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# THE ROLE OF URBAN GARDENING IN REVITALIZATION OF RESIDENTIAL AREAS

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**Title:**

**THE ROLE OF URBAN GARDENING IN REVITALIZATION OF RESIDENTIAL AREAS**

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## ***Abstract***

The aim of this Short Term Scientific Mission is to get an insight on the impact of urban gardening on the health and life quality of people living in residential areas of Malmo.

The research is divided into three phases:

1. Research on theoretical background and selection of case studies
2. Fieldwork
3. Evaluation of gathered data

This report describes problems observed in different residential areas in Malmo. In some areas strong inhabitant homogeneity is leading to problems of exclusion and is turning neighborhoods into a problematic area. Described as one of possible recreational activities, urban gardening has the potential to promote public health and improve the quality of life by increasing people's physical activity and social engagement. Being located inside the neighborhood, community gardens give a possibility to strengthen the community and improve inhabitants health regardless their age, cultural, economic and educational background (Teig et al., 2009).

It was decided to focus on two case studies in different residential areas of Malmo, to get the insights on the benefits of urban gardening for neighborhood residents. Using participatory observation, interviews and other sociological and empirical research methods, it has been found out that the community garden of Seved and Annelund welcome people of different age, race and ethnicity, and promote residents healthy lifestyle and social engagement.

***Keywords:*** *community garden, health, social engagement, neighborhood outdoor environment*

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# 1. Introduction

Malmo municipality development in the 20th century is characterized with two periods of strong population growth. The first period started after the Second World War and lasted till the 1970's, while the period of the second growth started in the 2000's and is present till now (Jacobson, 2012; Stadskontoret, 2014). There are many residential areas built in the 1940s – 1950s and 1960s – 1970s, which now have problems of social segregation (Dureigne, 2011).

Social inequalities are usually followed by different types of problems (Grander & Stigendal, 2014). Some areas in Malmo are characterized by a strong inhabitant homogeneity, which causes lack of social links to other parts of the city and leads to problems of exclusion, turning neighborhoods into a problematic area (Dureigne, 2011). There have been different research projects focusing on challenges in residential housing areas and possible actions to solve social and other related problems (Dureigne, 2011; Grander & Stigendal, 2014).

Creation of a livable outdoor environment is a challenge to be solved in every residential neighborhood. In some research papers livability is defined as the quality of life. There is a set of guiding principles, which should be followed to develop a livable environment: accessibility, equity and participation (Timmer & Seymoar 2005).

The livability of residential neighborhoods is strongly affected by the understanding of this term by professionals, who are in charge of planning processes. However, residents of these areas may have a cardinaly different view on the aspects of livable environment, depending on their lifestyle, previous experience and other factors (Pandey et al., 2014).

Following this idea, it becomes obvious that one of the ways to create a livable neighborhood environment is to involve inhabitants in the planning process, offering possibilities to organize the outdoor environment in the way they want.

Despite the fact that interpretation of livability varies with time and place the general idea of „quality of life”, „well-being” and „satisfaction with conditions of life” remains the same (Pandey et al., 2014). The physical and social aspects of outdoor environment play a crucial role in how people interact with their local environments and how they connect with other community members. Outdoor environment can influence people choices to be more physically active and have a healthier lifestyle (Comstock et al., 2010).

Urban gardens can take various forms and have different roles (Turner et al., 2011). Previous studies show that urban gardening as one of possible neighborhood attachments, promotes people's emotional connection to physical and social environments. Community

gardens are identified as places which promote different community and individual benefits, as they offer place for community engagement and environmental action (Comstock et al., 2010). Furthermore, urban gardening promotes healthy lifestyles, has positive impact on physical and mental health (Bird, 2004; Kaplan & Kaplan, 1989).

The aim of this study is to investigate the role of urban gardening in revitalization of residential areas in Malmo. This research focuses on community gardening impact on health and well-being of people living in residential neighborhoods of Seved and Annelund. This study is also focused on the role of community garden as a place that promotes social engagement.

## **2. Methodology**

Referring to studies about inhabitant problems in residential areas of Malmo and the variety of roles urban gardening can play, it was decided to focus on two neighborhood community garden case studies to analyse how urban gardening helps to improve people's quality of life. This report gives an insight in the role of community gardening for residents of Seved area (part of the neighborhood called Southern Sofielund) and Annelund neighborhood.

It was decided to focus on the above sites which show two different examples of the neighborhood community garden. As both sites are located in the residential housing areas, it makes possible to compare the impact of urban gardening on physical activity and quality of life of people living in similar environments.

Participatory approach has been chosen as an empirical research method, that involves researcher in the knowledge-production process (Bergold & Thomas, 2012). It was decided to join the community garden group to take part in everyday activities, and to make observations also from a community gardener's point of view. Both quantitative and qualitative research methodologies were used, choosing semi-structured interviews to collect qualitative data, and surveys to get the statistical data. Qualitative and quantitative methods interact in social research practices and are both considered to be a useful tool (Kvale, 1996).

### **3. Definitions**

#### ***Community garden***

According to various definitions, in different countries community garden is often called „intercultural garden” or „neighborhood garden” as they promote social engagement in combination with concerns about ecology, healthy lifestyles and alternative gardening (Rosol, 2006; Müller, 2011).

Community garden can have various forms and functions, that’s why the definition of this term varies depending on the purpose, land use type, management and other circumstances. However, there are common things found in many definitions of community gardens. Community gardens can be managed by municipalities, non-governmental organizations, health practitioners, teachers or groups of gardeners (Turner et al., 2011). According to Lawson the term community garden is close to the term neighborhood garden, as in both cases individual gardeners have their own small plots under the garden’s overall management (Lawson, 2005). Community garden may be organized as the communally worked land, or as a territory where every community member has got their own plot. According to Rosol there are three types of reasons for people to join a community garden (Rosol, 2006). People belonging to the first group are enthusiastic about gardening as an activity. The second group is passionate about the general idea of community garden and possibility to be a part of some creative outdoor project. The third group doesn’t have any specific reason.

## 4. Findings

### 4.1. *The city of Malmo*

With a total area of 158.4 km<sup>2</sup> Malmo is the third largest city in Sweden. According to Malmo city homepage data from the year 2014 (Stattskontoret, 2014) the city has 317930 inhabitants, from whom 161450 are women and 156480 – men. (Stattskontoret, 2014). Statistical data shows that 28.35% of Malmo’s inhabitants are in the age of 40 – 64, 17.08% – in the age of 30 – 39, 16.96% - in the age of 20 – 29, 10.8% - in the age of 65 – 79. Other age groups are represented by less than 10% of inhabitants and are shown in the Table (Table 1). Comparing to inhabitant statistical data from the year 2013, the number of people increased by 4936 (312994 inhabitants in 2013). The urban population of Malmo is estimated to grow till 2018 (Stattskontoret, 2015).

*Table 1.* Age division of inhabitants living in Malmo.

Table created using data from Malmo city homepage (Stattskontoret, 2014).

