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Urban gardeners in Oslo: An explorative study of their motivations and the perceived effects of gardening on quality of life

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ABSTRACT

Urban agriculture has been associated with social, emotional, health and mental health benefits. However, literature describing the relationship between garden participation and effects on quality of life has not been fully addressed in the Norwegian setting. The city of Oslo has set important goals for the development of a more inclusive and livable city, and urban agriculture has achieved a place on the agenda to accomplish such ambition. Since then, multiple gardening initiatives have developed, along with research projects studying their process. Case studies and interview-based research have been conducted before. However, this explorative study aims to provide a different angle. A mixed method research approach was applied, using a cross sectional survey, participant observation, informal conversation notes and secondary data. To understand the perceived benefits of gardening on well-being, two groups of participants were studied, gardeners (n=102) and visitors (n=46) from seven community gardens in Oslo. Based on the Capability Approach by Nussbaum, a list of activities was built to create an overview of the most important activities for gardeners. To study their effect and motivation, three capabilities from the Capability Approach were applied. In addition, the Attention Restoration Theory by Kaplan was adopted to understand the restorative benefits. Results highlight gardening activities such as: being in contact with nature, socializing with others and contributing to the development of the area as the most important activities for gardeners. Participants reported positive health and well-being results, however, the responses could be influenced by other variables that were not included in the analysis. Additionally, gardeners' and visitors' responses on connection with nature and sense of belonging illustrate similar trends found in previous studies supporting social and emotional benefits. However, in order to achieve a better understanding of these results, in-depth research should be conducted in order to understand the complexity behind quality of life indicators, and thus establish clear evidence that supports or challenges the multifunctionality of urban agriculture.

Keywords: urban agriculture, self-reported well-being, quality of life, connection to nature, sense of belonging, public spaces, capability approach, attention restoration theory

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1 Introduction

Humans have a deep bond with nature that affects mental and physical state, commonly hypothesized under the term of biophilia (Verheij et al., 2008). However, slowly but surely human lives have been separating nature. In fact, two decades ago an academic article revealed how Americans spend 93% of their time indoor, similarly a more recent study points out comparable findings in German homes (Klepeis et al., 2001; Brasche & Bischof, 2005). This is an important issue as limited access to fresh air and daylight can have negative effects on our health and well-being (Kaplan & Kaplan, 1989). Therefore, to nurture and value the connection humans find in nature and thus create higher levels of environmental consciousness, the United Nations has set an emphasis on increasing the amount of open public spaces in cities. Particularly with the Sustainable Development Goal #11, which stands for sustainable cities and communities (United Nations, 2019). This call has increased the interest in bringing cultivation practices into the city planning. Urban agriculture (UA) has been defined by the Food and Agriculture Organization (FAO) as a cultivation activity that includes “anything from small vegetable gardens in the backyard to farming activities on community lands by an association or neighborhood group” (2010, p.1). Yet, UA has shown to be more than just growing food in cities, reports, among several, the scholar-led project COST Action Urban Agriculture Europe (Lohrberg, 2016). The development of urban gardens and green infrastructure has been associated with increased levels of urban aesthetic experiences and sonic environments for noise control and aversion (Litt et al., 2015; Evensen et al., 2016), age-friendly outdoor activities (Erwein, 2014; Wood et al. 2016; Teig et al. 2009), ecological benefits such as air regulation and conservation of urban biodiversity (Calvet-Mir et al., 2017), and opportunities for strengthening social integration and neighborhood attachment (Veen & Eiter, 2018; Soga et al., 2017; Evensen et al., 2016; Bogstad, 2018). Especially from a social perspective, community gardening has exhibited effects on human well-being including psychological issues such as depression, anxiety and mental fatigue; increasing levels of physical activity and fruit and vegetable intake, and thus improving quality of life and life satisfaction (Alaimo et al., 2016; Litt et al., 2015; Wood et al., 2015; Capaldi et al., 2014). These effects from urban gardens, among others, have been analyzed from the Ecosystem Services approach, which is a tool to communicate the value of nature for human well-being (Camps-Calvet et al., 2016). It states that nature provides regulating and cultural services that are key for restoring and maintaining a properly functioning ecosystem that otherwise would require high restoration costs through technologies or built infrastructure (Gómez-Baggethun & Barton, 2013).

Although there is substantial evidence of the benefits of urban agriculture in Europe, there is scarce research on the social and emotional effects of community gardens in the Norwegian setting (Lohrberg, 2016). That is why our objective has been to find what motivates gardeners to participate in community gardens in Oslo and if the source of motivation shows reinforcement of quality of life aspects, as described by the Capability Approach by Nussbaum. By exploring the synergies between gardeners and community gardens, we hope to better understand relationships that may have an effect on sense of belonging and connection with nature, as well as how the gardens are perceived by visitors. With the results we aim to narrow the gap that exist in the understanding of social and emotional benefits of community gardens in the Norwegian setting; and to motivate the development of further studies that explore well-being and health effects from urban gardening in greater depth.

