Urban Farming at Zernike
Dissertation

Urban Farming at Zernike

Research Report
February – August 2013
International Facility Management
Hanze University of Applied Sciences Groningen, the Netherlands

Student: Maarten Klaassen
Student number: 000324906

Placement Coach: Andries van der Berg
Placement Tutor: Mark Kierans
Second Assessor: Ab Reitsma

Kennis Centrum, Bureau NoorderRuimte
Hanze University Groningen
Executive summary

After analyzing several definitions and looking at different examples, the definition of Urban Farming that will be used for this dissertation is as follows:

Urban Farming is growing your own vegetables of fruits, with the intention to be more self-sufficient and making an effort to contribute to the community in any way possible. Although it contains the word urban, it does not imply that an urban farm should be in an urban environment. As the example above shows, one can also live in a suburban environment, but still have an Urban Farm.

During the second World War the recognized advantages of Urban Farming such as: A binding factor, food security, mental en physical health benefits for the individual as well as the community, are also found during the first world war and even before the first world war. Basset once described the advantages as follows:
- Self-respect
- Independence and self-reliance
- Therapeutic benefits of fresh air and exercise
- Socialize and meet new people
- Maintain the vitality and morale high, trough the production of nutritious vegetables outdoors. (Bassett, 1972)

The mentioned benefits are again found in the community gardens and other initiatives of Urban Farming happening nowadays. According to Van de Beek the advantages are:
- Food security
- Binding factor
- Stress relief
- more beautiful neighborhood (Van de Beek, 2010)

This information shows that the general benefits Urban Farming has nowadays, are the similar advantages found 100 years ago during the First World War. Thus regarding benefits there hasn’t changed much. However the goal to set up an urban farm has changed. Where in World War II the goal was self/reliance and keep morale high, where now a days the goal is healthy food and a social binding factor.

When comparing the national and international examples, there was found that there are many similarities and Urban Farming isn’t practiced in a completely different way. However there are differences. These can be found in chapter 3.3. Thus, the conclusion can be drawn up, that Urban Farming in the Netherlands is comparable to the researched area.

There was found that the main benefits for Zernike would be: Therapeutic benefits of fresh air and exercise for students and staff, the option for students to buy healthy and fair produce and the social binding factor. There are more benefits found. These are described in chapter 3.4. But the mentioned benefits are the most profound.

The stakeholders are: Students, staff, RUG, entrepreneurs at Zernike, student associations, CAST, Studies at Hanze University and the RUG, the landowners, CVB and the municipality Groningen. The stakeholders have been described in detail in chapter 3.5. Stakeholder mapping was used in order to determine the most applicable strategy to approach and deal with the stakeholders. Because of time
and resources available, it was not found out if all stakeholders were supporting the idea of having an Urban Farm at Zernike. From the stakeholders that have been interviewed, only the municipality Groningen is not fully supporting this idea. The other stakeholders that have been interviewed were supporting the idea of having an Urban Farm at Zernike.

Lastly there was found that there are three main aspects. Namely; Space, people and knowledge. Space is needed to set up an Urban Farm. People are needed to farm and conduct studies and manage the farm. Lastly knowledge is needed to plant and harvest. But also to conduct research to insure continuity.

Space is available. There has been found out that Hanze, RUG, municipality Groningen and province Groningen together, own the ground at Zernike. Because of time and resources available, there has not been found out what piece of ground is owned by whom. Therefore, it has not been found out, if the landowner is supporting the idea of having an Urban Farm at Zernike.

People are available. Students and staff are supporting and willing to garden, if there would be an Urban Farm at Zernike.

Knowledge is also available. Several lectors, and the expert, have given the availability to take a role as; Client, expert, passive coaching or active coaching. Furthermore, lectors have shown their interest to conduct studies at the Urban Farm. Moreover, Alex van Spijk is willing to set up a research to design the Urban Farm and select the produce to be grown.

Finally, if Zernike sets up an Urban Farm, the most important benefits are:

- Therapeutic benefits of fresh air and exercise for students and staff.
- The option for students and staff to buy healthy and fair produce.
- A social binding factor between the (inter)national students, staff and entrepreneurs at Zernike science park.
Preface

I am very thankful to have had the opportunity to do my graduation project at Bureau NoorderRuimte. It has been a very leaning full experience and I am pleased with the fact that I had pleasure to meet many interesting people. I have had a great time learning and conducting my research. Therefore I would like to state a special thanks to the following people:

Anne van der Haar, Andries van der Berg, Jaap Postma, Hanneke Lestestuiver, Gea Posthumus, Mirjam Post, Steven de Boer, Mark Kierans and all junior employees at Bureau NoorderRuimte.

Because there were some difficulties, I would first like to explain the process how came to this final dissertation.

Mrs. Posthumus, researcher, client and teacher at Bureau NoorderRuimte, had written the following statement as a starting point for a research to be conducted: “Thinkers and doers all over the world are thinking about new innovative ways how food consumption and –production can be changed. Urban Farming is a broad concept with many implications and initiatives. Kenniscentrum NoorderRuimte is asking itself how Urban Farming can contribute to villages/cities that are facing decline. To be more specific: When in a living environment buildings are torn down, can Urban Farming contribute to the social and spatial aspect of this environment? Andries van den Berg, lector decline area’s and environment will be the client, Hanneke Lestestuiver will be the expert.”(Posthumus, 2013)

This was the starting point for this dissertation to be written. In the first meeting with the client, Andries van den Berg, the assumption was made that the north of the Netherlands was facing decline (province Groningen, Friesland & Drenthe). There was also decided that, Delfzijl would be the test case for this research. Due to the fact that Delfzijl was facing decline, placed in the north of the Netherlands and buildings were being torn down. During this meeting the assumptions was made that, if Urban Farming could contribute something to Delfzijl, Urban Farming could contribute something to any village in a declining area.

During this meeting, we initially composed these research questions:

Main question:
How can implementing a selective Urban Farming model contribute, with regards to social and spatial qualities, to the objectives of the municipality Delfzijl?

Sub questions:
1. What is Urban Farming specifically?
2. What concepts of Urban Farming can be differentiated?
3. Which of the concepts of question 2 can contribute to the social aspects of a declining area
4. Which of the concepts of questions 3 can contribute to the spatial aspects of a declining area
5. How can we determine if Urban Farming is applicable to a declining area?
6. What models of Urban Farming are applicable to Delfzijl?

During literature review, there was found that Delfzijl would not be a representative test case. The reason Delfzijl was not a representative test case was the fact that, there was found it would be impossible to apply a specific model of Urban Farming to Delfzijl. The model that would be applicable
to a village in a decline area is dependent on: resources available, space available, motive, goal, location, target group, diet, culture and people who would manage the urban farm. Because of the many variables, every city, village of initiative will end up using a different model of Urban Farming.

After this conclusion, a meeting was set up with the client. During this meeting it was decided to change the focus from Delfzijl to declining areas in general. Furthermore, what results Urban Farming had shown in the Netherlands, and in comparable areas abroad. From this point on, the following main question and sub questions were:

Main question:
What can Urban Farming contribute to the social and spatial aspects of declining areas?

Sub questions:
1. What is Urban Farming?
2. What results have been achieved in the recent history?
3. What is the comparison between Urban Farming nationally and internationally?

During the research phase there was a lunch meeting about Urban Farming for all employees of Bureau NoorderRuimte and other interested parties. The purpose of this lunch meeting was to present and discuss the results that were found so far. This lunch meeting was called: Slimmer na je lunch, do it together (Smarter after your lunch, do it together). After this meeting many lecturers and students were enthusiastic about Urban Farming. Several lecturers had shown their interest in Urban Farming and were wondering why there isn’t an urban farm at Zernike. Or as Mr. van Spiijk: “this sounds like a really good idea an you guys really got me inspired. I’m in!” This idea of having an Urban Farm seemed really interesting for future research. Later on, during an afternoon drink, once more Urban Farming was a subject of discussion and again the question was asked: Why doesn’t Zernike have an Urban Farm yet? At this point I was really enthusiastic to conduct research about, how Zernike could implement Urban Farming.

After the sub questions were answered and conclusions were drawn up there was a meeting with the client, expert and coaches to see what could be done with the found information. During this meeting the idea of conducting research, how Zernike could implement an urban farm was suggested. The client, coaches and expert were excited about this idea and it was decided to set up a new research. Because answering the sub question took quite a lot of time, there wasn’t enough time left to conduct research how Zernike should set up an Urban Farm, therefore it was decided to conduct research what the needed aspect were to set-up an urban farm, and find out if there was enough support for an urban farm, thus;

What is needed to implement Urban Farming at Zernike and profit from the benefits Urban Farming has to offer?