Age	Number	Percentage (%)
0	5123	1.62
1 – 5	22502	7.07
6 – 9	14044	4.43
10 – 12	8698	2.75
13 – 15	8130	2.56
16 – 19	12105	3.8
20 – 29	53915	16.96
30 – 39	54311	17.08
40 – 64	90128	28.35
65 – 79	34450	10.8
80 – 84	6640	2.08
85 – 89	4775	1.5
90 -	3108	1
<b>Total</b>	<b>317930</b>	<b>100%</b>

The statistical data shows that 31% (99788) of Malmo’s inhabitants were born abroad (Malmo stad 2, 2015). Gender division is almost equal 49741 are women, and 50047 – men. 11% of people born in Sweden have both parents born abroad. In total the number of Malmo’s residents with foreign backgrounds is 43% (135509) (Malmo stad 4, 2014). According to Malmo city homepage data inhabitants born abroad mostly come from Iraq (11003), former Yugoslavia (8179), Denmark (7916), Poland (7103), Bosnia and Herzegovina (6223), Lebanon (4123) and Iran (3604) (Malmo stad 5, 2014).



## 4.2. Community garden in Malmo

Community garden is a relatively new trend in Malmo, though urban gardening is not a new phenomenon here (Eriksson, 2013). The first community garden project was initiated in 1997 in Slottsträdgården (Malmö stad, 2015). Now there are 3 community garden initiatives in Malmo: Slottsträdgården, community (neighborhood) gardens in Annelund and in Seved (Figure 1).

The case study is focused on community (neighborhood) gardens in Annelund and Seved, as the aim of this research is to find out how community garden can contribute to revitalizing the neighborhood area. Slottsträdgården doesn't fit into the definition of neighborhood community garden, as it is located in a large public park, close to popular sightseeing destinations and the garden itself is partly a botanical garden and garden exhibition place (Figures 2,3,4,5).



Figure 1. Location of community garden in Malmo. Adapted photo from *Malmö stad* homepage.

- - Community (neighborhood) gardens,
- - community garden combined with botanical garden and garden exhibition place



Figure 2. *Slottsträdgården, Rosenpergola.*  
Rose pergola. Photo: A.Korolova



Figure 3. *Slottsträdgården, Klimatträdgården.* Climate garden.  
Photo: A.Korolova



Figure 4. *Slottsträdgården.* Entrance.  
Photo: A.Korolova



Figure 5. *Slottsträdgården, Torrt och frodigt.* Garden „Dry and lush”. Photo: A.Korolova

### 4.3. Case study 1: Seved

#### *Neighborhood description*

The neighborhood of Seved is located in Southern Sofielund (*Södra Sofielund*) (Figure 6), which is a part of the Inner City area in Malmö, Sweden. According to Malmö city homepage data (Malmö stad 3, 2015) there are about 4480 people living in Southern Sofielund. The majority of population living in the neighborhood are young people from 15 to 39. The area is described as a frequently changing environment, because of many people moving out and new people coming to live there.

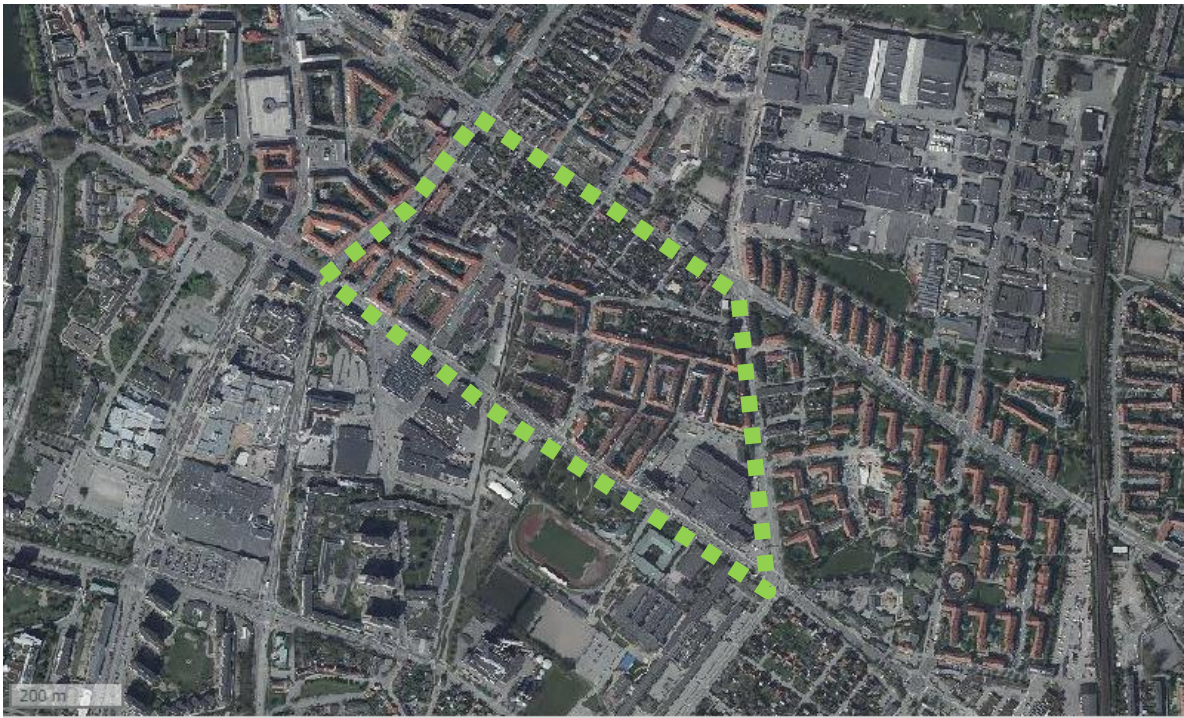


Figure 6. Aerial photo of Seved neighborhood (marked with dotted line). Adapted from Malmö city homepage.

The Seved area in particular is described as a dynamic and diverse living environment. Inhabitants of Seved have different social, economical and cultural backgrounds. Seved has also a diverse building environment presented by different types of residential housing: rental apartments in block houses, condominiums and single family houses (Malmö stad 3, 2015).

Comparing to South Inner City and the whole city of Malmö the employment rate in Southern Sofielund is low, only 44% of its inhabitants being employed. In South Inner City - 56%, and in the whole of Malmö 61% of the working age population has a job. The comparison of inhabitant's income shows that there is a big difference between Southern Sofielund/Seved, the South Inner City in general and the whole of Malmö. 46% of households in Seved are receiving social support, which is a high percentage comparing with 26% of socially supported households in the whole of South Inner City (Malmö stad 3, 2015).

The quality of housing is affected by landlord decisions, and the difference between the property owned by private landlords and bigger companies is obvious. Though residential blocks in the Seved area were built approximately at the same time around the 1940s – 1950s (Dureigne, 2011), there are noticeable differences in the quality of external finishing, the presence of additional external insulation and the quality of the outdoor environment (Figures 8, 10, 11). The area marked on the map (Figure 7) is the area of the residential apartment housing with a welcoming outdoor environment. Each inner yard is a multifunctional place with activities for people of different ages and interests. There are

children playgrounds, shelter sheds, places for barbecue, hammock, raised bed gardens and free lawns. The green area is located on the raised level, which is surrounded by flower bushes and greenery and is only a couple of stair-steps higher when the other outdoor area (Figure 9). However, this difference in levels and the greenery on the periphery give the feeling of safety, comfort and privacy. There is a defined place for car parking and bicycle parking facilities.

There are people with different cultural backgrounds living in this area as it can be noticed from their appearance. Both physical bearing and outfit show that people can possibly come from other countries. Eye shape or skin color, as well as religious outfits like hijabs or turbans, make suppose that people may have different cultural backgrounds. The majority of people seen outdoors are young people and people with small children, however there are also many people in the age group of 30 – 60 (Table 2).