1.1 Background

Oslo is the European Green Capital of 2019 and the European city with the highest rate of population growth (current population is at 681,067 people) (Oslo Kommune, 2019b). In an effort to strengthen social sustainability and well-being, the city government has invested in urban agriculture grant schemes for the establishment of over 3200 cultivation boxes that cover more than 13000 square meters of total cultivated area in the city (Oslo Kommune, 2019a). Government officials have stated that “the city government wants Oslo to be an international leader in the use of urban agriculture activities in the process of facilitating a greener, warmer and more creative city space for everyone” (ibid). With this aim, the Agency for Urban Environment (Bymiljøetaten) has developed a program, called *Spirende Oslo - room for everyone in the city's green space*, to contribute to the sustainable development of the city by promoting the different types of urban agriculture in Oslo. Their goal is to create inclusive spaces that add more value to public areas through agriculture. In addition, the municipality has funded multiple research projects in this field, one of them being the basis of our master thesis, called *Cultivating Public Spaces (CPS)*. It is an ongoing research project that we were able to join, coordinated by the Norwegian University of Life Sciences (NMBU). The research is conducted with the intention of “addressing the potentials of UA as a driving force of a sustainability transition in contemporary Norwegian cities” (Sirowy, 2017). Thanks to the collaboration with researchers at the project, we were able to use literature from the project, their survey software to conduct our data collection, NMBU logos to represent the university during field work, and professional advice from other researchers in the project.

There is a wide range of urban agriculture initiatives in Oslo. Besides community gardens, there are public and private allotment gardens, vertical farms and hydroponic systems, rooftop gardens, and cultivation boxes. To illustrate how these are differentiated, we use the figure below, taken from a typology of urban agriculture in Europe (Vejre et al., 2016 p. 23). This figure illustrates different gardening practices and how they can be divided according to production target. Given our focus on social cohesion and nature-human connections, we focus on community/allotment gardens as they usually have a bottom-up structure and emphasis on “growing social networks, building meeting places, and establishing a sense of community,” rather than simply growing vegetables as a commodity (Lohrberg, 2016 p. 25).

Urban food gardening: 6 types



Figure 1: Types of urban agriculture. Source: (Vejre et al., 2016 p. 23)

Growing social network, building meeting places, and establishing a sense of community is especially interesting matter for Oslo, as the city has experienced a rapid compaction process over the past 30 years. However, even if one may intuitively think that shorter distance between people could facilitate social ties, Oslo has actually experienced an increase in loneliness and weak social ties, especially among adults and those living alone (Halvorsen Thoren, 2010; Vrålstad, 2017). In fact, the European Commission underlined the need of public places to be age-friendly and inclusive, as only 20% of the world population is under 20 years old (Vandecasteele et al., 2019), a matter that is also highlighted in the Sustainable Development Goals (United Nations, 2019). Therefore, it is not a surprise that the municipality of Oslo has invested in urban agriculture practices in recent years, as an attempt to build ecological resilience and inclusive environments where communities can increase their social and natural contact (Oslo Kommune, 2019a; Halvorsen Thoren, 2010; Nordh et al., 2016). Literature has shown a higher degree of health and mental benefits from the use of public gardens, especially when management structures of the garden are based on an inclusive setting

allowing participation regardless of economic factors, nationality, or residential location (Wood et al., 2015; Nova et al. 2018; Soga et al., 2017; Ernwein, 2014; Altieri et al., 1999; Camps-Calvet et al., 2016).

1.2 Research Objective

Given the relevance of our chosen topic for a city like Oslo, our objective is to explore relationships that exist between gardeners and community gardens, and the perceived potential for aesthetic and restorative experiences for urban visitors. However, in our research we mainly seek to develop a better understanding of the self-reported benefits on quality of life, specifically on sense of belonging and connection with nature from gardeners. We study these effects through various elements of quality of life, *emotions, affiliation, senses, imagination and thought* taken from the Capability Approach developed by Nussbaum (2011 p.18). In addition, we look at some qualities of the garden in bringing restorative experiences through the lens of Attention Restoration Theory by Kaplan (1995). With this research we seek to contribute to the field of knowledge about urban agriculture in Oslo, as existing literature is limited and focuses either on a specific case (Bogstad, 2018), different types of UA (Nordh et al., 2016) and distinct health aspects such as mental disorders, diet effects, or educational aspects (Veen & Eiter 2018; Ihlebæk et al. 2018; Stafsgeng, 2019). Our main research questions are: a) what activities are most important for gardeners? b) how do they self-report on health and well-being? c) how do they self-report on sense of belonging and connectedness to nature?

