financiers. In the end the loan application for the farm was approved by financial institutions to further develop the business.

THE DEVELOPMENT PROCESSES

The planning profession has been developing a more collaborative approach which correlates with the idea of sustainable development (Næss, 2009). There must be cooperation between the authorities, agents at the 'grass-roots' level and NGOs.

Way back in history the locations where the farms have been established, are linked to activities connected with food. Earthworks Urban Farm began as part of a charity project to feed the poor but the concept of 'Uit je eigen stad' resulted from an exploratory project designed by individuals who had

strong links with the agents at the grass-roots level, as well as a knowledge of institutions, businesses and the local government.

Networking activities, partnerships with other grass-roots organizations and cooperation with the local Universities characterize the development process of Earthworks Urban Farm. The concept of 'Uit je eigen stad', presented to the local government as a re-development strategy three years ago triggered off a new development procedure within the government. The process revealed the need to share information by setting up a local government department which could deal with the topic and develop a policy on urban agriculture. 'Earthworks Urban Farm' has acquired knowledge that has been recognized and welcomed in projects at Wayne State University and the authorities are trying to put the activity 'on the books'. Participation in discourses on food issues and influencing the establishment of a policy on urban agriculture is also a noticeable part of the progress made by 'Earthworks urban farm'. Politics proved to be very influential in the process of establishing 'Uit je eigen stad'. The development process of 'Uit je eigen stad' was a rather complicated decision-making process in which the agents involved had conflicting ideas of what the 'right' land-use developments were, in general, which seriously hampered the process of obtaining legal permission.

'Earthworks Urban Farm's future plans are characterized by humility and the project will continue along these lines. However, they point out that it is the city's responsibility to clean the soil. It is estimated that from the outset in 2013 the farm will operate in accordance with the urban agricultural code. The future plans of 'Uit je eigen stad' are to launch aqua-phonic cultivation in 2013 and get permission for enlarging the area for fruit production. From 2013 - 2023 the farm will operate temporarily in an urban agricultural zone. The initiative perceives the farm as part of a larger concept to develop farms at other locations with the prime goal of producing food necessitating little investment.

Comparing these projects clearly identifies different general aspects within a cultural context. While the farm in Detroit has been operating for almost fifteen years without any intervention on behalf of the local government, it took three years for 'Uit je eigen stad' to obtain permission for a temporary development that is valid for the next ten years. The initiative is considered to be too short, because from a financial perspective they would have needed at least 15 years. The only hope they have is that the authorities' viewpoint will change over time.

By analyzing both farms' development processes it can be concluded that both projects have suffered for not being 'recognized' as urban land-use objectives. However, the farms have clearly influenced their physical environment in an extremely positive way by transforming distressed areas into green, productive, enjoyable places. Both farms have brought new, but in a way 'old and basic ideas', onto the urban landscape, showing inhabitants how to survive and at the same time enjoy life. It is surprising to note that although one farm is 'classified' as a substance farm and the other an entrepreneurial farm they both have many features in common. The idea of what is 'economical' raises questions too. Both cities aim to improve the economy with activities relating to food issues which indicate that both are considered to be economically beneficial for the community in question. It's also very interesting to see that entrepreneurial urban agriculture can have a positive influence in social terms, offering opportunities to experience engagement and integrity. The actual situation in a city and the existing (policy) priorities shape what kind (type) of urban agricultural practices develop in them (van Veenhuizen, 2006). Within a city projects are considered 'place-specific' (Wiskerke & Viljoen, 2012). This means that urban farms reflect what is suitable for a specific area at a particular time. Therefore it must be kept in mind that farms may vary and adapt to changing situations which makes the idea of urban agriculture even more attractive. Cities should appreciate the advantage of variation in urban

agricultural activities because only then will its citizens realize its capacity to blend into the dynamic environment of the city and society.

5.2 CONSIDERATIONS FROM THE PERSPECTIVE OF GLOBAL SUSTAINABILITY AND LAND-USE ETHICS

Producing more food inside cities could compensate toward solving a dilemma now that the conventional food systems are facing excessive pressure to increase production and depleting natural resources at the same time as the world's population increases. Challenges such as food quality and security, unequal consumption, global obesity, poor nutrition and environmental hazards indicate that the current food-chain from production to consumption is unsustainable for the ever-increasing global population. Linked to global ethics in sustainability, cities are seen as potential places for producing food. This is an extremely interesting phenomenon where differing geographical values having direct links between food and land are put in the spotlight. This scenario which, according to Næss (2009) upholds that the rich and poor everywhere; now and in the future should be nourished, without jeopardizing the eco-systems. This means that the developed countries need to bear in mind the 'distribution ethics' of sustainability and act in responsible way. Identifying potential city terrain for agricultural use is a principle of sustainable urban development policy.

Urban agriculture within cities has only been developed as 'marginal land use' until recently but its development depends on policies approving it which will involve various agents having different perspectives. A gap between reality, i.e. 'work-in-progress' and what is legally acceptable indicates that institutions are not familiar with the development taking place. This study explains this in detail. Therefore discussions on the concept of land-use ethics are essential to shed light on what needs to be changed. The philosophy of 'land ethics' applied in land-use planning indicates how land is utilized and whether changes can be made to it or not according to what is considered right and wrong.

Utilitarian ethics indicate that the right moves have the best results (consequences). It is claimed that utilitarian ethics are driven by financial gain. Agricultural development could be economically and socially viable for communities who have little access to healthy food. However, the authorities or agents in power who are responsible for vacated city terrain might prefer to use the land for housing claiming that urban agriculture would not be as financially rewarding as real estate. This proved to be one of the perspectives obstructing the development of 'Uit je eigen stad'. Kantian ethics uphold actions governed by basic moral rules or principles, therefore Kantian supporters who are in favor of a more just society (such as Egalitarians) would propose that regulations be amended to recognize urban agriculture legally. This proved to be a challenge in Detroit city to amend State laws currently in force and also for Rotterdam to influence changes in European regulations. On the other hand, those who oppose urban agriculture and wish to retain the legal framework can refer it deeming that activity should not be allowed unless it fits into present regulatory framework. During the process permitting 'Uit je eigen stad' to use the 'Marconistrip' was a perspective that needed careful consideration if litigation were involved. Virtue ethics deem an action to be correct if an agent who upholds virtues would do it if the circumstances were ethical. If unused terrain in cities could be used for a more valid purpose than remain unproductive a virtuous agent would most probably take action in support of land-use linked with the value of his products. Feeding the poor or having an influence on the environment so that it becomes more beautiful and enjoyable are virtuous aspects of the farm's initiative. A libertarian agent would act according to his own desires and become involved in urban agriculture in collective ways if his activities did not blend with a libertarian market-orientated society. Therefore, in libertarian societies, networking with NGOs and agents at the grass- roots level would most likely influence a

'bottom-up' approach in land-use planning. Earthworks Urban Farm's development process and the networking activities that characterize the farm's agenda seem to reflect the libertarian philosophy.