It was decided to make observations in front of community garden in Seved (Figure 7) during working days and during the weekend choosing different time of the day. Observations took place on working days from the 8th till 15th of July, and on the weekend on the 11th and 12th of July. As a result the Table data shows the division between inhabitants of different age and ethnicity living or spending time in the neighborhood of Seved. The total number of people presented in the Table are 212. According to observation data more than a half (55.2%) of people seen in Seved are Europeans, however there are also many immigrants supposedly from Middle East countries (30.6%).

*Table 2.*

\*One family or person with a child or many children in this table are counted as 1.

Inhabitant groups	Europeans	Afro-Europeans	Immigrants from Middle East Countries	Immigrants of Asian background
Men in the age of 18 – 30	19	10	20	5
Women in the age of 18 – 30	28	2	9	-
Women with children*	14	-	6	-
Men with children*	4	-	-	-
Families with children*	2	-	6	-
Couples*	3	-	1	-
Men in the age of 30 – 60	14	6	16	3
Women in the age of 30 – 60	13	-	2	2
Men in the age of 60 and more	11	-	4	1
women in the age of 60 and more	9	-	1	1
Total women	50	2	34	9
Total men	44	16	18	3
Total families, couples and people with children*	23	-	13	-
Total	117	18	65	12
Total in %	55.2	8.5	30.6	5.7

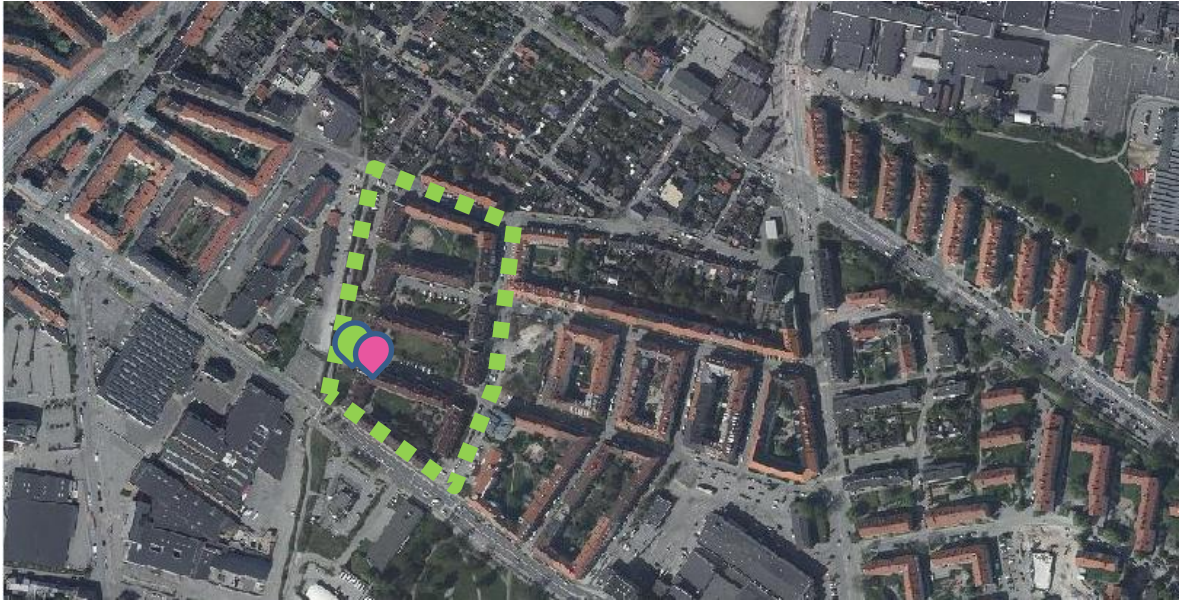


Figure 7. Aerial photo of Seved neighborhood. The area of the residential apartment housing with a welcoming outdoor environment (marked with dotted line). Adapted from Malmö city homepage.



-  - Location of community (neighborhood) gardens in Seved
-  - Place where observations were made



Figure 8. Seved neighborhood. Courtyard with children's playground and hammock. Photo: A.Korolova



Figure 9. Seved neighborhood. Green area on the raised level. Photo: A.Korolova



Figure 10. Seved neighborhood. Raised-bed garden in the courtyard. Photo: A.Korolova



Figure 11. Seved neighborhood. Children's playground. Photo: A.Korolova

The other part of the Seved neighborhood (Figure 12) is described as a low quality residential housing with a poor quality of the outdoor environment (Figures 13, 14, 15, 16). Compared to the area described in this report earlier, this part of Seved doesn't provide a lot of choice for outdoor activities. As a result of observation mostly men aged around 25 – 40 were noticed there, spending their free time next to the house, talking and observing others. Based on their appearance they are mostly Afro-Europeans, but also Muslim people and Europeans. While the area of Seved described first in the report is welcoming and provides a feeling of safety, this area gives a feeling of insecurity and even danger.

According to police security measure data for 2012, there has been a slight decrease in overall problems in the area of Southern Sofielund and Seved in particular. The number of problems connected with substance abuse and littering is decreasing, however there is an increase in problems like property crime and violence (Malmö stad 3, 2015).