2 Methods

2.1 Design

Research indicate that participating in community gardens has social and emotional benefits that can promote community involvement, well-being, and a healthy emotional state (Alaimo et al., 2016; Litt et al., 2015). To find out the source of these benefits, our first research question explores which activities are the most important to the gardeners in our survey in order to create a comprehensive basis for further elaboration with the second and third question. In the project description of Cultivating Public Spaces, these activities are also described as “functionings,” which is a term taken from the Capability Approach, and is used in the project to emphasize on the “various states of human beings and activities that a person can undertake” (Sirowy, 2017, p.6). In this research we refer to functionings under circumstances that make it clearer to identify the relation to the

Capability Approach. In addition, we combined elements of qualitative and quantitative methods of data collection. According to Yin (2011), applying a mixed method design enables the study to be richer in input and evidence as opposed to adopting a single method alone. We mainly used a cross sectional survey that we conducted face-to-face and online, in addition to participant observation, informal conversation notes and secondary data. A cross sectional survey allowed us to gather data on gardeners in Oslo during autumn 2019. The design takes a snapshot of the status of the current population at a specific time and point of place (Paffenbrager, 1988). Using observation, we clarified possible relationships stimulating health and well-being from exposure to community gardens. With this information we were able to describe numerous characteristics that exist in the specific community at once. For example, a cross sectional study might be used to determine if exposure to cultivation in community gardens can be associated with particular health outcomes. However, this study will not determine cause-and-effect relationships between different variables. Instead try to fill up gaps in the literature, because we have not come across empirical studies undertaken with qualitative research methods on experiences and influences of community gardens on participants (Genter et al., 2015), at least not any focusing on the Norwegian context.

2.2 Study Area

All data collection was done through fieldwork in seven different urban agriculture initiatives in Oslo: 1) Losæter, 2) Voksenenga Nærmiljøhage, 3) Ellingsrud Parsellhage, 4) Dr. Dedichens Drivhus, 5) Sagene Takhage, 6) Vaterlandsparken and 7) Sofienbergparken (see Figure 2, and Appendix I).

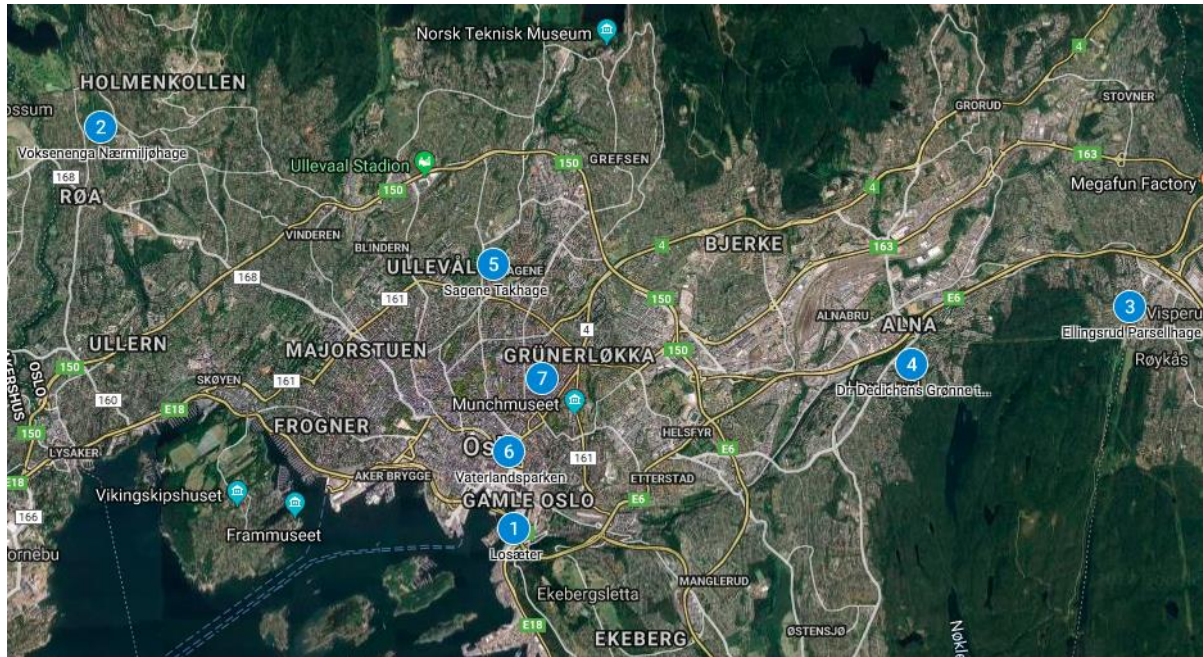


Figure 2: Map overview of urban agriculture initiatives in Oslo. Source: Google Maps

The underlying criteria for selecting these specific initiatives was centered around the cooperation with Cultivating Public Spaces research project cases. As shown in the Figure 2, the gardens are located in different public urban areas with diverse types of community-based gardens (allotments, boxes, and greenhouse). The initiatives have different functions, activities and objectives and some are well established while others are newly developed. The preliminary criteria for the chosen initiatives involved location and access (urban public spaces) to assure accessibility, without closed fencing or access code for entering the gardens, and a considerably low fee for owning a cultivation space (see Appendix II for a more detailed overview of preliminary criteria of Cultivating Public Spaces' case selection). Using these criteria increased the validity in our samples, as there are also initiatives that are private, membership oriented, or for commercial purposes.