In order to answer this question, the conducted research would be used and the following sub questions were added:

4. What are the benefits for Zernike in general?
5. Who are the stakeholders regarding an Urban Farm at Zernike?
6. Is there enough support from the stakeholders?
7. What is needed to implement an Urban Farm at Zernike?
Table of Contents

Executive summary ................................................................................................................................. 3
Preface ..................................................................................................................................................... 5
Table of Contents .................................................................................................................................... 7
Glossary ................................................................................................................................................... 9
List of appendices .................................................................................................................................. 10
Introduction ........................................................................................................................................... 12
Chapter 1: Literature review ................................................................................................................. 13
  1.1 Urban Farming............................................................................................................................. 13
  1.2 Urban Farming in history ............................................................................................................. 15
    1.2.1 Victory gardens ..................................................................................................................... 15
    1.2.2 Community gardens ............................................................................................................. 16
  1.3 Section conclusion ....................................................................................................................... 17
Chapter 2: Research process & theoretical foundation ........................................................................ 18
  2.1 Problem definition ....................................................................................................................... 18
  2.2 Methodology ............................................................................................................................... 19
Chapter 3: Findings ................................................................................................................................ 22
  3.1 Urban Farming ............................................................................................................................. 22
  3.2 History and benefits .................................................................................................................... 22
  3.3 International and National examples of Urban Farming ............................................................. 23
    3.3.1 Culture .................................................................................................................................. 23
    3.3.2 Diet ....................................................................................................................................... 24
    3.3.3 Climate .................................................................................................................................. 24
    3.3.4 Goal ...................................................................................................................................... 25
    3.3.5 Location ................................................................................................................................ 26
    3.3.6 Concept ................................................................................................................................ 26
    3.3.7 Yield ...................................................................................................................................... 27
  3.4 Target group .................................................................................................................................. 27
Glossary

CAST
(Culture Activities for STudents) an Organization within Hanze University who organizes activities for students

Community gardens
Urban Farms set up during the 1970’s

CSF
Critical success factors. Factors that are considered most important

CVB
College van Bestuur. Central governing body of a College or University.

IIED
International institute for environment and development. An organization that monitors agriculture around the world

RUG
Rijks Universiteit Groningen. A University located in Groningen.

Sub Urban
Any outlaying part of a city or town

Urban
A city centre

Victory gardens
Urban Farms set up during World War II

Zernike
An area at Groningen. Hanze University, RUG and entrepreneurs are located here

Zernike science park
A research area at Zernike.
List of appendices

Appendix 1. International examples .................................................................
  1.1 Brooklyn Rooftop Garden .................................................................
  1.2 Peaceful belly farm .........................................................................
  1.3 Seattle youth garden works ..............................................................
  1.4 Zenger farm ....................................................................................
  1.5 Seattle p-patches ...........................................................................
  1.6 Youth grow Program ........................................................................
  1.7 Home garden program ......................................................................
  1.8 Baby and toddler nutrition workshop .............................................
  1.9 Student nutrition ............................................................................
  1.10 Food summer camp ........................................................................
  1.11 Yes in my backyard .........................................................................
  1.12 Urban roots ...................................................................................
  1.13 Keep Growing Detroit Season Extension Program .......................
  1.14 Earthworks urban farm .................................................................
  1.15 Harlem Grown ..............................................................................

Appendix 2: Dutch examples of Urban Farming ..............................................
  2.1 CBS building, Heerlen .................................................................
  2.2 “De stadsboerderij” (The cityfarm) ...................................................
  2.3 Plant Paradise in Eindhoven ............................................................
  2.4. Groene ruimte maken (creating green space) ..............................
  2.5 Het hof van Reseda .........................................................................
  2.6 De dakboerderij (The rooftop) ........................................................
  2.7 Buurtmoestuin de Middenmoes (neighbourhood garden de middenmoes)
  2.8 Urban Green Court .........................................................................
  2.9 Meezenbroek .................................................................................
2.10 Stadshoeve de Tuin .............................................................. Fout! Bladwijzer niet gedefinieerd.
2.11 De Voedseltuin (the foodgarden) ........................................ Fout! Bladwijzer niet gedefinieerd.
2.13 Hof van Jannie (court by Jannie) ........................................ Fout! Bladwijzer niet gedefinieerd.
2.14 Geveltuinen XXL (facade gardens XXL) ......................... Fout! Bladwijzer niet gedefinieerd.
2.15 Buurtmoestuin Parmenides (neighborhood garden, Parmenides) ............... Fout! Bladwijzer niet gedefinieerd.

Appendix 3: Interview Hanneke Lestestuiver.............................. Fout! Bladwijzer niet gedefinieerd.
Appendix 4: Interview Mark Mobach......................................... Fout! Bladwijzer niet gedefinieerd.
Appendix 5: Interview Alex van Spijk ........................................ Fout! Bladwijzer niet gedefinieerd.
Appendix 6: Interview Paul van Eijk ......................................... Fout! Bladwijzer niet gedefinieerd.
Appendix 7: Frankville ................................................................. Fout! Bladwijzer niet gedefinieerd.

These appendices are provided in a separate document
Introduction

This report is the basis to set up an Urban Farm at Zernike. There will be a focus on what Urban Farming is, what its benefits are, a description of the research process, the theory and methods used and the research questions will be answered. Finally a conclusion will be drawn up based upon the research questions. These conclusions will be used to give a recommendation to Zernike on how it can set up an urban farm and profit from its benefits.

This research has been conducted within Bureau NoorderRuimte. “Bureau NoorderRuimte is part of the knowledge centre NoorderRuimte. It is a learning/working environment where students, teachers, researchers and lectors work together on practical issues that have been initiated by the knowledge centre or by the external environment of the knowledge centre” (Hanze.nl, 2013) Nevertheless, the assignment itself was given by the lector spatial transformations, Andries van den Berg, also part-time lector at knowledge centre NoorderRuimte.

As mentioned in the preface, the objective of this dissertation has changed twice. At first the objective was to find out, how Urban Farming could contribute, regarding social and spatial aspects, to the objective of the municipality Delfzijl. Then the objective changed to, what can Urban Farming contribute to the social and spatial aspects of declining areas? During research, there was found that many students and lectors were asking the same question: ‘If Urban Farming has so many benefits then why doesn’t Zernike have an Urban Farm?’ Therefore the objective was changed one last time to, finding out what the benefits for Zernike could be and what is needed to set up an Urban Farm at Zernike. Therefore, this dissertation will find out what the benefits for Zernike are and what the needed aspects are. As well as a recommendation for future research. This dissertation could also be used for other research about Urban Farming.

Chapter 1 will explain what Urban Farming is. Several definitions will be compared and analyzed and there will be looked at examples of Urban Farming to come to a clear definition. Moreover, there will be looked at the history of Urban Farming to learn from past results. This will be done by looking at the previous work done on the field of study.

Chapter 2 focuses on why and how the research has been conducted. This is done by explaining the problem definition and key issues. Furthermore, the sub questions will be described and how they have been researched and what methods and theories have been used. The methods and theories are also described in detail.

Chapter 3 contains the research results. The research results are presented in relation to the sub questions. The results of this chapter will be used to answer the main question.

Chapter 4 will answer the main question and contains the conclusion of this dissertation. The conclusion will be based on the results of the answers derived from the sub questions. This will determine the recommendations given in chapter 5.

Chapter 5 will give a recommendation for Zernike as well as recommendations for future research.
Chapter 1: Literature review

This chapter will present the data already available about Urban Farming. First there will be looked at the definition of Urban Farming. Several definitions will be compared and analyzed. Moreover there will be given examples. Furthermore, there will be a brief description of the history of Urban Farming. The benefits noticed in the history will also be mentioned.

1.1 Urban Farming

In order to find out what Urban Farming specifically is, one should first know the definition of Urban Farming. However, there isn’t one clear definition for Urban Farming. A quote from Dan Susman explains the complexity in defining Urban Farming:

“After traveling to more than twenty cities and visiting over eighty urban farms across the country for my documentary film, Growing Cities, you’d think I’d be able to sum Urban Farming up in one sentence; be able to say exactly what it is, who does it, and why. But, I can’t. I’ve met tons of city farmers, from backyard chicken keepers to community gardeners, and seen people growing food in the most unlikely of places. Nonetheless, I still can’t find a neat and tidy way to describe the urban agriculture movement.” (Susman, 2012)

Of course one can state that Urban Farming is: People who grow food in an urban environment. However this would be too easy. Therefore multiple definitions are compared to find similarities, to come to the most complete definition of Urban Farming.