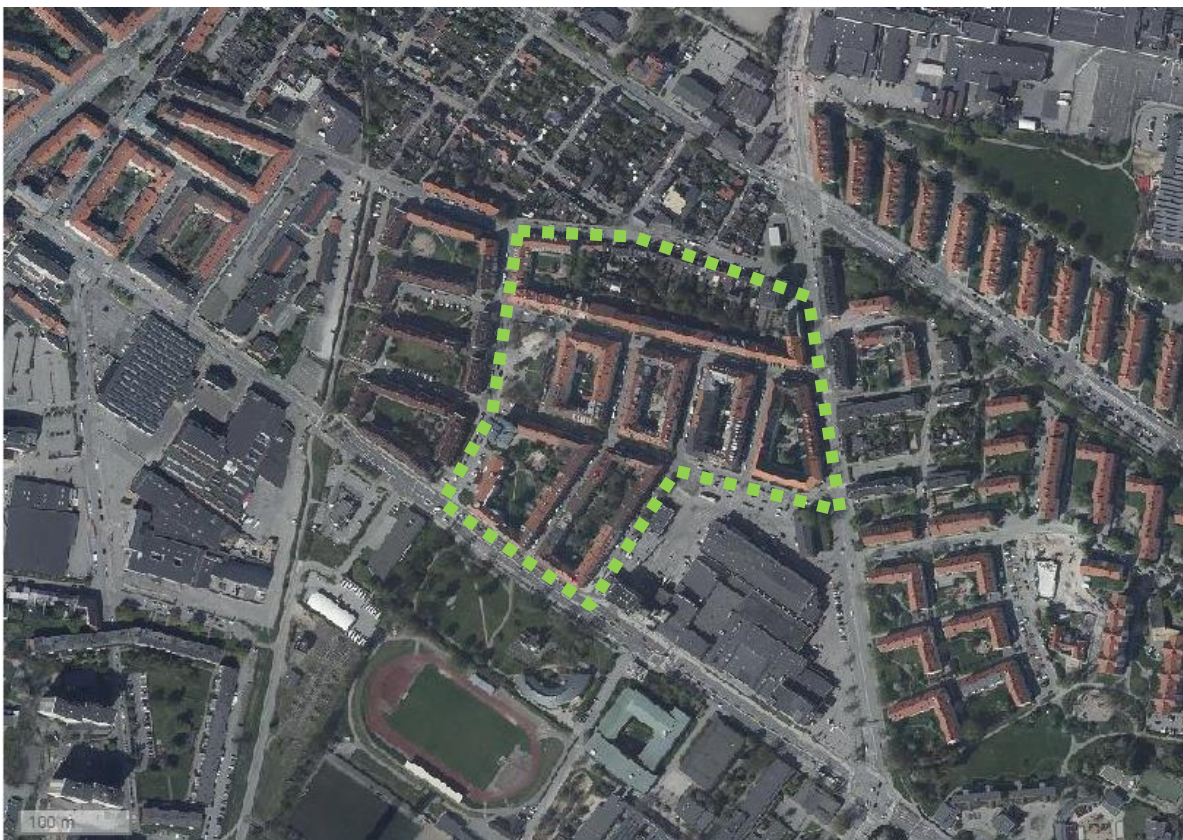


Figure 12. Areal photo of the Seved neighborhood . The area with a poor quality of the outdoor environment (marked with dotted line). Adapted from Malmö city homepage.



Figure 13. Seved neighborhood. Picture shows a typical outdoor environment.

Photo: A.Korolova



Figure 14. Seved neighborhood. Picture shows a typical outdoor environment.

Photo: A.Korolova



Figure 15. Seved neighborhood.

Photo: A.Korolova



Figure 16. Seved neighborhood.

Photo: A.Korolova

### ***Community garden Seved***

Type	Community garden, Community garden with small personal plots, green wall
Location	Seved, Southern Sofielund, Malmo, Sweden
Name	Seved neighborhood garden
Size	Both community gardens – approx. 400 m <sup>2</sup> , green wall – 50 m <sup>2</sup>
Year of establishment	Community gardens – 2010, green wall – 2013
Managing organization	Odlingsnätverket Seved (Non-governmental organization)
Garden facilitator	Maria Persson employed by Odlingsnätverket
Land ownership	Private property owner

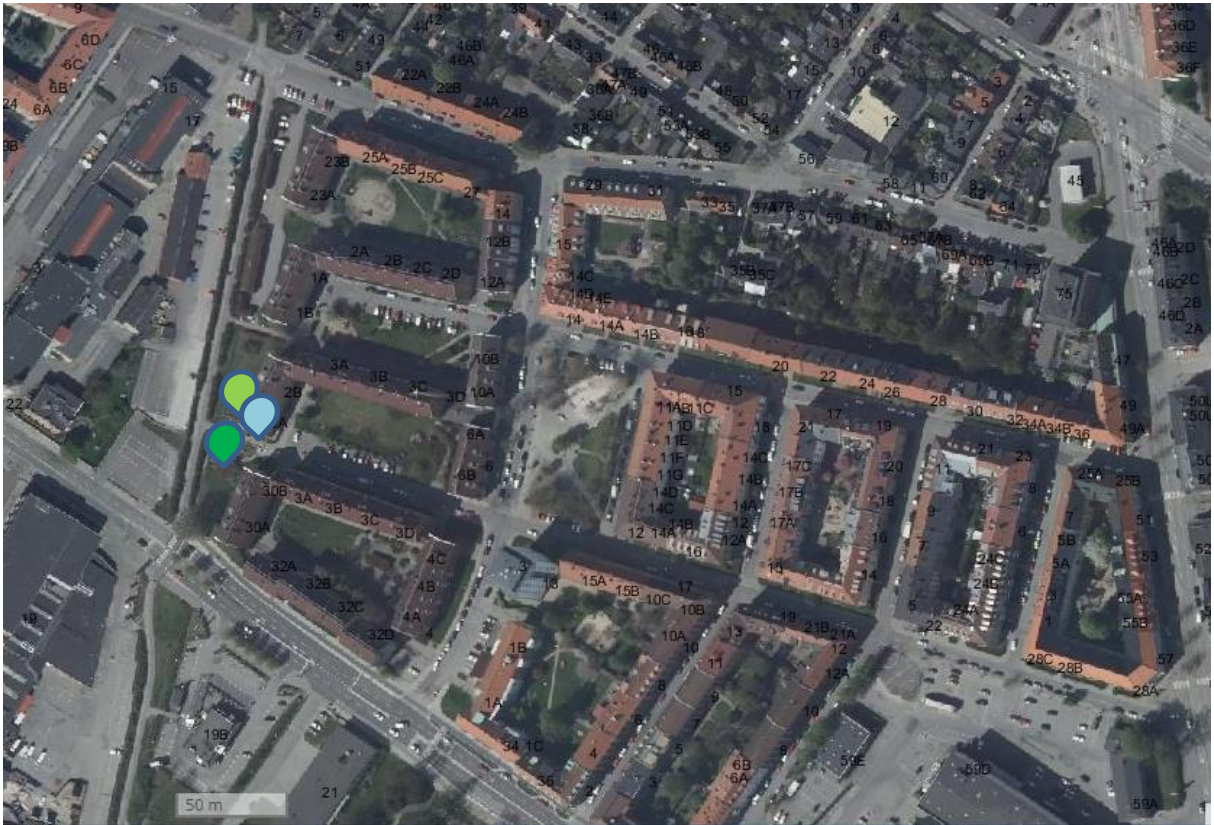





Figure 17. Aerial photo of the Seved neighborhood. Location of community gardens and the green wall. Adapted from Malmo city homepage.

-  - Location of community garden
-  - Location of community garden with personal small plots
-  - Location of the green wall

The neighborhood garden in Seved consists of community garden plot (Figure 20), a community garden with small personal plots (Figures 21, 22, 23) and a vertical garden structure (Figures 24 & 25). This is also the place where the Odlingsnätverket Seved NGO, which runs the community garden initiatives in Seved and Annelund, has its office.

According to garden facilitator's statement, there are about 70 community garden members, however only about 50 of them are involved in the gardening process. Gardeners have organized meetings every Thursday from 15.30 till 18.30, when they work together on the community garden plot, take care of the vertical garden, but also help each other with their own plots.

The green wall structure with total area about 50 m<sup>2</sup> was created in 2013 as a pilot project for vertical community garden. The main idea was to inspire property owners to use the city space in a new way as in many areas lack of space doesn't allow to create community gardens or to grow in containers. The wall is edible during the whole year and plants are



replaced depending on the time of the year. The „summer wall” which includes plants such as strawberries, chard, lettuce, celery, spinach and herbs – oregano, lavender or rosemary, is cultivated from May till November. In November „summer wall” is replaced by the „winter wall” represented mostly by green cabbages and herbs like oregano and thyme. The choice is determined by the visual aesthetics of plants, usually bushy and compact plants are selected, as well as wind sensitive plants are avoided (Malmo stad 6, 2014).

Semi-structured interviews were focused on collection of qualitative data about gardeners perception of community members and the role of community garden in people’s life. Information obtained from the interviews allowed to create an overall picture of the community.

As shown in Table 1 (Appendices, Table 1) the community garden in Seved has a multicultural background, represented by people of different ages and genders.

Comparison of observation data together with survey results and information obtained from the semi-structured interviews show that the real gender division between community gardeners and the perceived one almost coincide (Diagram 1 & 2).