Community residents around the world have their own distinctive viewpoints and perceive urban agricultural development differently even in the same city there are agents whose perspectives differ according to what each of them values the most. However, the study reveals that libertarian land-use ethics influenced the features of the development process in Detroit while Utilitarian and Kantian land-use ethics had more of an effect on the development process analyzed in Rotterdam.

Principles of ethical land-use appear to be theoretically relevant in urban agriculture in many ways, indicating that it's development should be considered rightful, thus worth allowing (Sigurdardottir, forthcoming). Even so aspects relating to jurisdiction and business agreements could prove problematic. This indicates that ethical shifts need to occur at higher levels, to ensure that the legal framework and institutions are no longer barriers in urban agricultural development while at the same time western cities cultivate a spirit of sustainable global ethics.

5.3 STRENGTHS AND WEAKNESSES OF THIS STUDY.

As was explained in section 2.1 this study is a piece of exploratory research which aims to structure the analysis of knowledge gained in a specific context. The objective was to provide an insight into the process of urban agricultural development. The strengths of this study can be found in its wide perspective which involved investigating individual opinions on a range of influential factors. By this means individuals from different fields of expertise in the same city can understand one another's position better and most likely put some 'pieces of the puzzle together' regarding the city's situation and its ideals concerning food issues in the future. In the same way, but on another scale the cities can probably learn from each other and perhaps see the advantages of developing urban agriculture from a different perspective.

The researcher was not able to travel to Detroit and interview agents personally as she was able to do with those linked to the project in Rotterdam. For the same reason the project in Detroit was not experienced in the same way as it was during a visit to the farm in Rotterdam. These facts are considered to be weaknesses in the study because personally experiencing and observing a situation is not the same as reading literature and interviewing by Skype where there were time constraints due to occasional interruptions with the connection. Some of the literature reviewed was in Dutch which took the researcher a considerable amount of time to read and understand. It is worth mentioning that the researcher might possibly have misinterpreted some of that literature.

The same quality of revealing the study's potential to give a broad insight into the process of urban agricultural development from different cultural aspects, could possibly have weakened the study as well. It was impossible to go into certain aspects of the study in depth, an example of which is the policy and legal framework for both cities. Originally the aim was to investigate what kind of legal authorization was necessary to establish the urban farms and who was responsible for granting it. But after studying the necessary literature and carrying out interviews other legal aspects proved to be major barriers in the development process, especially in Detroit regarding the RTFA State law. An attempt was made to investigate whether there were similar barriers in Rotterdam or the Netherlands in general, but this is still a little unclear.

The theory of agricultural urbanism has been used as a 'lens' to screen the themes emphasized in both cities' policies concerning urban agriculture which proved to be unclear regarding the necessary qualities for building up communities and improving social cohesion. However, the themes were covered by the principle of "encouraging partnership and organization being responsible". It was also

experienced that the themes may have, on occasions, been understood differently by the interviewees. For example the theme on "Integrating sustainable food system goals into all policies and programs" which includes the participation of all key food system stakeholders. It was problematic to use the word 'all' in the principle and the definition of 'key food system stakeholders' was not clear either. For the city of Rotterdam this principle was far too ambitious as one of the key food system stakeholders was thought to be either an energy supplier or the port authority, both of which are large public enterprises. In Detroit the interviewees did not think of such agencies as key food system stakeholders. This may be the reason why both cities have completely different opinions on this particular theme.

6 CONCLUSIONS

What are the main features of the process in cases where urban agriculture is developed in inner cities, and what can be learned from comparing two different processes of such development?

Nowadays, it's important to keep in mind that sharing knowledge is one way of saving time and capital if agents have to do more with fewer resources. When progressive development is required, new ideas for different approaches and perspectives must developed alongside those already in existence. It is anticipated that this study will provide information that is new and more inspiring for any particular city and create a deeper understanding of the development's progress.

Developing local food systems in Detroit and Rotterdam is a kind of contrasting activity within both cities which have an important places in the global business network. However, opportunities for urban agricultural development within them is influenced by the nature of their historical background. Both Detroit and Rotterdam have such backgrounds that they are especially interesting as territories for urban agriculture. The current situation in both Detroit and Rotterdam influences the benefits that urban agricultural activities are likely to have and are particularly relevant for them at the moment. The past sets the scene for current and future projects.

Following the grass-roots objectives the cities have been creating policies on urban agriculture. In Detroit NGOs and the Food Policy Council (DFPC) have played an influential role in that area which originally required more justice regarding food in the city. After the NGO 'Eetbaar Rotterdam' put the phenomenon of urban agriculture on Rotterdam's agenda, 'Think Tank' a municipal embryo on urban agriculture, having formal recognition in the governmental structure took the lead in creating a policy on urban agriculture in Rotterdam. In Detroit it is considered crucial to adapt appropriate regulations to ensure that agriculture can be legally beneficial to neighborhoods. In Rotterdam the policy on urban agriculture was established by merging it with the current sustainability agenda using a model based on policy dimensions in urban agriculture.

Increasing economic activity and the food system profile, is considered to be as an objective for both cities so that they can see the advantage of increasing access to and growing, selling and processing food, but in both cases, laws at the national and international level are barriers to this development. Both cities consider that issues relating to 'healthy' food system, important elements on which they have in focus. Encouraging partnership and organizations to be responsible is perceived as important for both cities but from different perspectives. For Rotterdam, improving social cohesion especially for people from different cultural backgrounds is important, while the authorities in Detroit have given support by partnering organizations whose aim is to improve food security. Whereas one of the key issues in the Rotterdam's urban agricultural policy is to improve the aesthetics of the city's environment with (place-making) design-strategies, the main objective in Detroit is to integrate sustainable food system goals and decide which [not all] plans and programs they are appropriate for. These differences show how urban agriculture is beneficial to both cities and exposes them to new ideas for them to consider how urban agricultural activities can have a positive effect on their terrain.

The main strategies of both cities to promote urban agriculture seem to be completely opposite to one another in some ways. Whereas Detroit is developing an ambitious zoning ordinance for urban agriculture Rotterdam prefers to introduce exceptions into the current zoning procedure expect for projects that are long-term. Therefore urban agriculture in Rotterdam is generally considered as a temporary development. Certain strategies are only used by the cities in exceptional circumstances.

Networking seems to be a crucial way of sharing information. Authorities can learn from agents at the grass-roots level, and suggest ways to create an 'institutional home' for urban agriculture to facilitate

communication among diverse disciplines, share knowledge, minimize risks and avoid unnecessary costs. Simplifying and re-organizing government structure with the aim of making civil servants more aware of the projects their colleagues are working on is one aspect of this issue.

In order to make an initial step towards a more general recognition of local, sustainable food systems political influence is essential, to bring changes in both State and European legislation. The analysis of 'Uit je eigen stad's development process underpins this argument.

Both farms are operating on industrial plots in close proximity to residential areas. The areas in question were suffering from neglect and the farming initiative presented opportunities to make use of them so that they would have positive impact in some way. Earthworks Urban Farm is spread over several parcels of land owned mainly by small businesses which have no use for them. 'Uit je eigen stad' is located on a particular plot for which a prominent organization is responsible.