The first definition is again from Dan Susman:

“I don’t think I’ll ever really arrive at a neat and tidy definition of Urban Farming. That said I can tell you what it is – a backyard garden, a mom concerned about what her kids are eating, a tomato in a windowsill, an organizer demanding access to fresh food for her community, and everything in between. Together, these parts make a movement; one that is creating Growing Cities across the country communities that are healthier, more sustainable, and socially just. “(Susman, 2012)

According to Kennisbank Herbestemming, the definition of Urban Farming is: “Urban Farming, also called, vertical gardening is the cultivation, processing and distribution in an urban environment. This may be in a building, on fallow plots or in or around the fringes of a city.”
According to Chris Thoreau (Wordpress, 2012), the definition of Urban Farming is as follows: “Urban Farming often consists of many of the following criteria and circumstances:

- The farming activity is being done in an urban area
- Differentiating Urban Farming from peri-urban and rural farming
- Takes place on relatively small parcels of land
- Takes place on private land
- Not in publicly owned space such as parks
- But through guerilla gardening/farming, could take place on public land
- Often takes place on multiple pieces of land
- Income is generated from the sale of produce
- Produce is used for personal consumption in an effort to be more self-sustaining beyond basic community gardening or backyard gardening”

From these definitions one can certainly say, Urban Farming has to do with: Growing vegetables or fruit in an urban environment. Furthermore, cultivation, processing and distribution take part in Urban Farming. In most cases the produce is for personal consumption. However in some cases income is generated. Furthermore, depending on which definition you look at, the social benefits are taken into account.

After analyzing, comparing and combining several definitions of Urban Farming, the definition is still a bit vague. The following examples will indentify Urban Farming by using the three quotes mentioned above, in order to come to a clear definition of Urban Farming.

Example 1: If someone lives in a city and has a lemon tree on his balcony. This person uses his home grown lemons for personal use. Can we describe this person as an urban farmer? If one compares this case to the above mentioned definition, one could see that cultivation is in place. Processing maybe, it is being done in an urban area. It takes place on private land and not in publicly owned space, and income is not generated. However, distribution is not in place thus, one can say that this person is not an urban farmer, and his lemon tree is not part of an urban farm. However, what is lacking in the above mentioned definitions is; Intention. In this case the person is growing lemons for his own use, that’s it. But if this person sees his lemon tree to be more self-sufficient, hands out lemons to friends/family/neighbors and tries to contribute to reducing “food mileage” (the road food has to cover from the farm to a person’s plate), and tries to contribute to the community, then this persons is an urban farmer and has a small urban farm. (Wordpress, 2010)

Example 2: A company, located in a suburban area, builds a garden on its rooftop. This garden is for employees to grow vegetables and fruits. These vegetables and fruits are for personal use of the companies employees. Can one say this garden is an urban farm, and are the employees urban farmers? If we look at the definition we can say for certain; this garden is in a suburban area, the produce is for personal use. It takes place on private land and not in public land. If one takes the intention in consideration, one can say that this company is trying to be more self sufficient, because it is producing its own food, and the company is contributing to the community by means of CO2 reduction, because of reducing food mileage. So one can say this is a good example of Urban Farming. (Wordpress, 2012)
1.2 Urban Farming in history

Urban Farming has had a prominent role within the societies around the world. The first examples can be found around 3500 BC in the Egypt culture. However, Urban Farming took a lift in World War II, where it had a role to keep morale high. Thereafter Urban Farming became more popular because of the so called ‘community gardens’ in the seventies. This will be described in more detail in this section, because these two hypes have had an important role in the development of Urban Farming.

1.2.1 Victory gardens

During World War II food was a valued good. So called ‘Victory gardens’ began to pop up everywhere. Old gardens, left over from the relief gardens and the liberty gardens set up during World War I, were taking in to use again and new gardens were created. The War Food Administration, who created a National Victory Garden Program, set with five goals:

• Lessen demand on commercial vegetables supplies and thus make more available to the armed forces and lend-lease programs.

• Reduce demand on strategic materials used in food processing and canning.

• Ease the burden on railroads transporting war munitions by releasing produce carriers.

• Maintain the vitality and morale of Americans on the home front though the production of nutritious vegetables outdoors.

• Preserve fruit and vegetables for future use when shortages might become worse. (Basset, 1981)

The benefits of the Victory gardens were recognized. The gardens were for everyone, and a binding factor. Furthermore food security, mental en physical health benefits for the individual as well as the community. The Victory gardens kept morale high and relieved stress for those who had a loved one in war. Advertisements were being used to motivate Americans to produce their own food and contribute to the victory of World War II. In 1943, it was estimated that over 20 million garden plots were planted. There gardens produced around 9-10 million pounds of fruit and vegetables per year. Around 44% of the fresh vegetables and fruit in the United States. (Livinghistoryfarm.org, 2012)

The need for food had led to great creativity. A great example can be seen on the picture 1.2. Here, a garden has been built in a bomb crater. (London, 1943)
1.2.2 Community gardens

The latest trend in Urban Farming is community gardens. From around 1970 till now, the movement has taken a lift. At first the main reason behind the community gardens was the economic crisis in the 70’s. Because of the economic crisis, buildings were abandoned, vacant lots throughout the whole city, etc. In a way to make the city a little bit more beautiful, “the green guerilla” was lobbying with so called “seed bombs”. These seed bombs were packed with seed, fertilizer and water and thrown over the fences of vacant lots. This lobby wasn’t only about making the vacant lots and the city more beautiful, it triggered several government funded programs. For example, the “Bowery Houston Community Farm and Garden”. The founder of “Green Guerillas”, together with volunteers had spent a year removing trash, adding topsoil, installing fencing in order to create a community garden. In April 1974 a lease by the City of Housing Preservation and Development was approved in just 1 month, becoming the first community garden in the city of New York. This garden began the attract attention and won several rewards. Because of its success the Green Guerillas started gardening workshops and experimenting with sturdy plants that could stand up to a hostile city environment. (Wordpress.com, 2012)

After the community garden movement, many initiatives of Urban Farming have been set up. However the main difference is the intention to undertake initiative. In the 1970’s the economic crisis was the main motivator for Urban Farming. Now however the reasons are completely different. The main reasons are reduce hunger all over the world, the trend to eat healthy food and the need for a social binding factor in the individualistic culture of modern days.
1.3 Section conclusion

After analyzing several definitions and looking at different examples, the definition of Urban Farming that will be used for this dissertation is as follows:

Urban Farming is growing your own vegetables of fruits, with the intention to be more self-sufficient and making an effort to contribute to the community in any way possible. Although it contains the word urban, it does not imply that an urban farm should be in an urban environment. As the example above shows, one can also live in a suburban environment, but still have an Urban Farm.

During the second World War the recognized advantages of Urban Farming such as: A binding factor, food security, mental en physical health benefits for the individual as well as the community, are also found during the first world war and even before the first world war. Basset once described the advantages as follows:

- Self-respect
- Independence and self-reliance
- Therapeutic benefits of fresh air and exercise
- Socialize and meet new people
- Maintain the vitality and morale high, trough the production of nutritious vegetables outdoors. (Bassett, 1972)

The mentioned benefits are again found in the community gardens and other initiatives of Urban Farming happening nowadays. According to Van de Beek the advantages are:

- Food security
- Binding factor
- Stress relief
- more beautiful neighborhood (Van de Beek, 2010)

This information shows that the general benefits Urban Farming has now days, are the similar advantages found 100 years ago during the First World War. Thus regarding benefits there hasn’t changed much. However the goal to set up an urban farm has changed. Where in World War II the goal was self/reliance and keep morale high, where now a days the goal is healthy food and a social binding factor.
Chapter 2: Research process & theoretical foundation

This chapter will give a clear description on what the problem definition is and which questions need to be answered to solve this problem. Furthermore the steps that will be taken to complete this dissertation are described. This will include the various methods, models and literature used in order to answer the questions.

2.1 Problem definition

During research there was found that many students and lectors were asking the same question: If Urban Farming has so many benefits as mentioned in the literature review, then why doesn’t Zernike have an Urban Farm? There was a need for an Urban Farm, but there was no research conducted what was needed to set up an Urban Farm at Zernike and what the benefits of this urban farm would be. This was the problem. Therefore the objective of this dissertation is: Find out what the benefits for Zernike could be and what is needed to set up an Urban Farm at Zernike.

The main question is:
What is needed to implement Urban Farming at Zernike and profit from the benefits Urban Farming has to offer?