According to the gardeners’ perception the average age of gardeners varies from 20 – 30 years to 50 years. The survey data also showed that there are both younger members aged 25-30, middle-aged people, but also gardeners aged 55-67 (Appendices, Table 3).

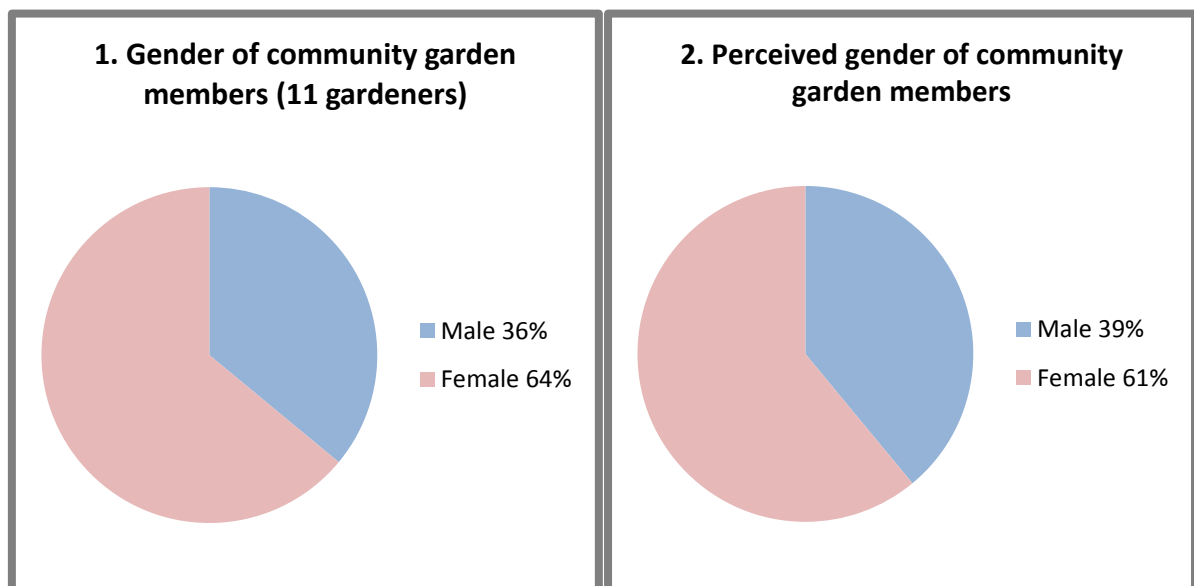


Diagram 1. Observation and survey data

Diagram 2. Semi-structured interview data (gardeners’ perception of gender division)

The map below shows from which countries or regions gardeners think their fellow gardeners come from (Figures 18 & 19). Some gardeners mentioned specific countries, still some people found it difficult to give a specific answer. As a result some could name only the region, and one person even mentioned „people come from different countries” as an answer. However, the data collected from semi-structured interviews gives the possibility to have an overall idea about the garden members’ origin (Appendices, Table 4).



Figure 18. Gardener’s perception of their fellow gardeners’ country of origin (mentioned specific country). World map picture adapted from Educyclopedia.

Figure 19. Gardener’s perception of their fellow gardeners’ country of origin (mentioned region). World map picture adapted from Educyclopedia.

The semi-structured interview helped to find out general information about the distances from gardeners’ home to the community garden and the way people get to the garden. This data was crucial in defining the importance of being a community garden member for people living in the neighborhood of Seved, as the answers helped to find out whether gardeners come from this neighborhood or they live in other areas of Malmo. Information about the way gardeners get to the garden showed whether people have also indirect physical activity while walking or cycling (Bird, 2004). Semi-structured interview results give a possibility to suppose that the majority of community garden members live in the close proximity to the garden and almost everyone is getting to the garden by foot. However, there are some people who use the bicycle as the means of transport. There are some people living in other areas of Malmo and using public transport to get to the garden (Appendices, Table 5 & 6).

Observations and semi-structured interview data make it possible to suppose that time spent in the garden working and relaxing is rather variable and depends on many circumstances like the distance from the garden to home, amount of free time, weather and other circumstances. Some gardeners visit garden every day, while some people come once in a fortnight. However, in general members of Seved community garden visit the garden 2-3 times a week, and spend a couple of hours working in the garden. The observation data as well as the information got from the interviewees showed that people don’t usually spend

time in the garden relaxing, and the space created for this purpose is mostly unused. However, some gardeners mentioned that in good weather they use the free garden space for grilling. This year as the weather wasn't good enough the table with benches placed in the center of the garden were left unused (Interview data; Appendices, Table 7).

Despite the fact that each gardener has their own reason to join the community, the interview data showed that being part of the gardening initiative positively affects people's well-being, health, physical activity and social engagement. As many gardeners noticed, growing vegetables in the community garden doesn't provide people with lots of fresh food. For this reason the fresh food supply doesn't play the most important role in growing of vegetables and herbs in the community garden (Appendices, Table 8).



Figure 20. Community garden, Seved.  
Photo: A.Korolova



Figure 21. Community garden with personal plots, Seved. Photo: A.Korolova



Figure 22. Community garden with personal plots, Seved. Gardeners harvesting their first own grown potatoes in 2015.  
Photo: A.Korolova



Figure 23. Entrance to the community garden with personal plots, Seved (on the left). Green wall structure (on the right).  
Photo: A.Korolova



Figure 24. Green wall structure, Seved.

Photo: A.Korolova



Figure 25. Green wall structure, Seved.

Photo: A.Korolova

## 4.4. Case study 2: Annelund

### *Neighborhood description*

According to Malmo city statistical data there are 1948 inhabitants living in the neighborhood of Annelund; 1480 of them aged from 20 to 64 (Malmö stad, 2014).

One of the Annelund neighborhood's specific distinctions is the way the housing area is organized. Housing blocks have a private outdoor space with limited access, opened only for area inhabitants. This type of neighborhood organisation protects inner yards from vandalism and theft. However, the street public area seems to be an impersonal, uncomfortable place as it is enclosed by high fences (Figures 26, 27, 28, 29). The Annelund neighborhood has a large public park which offers various outdoor activities. Based on the observations this public park is a popular leisure venue for local people regardless of age, gender or ethnicity.

According to data got from observations (Figure 30) made during working days (from the 6th of July till 15th of July) and during the weekend (on the 4th, 11th and 12th of July) choosing different time of the day, there are people of different age and cultural backgrounds living in the neighborhood of Annelund. The total number of people presented in the Table are 194 (Table 3). Observation data gives an approximate information about age and ethnicity of inhabitants living or spending time in the neighborhood of Annelund.