2.3 Sampling and recruitment

The timeframe of the data collection was from mid-August until mid-October 2019. During this period we mainly attended public and internally planned events rather than coming on regular days because of two factors (see Appendix I for event programs). Firstly, because events allowed us to encounter more participants than on regular days; and secondly, because events allow individuals to have more flexibility in their personal schedule to participate in the survey. In addition, our data was collected either on site with the survey or via email through a digital version. We contacted project leaders to ask about internal events (workshops or “dugnad”/unpaid communal work), and Facebook

to find out about public events (open days, festivals, cafe evenings). We also used Facebook to schedule visits and as a platform to inform about the survey, as well as email, to share the online survey in the private group page of the initiatives. Due to rain during some events, participation was low, resulting in long standby time and insufficient data. As a result, we relied on the online survey during the last part of the data collection to get the desired number of primary users.

2.4 Participants and socio-demographic profile

The population studied has one shared characteristic, which is being familiar with the community gardens. Based on seven different gardening initiatives in Oslo, a sample from gardening population was selected determined by availability and desire to participate in the study. We separated our sample into two groups: gardeners and visitors, each of them having a respective survey, primary survey (Appendix III) and secondary/tertiary survey (Appendix IV). The rationale for this stratification is due to the interest in getting a better understanding of the motivations and quality of life effects in gardeners, as well as perceived changes and benefits from those who are not affiliated with the gardens (visitors). The formal criteria of what determines a primary, secondary and tertiary participant was developed in the project Cultivating Public Spaces and given to us in writing before the start of the field work (Appendix II). For our study, gardeners allowed us to get insights of perceived effects of gardening in their lives, while visitors, who could be anyone visiting the gardens, presented valuable information about the immediate impressions of the gardens. Especially, signs of aesthetic or restorative benefits perceived by those living in proximity to the garden. According to the ethical guidelines of the Norwegian Centre for Research Data (NSD), the minimum age requirement is from 17 years old. However, since the surveys are anonymous and we do not disclose any personal or potentially identifiable information, our age range was allowed to start at 16 years old and our participants were not required to sign a consent form. This is important, as participants at Vaterlandsparken were mainly youth workers at the gardening initiative, mostly under 21 years. Ethical considerations are discussed further in section 2.8.

In order to illustrate a more comprehensive view of our sample, we collected data on gender, age, education and occupational status were identified. In total, 148 participants were studied: gardeners (n=102) and visitors (n=46). Because of our focus on direct effects of community gardens, we mainly focused on those who are directly involved in the gardens, being the primary sample. Demographic profile of gardeners is shown in Table 1 below. In our sample of gardeners, we have a bigger proportion of women (74 %) participating than men (26 %) and their age ranges from 16-75

years, with an average of 44 years. The majority are university/college-educated and full-time workers. It is important to note that for the last round of online surveys, the question on occupational status was lacking due to a mistake, therefore we lacked 10 responses from that question in our data set. This explains why our population number went down to 92 under that question.

Demographic profile of participants

		Primary Survey (n=102) Gardeners	
Gender (number (%))	Female	75	(74%)
	Male	27	(26%)
Age (number)	16 - 30	(22)	
	31 - 45	(36)	
	46 - 60	(28)	
	61 - 75	(14)	
	No answer	(2)	
Education (number (%))	Primary and lower secondary school	2	(2%)
	High School	19	(19%)
	University/college 3 years -	27	(26%)
	University/college 4 years +	52	(51%)
	PhD	1	(1%)
	Other	1	(1%)
Occupational Status (number (%)) n=92	Working – full time	55	(60%)
	Working – part time	11	(12%)
	Student	7	(8%)
	Unemployed	3	(3%)
	Retired	11	(12%)
	On social welfare (Uføør)	4	(4%)
	Other	1	(1%)

Table 1: Demographic information from primary survey. Number outside parenthesis indicates the number of participants in each category (female, male, etc). The number inside the parenthesis indicates the percentage in the entire population (gender, education level and occupation status). Only in the category of age, the number illustrates the number of participants within that range.