In order to answer the main question, the following sub questions were prepared:
1. What is Urban Farming?
2. What are its benefits?
3. What is the comparison between Urban Farming nationally and internationally?
4. What are the benefits for Zernike in general?
5. Who are the stakeholders regarding an Urban Farm at Zernike?
6. Is there enough support from the stakeholders?
7. What is needed to implement an Urban Farm at Zernike?

In order to answer the sub questions and come to a final conclusion, there needs to be found out what Urban Farming exactly is and what its benefits are. Secondly there needs to be found out if these benefits are also applicable to Zernike. Because Urban Farming is practiced across the world, there needs to be researched if Urban Farming examples in the Netherlands are comparable to international examples and what the similarities are. Finally there needs to be determined, if there is enough support for an Urban Farm at Zernike and how Zernike can implement Urban Farming.
2.2 Methodology

This section will focus on how to answer the questions to come to a proper advice. A description on what models and theories were used, and how they add value. A description per sub question will be used.

In order to find out what Urban Farming is, quantitative desk research was conducted. Various examples and definitions were analyzed and compared to come to clear definition of Urban Farming. Next to that, an expert meeting was used to gain more insights.

To research what benefits Urban Farming has to offer, quantitative desk research was used. By looking at the history of Urban Farming and what results were already proven. In order to make sure the right conclusions regarding benefits were drawn up, the benefits were compared to other research conducted in Urban Farming. As well as an expert meeting.

To answer the question how Urban Farming can be compared nationally and internationally the method of desk research was used once more. 15 international examples as well as 15 national examples of Urban Farming were researched. 30 examples had been set as a maximum, in collaboration with the client and because of time and resources available. The following aspects would be looked at nationally and internationally: goal, location, concept, target group and how they’re managed. Analyses and an expert meeting were used to come to a selection of goals, what the urban farmers had to set up an urban farm. Furthermore the location was described to see in what kind of places it is possible to set up an urban farm. The concept was described to see what already was available. Furthermore, yield was described to insure the produce would be applicable to the Netherlands. Target groups were described to see who the Urban Farmers were. Lastly, how they’re managed was described in order to find out how the researched urban farms were managed and ensured their continuity. The international examples were selected specifically on three main aspects: culture, diet and climate. Culture was determined by using the five dimensions theory by Hofstede. This model gives a clear insight on what aspects of culture are comparable and how well they match. Hofstede’s five dimension model deals with the following five dimensions:

- **Power distance:** “This dimension deals the fact that all individuals in societies are not equal. It expresses the attitude of the culture towards these inequalities amongst us. Power distance is defined as: The extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.” (Hofstede, 2010)

- **Individualism:** “The fundamental issue addressed by this dimension is the degree of interdependence a society maintains among its members. It has to do with whether people’s self-image is defined in terms of “I” or “We”. In Individualist societies people are supposed to look after themselves and their direct family only. In collectivist society’s people belong to ‘in groups’ that take care of them in exchange for loyalty.” (Hofstede, 2010)

- **Masculinity / Femininity:** “A high score (masculine) on this dimension indicates that the society will be driven by competition, achievement and success, with success being defined by the “winner” or “best-in-the-field.” This value system starts in school and continues throughout one’s life – both in work and leisure pursuits. A low score (feminine) on the dimension means that the dominant values in society are caring for others and quality of life. A feminine society is one where quality of life is the sign of success and standing out from the
crowd is not admirable. The fundamental issue here is what motivates people, wanting to be the best (masculine) or liking what you do (feminine).” (Hofstede, 2010)

- Uncertainty avoidance: “The dimension, Uncertainty Avoidance, has to do with the way that a society deals with the fact that the future can never be known: should we try to control the future or just let it happen? This ambiguity brings with it anxiety and different cultures have learnt to deal with this anxiety in different ways. The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these is reflected in the UAI score.” (Hofstede, 2010)

- Long-term orientation: “The long term orientation dimension is closely related to the teachings of Confucius and can be interpreted as dealing with society’s search for virtue, the extent to which a society shows a pragmatic future-oriented perspective rather than a conventional historical short-term point of view.” (Hofstede, 2010)

The second aspect was diet. The main focus will be on the similarity in consumption of produce. In order to find this out, desk research was conducted. The FAS (Foreign agriculture service) has made an overview on what the diets of the continents were. The FAS is an organization who monitors the agriculture around the world. The FAS monitors development, import and export. “FAS have a global network of 96 offices covering 169 countries. These offices are staffed by agricultural attachés and locally hired staff that are the eyes, ears, and voice for U.S. agriculture around the world. FAS staff identify problems, provide practical solutions, and work to advance opportunities for U.S. agriculture and support U.S. foreign policy around the globe.” (FAS, 2012). The FAS has conducted a study what the diet of the continents were. This study was used to select what country is most comparable, regarding produce, to the Netherlands.

Lastly, the third aspect ‘climate’ will compare the climate in the United States to the climate in the Netherlands. The climate was determined, in other to make sure the produce found in the international examples would also grow in the Netherlands. This aspect was not a main focus, because Zernike has to determine for itself what kind of produce it want to harvest. However this aspect had to be compared because, if the examples from Miami were used to compare and the main produce in Miami were bananas, the examples wouldn’t be reliable. Due to the fact that it is impossible to harvest banana’s in the Netherlands. A climate map was used in order to determine which area within the United States was most comparable to the Netherlands.

Interviews were conducted in order to found the answer to the following sub questions:

- What are the benefits for Zernike in general?
- Who are the stakeholders regarding an Urban Farm at Zernike?
- Is there enough support from the stakeholders?

The main reason these questions were answered by means of an interview was, to make use of the knowledge present at Zernike. Lectors were interviewed to find out how they think Zernike can profit from Urban Farming. Also, to find out what they thought the critical success factors were and how the Urban Farm can be implemented. Furthermore, lectors were interviewed to gain new ideas regarding, how Zernike can implement an Urban Farming. Hanneke Lestestuiver, assigned expert in
Urban Farming, was interviewed to find out what she thinks the critical success factors of Urban Farming are and how she thinks Zernike can benefit from an Urban Farm. The interviews were conducted in an informal way. The reason for this is that the interviewees need to feel comfortable to speak as freely as possible. Who the stakeholders are was found out by means of expert meeting and a brainstorm. The Mendelow’s power-interest grid was used in order to find out what the stakeholders interest and power is. This model, shown in figure 2.1, helps to indentify the stakeholder’s interest and power.

The left side represents the power of the stakeholders. The top side represents the level of interest.

- **Box A - Minimum effort:** Their lack of interest and power makes them open to influence. They are more likely than others to accept what they are told and follow instructions.

- **Box B - Keep informed:** These stakeholders are interested in the strategy but lack the power to do anything. Management needs to convince opponents to the strategy that the plans are justified; otherwise they will try to gain power by joining with parties in boxes C and D.

- **Box C - Keep satisfied:** The key here is to keep these stakeholders satisfied to avoid them gaining interest and moving to box D. This could involve reassuring them of the outcomes of the strategy well in advance.

- **Box D - Key players / participation:** These stakeholders are the major drivers of change and could stop management plans if not satisfied. Management, therefore, needs to communicate plans to them and then discuss implementation issues. (kfknowledgebank.kaplan.co.uk, 2013)

Medenelow’s power-interest grid adds value to determine what strategy is most applicable to approach and deal with the stakeholders. Furthermore, a questionnaire was conducted to find out if students, as well as staff, had a need for an Urban Farm.

Lastly one research questions had to be answered, namely: What is needed to implement an Urban Farm at Zernike? This question was answered by means of: Interviews, desk research, expert meeting and stakeholder mapping. Interviews and expert meetings were used in order to find out what is needed to set up an urban farm and if there is support from the stakeholders, what the critical success factors were, to gain ideas, and availability of the needed aspects. Desk research was used in order to find out how other urban farmers set up their urban farm and how they made their urban farm successful.
Chapter 3: Findings

Within this chapter the findings of research will be presented. This is done by means of answering the sub questions. First a brief summary of the definition of Urban Farming will be described as well as a short description of the history and benefits. Furthermore section 3.3 will show the results of the international examples in comparison with the national examples. First Culture, Diet and climate will be described. Secondly the aspects researched will be described. Section 3.4 will be describing what the benefits for Zernike could be. Moreover, section 3.5 will explain who the stakeholders are and what their power and interest is. Thereafter there will be described if the stakeholder is supporting the idea of having an Urban Farming. Section 3.6 will describe what the critical success factors are. Lastly there will be described what is needed to set up an Urban Farm in section 3.7

3.1 Urban Farming

After analyzing, comparing, and combining several definitions of Urban Farming, it was found that Urban Farming does not necessarily have to be in an urban environment. An important aspect that was found was intention. Thus, what does one do with the produce and why does one want to grow their own produce. There was found that Urban Farmers want to contribute something to the environment. This could be done by reducing food mileage (the road food has to travel from the place it was produced to one’s plate) or because one wants to eat healthy fair food. Meaning produce grown without chemical enhancements. Furthermore, there was found out that Urban Farming is growing your own produce in any place possible.