The aim, highlighted by both farms, is to have an impact on the environment by sharing experience that arouses people's awareness in what they consume by reinforcing the consumers links with farming activities and the environment. Providing education is therefore an important characteristic of both farm's activities. 'Earthworks Urban Farm' wants to re-build a broken community and make it more stable whereas 'Uit je eigen stad' stands for transparency in a complicated society. The main difference between these projects is that 'Earthworks' is a subsidized urban farm operating as a non-profit making charitable organization and 'Uit je eigen stad' is an agricultural entrepreneur which has to make a profit.

For both farms it is legally advantageous to develop in an industrial area. This fact raises questions regarding possible contradictions between what is allowed more easily in accordance with the planning regulations on one hand, and at the state level regarding hygiene and safety on the other. The farms have already acquired permits indicating the difference between the 'paper-work' required for both non-profit and commercial projects and/or those in a different cultural context concerning land-use ethics. However, when urban agriculture is legally recognized in Detroit's zoning ordinance the situation will probably change in accordance with the type of farming activity (e.g. hydrophoics, market farming, gardens etc).

Both farms are a bottom-up initiative development, the idea emanating from the grass-roots' level. However the process of establishing the farms correlates with a completely different link to the local government. Permission granted by the local government in Rotterdam was key to get 'Uit je eigen stad' started, while 'Earthworks Urban Farm' has been developing its activities for almost 15 years without any intervention from the local government. In both cases cooperation with universities and their staff have been crucial the universities act as a kind of bridge between the authorities and agents at the grass-roots level. The role of the Social housing corporation in Rotterdam as financier and facilitator of 'Uit je eigen stad' seems a particularly interesting paradigm for other cities to look into. As a substance and non-profit making farm 'Earthworks Urban Farm' relies on sponsors and volunteers. Originally, sponsoring (group- funding) and volunteers were needed for 'Uit je eigen stad' while their concept was being considered by financiers. In the end the loan application for the farm was approved by financial institutions to further develop the business.

The analysis indicate that both farms' development processes have suffered for not being 'recognized' as urban land-use objectives. However, the farms have clearly influenced their physical environment in an extremely positive way by transforming distressed areas into green, productive, enjoyable places. Both farms have brought new, but in a way 'old and basic ideas', onto the urban landscape, showing inhabitants how to survive and at the same time enjoy life. It is surprising to note that although one farm is 'classified' as a substance farm and the other an entrepreneurial farm they both have many

features in common. The idea of what is 'economical' raises questions too. Both cities aim to improve the economy with activities relating to food issues which indicate that both are considered to be economically beneficial for the community in question. It's also very interesting to see that entrepreneurial urban agriculture can have a positive influence in social terms, offering opportunities to experience engagement and integrity. The actual situation in a city and the existing (policy) priorities shape what kind (type) of urban agricultural practices develop in them (van Veenhuizen, 2006). Within a city projects are considered 'place-specific' (Wiskerke & Viljoen, 2012). This means that urban farms reflect what is suitable for a specific area at a particular time. Therefore it must be kept in mind that farms may vary and adapt to changing situations which makes the idea of urban agriculture even more attractive. Cities should appreciate the advantage of variation in urban agricultural activities because only then will its citizens realize its capacity to blend into the dynamic environment of the city and society.

Community residents around the world have their own distinctive viewpoints and perceive urban agricultural development differently even in the same city there are agents whose perspectives differ according to what each of them values the most. However, the study reveals that libertarian land-use ethics influenced the features of the development process in Detroit while Utilitarian and Kantian land-use ethics had more of an effect on the development process analyzed in Rotterdam.

Tentative principles of ethical land-use appear to be relevant in urban agriculture in many ways theoretically, indicating that the development should be considered right, thus worth allowing. Even so aspects relating to jurisdiction and business agreements could prove problematic. This indicates that ethical shifts need to occur at higher levels, to ensure that the legal framework and institutions are no longer barriers in urban agricultural development while at the same time western cities cultivate a spirit of sustainable global ethics

Comparing the cases depicts the vibrant character of urban agriculture and the variation of stakeholders involved but in both cases the initiative and the supporters' keen interest have been vital because the development in both cases originated at the grass-roots level and the cities' officials are following it. However, when much needed financial or professional support comes from a higher level (national or state), legislation designed for global market or the conventional food system can be a hindrance to the cities' further development in establishing (regional/local) food systems. In order for cities to build up their self reliance on food economics and related activities, resulting in more sustainable food systems and habitable urban areas, general ethical changes need to be made. Consequentially, laws, regulations and levels of authority will have to be re-structured so that multi-functional landscapes incorporating urban agriculture are accepted without difficulty. This will encourage cities in the western world to develop a spirit of global ethics in sustainability.

7 SUGGESTIONS FOR FURTHER STUDY

The report opens by considering the relevance of urban agriculture in a global context and concludes that the (western) developed countries are especially responsible for developing more sustainable food systems and therefore include cities as food producing regions. Bearing this in mind, it would certainly be interesting to see a similar study done in a different cultural context, for example in cities in other developed countries such as in Scandinavia, North America, Eastern and Southern Europe or Australia. Then more cities could continue investigating how other (western) cities approach the development of urban agriculture.

Regarding urban agricultural development in Rotterdam and the Netherlands as a whole, it is important to do more accurate research on the legal framework, for instance on how the regulations regarding professionalism in the food sector ('productschap') affect (commercial) urban agriculture and the effects that European Union regulations have on the free market.

It would be extremely useful to consider ideas on how an 'institutional home' could be created for urban agriculture, i.e. a platform where various local authorities, government departments, professional institutions and agents at the grass-roots level can meet. Authorities who enforce the regulations regarding hygiene and safety at the national level who seem to be 'aliens' in the overall picture at the moment could well be one of the participants. It is worth mentioning that the researcher tried to make contact with the authorities in the Netherlands who are responsible for enforcing the regulations regarding this study but without success. Cities that have established a policy on urban agriculture could, by creating an 'institutional home' or platform, provide urban farmers with a better service and at the same time work on minimizing risks linked to urban agriculture. The organizational levels and divisions must somehow become more flexible and try to merge. The current governmental structure in Rotterdam, at least, seems far too complicated for the farmer to orientate himself and find out how to approach the authorities regarding applications for legal permits etc..

Neither the authorities in Rotterdam nor in Detroit are interested in incorporating the possible benefits of urban agriculture into the process of recycling organic waste and waste water. The possible reasons for this seem to be that the system is very centralized regarding waste management and other kinds of infrastructure systems. It would be extremely interesting, however, to investigate this issue in more detail, perhaps by finding a test case to study and present it to institutions, businesses and farmers.