Figure 26. Annelund neighborhood. View to the courtyard located in front of community garden *Enskifteshagen*. Photo: A.Korolova



Figure 27. Annelund neighborhood. View to the courtyard from *Vitemöllegatan*. Photo: A.Korolova



Figure 28. Annelund neighborhood. View to the courtyard from *Vitemöllegatan*. Photo: A.Korolova



Figure 29. Annelund neighborhood. View to the courtyard from *Vitemöllegatan*. Photo: A.Korolova

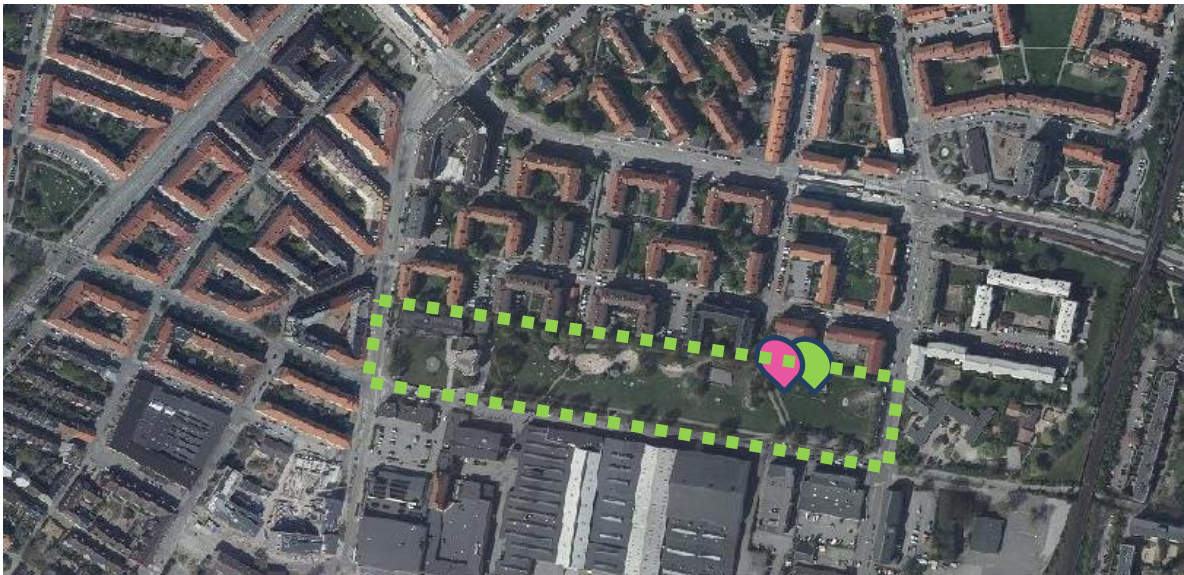




Figure 30. Aerial photo of Enskifteshagen in Annelund neighborhood (marked with dotted line). Adapted from Malmo city homepage.

-  - location of community garden Enskifteshagen.
-  - place where observations were made

*Table 3*

\*One family or person with a child or many children in this table are counted as 1.

\*\* Children noticed walking on their own

Inhabitant groups	Europeans	Afro-Europeans	Middle East Countries, Arabs, (Muslim)	East Asia
Men in the age of 18 – 30	17	5	23	2
Women in the age of 18 – 30	28	4	20	
Men in the age of 30 – 60	3		24	
Women in the age of 30 – 60	9		4	
Men in the age of 60 and more	7	1	1	
Women in the age of 60 and more	6			
Women with children*	2		10	
Men with children*	4		10	
Families with children*	2		7	
Couples*				
Children** <18 years	2		3	
Total women	43	4	24	-
Total men	27	6	48	2
Total families, couples and people with children	8	-	27	-
Total children** <18 years	2		3	
Total	80	10	102	2
Total in %	41,2	5,2	52,6	1

### *Community garden Annelund*

Type	Community garden
Location	Enskifteshagen, Annelund neighborhood, Malmo, Sweden
Name	Hagen (Enskifteshagen)
Size	1200 m <sup>2</sup>
Year of establishment	2010
Managing organization	Odlingsnätverket Seved (Non-governmental organization)
Land ownership	City of Malmo

Community garden is located in the Annelund neighborhood of Malmo (Figure 30). This urban gardening project was initiated by a group of people called „Mykorrhiza”. Starting as a local group’s initiative, in 2010 „Mykorrhiza” became a non-governmental organization, which stopped their activity in 2013. The group had a general idea to initiate local food production, with the focus on environment, health and global solidarity (Nätverket

Mykorrhiza, 2015). The initiative is now followed by another non-governmental organization (NGO) - Odlingsnätverket Seved (Odlingsnätverket, 2015).

The community garden is now located in the Enskifteshagen public park (Figure 30). As many local people had interest in growing food within a community garden, the NGO asked the municipality for permission to transform a part of the park into an urban garden. There is no fee to be paid to the municipality. Gardeners pay 200 Swedish krona per year to maintain 3 raised bed boxes and this money goes to the NGO. However, people with financial difficulties can maintain a box for reduced price or even for free (Interview data).

Since this year (2015), the NGO takes part in the pilot project offering young people a possibility to get their first working experience. The Municipality of Malmö is supporting young people aged 16 – 17, by finding a temporary occupation and paying them wages. However, experienced gardeners are not enthusiastic about this idea, as those young people don't put that much effort working in the garden (Interview data).

First organizing the community garden in Enskifteshagen, it was decided to check the quality of soil, as the neighborhood area has an industrial character. The soil test results showed a high percentage of contaminants in this area. For this reason it was decided to bring the soil suitable for agricultural needs and create raised beds and gardening boxes.

In this community garden, everyone has got their own box or several boxes, however gardeners do help each other. There are regular meetings every Tuesday from 15.30 to 18.30. During those meetings gardeners discuss their problems, make plans, help each other and just spend their time relaxing, drinking coffee and often tasting different foods made from vegetables or berries raised in the garden (Figures 31 & 32).

Regardless of where you live, everyone is welcome to join the community garden. Everyone has their own reason to join the community: for some people it's important to get some additional fresh vegetable and herb supply, others are more interested in social engagement and possibility to spend more time close to nature while being physically active. Some gardeners have only flowers and herbs in their boxes, explaining this as a wish to enjoy the esthetic aspect of gardening (Interview data).

Despite the fact that the general idea of the community garden in Enskifteshagen is to provide an open place, welcoming everyone to join the community, the visual appearance of the garden is in contradiction with this statement. Having an about 1.5 m high metal net fence, and the entrance door hidden in tangled vegetation, the area gives a feeling of being private (Figures 33, 34, 35). However, when spending time inside the garden *and being on the other side of the fence*, it provides the feeling of privacy in a good sense. This makes gardeners feel

more free while working, but especially while having a rest, sitting around the table and drinking coffee.



Figure 31. Community garden Enskifteshagen. Gardeners enjoying coffee and sandwiches with jam made from berries grown in the garden. Photo: A.Korolova



Figure 32. Community garden Enskifteshagen. Gardeners discuss the new canopy to be installed in the garden. Photo: A.Korolova



Figure 33. Community garden Enskifteshagen. The entrance. Photo: A.Korolova



Figure 34. Community garden Enskifteshagen. View from the outside. Photo: A.Korolova



Figure 35. Community garden Enskifteshagen. View from the outside. Photo: A.Korolova



Figure 36. Community garden Enskifteshagen. Garden place created for children. Photo: A.Korolova



Comparison of observation data together with survey results and information obtained from the semi-structured interviews in Enskifteshagen show that the real gender division between community gardeners and the perceived one differ (Diagram 3 & 4). Obtained information show there are more male garden members than gardeners perceive (Appendices, Table 9 & 10). This fact can be explained by more active involvement of female gardeners, who come more often and spend more time in the garden.

According to the gardeners' perception the average age of gardeners varies from 20 – 30 years to 50 – 60 years. The survey data also showed that there are both younger members aged 25 – 30, middle-aged people, but also gardeners aged 55 – 80. As there is a raised bed created for little children to practice gardening (Figure 35), some people mentioned children as the youngest garden members (Appendices, Table 11).