The following definition was found to be most complete: Urban Farming is growing your own produce, with the intention to be more self-sufficient and making an effort to contribute to the community in any way possible. Although it contains the word urban, it does not imply that an urban farm should be in an urban environment. One could also live in a sub urban environment, but still have an Urban Farm.

3.2 History and benefits

During literate review, the following benefits were found
- Self-respect
- Independence and self-reliance
- Therapeutic benefits of fresh air and exercise
- Socialize and meet new people
- Maintain the vitality and morale high, trough the production of nutritious vegetables outdoors.
- Food security
- more beautiful neighborhood
- Employment opportunities

Other benefits are proven by ‘Growing Gardens’ (an Urban Farming organization). Their program: ‘The home garden program’ is located in Portland, Oregon, USA. This program provides low-income
families with seeds and a “container” to grow their own vegetables. More about this is chapter 3.4. A recent survey, conducted by ‘Growing Gardens’ shows the following benefits:
“Our 2011 end of year surveys found:
93% of Home Gardeners saved money on food as a result of their garden.
88% of Home Gardeners shared extra produce with someone outside of their household.
46% of Home Gardeners met new neighbors as a result of their garden.
66% of Home Gardeners increased their daily fruit & vegetable consumption as a result of their garden.
54% of Home Gardeners spent more time outdoors as a result of their garden.
Of the Home Gardeners who report regularly using emergency food boxes 32% decreased the number of food boxes as a result of their garden. “(Growing-gardens.org, 2011)

These results are subscribed by the IIED (International institute for environment and development). In their report: ‘Urban agriculture for sustainable cities: Using wastes and idle land and water bodies as resources’ (IIED, 2010)

3.3 International and National examples of Urban Farming

The national and international examples that have been selected can be found in appendix 1 & 2. The examples were selected on three aspects: Culture, Diet, Climate.

3.3.1 Culture

Culture is an important aspect in selection examples because, if the wrong culture was selected, the examples wouldn’t be applicable for this dissertation. Hofstede’s five dimensions were used to select what culture would be most applicable. Figure 3.1 shows that the Netherlands and the United States are comparable. However this wasn’t a perfect match, Individualism (IDV) is the main aspect the focus will be on, because according to the literature research, Urban Farming’s main benefit is the social binding factor. Masculinity (MAS) is not comparable, however masculinity is not an aspect this research was focused on. The other aspects, power distance (PDI), uncertainty avoidance (UAI) and long term orientation (LTO) were comparable. There was a rather large difference in long term orientation. However, because the Urban Farm will be located in the Netherlands, there will be looked at how the Urban Farm can be successfully managed on the long term in the Netherlands, rather than in the United states. The international examples would be taken into consideration in order to gain ideas.

![Figure 3.1 The 5 dimensions by Hofstede. The United States and The Netherlands compared to each other (Hofstede, 2010)](image-url)
3.3.2 Diet
Diet was the next aspect in order to select the region to be investigated. Figure 3.2 shows that the United States and the European Union were comparable. Although this wasn’t a perfect match, the other continents were not comparable to the European Union, because there was a large difference in consumption.

3.3.3 Climate
Figure 3.3 was used to determine what states would be applicable. The Netherlands is located in a tempered zone, therefore there was chosen for the United States. Because the Netherlands is located next to a sea, the states on the east and west side of the United States are chosen to compare to the Netherlands.

To conclude, the 3 dimensions resulted in using the United States. More specifically, the states located in the tempered zone on the east and west side. These states are: New Jersey, Washington, Idaho and British Columbia. The maximum of examples to be investigated was set at 30. 15 international examples and 15 national examples. This number was determined in collaboration with the client. This number was set to make sure this investigation wouldn’t take too much time. In collaboration with the client, it was determined this number would
be enough to be representative. The selected examples can be found in appendix 1 & 2. The next section will show the results of the international examples in comparison with the national examples.

3.3.4 Goal

Table 3.4 shows the goals of the international and national examples summed up. The blue beams represents the international examples, the purple beams represent the national examples. The value on the vertical axe represents the amount of examples. As this model shows, the main goals are: Healthy Food, Education and Connect people. The goal Healthy Food implies that, people want to grow their own vegetables. The examples have shown that people want a sustainable food chain and fair, unprocessed food and therefore set up their own urban farm. This is in correlation with the fact that education is a main goal to set up an urban farm as well. The examples have shown that people set up an urban farm to educate children but also adults, how to grown their own, unprocessed vegetables and fruits. In the international examples the main goals, Healthy food and Education, were most of the time combined. The examples show, if people set up an urban farm to grown their own healthy food, they are also willing to educate other people how to grown their own healthy food. The other main goal is to Connect People. This goal implies that people want to improve social cohesion and bring the neighborhood closer together or see this as a tool to meet new people. This is the case nationally as well as internationally. Internationally, to connect people is a logical main goal next to Healthy Food and Education. If people want to grown their own healthy food, educate others, they automatically connect with other people. However this was not the case in the national examples. The national examples show that people want to improve social cohesion, or connect people, by means of Urban Farming. Where in the international examples, connecting people was a logical side effect, within the national examples Healthy Food was a logical side effect.

Employment and Food Security were also goals to set up an Urban Farm. However, every time this was a goal, it was combined with; Healthy Food, Education or to Connect people.
### 3.3.5 Location

Table 3.5 shows where the Urban Farms in the examples are located. The blue beams represent the international examples, the purple beams represent the national examples. The value on the vertical axe represents the amount of examples. Chapter 1 has shown that an urban farm does not necessarily have to be in an urban environment, because it is about the intention one has with its produce. However this table shows that urban farms are mostly found in urban areas and neighborhoods and rarely found in sub-urban areas as well as schools and company property. During an informal talk with Mrs. Meier (Lector declining areas) there was found that people living in a sub urban area, don’t feel the need of having an Urban Farm. Because most people have an own garden and don’t feel the need for another garden or Urban Farm. Another reason Mrs. Meier subscribes is the idea that, because in an urban area or neighborhood there are more people per m², the chances of finding a group of motivated people is higher than an sub-urban area. Therefore more Urban Farms are found in an urban area of neighborhood.

### 3.3.6 Concept

The national and international examples have show that there are countless concepts of Urban Farming. Most common was an urban farm on a vacant lot. Other concepts were: rooftop garden, container garden, school garden, garden inside a building, home garden and a sub-urban farm. The one thing all concepts had in common was the fact that one needs space, soil and a group of motivated and enthusiastic people. Wetter this is on top of a roof or on a vacant lot, if there are motivated people who want to set up an urban farm, the only thing they need is space and soil. The best examples that subscribes this fact, is example 1: Brooklyn rooftop garden (appendix 1.1). People wanted to set up an Urban Farm in Long Island City, Queens, New York, to provide fresh food and education. However there was no space available. Therefore the farmers build their Urban Farm on top of a roof because it was the only space available.
3.3.7 Yield

Table 3.6 shows the main produce. The blue beams represent the international examples, the purple beams represent the national examples. The value on the vertical axe represents the amount of examples. As the table shows the main produce is: vegetables, fruit and herbs. However this is completely dependent on the preferences of the Urban Farmers. Also the climate has a big influence what vegetables, fruits and herbs are available to grow. Furthermore it is interesting to see that flesh and fish are not common on Urban Farms. A reason for this could be that the recourses needed for flesh and fish are of a higher demand. Demands that are most of the time not available.

3.3.4 Target group

Table 3.7 shows the target groups of the Urban Farms that have been investigated. The blue beams represent the international examples, the purple beams represent the national examples. The value on the vertical axe represents the amount of examples. Interesting to see is the fact that there isn’t a clear difference in target groups. Except for elderly in the international examples. A reason for the fact that there isn’t a clear difference in target group is the fact that most examples had the target group: Anyone who likes to farm. Basically, the urban farms are open to everyone who wants to help out and is interested. What was found was that adults, youth and children are farming together. This is subscribed by the fact that Urban Farming connects people.