2.5 Survey

The cross-sectional survey we used was developed by colleagues from the Cultivating Public Spaces project. A cross-sectional survey is used in descriptive research and does not determine causality, meaning that we recorded information that is present within our study population and provides a quick glance at the relationships that may exist at a particular time (Mann, 2003). The survey was pretested with a pilot group of 13 informants some days before the start of the field work. Running a pilot provided the opportunity to review the survey content, language, biases, and general protocols of the survey. It also allowed us to get feedback on the flow of questions. Surveys are useful to find

out the characteristics, behaviors, or opinions of a particular population (Salant & Dillman, 1994). In our case we used it as an exploratory tool to study a sample size of 148 participants on a subject that has not been thoroughly studied. The majority of the questions were closed-ended, with the exception of a few open-ended questions allowing participants to identify their own reasons for their participation in the garden (primary survey), and description of the place (secondary survey). The survey developed by Cultivating Public Spaces addressed different aspects from the Capability Approach by Nussbaum (2011). The physical survey involved talking to respondents in person and submitting each answer on iPads or mobile phones by researchers, while the online survey relied more on subjective understanding. The primary survey consisted of 31 questions on the following topics: activities in the garden, responsibilities, engagement, ownership and belonging to neighborhood, relationship with other members, health, socio-demographic data (age, gender, education, occupation) and connection to nature. The secondary/tertiary survey consisted of 27 questions concerning perceived changes and aesthetics of the garden, the use of place, sense of belonging to the neighborhood, and likelihood to join the garden. All participants voluntarily agreed to participate in the study, and we identified ourselves as master students from NMBU - an academic institution. Surveys were conducted in Norwegian and English, depending on the participants' preferences.

2.5.1 Measurements of perceived quality of life

The main question in our primary survey consisted of a list of 15 activities that can be enabled by participating in the gardens. The list was developed by the project Cultivating Public Spaces, using information from the Capability Approach and Attention Restoration Theory and making operationalizations to fit the project's goal. To explore which activities were most important among gardeners, each participant was asked to choose how important each activity was for them in a 4-point scale *not important, little important, important* and *very important*. Usually the questions were read out loud by researchers and participants answered vocally. In addition, to further examine quality of life, we used scales recommended by The Norwegian Directorate of Health (Nes, Hansen, & Barstad, 2018). Participants were asked to respond and self-report to items such as: "*When you think about how you feel nowadays, are you largely satisfied with life, or largely dissatisfied?*" given on a 7-point scale (1 = very satisfied / 7 = very dissatisfied) and "*To what extent has participation here influenced how you feel at present?*" with a 7-point scale (1= to a little extent, 7 to a great extent). Lastly, gardeners were also asked to estimate their current health status, from a 5-point scale rated on a scale from *excellent, very good, good, fairly good* and *bad*. Here we measure health as

subjective health which is the health people say they experience themselves. This question was a single item from a 12-item Short-Form Health Survey made by the health institute, New England Medical Center (Ware et al., 1996). In addition, participants' proximity to the community gardens was also recorded to make inferences about possible determinants of physical activity.

2.5.2 Measurements of sense of belonging and connectedness with nature

The last survey section devoted to answer our research questions was the one on sense of belonging and connection with nature. The primary survey asked the following questions regarding feelings towards the garden: “Do you feel that you belong here?” and “To what extent do you feel that this is your place?” The former being more socially oriented, whereas the latter one is leaning towards a sense of ownership. Moreover, we were interested to find out how much freedom is perceived by gardeners to be included in the development of the garden, for which we asked, “To what extent do you feel that you can affect the development of this place?” with a 7-point scale (1= to a very little extent / 7= to a very great extent). These three questions were developed by CPS following operationalizations from the Capability Approach. Lastly, to find out how connected participants felt with nature, regardless of being a gardener or visitor, both surveys asked participants to categorize themselves in a figure that illustrates multiple degrees of connectivity with nature which is shown in Figure 3 below. Responses were given using the Inclusion of Nature in Self Scale (INS), which is a measurement tool for the assessment of individual self-nature connection (Martin & Czellar, 2016). There are also other measurement tools that have been used in research for evaluating relationship with nature such as CNS and NEP (Mayer and Frantz, 2004).

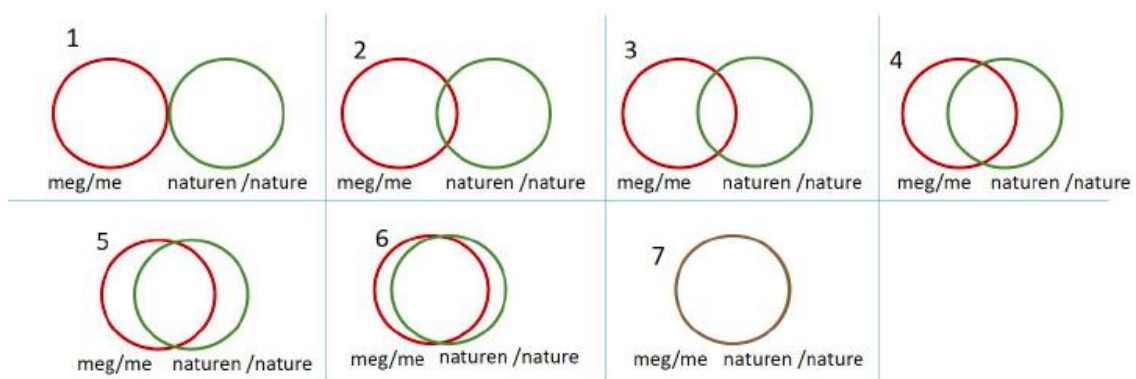


Figure 3: Scale used in primary and secondary surveys for measuring participants' connection with nature. Question: How strongly are you connected with nature?