8 ACKNOWLEDGEMENTS

I would not have been able to do this without the support of a good many people. First of all, I want to thank all those who allowed me to do interviews with them. I am grateful to the people in Detroit for their participation and positive attitude; Laura Buhl, a planner working in the City Planning Commission in Detroit city, Professor Kameshwari Pothukuchi, at Wayne State University and Patrick Crouch, an urban farmer at Earthworks Farm, Detroit. I would also like to thank the people in Rotterdam for their cooperation; Arienne de Muynck, a city developer in the City Development Department at the municipality of Rotterdam; Kees van Oorschot, landscape architect and an adviser to the Municipality of Rotterdam; Jan Willem van der Schans, an economist and researcher at Wageningen University and Bas de Groot, an urban farmer at the urban farm - 'Uit je eigen stad' (From your own city). I want to thank my supervisor for constantly telling me to have faith yet at the same time being honest in his criticism and considerations. I would like to thank Ms. Enid Tomkinson for editing the text and helping me meticulously with the language. She has been a 'light on my journey through a dark valley'. I am grateful to my friend Hanna Lára Pálsdóttir for her encouragement and comments. Finally I am overflowing with gratitude for the support I have had from all the members of my family but, especially, my mother Steinunn Guðný Sveinsdóttir for her faith in what I am doing, and my sister Doctor Sigurveig Þóra Sigurðardóttir for her tremendous support and constructive feedback. Last, but not least, I want to thank my beloved children Sóley Birna, Sigurður Nökkvi, Svanhildur Guðný and Arnbjörn Óskar, who have shown their mother so much patience and understanding - you are "stars" that light up my life and give purpose to everything.

LIST OF TABLES AND FIGURES

REFERENCES

Allmendinger, P. (2009). *Planning Theory* (Second edi., p. 260). New York: Palgrave Macmillian.

American Planning Association. (2012). LBCS Standards - LBCS Dimensions. Retrieved July 22, 2012, from http://www.planning.org/lbcs/standards/

Atkinson, A. (2012). From Motown to Grow-Town! *Michigan Citizen*. Detroit. Retrieved from http://michigancitizen.com/from-motown-to-growtown-p9549-77.htm

Beatley, T. (1991). Viewpoint, A set of ethical principles to guide land use policy. *Land Use Policy*, *1*(January), 3–8.

Bollier, D. (2002). Reclaiming the Commons. *Boston Review. A political and literary forum*. Retrieved July 21, 2012, from http://bostonreview.net/BR27.3/bollier.html

Broekhof, S. (2010). *Building a Common Vision : From allotment garden to sustainable food system*. Wageningen University.

Broekhof, S. M., & van der Valk, A. J. J. van der. (2012). Planning and the quest for sustainable food systems: explorations of unknown territory in planning research. In A. Viljoen & J. S. C. Wiskerke (Eds.), *Sustainable food planning: evolving theory and practice* (pp. 67–77). The Netherlands: Wageningen Academic Publisher.

Brown, C. (2001). Ethical Theories Compared, Rosalind Hursthouse's Comparison. Retrieved July 11, 2012, from http://www.trinity.edu/cbrown/intro/ethical_theories.html

City of Detroit. (2012a). Neighborhood Clusters Map. *City of Detroit: Planning & Development Department*. Retrieved August 29, 2012, from http://www.detroitmi.gov/Departments/PlanningDevelopmentDepartment/tabid/134/Default.aspx

City of Detroit. (2012b). *Detroit zoning ordinance* (p. 173). Detroit. Retrieved from http://www.detroitmi.gov/Portals/0/docs/legislative/cpc/pdf/Ch 61 Mar302012

City of Detroit ITS/Communications and Creative Services Division. (2012). Zoning Map Index. Retrieved April 12, 2012, from http://www.detroitmi.gov/Default.aspx?tabid=3093

City of Detroit: Planning & Development Department - Real Estate Development Division. (2004). GARDEN PERMIT / ADOPT-A-LOT PERMIT - Process for applying for a Garden Permit/Adopt-A-Lot Permit. *City of Detroit*. Retrieved June 2, 2012, from http://www.ci.detroit.mi.us/DepartmentsandAgencies/PlanningDevelopmentDepartment/RealEstateDevelopment/GardenPermitAdoptALotPermit.aspx

Conners, L., Schmid, M., & MacInnis, M. (2009). *Urban Roots - Documenting the green transformation of Detroit*. tree media group. Retrieved from http://www.treemedia.com/treemedia.com/Urban_Roots.html

Creswell, J. W. (2009). *Research Design*. Los Angeles, London, New Delhi and Singapore: SAGE Publications, Inc.

Delden, B. van. (2011). Tvenwty five years of compact city policy - context impact and outlook. In L. Boelens, H. Ovink, H. L. Pálsdottir, & E. Wierenga (Eds.), *Compact City Extended -Outline for future policy, research, and design* (pp. 154–172). Rotterdam: 010 Publisher.

Detroit Black Community Food Security Network. (n.d.). Statement of purpose. Retrieved June 5, 2012, from http://detroitblackfoodsecurity.org/about.html

Detroit Food Policy Council. (2008). City of Detroit Policy on Food Security. Retrieved May 5, 2012, from http://detroitfoodpolicycouncil.net/Page_2.html

Detroit Food Policy Council. (2011). Our Mandate. Retrieved May 5, 2012, from http://detroitfoodpolicycouncil.net/Page_3.html

Dick, B. (2005). Grounded theory: a thumbnail sketch. *Resorce papers in action research*. Retrieved from http://www.aral.com.au/resources/grounded.html

Driver, J. (2009). The History of Utilitarianism. *Stanford Encyclopedia of Phylospophy*. Retrieved June 18, 2012, from http://plato.stanford.edu/cgi-bin/encyclopedia/archinfo.cgi?entry=utilitarianism-history

Earthworks Urban Farm. (2008). History of the Earthworks Urban Farm. *Capuchin Soup Kitchen, Detroit*. Retrieved March 1, 2012, from http://cskdetroit.org/EWG/about_us/history

Eetbaar Rotterdam. (n.d.). Stadslandbbouwblog 2.0 [blog about urban agriculture]. *Eetbaar Rotterdam*. Retrieved September 26, 2012, from http://www.eetbaarrotterdam.nl/about-2/

Eetbaar Rotterdam. (2009). *Eetbaar Rotterdam - Expertisegroep Stadslandbouw [Expert group on urban agriculture]*. Rotterdam. Retrieved from http://www.eetbaarrotterdam.nl/Downloads/manifest_EETBAAR-ROTTERDAM.pdf

Engel, J. R., & Engel, J. G. (Eds.). (1990). *Ethics of environment and development: global challenge, international response* (p. 264). London: Belhaven Press.

Ewing, B., Reed, A., Galli, A., Kitzes, J., & Wackernagel, M. (2010). *calculation methodology for the national footprint accounts, 2010 edition*. Retrieved from http://www.footprintnetwork.org/images/uploads/National_Footprint_Accounts_Method_Paper_2010.pdf

Faludi, A. K. (1986). *Critical Rationalism and Planning Methodology*. London: Pion.

Feenstra, G. (2002). Creating space for sustainable food systems : Lessons from the field. *Agriculture and Human Values*, *19*, 99–106.

Fieser, J. (2009). Ethics. *Internet Encyclopedia of Philosophy - IEP - A Peer-Reviewed Academic Resource*. Retrieved October 25, 2012, from http://www.iep.utm.edu/ethics/#H3

Flyvbjerg, B. (2004). Five misunderstandings about case-study research. In F. C. Seale, G. Gobo, J. F. Gubrium, D. Silverman, & B. Flyvbjerg (Eds.), *Qualitative Research Practice* (pp. 420–434). London and Thousand Oaks, CA: Sage.