However a side note has to be made: The national examples also had the target group: Neighborhood residents. This has been processed as a part of all four target groups.
3.3.5 Managed by

Table 3.8 shows by whom the national and international examples are managed. The blue beams represent the international examples, the purple beams represent the national examples. The value on the vertical axe represents the amount of examples. Most common internationally and nationally is, Urban Farms managed by individuals. However by whom the Urban Farm is managed doesn’t ensure the success of the Urban Farm. According to ‘NEO Food Web’ and SPIN Farming, the success of managing and ensuring continuity of the Urban Farm, is that it should be managed by passionate and motivated people. This is in correlation with the table that shows that there isn’t one clear successful way to manage an urban farm. However most commonly it is managed by individuals.

3.4 Benefits for Zernike

A recent example what kind of positive effects Urban Farming could have, is the home garden program. The home garden program is located in Portland, Oregon, USA. This program provides low-income families with seeds and a “container” to grow their own vegetables. Picture 3.1. shows a picture of participants of the home garden program.

“Our 2011 end of year surveys found: 93% of Home Gardeners saved money on food as a result of their garden. 88% of Home Gardeners shared extra produce with someone outside of their household. 46% of Home Gardeners met new neighbors as a result of their garden. 66% of Home Gardeners increased their daily fruit & vegetable consumption as a result of their garden. 54% of Home Gardeners spent more time outdoors as a result of their garden. Of the Home Gardeners who report regularly using emergency food boxes 32% decreased the number of food boxes as a result of their garden. “(Growing-gardens.org, 2011)

This example shows the same positive aspects Urban Farming has, compared to effects Urban Farm had to offer throughout history. Rather surprising, because the setup is different and about 50 years between the examples. However, again the financial benefits are present together with the therapeutic benefits of fresh air and exercise. But most important, the social benefits are present again.
The difference between the examples could be interpreted as, no matter what year, target group or setup Urban Farming has, Urban Farming has benefits. Therefore the benefits found in these two examples can be translated to Zernike and it can be expected that, if Zernike has an Urban Farm, the same benefits will be visible. Thus, Therapeutic benefits of fresh air and exercise, financial benefits and social benefits.

Other benefits Urban Farming has to offer for Zernike are:

- Urban Farming can be used as a tool to educate or raise awareness where food comes from and how to cultivate fruit and vegetables. (Growing-gardens.org, 2013)
- Urban Farming could be a social binding factor for national students, international students, staff and entrepreneurs at the Zernike science park.
- Urban Farmers feel better about themselves because they contribute to being ‘green’. Meaning doing something to improve the environment and reduce food millage. Next to that, it gives a satisfactory feeling to grow your own food. (Thestop.org, 2013)
- Urban Farming could be a relaxing “escape” from the hectic life people live now days. (Basset, 1981)

During the interviews held with the potential stakeholders, the following benefits for Zernike were mentioned:

- Hanze University is very keen on improving its image. An Urban Farm could be something to improve the image of Hanze University and Zernike. (J. Postma, 2013)
- The entrepreneurs at Zernike Science Park could, if they invest, improve their image and show that they are ‘green’. (A. van Spijk, 2013)

Another interesting point how Zernike could benefit from an urban farm is the following article: ‘Zeepbel Zernike’ (Dagblad van het noorden, 2012): This article implies that Zernike is a ‘Bubble’. It was expected that Zernike would attract entrepreneurs and other businesses. However instead of growing, there is a decline. During an interview with B. Nicolai (Engineer) the following information was found:

> “An Urban Farm as a meeting point could make Zernike more attractive for companies. If it is a success, and the meeting point has benefits for companies, the location will be more attractive and therefore could become an “A” location. If this happens the ground price as well as the real estate will be worth more.” (B. Nicolai, 2013)

From this information one could derive, if the urban farm will be designed as a meeting point, the ground of Zernike will be more attractive and thus will attract more companies. This could be a point to get the interest of the municipality Groningen and the companies already located at Zernike to support the Urban Farm at Zernike.
3.5 Stakeholders

This section will identify who the stakeholders are. Furthermore, this section will focus on who and what the stakeholder’s power and level of interest is.

3.5.1 Landowner

The landowners’ support is needed in order to get approval to build an Urban Farm on their land. The benefit for the landowner could be the fact that, the ground as well as the real estate will be more worth and more attractive. The landowner has high power, because of the need of approval of the use of their land. The landowner also has a high level of interest because of the value increase. If the landowner is not kept satisfied it could stop the project.

3.5.2 CVB (College van Bestuur)

The CVB support is needed in order to get support from within the organization. If the CVB decides to approve the Zernike Gardens, the study on how to build the Zernike gardens project can take off. The benefit for the CVB could be to improve the image of Hanze University, RUG and Zernike. The level of power is high because they could stop this project when not kept satisfied. The level of interest is high, because of the opportunities Urban Farming has to offer.

3.5.3 Municipality Groningen

The municipality’s support is needed in case of licenses or, if the municipality owns the ground at Zernike. The municipality’s benefit is that the value of the ground and real estate is worth more. Next to the fact that it will be more attractive for companies, to be located at Zernike. The power of the municipality is high, because of the needed licenses. The level of interest is high, because of the social impact this project could have, as well as leading an example for other projects.

3.5.4 RUG (Rijks Universiteit Groningen)

The RUG support is needed because the RUG owns ground at Zernike and could help make the Urban Farm a success. The RUG could conduct studies at the Zernike Gardens in order to guarantee continuity. The RUG could also be approached to ask for support, knowledge, funding, sponsoring, development, innovation and improvement. The level of power is low because the RUG doesn’t give out licenses or could cancel the project. The level of interest is high, because they could conduct studies and this could be a career investment for their students. Also their image could improve.

3.5.5 Entrepreneurs Zernike science park

The entrepreneurs of Zernike Science Park are needed to increase support. For example, the entrepreneurs could be approached for funding. If all companies sponsor an Urban Farm at Zernike, the Urban Farm could be paid from this financial support. Their benefit could be, to show the world that they are “green”. Next to the fact that their employees could make use of the urban farms and benefits from the benefits mentioned in chapter 2. The level of power is low, because the entrepreneurs can’t give licenses, don’t own land or have the power to cancel the project. However, the level of power could be high if they are approached for financial support. Interest is high, as stated, the entrepreneurs could show that they are “green”. Next to that, they could make use of the Urban Farms as a relaxing escape as well as the fact that the ground and real estate could be worth more.
3.5.6 Students

Students are needed because they have to use the Urban Farm. The students and staff will be using the urban farm and are therefore one of the most important stakeholders. The benefit for students could be the fact that the urban farm could be a nice activity besides school. They can learn how to grow fruit and vegetables and all other positives effects mentioned in chapter 2 are applicable to students. The level of power is low because students cannot give out licenses, own land or are capable of cancelling the project. The level of interest is low. Despite the fact that students have many benefits from the Urban Farm, the interest is low because they don’t have the resources available to set up an Urban Farm on their own and need support from other stakeholders.

3.5.7 Staff

Staffs of Hanze University and the RUG are needed because they will use the Zernike gardens as well. The benefit for staff is basically the same as for the students. The level of power is low, because staff cannot give out licenses, own land or are capable of cancelling the project. The level of interest is low. Despite the fact that staff has many benefits from the Urban Farm, the interest is low because they don’t have the resources available to set up an Urban Farm on their own and need support from other stakeholders.

3.5.8 Students associations

Students associations are needed in order to guarantee continuity. Because the student associations have a constant supply of new students for who they want to offer all kinds of activities. For example, for students to get to know each other. These activities could be organized at the Urban Farm. The level of power is low, because staff cannot give out licenses, own land or cancel the project. However the level of interest is high. Because student associations could use this as a social binding factor to connect students. As well as an extra activity to offer for the students.

3.5.9 CAST (Cultural activity for students)

The CAST is an organization within Hanze University who organizes activities for students. The CAST is needed in order to guarantee continuity. The CAST could organize activities around the Zernike Gardens. Their benefit is the fact that they can offer activities for their students. The level of power is low, because staff cannot give out licenses, own land or have the power to cancel the project. The interest is high, because this could be a binding factor for the people of the CAST, as well as an extra activity.

3.5.10 Studies of Hanze University and the RUG

Studies of Hanze University and the RUG are needed because they could give an extra dimension to the Urban Farm which could contribute to the continuity. For example, social studies could conduct research if an Urban Farm binds (inter)national students more than for example a pub quiz. Furthermore the agriculture school could be used for the practical questions. Meaning how to harvest, how to organize the garden, etc. Thus, the extra dimension is that the Urban Farm could be used to expand the possibilities to gain more knowledge for several studies. The level of power is low, because the studies cannot give out licenses, own land or have the power to cancel the project. The level of interest is high, because of the studies there could be conducted at the Urban Farm and the possibility to gain more knowledge.
The stakeholders have been determined and analyzed. Their interest and power has been analyzed and processed in table 3.9. Horizontally the power is represented. This could be high or low. Vertically the level of interest is represented. This could also be high or low.