For the secondary survey, we mainly asked participants to describe their perceptions of the place, changes due to the presence of the garden, and aesthetic perceptions of beauty, tidiness, safety and noise. These questions were developed in accordance to operationalizations of the Capabilities Approach as in the survey for primary users. In addition, we use the Attention Restoration Theory to investigate potential for restorative experiences perceived by people. The reason for having secondary users was to gather information about how urban agriculture, in this case community gardens, can affect those who are not directly involved and how it can affect aesthetic perceptions of the area.

The logistics with the online survey were slightly different from the physical survey. The survey was sent out to the project leaders at the various urban initiatives for them to distribute to members via email or social media. In cooperation with Cultivating Public Spaces, the online version of the survey was tested by us beforehand to make sure the questions were appropriate to complete at home as well as whether the questions were understandable and explained well in the text. The online survey was chosen as a method of data collection as it can provide a sense of privacy (Salant & Dillman, 1994), allowing participants to feel more comfortable to share their opinions and complete the survey in their own pace. With the online version we received a higher number of respondents of primary users; however, the quality of the responses may be affected due to misinterpretations of the questions or getting unrelated people from our target to take the survey. In collaboration with the research team, we completed the survey among 148 informants in total. The primary survey covered a sample of 102 informants, including 47 face-to-face interviews and 55 online interviews. The secondary survey covered a sample of 46 informants.

2.6 Participant Observation & Informal Conversation

During our data collection we also used participant observation as a complementary tool to the survey. This allowed us to obtain more detailed data about participants, to get familiar with the community, and to explore the setting by actively participating in the activities. These tools enable researchers to learn about the logistics and internal structures that exist in the population at study, from a more natural setting than interviews, focus groups, and surveys (DeWalt & DeWalt, 2002). For instance, we were involved in food making and other preparations together with the participants at different locations, which gave us the opportunity to get to know them and build trust. This was important for us as we could address doubts and answer questions that the participants had about our research and survey, as well as an opportunity to ask other participants to complete the survey. In

order to clarify bias and to improve transparency, we have kept a log of our research activities and meetings, by taking and organizing structured field notes (Appendix V). In addition, reflection notes from the field were written down and analyzed after each visit. This allowed us to review and ask ourselves if there was room for improvement.

2.7 Data Analysis

The survey data was entered into Microsoft Excel and divided into primary users and secondary/tertiary users. Descriptive statistics were generated to analyze socio-demographic factors. This includes information on gender, education level, age, occupation status etc. We mainly used Pivot Tables to make comparisons, figures, and other illustrations to show results and an overview of response rates. Quantitative data that needed further statistical analysis was coded to generate inferences about possible relationships and underline prevailing differences (See Appendix VI). We used mean and median as central tendency indicators and standard deviations to give a better representation of the results. Then we identified and interpreted patterns and themes in order to help us answer our research questions. In addition, we also asked visitors in the secondary survey if they could describe the place in a few words to see if there were any common themes that could highlight their perception of the gardens. Since answers had a diverse variety of aspects making it hard to categorize, we illustrated them in a word cloud.

2.8 Ethical Considerations

Conducting research in an ethical way respecting informants' privacy and avoiding any harm is necessary for a study to be justified (Kvale & Brinkmann, 2009). All the participants were explicitly informed about the purpose of the survey and that their participation was anonymous and voluntary. Data collection approval by the Norwegian Center for Research (NSD) was done by the project Cultivating Public Spaces prior to our research start (see Appendix VII). Additionally, we did not request any directly identifiable data neither classify participant's information in an informant list. Therefore, according to the rules of NSD we were not required to present a consent form (NSD, 2019). Participants were able to withdraw from the survey at any time without explanation. The data from the survey was stored in a private folder on "Google Drive" and "Microsoft Teams". Only research members of the project Cultivating Public Spaces had access to the documents to protect the integrity of the research and participants. Ethical considerations and sensitivity towards the subjects are also essential for the reliability and validity of the study (Yin, 2009). This will be discussed later in the thesis. Reflection is important when discussing ethics (Reid et al., 2018). As researchers, it

was necessary to allow some time to plan our behavior during each visit and the purpose we were going to inform to participants and garden leaders. Thorough consideration was given to our actions, as they might have an effect on the participants, which can influence what we observe (Yin, 2011). To make ourselves approachable, for example, during some events we wore the NMBU t-shirt to show our association with the university. In that way we confirmed our intentions and avoided being identified as social or campaign workers.