Flyvbjerg, B. (2011). Case Study. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (4th ed., pp. 301–316). Thousand Oaks, CA: Sage.

Foley, J. a., Ramankutty, N., Brauman, K. a., Cassidy, E. S., Gerber, J. S., Johnston, M., Mueller, N. D., et al. (2011). Solutions for a cultivated planet. *Nature*. doi:10.1038/nature10452

Giorda, E. (2012). Farming Motown: Competing narratives for urban development and urban agricuture in Detroit. In A. Viljoen & J. S. C. Wiskerke (Eds.), *Sustainable food planning: evolving theory and prctice* (pp. 271–281). The Netherlands: Wageningen Academic Publisher.

Government of Netherlands. (n.d.). Food and food safety - Food safety -Dutch Food and Consumer Product Safety Authority. *Ministry of general affairs*. Retrieved September 25, 2012, from http://www.government.nl/issues/food-and-food-safety/healthy-foods

Graaf, P. de. (n.d.). Room for Urban Agriculture in Rotterdam. *Eetbaar Rotterdam*. Retrieved November 1, 2011, from http://www.pauldegraaf.eu/downloads/RvSL_Summary.pdf

Graaf, P. de. (2012). Room for urban agriculture in Rotterdam: defining the spatial opportunities for urban agriculture within the industailsed city. In A. Viljoen & J. S. C. Wiskerke (Eds.), *Sustainable food planning: evolving theory and prctice* (p. 598). Wageningen: Wageningen Academic Publisher.

Hofstede, G. (1991). *Cultures and organizations, intercultural cooperation and its importance for survival*. UK: Harper Collins Pblishers.

Holland, M., & Salle, J. de la. (2010). *Agriculture Urbanism Handbook for Building Sustainable Food & Agriculture Systems in 21st Century Cities*. (M. Holland & J. de la Salle, Eds.) (p. 250). Winnipeg Manitoba Canada: Green Frigate Bokks.

Institute for Housing and Urban Development. (2012). Rotterdam: so Dutch yet so different. *IHS - Making cities work - Institute for Housing and Urban Develpoment*. Retrieved July 30, 2012, from http://www.ihs.nl/current_students/student_life/rotterdam_student_city/rotterdam_different/

Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Vintage Books.

Jamieson, D. (2008). *Ethics and the environment*. UK: Cambridge University Press.

Jansen, K., Gökce, D. G., & Wouden, M. vand der. (2010). *Muslims in Rotterdam, At home in Europe Project*. Retrieved from http://www.soros.org/sites/default/files/a-muslims-rotterdam-report-en-20101119.pdf

Junior Worldmark Encyclopedia of World Cities. (2000). “Detroit.” *Encyclopedia.com*. Retrieved April 15, 2012, from http://www.encyclopedia.com/topic/Detroit.aspx

Karakus, H., & Bol, P. (2011). The case of Rotterdam - social uplift in compact city. In L. Boelens, H. Ovink, H. L. Pálsdottir, & E. Wierenga (Eds.), *Compact City Extended -Outline for future policy, research, and design* (pp. 180–198). Rotterdam: 010 Publisher.

Kelbaugh, D. S. (2002). *Repairing the American Metropolis: Common Place Revisited*. Seattle: University of Washington Press.

Koninklijke Bibliotheek - Nationale bibliotheek van Nederland. (n.d.). Dossier VOC (1602-1799). *Koninklijke Bibliotheek - Nationale bibliotheek van Nederland*. Retrieved July 26, 2012, from http://www.kb.nl/dossiers/voc/voc.

Kothari, R. (1990). Environment, technology, and ethics. In J. Ronald Engel & J. G. Engel (Eds.), *Ethics of Environment and Development. Global challenge, International Response*. London: Belhaven Press.

Lang, T. (2010). From "value-for-money" to "values-for-money"? Ethical food and policy in Europe. *Environment and Planning A*, *42*(8), 1814–1832. doi:10.1068/a4258

Leede, H. de. (2011). *Interview with one of the owners of "Uit je eigen stad" in Introduction film about Rotterdam*. Retrieved from http://www.youtube.com/watch?v=vit7OwUEwBw&feature=youtube_gdata

Leopold, A. (1949). *A sand county Almanac*. *"A Sand County Almanac."* New York: Oxford University Press.

Long, R. T. (1998). Towards a Libertarian Theory of Class. *Social Philospohy and Policy*, *15*(2), 303–349. Retrieved from http://www.praxeology.net/libclass-theory-part-1.pdf

MICHIGAN RIGHT TO FARM ACT, Pub. L. No. (286.471 - 286.474) (1981). Michigan Legislative Website. Retrieved from http://www.legislature.mi.gov/(S(pl5pturhtltspgef5ytsbcvv))/mileg.asp

Maps of the Worlds. (2011). History of Rotterdam. *Map of the Worlds*. Retrieved July 26, 2012, from http://www.mapsofworld.com/cities/netherlands/rotterdam/history.html

Martinez, S., Hand, M. S., Pra, M. D., Pollack, S., Ralston, K., Smith, T. A., Vogel, S., et al. (2010). Local Food Systems: Concepts, impacats and Issues. *USDA Economic Research Service*. Retrieved July 19, 2012, from http://www.ers.usda.gov/publications/err-economic-research-report/err97.aspx

Mastrigt, T. van, Sman, L. van der, & Toxopeus, J. (2012). Werkgelegenheid en (potentiële) beroepsbevolking [Employment and (potential) labor]. *UWV - Adviseurs Arbeidsmarktinformatie*. Retrieved September 17, 2012, from http://www.rotterdam.nl/Stadsontwikkeling/Document/Economie en Arbeidsmarkt/Factsheet Rotterdam totaal juni 2012.pdf

McCluney, R. (2003). Renewable energy limits. The Final energy Crisis. Florida Solar Energy centre/University of Central Florida (Andrew Mac.). Florida: Pluto Press.

Mendes, W., Balmer, K., Kaethler, T., & Rhodes, A. (2008). Using Land Inventories to Plan for Urban Agriculture: Experiences From Portland and Vancouver. *Journal of the American Planning Association*, *74*(4), 435–449. doi:10.1080/01944360802354923

Mogk, J. E., Kwiatkowski, S., & Weindorf, M. (2011). Promoting Urban Agriculture in Detroit. *The Wayne Law Review*, *56*, 1–61.

Morgan, K., Marsden, T., & Murdoch, J. (2006). *Worlds of Food. Place, Power and Provenance in the Food Chain*. Oxford: Oxford University Press.

Mougeot, L. J. M. (1999). *CFP Report 31 - Urban Agriculture: Definition, Presence, Potential and Risks, Main Policy Challenge* (pp. 14–40). La Habana, Cuba. Retrieved from http://idrc.org/mimap/ev-2571-201-1-DO_TOPIC.html#Abstract

Mougeot, L. J. M. (2000). Urban Agriculture:Defination, Presence, Potentials and Risks, and Policy Challenges. *Cities Feeding People Series*, *Report 31*(November).