The entrepreneurs at Zernike have been mentioned between brackets, because their role as stakeholder could change if they give their financial support. Mr. van Spijk said the following about this:

"Looking at that kind of sponsorship is involved, and a few organizations working together, it goes a long way. So the thing to do is, come up with an attractive marketing plan, and you get a large company to sign up for that and you call it the "thousand one hundred" and if you show them they will benefit from this, students will live a healthier lifestyle their employees live a healthier lifestyle. There is nothing to lose for them. If they all donate a 1000 euro’s. That is a good starting base and you could really do something. I should put that in as part of a strategy. So you need a market research if companies are interested."

### 3.5.11 Supporting Stakeholders

Within this section there will be looked at if the stakeholders are supporting the idea of having an Urban Farm at Zernike. This has been found out by means of interviews.

**Alex van Spijk** (Landscape architect)

“I think this is a great idea and I have been thinking about something like this.” It has been an interest of mine for some time, it is connected to my research, and it has absolutely been proven that we waste a lot of energy in our food production and consumption. Also how food is distributed and what about food miles. It is also about awareness, people creating awareness about what they put into their body and what is coming out. And vice versa. We’re just out of touch with that whole thing. I
would like to help you with the recommendations to help you if you finish of your report. Because I think this is important to have as a project for next year.”

Alex van Spijk has also said during the interview, that he would be available for a role as an expert and for active coach.

Furthermore, Alex van Spijk answered the question how successful this project could be as follows: “10 out of 10, why not?” (Van Spijk, 2013)

**Mark Mobach** (Lector Facility Management)

Mr. Mobach is supporting the idea of Zernike Gardens and thinks this project could be successful. Mr. Mobach’s condition to support this project is: it should be a realistic plan to realize the Urban Gardens.

“An unavoidable question is who is going to pay for this? And what ground is available. Next to the who is going to build the garden? Who is going to provide the tools? Who is going to finance everything? Who is going to put the seeds in the ground and how are you going to seed.” (M. Mobach, 2013)

Furthermore, Mr. Mobach answered the question how successful this project could be as follows: “I think this is hard to estimate because I don’t know how big the target group is. But I’ve seen how enthusiastic people are, so I would say an 8 or a 9, if you can answer all the practical questions. Definitely 9. If it is a realistic plan! If this plan is not really thought through, unmotivated people would say a 5 and motivated people would say a 7.” (M. Mobach, 2013)

**Paul van Erik** (Dean Architecture)

Paul van Eijk gave his blessing to this project and also thought about some ideas how Architecture can contribute to this project:

“Our students could think with you, for example to conduct a study to façade greenery. They could conduct a study about the rain water that could be held on the rooftop gardens. What this means for the burden to the sewage. What kind of possibilities are there for the existing buildings. So basically to include ecology in the building, which is something, our students could think about.” (Van Eijk, 2013)

Paul van Eijk has also said during the interview, that he would be available for a role as client and passive coach.

**CVB.**

An interview with Han de Ruiter (CVB) was not possible, because of the timeframe an availability of Han de Ruiter.

**CAST**

Because of the time frame, it was not possible to have an interview with representatives from the CAST.
Students

During the lunch meeting ‘Slimmer na je lunch, do it together!’ (Smarter after your lunch, do it together!) Which took place at 04-04-2013, a survey was conducted regarding interest and need. The results of this survey is presented in figure 3.10

“I meet students who ask: where can we get locally grown vegetables. I tell them to go the market, but it is expensive. You have to give them the opportunity to do so. I speak to students, and you can mention this in you report, 5 years ago it would have been unthought-of or, unimaginable who get excited about renewable energy. You can speak to law/architect students, they get excited about renewable energy. The same thing goes for food. This is definitely an opportunity” (Van Spijk, 2013)

According to the survey and Mr. van Spijk, there is enough support from the students.

Staff

During the lunch meeting ‘Slimmer na je lunch, do it together!’ (Smarter after your lunch, do it together!) Which took place at 04-04-2013, a survey regarding interest was conducted. The results of this survey are presented in figure 3.10. The questions asked are shown at the top of the figures. The pie charts show the quantity of “Yes” and “No” answers.

These results were subscribed by the interviewed staff, who are supporting the idea of having an Urban Farm at Zernike.
3.5.12 Non supporting stakeholders

Hanneke Lestestuiver (Expert in Urban Farming and writer of the food policy for the municipality Groningen.) Although she is not working at the municipality Groningen, she has worked there for some time and knows the procedures. She answered the questions if there is support by the municipality as follows: “First of all, do not expect too much. Groningen could provide you with a lot of information. However they are really busy. So again, do not expect too much. Furthermore they could tell you where ground is available. Also there is a “bestemmingsplan Zernike 2006” you could use this to see where ground is available and who owns the ground. Furthermore if you contact the municipality try to ask for a contact person. This could be Tjeerd, Tjeerd something; anyway he is the guy who decides about agriculture. Furthermore I can say for certain, there is no need from the municipality to start an urban farm at Zernike and there is definitely no money to start an urban farm. So I can advise you to start with the entrepreneurs and companies at Zernike. If you decide to go to the municipality make sure they don’t steel or adopt your idea. Often when a project becomes successful they say it is their project. So be aware.” (H. Lestestuiver, 2013)

Hanneke Lestestuiver has said during the interview, that she would be available for the role as an expert and passive coach.

3.5.13 To be found out

Because of the timeframe it was not found out if there was support by the following stakeholders
- Landowner.
- RUG.
- Entrepreneurs of Zernike science-park.
- Students associations.
- CAST

3.6 Critical success factors (CSF)

Research had shown that if there is group of motivated people, the most important thing needed to set up an Urban Farm is space and soil. Furthermore, in order to manage the Urban Farm and ensure continuity a group of enthusiastic and motivated people is needed. During the interviews with the stakeholders and the expert, there was asked what they think the critical success factors were to set up an Urban Farm. The critical success factors, according to the stakeholders and the expert were as follows:

- Have a roadmap, thus a clear long term plan
- Cost & benefit analyses. (Financial benefits, energy saving benefits of a closed system)
- Create a closed system
- Get support from all stakeholders
- Communication plan for stakeholders and keep them connected
- Do not try to do everything by yourself
- Divide in multiple projects
- Urban Farm should be visible
- Have a clear marketing plan
- Learn from successful projects
- All practical questions need to be answered (for example, who is going to maintain the garden, where do you store equipment, etc.
- A good story to sell this project
- Connect ecology and economy
- Quick Wins.

The above mentioned CSF can be categorized in 3 main aspects, namely:

- Space (space to set up an Urban Farm)
- People (People to conduct research, farm and maintain the Urban Farm)
- Knowledge (Schools who could conduct several research)

3.7 Needs to implement Urban Farming at Zernike

**Space:** Space or ground is available. However, it will be important to find out which land is available. Because of time and resources available it has not been found out who owns what part of Zernike. However it has been found out that the ground at Zernike is owned by: Hanze University, RUG, municipality Groningen and Province Groningen (H.J. Falkena, 2011). Furthermore ‘Frankville’ has been given a piece of land to set up an Urban Farm and can be contacted (See appendix 7 for more information).

**People:** During this research is has been found out that there is enough support by students and staff. 33% of the asked students would like to farm. 71% of the asked staff would like to farm. Because of time and resources available it has not been found out if the entrepreneurs of Zernike Science Park are interested in this project. Most of the stakeholders are supporting this project. And according to Mark Mobach, Alex van Spijk and Paul van Eijk several schools are willing to conduct studies.

**Knowledge:** During this research it has been found out that knowledge is present. According to interviews there are enough lectors who are supporting this project and are willing to help. Furthermore many stakeholders have said to be open for contact if knowledge is needed.

To conclude, the most important aspects; a goal, space, people and knowledge, are available. Thus, it will be possible to make an Urban Farm at Zernike successful. This is subscribed by the interviewed stakeholders. The questions; “How successful, when put into practice, do you think this project could be”, was answered with an average grade of 8.9.

The next chapter is conclusion. Within this chapter the answers of the sub questions will be summarized and the main question will be answered.
Chapter 4. Conclusion

The goal of this dissertation was to find out, how Zernike can implement Urban Farming and profit from the benefits Urban Farming has to offer. The main focus was to find out what Urban Farming is, and what its benefits are. By answering these questions it was possible to find out, what benefits would be applicable for Zernike. The next key issue was to find out if there was support to profit from these benefits at Zernike and what the critical success factors are, according to the stakeholders. This chapter will summarize the findings and based on these finding the main question will be answered.