2.9 Research Approach

The Capability Approach framework was the main framework for this study, which is also applied in the Cultivating Public Spaces research project. This is owing to the fact that our results will contribute to module three from the same project. This module aims “to identify UA’s impacts on the quality of life of public space users, and the unaddressed potentials of UA in improving the quality of life in Oslo region” (Sirowy, p. 2, 2017). Capability Approach allows for the study to generate a multi-dimensional and non-reductionist understanding of the quality of urban life and facilitates subjective perspectives to account as well-being indicators in urban gardens (Sirowy, 2017). That being said, our results will rather portray results on quality of life on an individual level, rather than on a social or public level. The approach describes ten central human capabilities that as a whole, are considered essential elements to measuring people’s quality of life, without reducing it to a single metric (ibid). Capabilities are defined within this framework as an attempt to increase the understanding on connectedness to nature and a sense of belonging. The capabilities are not just as a set of “abilities residing inside a person but also the freedoms or opportunities created by a combination of personal abilities and the political, social, and economic environment” (Nussbaum, 2011, p.20). Applying this approach to our study allowed us to elaborate on questions such as: What are gardeners and visitors able to do and learn in community gardens? Are they able to contribute in some way to the development of the space? How does their participation affect their social lives and connections with nature? Based on three central human capabilities (see Appendix VIII), we designed a research strategy that allowed us to study quality of life benefits, and self-reports on sense of belonging and connection with nature. The first capability is *emotions*, which Nussbaum (2011) describes as “being able to have attachments to things and persons outside ourselves”. This can stimulate sensations of stress relief, sense of belonging, empowerment, a sense of accomplishment, interaction, pride, ownership, positive identity related to place. Secondly, *affiliation* can go hand in hand with the feeling of belonging as it emphasizes on various forms of social interaction, to be “free from non-discrimination on the basis of race, gender, sexual orientation, ethnicity, religion, national

origin and species,” which in the end can create a space where people are comfortable and feel motivated to participate (ibid). Lastly, *senses, imagination, and thought* describe the ability to use senses, imagination, cognitive reasoning, and learning, especially in environments of recreation and nature. By looking at our results through these lenses, we will be able to have a more comprehensive idea of the human-nature relationships that exists and how participants recognize their participation in community gardens in Oslo. With that we aim to draw inferences about self-reported social and emotional benefits. Table 2 below shows the definition of each capability. Moreover, the words marked in blue are derived from one of the first workshops at the kick-off project meeting facilitated by research leaders of Cultivating Public Spaces in end of 2017. The purpose of the workshop was to further develop and think about each capability in the Norwegian setting.

<p style="text-align: center;">SENSES, IMAGINATION & THOUGHT</p>	<p><i>“Being able to use the senses, imagine, think, and reason, including access to literacy and basic mathematical and scientific training; being able to use imagination and thought in creative, political and religious expression.”</i> <i>Learning new things, recreation, experience of being in nature.</i></p>
<p style="text-align: center;">EMOTION</p>	<p><i>“Being able to have attachments to things and persons outside ourselves; to love, to grieve, to experience longing, gratitude and justified anger. Not having one’s emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development) “</i> <i>Stress relief, sense of belonging, empowerment, a sense of accomplishment, interaction, pride, ownership, positive identity related to place.</i></p>
<p style="text-align: center;">AFFILIATION</p>	<p><i>“Being able to live with and toward others, to recognize and show concern for other humans, to engage in various forms of social interaction; to be able to imagine the situation of another, includes protecting freedom of assembly and political speech. Non-discrimination on the basis of race, gender, sexual orientation, ethnicity, religion, national origin and species.”</i> <i>Common purpose, building relationships, cross-status/cultures.</i></p>

Table 2: Three capabilities as defined by Nussbaum (2011 p. 33-34). The words marked in blue are our own interpretation, obtained from a workshop conducted by CPS research team.

The Attention Restoration Theory by Kaplan (1995) was adopted as a complementary theory to further understand and illuminate the indirect potentials of community gardens on attention restoration and aesthetic benefits. According to Kaplan & Kaplan (1989), the theory explains that being in nature is not only pleasant but can contribute to better concentration and improved ability focus. The theory grew from the late 1980s and early 1990s as people started to disconnect more and more from nature, and technology and indoor entertainment was getting more popular, also referred to as extinction of experience (Miller, 2005; Samways, 2006). Therefore, concerns were increasing about people lacking exposure to natural environments. The authors point out the importance of “getting away”, and how that might not be as easy for people living in urban areas. Natural environments that are easily accessible (e.g. community gardens) provide an important resource for improved focus (Kaplan, 1995). Their opinion on “effortless attention” comes from interacting in nature, which gives the brain a break, thus restoring its cognitive function. In this study, we aim to build further on the work of Kaplan & Kaplan (1989) in an urban natural setting, to see how the connection with nature impact urban dwellers’ well-being in a compact city.