Nasr, J. L., & Komisar, J. D. (2012). The integration of food and agriculture into urban planning and design. In J. S. C. Wiskereke & A. Viljoen (Eds.), *Sustainable food planning: evolving theory and practice* (pp. 47 – 57). The Netherlands: Wageningen Academic Publisher.

Neuman, M. (2005). The Compact City Fallacy. *Journal of Planning Education and Research*, *25*, 11–26. Retrieved from http://courses.washington.edu/gmforum/Readings/Neuman_CC Fallacy.pdf

Norris, P., Taylor, G., & Wyckoff, M. (2011). When Urban agriculture meets Michigan's Right to farm Act: The pig's in the parlor. *Michigan State Law Review*, *2011*(365), 366–395.

Næss, P. (2009). Urban Planning and Sustainable Development, (July 2012), 37–41. doi:10.1080/0965431012004987

Oxford Dictionaries. (2012). O. *Oxford University Press*. Retrieved October 30, 2012, from http://oxforddictionaries.com

Pearson, C. J. (2007). Regenerative, Semiclosed Systems: A Priority for Twenty-First-Century Agriculture. *Bio Science*, *57*(5), 409. doi:10.1641/B570506

Pearson, L. J., Pearson, L., & Pearson, C. J. (2010). Sustainable urban agriculture: stocktake and opportunities. *International Journal of Agricultural Sustainability*, *8*(1), 7–19. doi:10.3763/ijas.2009.0468

Peemoeller, L. (2012). Progress through process: preparing the food systems report for the Chicago Metroplitan Agency for Planing GoTo2040. *Sustainable food planning: evolving theory and practice* (pp. 547–556). The Netherlands: Wageningen Academic Publisher.

Pothukuchi, K. (2009). Community and Regional Food Planning: Building Institutional Support in the United States. *International Planning Studies*, *14*(4), 349–367. doi:10.1080/13563471003642902

Pothukuchi, K. (2011). Building Sustainable , Just Food Systems in Detroit Reflections from SEED Wayne ,. *Sustainability*, *4*(4), 193 – 198. doi:10.1089/sus.2011.9672

Pothukuchi, K., & Kaufman, J. L. (2000). The food system : A stranger to the planning field. *American Planning Association. Journal of the American Planning Association*, *66*(2), 113–124.

Rotterdam Municipal Archives. (n.d.). Port in the past - History of port development in time. *Port of Rotterdam*. Retrieved July 26, 2012, from http://www.portofrotterdam.com/en/Port/port-in-general/Documents/20100726_EN/index.html

Rotterdam municipality. (2012). *Food & the city - Stimuleren van stadslandbouw in en om Rotterdam [Encouraging urban agriculture in and around Rotterdam]*. Rotterdam.

R'damse Oogst. (2011). Over Rotterdamse Oogst. *Rotterdamse Oogst*. Retrieved September 26, 2012, from http://www.rotterdamseoogst.nl/over-ons/

Sachs, N. (2011). Exploring the connection between nature and health - "From Motown to Growtown!" *Therapeutic Landscapes Network*. Retrieved May 30, 2012, from http://www.healinglandscapes.org/blog/2011/07/from-motown-to-growtown-documentary-urban-roots-on-farms-community-gardens-and-food-justice-in-detroit-mi/

Shaw, B. (2005). *Environmental Virtue Ethics*. (R. Sandler & P. Cafaro, Eds.) (p. 237). USA: Rowman & Littlefield Publishers, inc.

Sigurdardottir, H. (2013). *Land ethics and urban agriculture - Is urban agriculture an "ethical" means to urban land-use? (Minor thesis)*. Wageningen University.

Sitarsz, D. (Ed.). (1993). *Agenda 21* (Vol. 80303, p. 331). United States: Boulder, CO (Imoted States) EarthPerss.

Smart Growth on Line. (2012). Smart growth principles - Mixed land use. *Smart Growth on Line*. Retrieved November 15, 2012, from http://www.smartgrowth.org/principles/mix_land.php

Smit, J., & Bailkey, M. (2006). Urban Agriculture and the Building of Communities. In R. van Veenhuizen (Ed.), *Cities Farming for the Future - Urban Agriculture for Green and Productive Cities* (pp. 146–171). RUAF Foundation, IDRC and IIRR.

Sonnino, R. (2009). Feeding the City: Towards a New Research and Planning Agenda. *International Planning Studies*, *14*(4), 425–435. doi:10.1080/13563471003642795

Star, L. L. (2009). America's Top 10 Urban Farms. *Natural Home & Garden*. Retrieved March 17, 2012, from http://www.naturalhomeandgarden.com/People-and-Places/Americas-Top-10-Urban-Farms.aspx

Statistics Netherlands - CBS. (n.d.). No Title. Retrieved July 28, 2012, from http://www.cbs.nl/en-GB/menu/home/default.htm?Languageswitch=on

Statline. (2012). Population dynamics; birth, death and migration per region. *Central Bureau voor de Statistiek (SBS)*. Retrieved July 26, 2012, from http://statline.cbs.nl/StatWeb/publication/?DM=SLEN&PA=37259eng&D1=0,22-24&D2=0&D3=70,92,930&D4=0,10,20,30,40,(l-1)-l&LA=EN&VW=T

Steel, C. (2008). *Hungry City* (p. 383). London: Vintage Books.

Stierand, P. (2012). Food Policy Councils: recovering the local level in food policy. *Sustainable food planning: evolving theory and prctice* (pp. 67–77). The Netherlands: Wageningen Academic Publisher.

The American Heritage Dictionary of the English Language. (2009). Mater of Philospophy, LSE. *Houghton Mifflin Company*. Retrieved October 25, 2012, from http://www.thefreedictionary.com/teleological

The Free Dictionary. (2012). Metropolitan. *Farlex inc.* Retrieved November 16, 2012, from http://www.thefreedictionary.com/metropolitan

The Government of Ontario Canada. (2009). French Ontario in the 17th and 18th Centuries - Detroit. *Queen's Printer for Ontario*. Retrieved April 12, 2012, from http://www.archives.gov.on.ca/english/on-line-exhibits/franco-ontarian/detroit.aspx

The Greening of Detroit - Urban Agriculture and Open space. (2012). Garden Resource Program. *Werewolf Industries, LLC*. Retrieved March 20, 2012, from http://detroitagriculture.net/urban-garden-programs/garden-resource-program/

The program 20D20. (2011). Detroit's History of Housing and Race - Interview with Professor Thomas J. Sugrue and more. abc Action news wxyz.com. Retrieved from http://detroit2020.com/2011/07/12/detroits-history-of-housing-and-race/

Thompson, P. (2010). Land. In G. L. Comstock (Ed.), *Life Science Ethics*. Raleigh: Springer Publishing.