The first question was: What is Urban Farming? There was found, that Urban Farming is; Growing your own produce with the intention to be more self-sufficient and make an effort to contribute to the community in any way possible. Urban Farming is most practiced in an urban environment, but could also be practiced in any other environment. The intention is key.

The second question was: What are its benefits? Many benefits were found. The most important benefits are: Therapeutic benefits of fresh air and exercise, financial benefits of growing your own produce, and it is a social binding factor.

The third question was: What is the comparison between Urban Farming nationally and internationally?

Basically there was found that there are many similarities and Urban Farming isn’t practiced in a completely different way. However there are differences. These can be found in chapter 3.3. Thus, the conclusion can be drawn up, that Urban Farming in the Netherlands is comparable to the researched area.

The fourth question was: What are the benefits for Zernike in general? There was found that the main benefits for Zernike would be: Therapeutic benefits of fresh air and exercise for students and staff, the option for students to buy healthy and fair produce and the social binding factor. There are more benefits found. These are described in chapter 3.4 but the mentioned benefits are the most profound.

The fifth question was: Who are the stakeholders regarding an Urban Farm at Zernike? The stakeholders are: Students, staff, RUG, entrepreneurs at Zernike, student associations, CAST, Studies at Hanze University and the RUG, the landowners, CVB and the municipality Groningen. The stakeholders have been described in detail in chapter 3.5. Stakeholder mapping was used in order to determine the most applicable strategy to approach and deal with the stakeholders.

The sixth question was: Is there enough support from the stakeholders? Because of time and resources available, it was not found out if all stakeholders were supporting the idea of having an Urban Farm at Zernike. From the stakeholders that have been interviewed, only the municipality Groningen is not fully supporting this idea. The other stakeholders that have been interviewed were supporting the idea of having an Urban Farm at Zernike.

The seventh and last question was: What is needed to implement an Urban Farm at Zernike? There was found that there are three main aspects. Namely; Space, people and knowledge. Space is needed to set up an Urban Farm. People are needed to farm and conduct studies and manage the farm. Lastly knowledge is needed to plant and harvest. But also to conduct research to insure continuity.
Based upon these answers and the research results in chapter 3, these were the main findings:

Space is available. There has been found out that Hanze, RUG, municipality Groningen and province Groningen together, own the ground at Zernike. Because of time and resources available, there has not been found out what piece of ground is owned by whom. Therefore, it has not been found out, if the landowner is supporting the idea of having an Urban Farm at Zernike.

People are available. Students and staff are supporting and willing to garden, if there would be an Urban Farm at Zernike.

Knowledge is also available. Several lectors, and the expert, have given the availability to take a role as; Client, expert, passive coaching or active coaching. Furthermore, lectors have shown their interest to conduct studies at the Urban Farm. Moreover, Alex van Spijk is willing to set up a research to design the Urban Farm and select the produce to be grown.

Lastly, if Zernike sets up an Urban Farm, it will profit from one or more of these benefits:

- Therapeutic benefits of fresh air and exercise for students and staff.
- The option for students and staff to buy healthy and fair produce.
- A social binding factor between the (inter)national students, staff and entrepreneurs at Zernike science park.
- A tool to educate or raise awareness where food comes from and how to cultivate fruit and vegetables.
- Urban Farmers feel better about themselves because they contribute to being “green”. Meaning doing something to improve the environment and reduce food millage. Next to that, it gives a satisfactory feeling to grow your own food.
- An Urban Farm could be something to improve the image of Zernike.
- The entrepreneurs at Zernike Science Park could, if they invest, improve their image and show that they are “green”.

The next chapter will be recommendations. Recommendations for future research will be given as well as an advice how to go further from this point on.
Chapter 5. Recommendation

This chapter will describe how to go further from here. Recommendation will be made and advices for future research will be given.

First of all, further research, regarding interest of the stakeholders, is needed. This was also one of the critical success factors mentioned by the interviewees. Because of time and resources available there has not been found out if the following stakeholders are supporting the idea of having an Urban Farm at Zernike:

- RUG.
- Entrepreneurs of Zernike science-park.
- Students associations.
- CAST

One stakeholder has been left out, namely; the land owner. The reason for this, being the fact that there first has to be found out who the land owner is. It is advised to contact Els Bijlholt (Project manager real estate at Hanze University). Mrs. Bijlholt will be able to explain what piece of ground is owned by whom. Mrs. Bijlholt has been contacted and willing to give an interview to hand out information.

It is recommended to approach a deal with the stakeholders according to Mendelow’s power-interest matrix:

- Students and staff: “Box A - Minimum effort: Their lack of interest and power makes them open to influence. They are more likely than others to accept what they are told and follow instructions.” (Kaplan Financial Knowledge Bank, 2013)

- RUG, Entrepreneurs at Zernike, students associations, CAST and studies at Hanze University and RUG: “Box B - Keep informed: These stakeholders are interested in the strategy but lack the power to do anything. Management needs to convince opponents to the strategy that the plans are justified; otherwise they will try to gain power by joining with parties in boxes C and D.” (Kaplan Financial Knowledge Bank, 2013)

- Land Owner, CVB, Municipality (Entrepreneurs at Zernike, if they give financial support): “Box D - Key players / participation: These stakeholders are the major drivers of change and could stop management plans if not satisfied. Management, therefore, needs to communicate plans to them and then discuss implementation issues.” (Kaplan Financial Knowledge Bank, 2013)

The “thousand one hundred” plan, which involved 100 companies to donate €1000.-, suggested by A. van der Spijk, is a great idea to gain financial support. However a marketing plan and market research is needed for this. Therefore it is advised, to set up a research to realize this idea.

Furthermore, a marketing plan needs to be set up, to put together a group of motivated and enthusiastic people to set up and garden at the Urban Farm.

It is advice to set up the Urban Farm at a visible place, so that as many students and staff will notice this Urban Farm. It is likely if the Urban Farm is set up at a noticeable place, students and staff will
show their interest and maybe want to join. Furthermore it is advice to hang up as many pamphlets as possible. Picture 5.1. Could be used as an example pamphlet or could be used as the actual pamphlet. Lastly, this marketing plan should create a good story to sell this project.

Next to a marketing plan, it is advised to set up a business plan. This business plan should create a road map, thus a clear long term plan. In order to create a clear long term plan, it is advised to learn from successful projects. The Urban Farming examples mentioned in this dissertation could be used, as well as other Urban Farming project across the Netherlands or over the world. Furthermore, this business plan should answer all practical questions (for example, who is going to maintain the garden, where do you store equipment, etc.). Moreover, the business plan should include a cost & benefits analyses (financial benefits, energy savings, catering saving, etc) as well as a communication plan for stakeholders to keep them updated and connected. Also it is advised to have as many quick wins as possible, to make sure stakeholders keep interested in this project.

Moreover, the expert advised the following:

- Do not try to do everything by yourself
- Divide in multiple projects
Thus, get as many students, lectors, other staff and organizations involved to share knowledge and think with you. Also, start a small project at first, and go from there. For example, set up an urban farm and a small market to sell the produce. Once more students and staff want to join, set up another Urban Farm or expand the existing Urban Farm.

Regarding not trying to do everything by yourself. It is advised to contact Frank van der Waals, project leader of Frankville (database.fankville@gmail.com). Frankville is an Urban Farm about to set up near Zernike. See appendix 7. For more information.

Lastly, Mr. van Eijk advised the following:

• Connect ecology and economy
• Create a closed system

Because of lack of knowledge, it is advised to have an interview with Mr. van Eijk about this.
6. Bibliography

Van Eijk, Paul. Personal interview. 03 June 2013
 kfknowledgebank (2013) Hofstede’s 5 dimensions. Consulted 11-08-2013 via www.kfknowledgebank.kaplan.co.uk
Lestestuive, Hanneke. Personal interview. 29 May 2013
Nicolai, Bareld. Informal talk. 11 April 2013
Mobach, Mark. Personal Interview. 30 May 2013
Postma, Jaap. Informal talk. 28 may 2013
vан Spijk, Paul. Personal interview. 23 May 2013
Chris Thoreau (2012) Meet your urban farmer. City farmer news
Bassett, (1972)Vacant lot cultivation. University of California
Living history (2012) wessels living history farm. Consulted 01-03-2013 via www.livinghistoryfarm.org
www.ppatchtrust.org

Food share (2013) *sharing tools and knowledge to build a just food system*. Consulted 23-03-2013 via www.foodshare.net


http://www.spinfarming.com/faq/