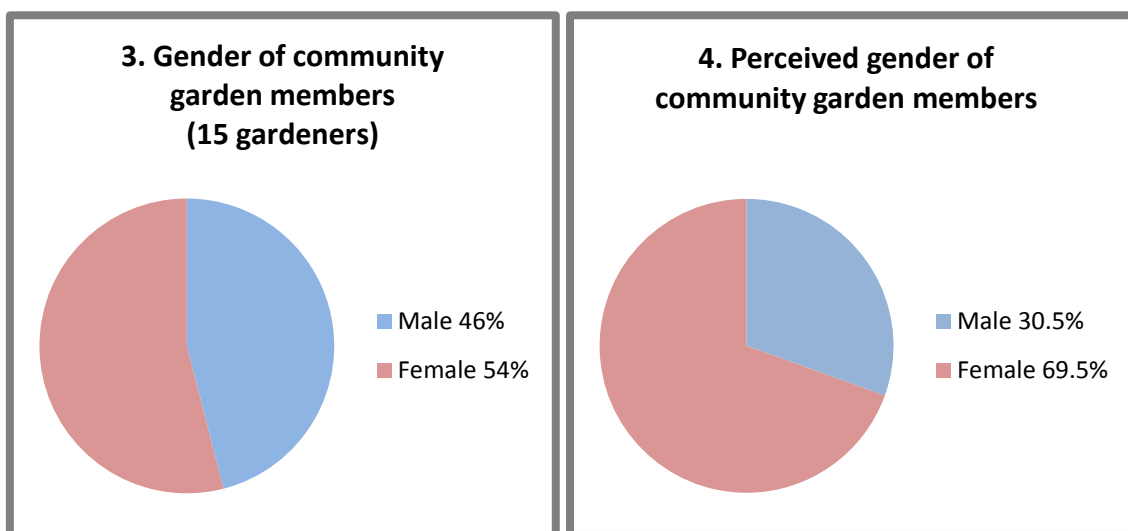


Diagram 3. Observation and survey data

Diagram 4. Semi-structured interview data (gardeners perception of gender division)

According to survey data only two in fifteen people are not native to Sweden. However, according to gardeners „perception of their fellow gardeners” there are people coming from various countries (Appendices, Table 13). As has been found out from the semi-structured interviews the majority of gardeners reach garden by foot, about 24.5% use bicycle, and noone is using public transport or car (Appendices, Table 14).

Observations and semi-structured interview data make it possible to suppose that time spent in the garden working and relaxing is rather variable. However, comparing observation data to the one from community garden in Seved it is possible to state, that members of

garden in Eskifteshagen spend more time on relaxing, drinking coffee or grilling in the garden (Appendices, Table 15). Semi-structured interview data shows that being member of community garden positively affects people's well-being and health, and promotes social engagement. Community garden provides a place for people to interact with their neighbors, while being closer to nature and being physically active (Appendices, Table 16).

## 5. Discussion and conclusions

Results of this research show that community garden can help revitalizing residential areas of Malmo. In particular this study investigated the importance of being a community garden member for people living in the neighborhoods of Seved and Annelund. Collected data shows that community (neighborhood) gardens are perceived by their users to have a positive impact on human health and well-being, to give possibility to be physically active and to promote social engagement.

Thanks to the chosen research methodology containing observations, surveys and semi-structured interviews it was possible to compare the real situation with gardeners' perceptions.

According to survey and semi-structured interview data the majority of community garden members are residents of Seved or Annelund. This fact proves that community gardens has a positive impact on neighborhood strengthening.

Members of the urban garden in Seved have different cultural backgrounds. The majority of gardeners in Annelund are native Swedes, however there are some people coming from Afghanistan and former Yugoslavia. This data advocates for the importance of urban gardening for both, immigrants and local people. As noticed from observations there is no distinction between Swedes and people who come from other countries. This fact advocates for community gardens as the place for integration since everyone regardless of age, gender or ethnicity is welcome.

Gardeners of different age, race and ethnicity, pointed out gardening's positive impact on health and well-being, as the community garden promotes physical activity and social engagement. In both cases possibility to get additional fresh food supply didn't play the most important role, as the amount of vegetables grown in the garden is not very big. The fact that some people use raised beds to grow only flowers and herbs also advocates for higher importance of social engagement and physical activity, rather than fresh vegetable supply.

According to the interview and the observation data, about 80% of gardeners come to the garden by foot and some 20% use bicycles. No one uses a private car to get to the garden. This fact shows that people get also physically active while reaching the garden site. As described by W.Bird moderate exercise like walking, biking and gardening, have long-term health benefits (Bird, 2004).

Comparative case studies of Seved and Annelund community gardens show how the differences between the arrangement of community gardens can affect the way gardens are

used, promoting both welcoming environment for work and relaxation, or vice versa creating an unused space for spending free time.

The fact that the non-governmental organization takes part in the pilot project offering young people to get their first working experience proves that urban gardening is of interest not only for neighborhoods' inhabitants, but also for teenagers coming from other areas of Malmo.

The research was conducted in Malmo from 26th of June 2015 till 15th of July 2015 and will be followed by research in Riga using the same methodology in allotment gardens within large-scale housing neighborhoods. More findings and comparative studies will be described in the long version of the short-term-scientific-mission report.

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## 7. Appendices

Case study 1: Seved

Survey results

1. Information about gender, age and country gardeners are coming from:

Table 1.

	Gardeners' gender	Gardeners' age	Country gardeners come from
	Male	66	Philippines
	Male	46	Algeria
	Male	58	Finland
	Male	26	Sweden
Total number of male gardeners represented in the Table	4		
	Female	67	Denmark
	Female	65	Philippines
	Female	30	Sweden
	Female	31	Sweden
	Female	55	Bosnia
	Female	50	Poland
	Female	32	Sweden
Total number of female gardeners represented in the Table	7		

Semi-structured interview questions and results:

1. How would you describe the age and gender of your fellow gardeners?

- Gender (share between men and women)

Table 2.

Gender	male	female
Percentage ratio (%)	40	60
	30	70
	50	50
	50	50
	30	70
	20	80
	50	50
	30	70
	40	60
	50	50
	40	60
Average percentage ratio (%)	39	61



- Age (average / span from oldest to youngest)

Table 3.

	Youngest	Oldest	Average (majority of gardeners)
Age of gardeners (years)	4	75 – 80	45 – 70
	25	67	40
	20	70	50
	25	66	50
	27	60	27 – 50
	25	65	40 – 50
	20	60	20 – 30, also 50
	20	66	20 – 30
	20	67	50
	20	65	50
	22	60	45 – 50

2. From which countries do you think the gardeners do come from?

Table 4.

	Country or region	Times mentioned
<b>Country</b>		
	Algeria	2
	Bosnia and Herzegovina	2
	China	2
	Denmark	2
	Iran	1
	Iraq	1
	Poland	2
	Sweden	11
	Syria	1
	Thailand	1
	Turkey	1
<b>Region</b>		
	East Europe	2
	Former Yugoslavia	1
	Middle East	4
	South America	1
	„Different countries”	1
Total number of specific countries mentioned by gardeners	11	
Total number of mentioned regions	4	
Other answers	1	

3. Do you think the gardeners live close to the garden? What is the percentage ratio?

- About 5 minutes walking distance
- About 10 – 20 minutes walking distance
- More than 30 minutes walking distance

Table 5.