TimeRime. (2010). Rotterdam: Gemeentearchif Rotterdam (439 items). *TimeRime bv*. Retrieved July 26, 2012, from http://timerime.com/en/timeline/15385/Rotterdam/

U.S. Census Bureau. (2010). 2010 Census Interactive Population Search. Retrieved April 4, 2012, from http://2010.census.gov/2010census/popmap/ipmtext.php?fl=26:2622000

USA Social Security. (2012). Supplemental Nutrition Assistance Program Facts. Retrieved May 30, 2012, from http://www.ssa.gov/pubs/10101.html

Uit je eigen stad. (n.d.-a). Retrieved November 8, 2011, from http://www.uitjeeigenstad.nl/

Uit je eigen stad. (n.d.-b). Het idee [The idea]. *Uit je eigen stad*. Retrieved September 28, 2012, from http://www.uitjeeigenstad.nl/over-uit-je-eigen-stad

United Nations. (2006). Johannesburg Summit 2002. Retrieved July 4, 2012, from http://www.un.org/jsummit/html/basic_info/basicinfo.html

Vallentyne, P. (2011). Libertarianism. *Stanford Encyclopedia of Philosphy, Wikipedia The free Encyclopedia*. Retrieved July 4, 2012, from http://en.wikipedia.org/wiki/Libertarianism#cite_note-0

van der Schans, J. W.. (n.d.). Agrarian urbanism the new utopia ? *Eetbaar Rotterdam*. Retrieved November 1, 2011, from http://www.pauldegraaf.eu/downloads/AgrarianUrbanism-JWSchans.pdf

van der Schans, J. W., & Wiskerke, J. S. C. (2012). Urban agriculture in developed economies. In A. Viljoen & J. S. C. Wiskerke (Eds.), *Sustainable food planning: evolving theory and prctice* (pp. 245–258). The Netherlands: Wageningen Academic Publisher.

van der Valk, A. J. J. (2002). The Dutch planning experience. *Landscape and Urban Planning*, *58*(2-4), 201–210. Retrieved from http://linkinghub.elsevier.com/retrieve/pii/S0169204601002213

van Veenhuizen, R.. (2006). Introduction - Cities Farming for the Future. In R. van Veenhuizen (Ed.), *Cities Farming for the Future - Urban Agriculture for Green and Productive Cities* (pp. 1–17). RUAF Foundation, IDRC and IIRR. Retrieved from http://www.ruaf.org/node/961

van der Velden, S. (n.d.). De Hongerwinter door andere ogen. *Historisch Genootschap Rotterdam*. Retrieved September 11, 2012, from http://www.roterodamum.nl/site/index.cfm?itm_id=51

Verma, N. (2009). *Ethics and Planning Research*. (F. L. Piccolo & H. Thomas, Eds.) (p. 260). England: Ashgate Publishing Limited.

WHO - World heath organization. (2012). Obesity and overweight. *WHO - World heath organization*. Retrieved October 25, 2012, from http://www.who.int/mediacentre/factsheets/fs311/en/

WHO -World Health Organization. (2012a). Food Security. *WHO*. Retrieved July 20, 2012, from http://www.who.int/trade/glossary/story028/en/

WHO -World Health Organization. (2012b). Nutrition. *WHO - World heath organization*. Retrieved October 25, 2012, from http://www.wpro.who.int/mediacentre/factsheets/nutrtion/en/

Walker, C., Carmody, D., Crouch, P., Hicks, C., Jones, P., Underwood, K., & Weinstein, P. (2011). *The Detroit Food System Report 2009 -2010*. *System*. Detroit. Retrieved from http://www.clas.wayne.edu/multimedia/usercontent/File/SEED/2DetFoodReport_2009-10lores.pdf

Watson, M. (n.d.). Local foods, Organic. *About.com*. Retrieved January 7, 2013, from http://localfoods.about.com/od/localfoodsglossary/g/organic.htm

Wayne State University. (n.d.). About Wayne State. *Wayne State University*.

Wiskerke, J. S. C. (2009). On Places Lost and Places Regained: Reflections on the Alternative Food Geography and Sustainable Regional Development. *International Planning Studies*, *14*(4), 369–387. doi:10.1080/13563471003642803

Wiskerke, J. S. C., & Viljoen, A. (2012). Sustainable urban food provisioning: Challenges for scientists, policymakers, planners and designers. In J. S. C. Wiskereke & A. Viljoen (Eds.), *Sustainable food planning: evolving theory and prctice* (pp. 19–35). The Netherlands: Wageningen Academic Publisher.

Woodford, A. M. (2001). *This is Detroit: 1701–2001*. Wayne State University Press.

APPENDIX 1

Question list used to screen information about applicable policy themes

1. *by taking integrated food and agriculture perspective - promoting grate range of food system elements in every community planning or projects (these food system elements are for example -production, processing, distribution, retailing, education, celebration, infrastructure, food security, food safety, food justice and more)*
2. *by use of place making design strategies? to make food visible and enhance experience of food*
3. *to increase economic activity and profile of the food system?.*
4. *by providing access to grow, sell or process food?*
5. *by embedding educational opportunities around food into community programs? to provide the opportunity for rich engagement with all aspects of food system in daily life*
6. *by integrating sustainable food system goals and considerations into government policy and programs and development plans? This includes integrating key food system stakeholders into all decision making processes*
7. *by integrating urban habitat consideration for other spices into food and agriculture agenda? Recognizing that birds and others are not always a good mix with crops.*
8. *by encouraging and maintaining partnership and organizations to take responsibility for managing successful urban food systems, policies, programs and physical spaces? Because food often falls between the cracks of typical governance and jurisdictional platforms. According to Kameshwari Pothukuchi, the following two points can be wrapped under this point (e-mail dated 26th of April 2012 and interview 27th of April 2012) "building and/or 'repairing' a community" through urban agriculture. building community self-reliance from market or state/government frameworks*
9. *by considering the needs of urban food systems and the many opportunities they offer to community infrastructure system? Addressing energy, wastewater and solid-waste management*
10. *by developing deeper understanding of how food and agriculture can contribute to climate change solution? Having urban agriculture as mean for climate improvements and as part of adaption strategies*

The optional answers for all questions asked:

- Yes indeed - can give concrete example/examples - referring to documents
- Yes – preferably, we are in the phase of developing such goal
- I don't know – this hasn't been discussed yet
- No , because we don't find this appropriate
- No, this is not possible

APPENDIX 2

Below table, lists Graaf's (2012) five promising types of urban agriculture; potential areas, sort of food production and the potential that each type has for the landscape. Furthermore, Graaf (2012) shows the promising types for the city of Rotterdam from two points of axis: control versus self-organization. This idea of Graaf's is an attempt to create ideology for urban agriculture that is place-specific.

Table 5 Five categories of Urban Agricultural development according to Paul de Graaf (n d p 4) and their potential character

Type of UA	Potential areas	Food production	Potential
Forest gardening	Semi-public green areas	Nuts, fruit, roots and other edible crops	Alternative model for design and maintenance of/and education in nature
Small-plot soil based cultivation	Back yards and left over public green areas spread over the city	Fruit and vegetable cultivation	Underused areas become productive
Soil-based cultivation on roof tops	Productive green rooftops with dynamic maintenance	Fruit and vegetable cultivation	Environmental and aesthetic benefits
Rooftop hydroponics	Use of rooftop space implementing lightweight greenhouses	'Off the grid' vegetable cultivation on substrate	Sustainable renovation in the existing city
Aqua parks	temporary use of fallow land and vacated buildings	Polyculture with a combined fish and vegetable cultivation and possibly other crops/cattle such as worms (vermaculture) connected in cycles	Recycling waste streams, use of fallow land and vacated buildings for crop production

APPENDIX 3

Detroit Zoning Ordinance page 173

ARTICLE VII. ZONING DISTRICTS (IN GENERAL)

Sec. 61-7-1. Establishment of zoning districts.