Walking distance from gardeners' home to the garden	5 minutes	10 – 20 minutes	More than 30 minutes
Percentage ratio (%)	90	10	-
	100	-	-
	90	10	-
	90	10	-
	90	5	5
	95	5	-
	70	20	10
	95	5	-
	95	5	-
	90	10	-
	95	5	-
Average percentage ratio (%)	90.9	7.73	1.37

4. How do you think do the gardeners get to the garden? What is the percentage ratio?

- Foot
- Bicycle
- Public transport
- Car

Table 6.

The way to get to the garden	By foot	By bicycle	By public transport	By car
Percentage ratio (%)	90	5	-	-
	90	10	-	-
	50	50	-	-
	100	-	-	-
	90	5	5	-
	50	5	-	-
	70	20	10	-
	90	10	-	-
	80	30	-	-
	90	10	-	-
	80	20	-	-
Average percentage ratio (%)	80%	15%	5%	-

5. How much time do you think the gardeners spend in the garden?

	Working in the garden	Relaxing
Per day		
Per week		

Table 7.

Hours per day spent on working in the garden	Days per week spent on working in the garden	Hours per day spent on relaxing in the garden	Days per week spent on relaxing in the garden
1 – 2 hours	2 – 3 days	-	-
15 – 30 min	Majority of gardeners 1 – 2 days, some every day	-	Couple of times during the summer (grilling)
2 hours	Majority of gardeners one day a week, some people come more often	-	-
1 – 2 hours	Some gardeners every day, some come even once in a fortnight.	In the afternoon 3 hours	Grilling when the weather is good
1 – 3 hours	One day a week, some come more often	-	-
2 hours	2 – 3 days, or every day	1 hour	2 - 3 times a week after working in the garden
2,5 – 3 hours	2 – 3 days, or every day	-	-
1 hour	2 – 3 days, or every day	3 – 4 hours	Couple of times during the summer (grilling)
30 min – 2,5 hours	3 days, some gardeners come every day	-	-
1 – 2 hours	3 days, some gardeners come every day	-	-
2 hours	2 – 3 days, or every day	-	-

6. What benefits do you think your fellow gardeners do get from the garden?  
 (1 – don't get any benefits, 5 – get a lot of benefits)

Table 8.

\*number shows how many gardeners gave specific estimation of benefits

	1	2	3	4	5	Average estimation
Well-being				1*	10*	4.9
Health (in general)				1*	10*	4.9
Social Engagement				1*	10*	4.9
Physical activity				3*	8*	4.73
Fresh food			6*	3*	2*	3.64

## Case study 2: Annelund

### Survey results

- Information about gender, age and country gardeners are coming from:

Table 9.

Marked with blue didn't take part in the longer interview

	Gardeners' gender	Gardeners' age	Country gardeners come from
	Male	24	Sweden
	Male	36	Sweden
	Male	55	Afghanistan
	Male	37	Sweden
	Male	26	Sweden
	Male (with children)	35	Sweden
	Male (with children)	32	Sweden
Total number of male gardeners represented in the Table	7 (46%)		
	Female	82	Sweden
	Female	37	Sweden
	Female	71	Sweden
	Female	68	Slovenia
	Female	57	Sweden
	Female	55	Sweden
	Female (with children)	30	Sweden
	Female	32	Sweden
Total number of female gardeners represented in the Table	8 (54%)		

### Semi-structured interview questions and results:

- How would you describe the age and gender of your fellow gardeners?
  - Gender (share between men and women)

Table 10.

Gender	Male	Female
Percentage ratio (%)	30	70
	25	75
	30	70
	30	70
	40	60
	40	60
	30	70
	30	70
	20	80
	30	70
	Average percentage ratio (%)	30.5

- Age (average / span from oldest to youngest)

Table 11.

	Youngest	Oldest	Average (majority of gardeners)
Age of gardeners	16	81	20-25, 60
	7	82	45-50
	6	82	32-60
	7	82	20-30, 50-60
	5	65	25
	7	70	50
	20	85	40
	25	82	60
	16	82	50-60
	20	81	50

2. From which countries do you think the gardeners do come from?

Table 12.

	Country or region	Times mentioned
<b>Country</b>		
	Afghanistan	6
	Bosnia and Herzegovina	1
	Iraq	1
	Sweden	10
<b>Region</b>		
	Arabic-speaking countries	1
	Balkan countries	2
	Former Yugoslavia	2
	Kurdistan area	3
	Middle East	2
Total number of specific countries mentioned by gardeners	4	
Total number of mentioned regions	5	
Other answers	-	

3. Do you think the gardeners live close to the garden? What is the percentage ratio?

About 5 minutes walking distance

About 10 – 20 minutes walking distance

More than 30 minutes walking distance

Table 13.

Walking distance from gardeners' home to the garden	5 minutes	10 – 20 minutes	More than 30 minutes
Percentage ratio (%)	80	20	-
	90	10	-
	80	20	-
	90	10	-
	90	10	-
	90	10	-
	50	50	-
	90	10	-
	80	20	-
	90	10	-
Average percentage ratio (%)	83	17	-

4. How do you think do the gardeners get to the garden? What is the percentage ratio?

- Foot
- Bicycle
- Public transport
- Car

Table 14.

The way to get to the garden	By foot	By bicycle	By public transport	By car
Percentage ratio (%)	80	20	-	-
	75	25	-	-
	90	5-10	-	-
	90	10	-	-
	80	20	-	-
	90	10	-	-
	50	50	-	-
	50	50	-	-
	80	20	-	-
	70	30	-	-
Average percentage ratio (%)	75.5%	24.5%	-	-



5. How much time do you think the gardeners spend in the garden?

	Working in the garden	Relaxing
Per day		
Per week		

Table 15.

Hours per day spent on working in the garden	Days per week spent on working in the garden	Hours per day spent on relaxing in the garden	Days per week spent on relaxing in the garden
1 - 1,5 hours	Every day or 2-3 times per week	30 minutes – 1 hour	2 – 3 times a week
3 hours	3 times or every day	1 hour	2 – 3 times a week, or always after work
1 – 3 hours	Some gardeners come 2 times a week, some – every day	1 hour	Always after work or doing short breaks
2 hours	On Tuesdays comes almost everyone, some people come every day	30 minutes	After work in the garden
15 minutes if person comes every day, or about 1 hour	Every Tuesday or some people – every day	1 hour	On Tuesdays
30 minutes – 1 hour	Once in two weeks, some people come every day	-	-
1 hour	2 times a week	50% of time spent in the garden	50% of time spent in the garden
5 minutes – 2 or 3 hours	Couple of times a week or every day	30 minutes	After working in the garden
2 hours	Every day or 2 days a week	30 minutes - 1 hour	After working in the garden
1 hour	2 – 3 days a week	-	-

6. What benefits do you think your fellow gardeners do get from the garden?  
 (1 – don't get any benefits, 5 – get a lot of benefits)

Table 16.

\*number shows how many gardeners gave specific estimation of benefits

	1	2	3	4	5	Average estimation
Well-being				3*	7*	4.7
Health (in general)				2*	8*	4.8
Social Engagement				1*	9*	4.9
Physical activity				3*	7*	4.7
Fresh food			3*	5*	2*	3.9