For the purpose of this Zoning Ordinance, the City of Detroit is hereby divided into the zoning districts that are delineated in Sec. 61-7-2 through Sec. 61-7-5 of this Code.
(Ord. No. 11-05, §1, 5-28-05)

Sec. 61-7-2. Residential Districts.

(1) R1 Single-Family Residential District
(2) R2 Two-Family Residential District
(3) R3 Low Density Residential District
(4) R4 Thoroughfare Residential District
(5) R5 Medium Density Residential District
(6) R6 High Density Residential District
(Ord. No. 11-05, §1, 5-28-05)

Sec. 61-7-3. Business Districts.

(1) B1 Restricted Business District
(2) B2 Local Business and Residential District
(3) B3 Shopping District
(4) B4 General Business District
(5) B5 Major Business District
(6) B6 General Services District
(Ord. No. 11-05, §1, 5-28-05)

Sec. 61-7-4. Industrial Districts.

(1) M1 Limited Industrial District
(2) M2 Restricted Industrial District
(3) M3 General Industrial District
(4) M4 Intensive Industrial District
(5) M5 Special Industrial District
(Ord. No. 11-05, §1, 5-28-05)

Sec. 61-7-5. Special Districts.

(1) PD Planned Development District
(2) P1 Open Parking District
(3) PC Public Center District

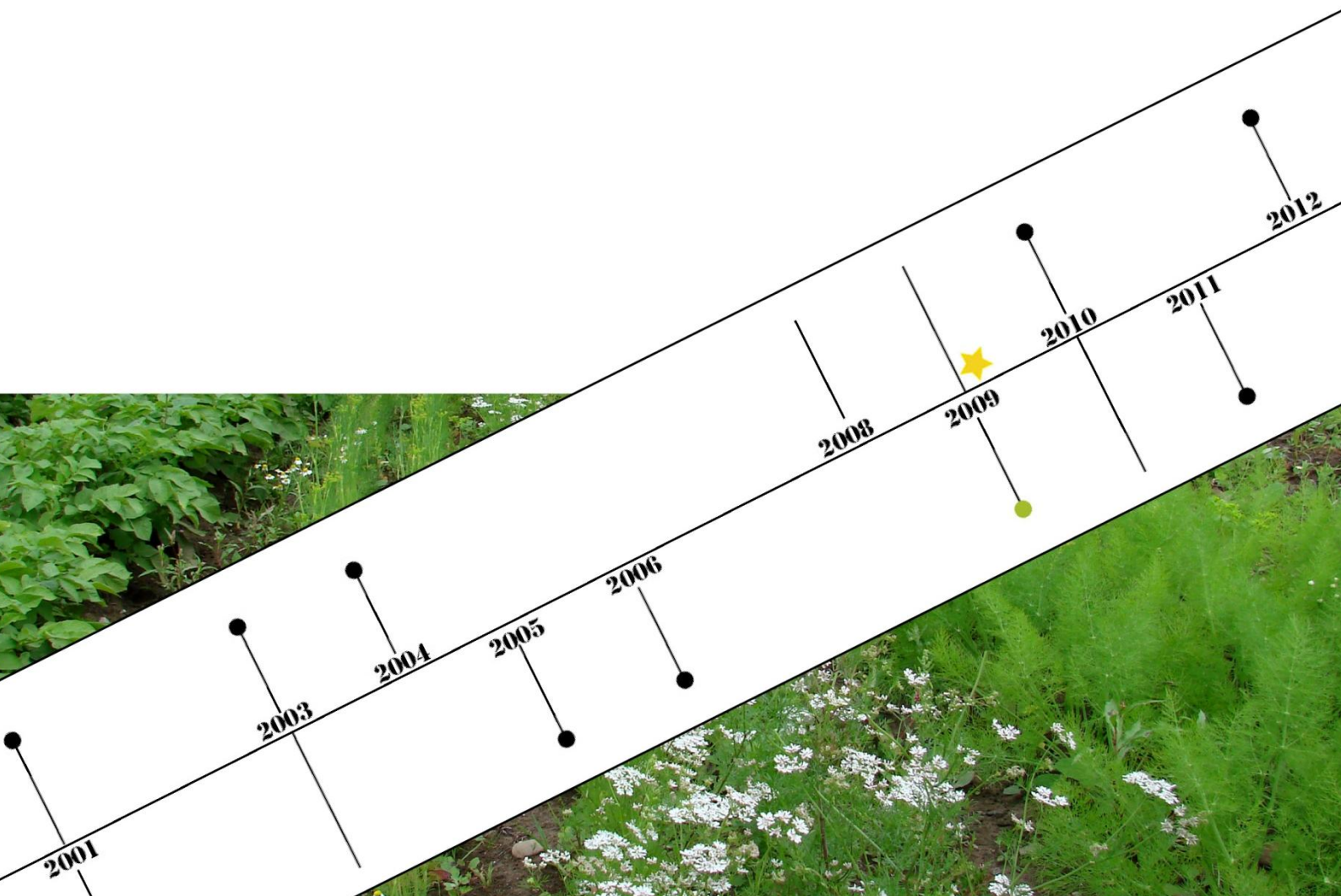
(4) PCA Public Center Adjacent District (Restricted Central Business District)
(5) TM Transitional-Industrial District
(6) PR Parks and Recreation District
(7) W1 Waterfront-Industrial District
(8) SD1 Special Development District, Residential/Commercial
(9) SD2 Special Development District, Commercial/Residential
(10) SD3 Special Development District, Technology and Research
(11) SD4 Special Development District, Riverfront mixed use
(12) SD5 Special Development District, Casinos
(Ord. No. 11-05, §1, 5-28-05; Ord. No. 13-11, §1, 8-23-11)

Sec. 61-7-6. Overlay Areas.

As provided for in ARTICLE XI, DIVISION 14 of this Chapter, certain areas of the City of Detroit, while classified within certain zoning districts, are geographically sub-classified as overlay areas. Overlay areas include the following:

(1) Gateway Radial Thoroughfare Overlay Areas;
(2) Traditional Main Street Overlay Areas;
(3) Major Corridor Overlay Areas;
(4) Grand Boulevard Overlay Area;
(5) Downtown and Riverfront Overlay Areas;
(6) Development Improvement Area; and
(7) Far Eastside Overlay Area.

(Ord. No. 11-05, §1, 5-28-05; Ord. No. 20-05, §1, 5-29-05; Ord. No. 13-11, §1, 8-23-11


2001
2003
2004
2005
2006
2008
2009
2010
2011
2012