2.10 Limitations of the methods

We would like to include some limitations that we are aware of in our research. Data gathered in this study was principally based on the information given to us by gardeners and visitors through face-to-face surveys and online surveys. The pre-made survey has a broad scope of the Capability Approach due to its link to the project Cultivating Public Spaces, which results in a limiting factor for us to develop more specific questions for the goal of this research. Often the survey approach provides only a "snapshot" of the situation at a certain point in time, yielding little information on the underlying meaning of the data (Gable, 1994). There are also potential response biases as surveys may not always result in accurate reporting, which can have an impact on validity will be discussed later. It would have been useful to do interviews or focus groups, as they could have led to a more precise and deeper understanding on the participants’ thoughts and reflections. For example, when asking about life satisfaction, follow up questions would allow for more depth and understanding about the variables that influence the participant’s answer. Another factor we came across was complacency bias, meaning that respondents may be influenced by what they think the interviewer would consider an “acceptable” answer (Parasuraman and Manzey, 2010). Asking a gardener to disclose his or her health status can cause feelings of embarrassment or judgement; which on the same note can cause similar feelings when asking visitors if they would like to spend more time in the garden. Regarding the online survey, participants were not able to clarify or ask questions if they

had doubts. At the same time, since the survey could be taken off-site, we were not able to fully regulate for unqualified participants. However, the delivery of the online survey was only based on member email lists and private Facebook groups.

A challenging aspect of the face-to-face surveys was the language barrier when participants noticed that one of us could not communicate in Norwegian. We found two different situations, one was with migrant participants who moved to Norway with a low level of English and had Norwegian as their second language. On the other side, we noticed that taking a survey in English made native Norwegians uncomfortable (usually the elderly), probably because of insecurities of not being able to communicate clearly in English. In general, Norwegian seemed to be the “comfortable” and preferred language for the most part. We tested this by asking participants if they preferred to self-take the survey with Norwegian text, which increased their willingness to participate. Another limitation was approaching participants randomly and asking them to participate in the survey. We presumed that wearing NMBU t-shirts was going to give us an advantage; however, one case it had an opposite effect. One possible explanation could be that our field work was programmed parallel to the local elections, which may have made us be perceived as volunteers from a political party or street marketers. In addition, people’s disinterest to take the survey could be due to loss aversion to the time spent by participating, as people’s subjective value for spending their time doing other things in the garden might be higher than their perceived value to participate in the survey.

Additionally, a larger sample size in both surveys, could might have strengthened the conclusions of this research. That way we could have yielded for representativeness or at least similar population sizes in both samples. Having acknowledged limitations, it is important to also note that our thesis process met multiple changes and delays that made our data collection period cluster limited to the last six weeks of harvest season. We also had unprecedented weather conditions and external factors that did not allow us to perform a wide outreach of our survey.

3 Results

We organize our results in three sections. The first section provides an overview of the activities that were enabled by the gardens and selected as most important for gardeners in the community gardens. The second section illustrates and clarifies how gardeners' self-reports on health and quality of life. The third section presents the results on the three studied capabilities. For each capability we present and interpret corresponding results on how gardeners and visitors self-report on sense of belonging and connection to nature.

3.1 Perceived importance of gardening activities

From a list of 15 of activities or human functionings performed at the garden (see Table 3), participants indicated how important each activity was for them, classifying them as *not important*, *little important*, *important*, and *very important*. To study the answers, we coded them from 1-4 respectively (see appendix VI). These activities are in accordance to the description from the Capability Approach (2011) and project Cultivating Public Spaces (Sirowy, 2017). Our results illustrated that our sample perceived most of the activities (12/15) as *important* (3). The most important activities were to be in contact with nature, learn about cultivation and connections in nature, socialize with others and contribute to the development of the area.

<i>How important are the following activities you can do here for you?</i>	<i>Urban Farmers</i>
<i>Grow your own vegetables</i>	3 (3,0)
<i>Learn more about cultivation of vegetables</i>	3 (3,1)
<i>Learn more about connections in nature</i>	3 (3,0)
<i>Be in contact with nature</i>	4 (3,3)
<i>Socialize/be with others</i>	3 (3,8)
<i>Practice Norwegian</i>	1 (1,5)
<i>Physical activity</i>	3 (2,5)
<i>Play with kids</i>	2 (2,2)
<i>Time to think/reflect</i>	3 (2,8)
<i>Get away from daily requirements</i>	3 (2,8)
<i>Do activities that are meditative to me</i>	3 (2,8)
<i>New challenges</i>	3 (2,8)
<i>Mastering new skills</i>	3 (2,9)
<i>Contribute to development of the area</i>	3 (3,1)
<i>Contribute to making the neighbourhood safe</i>	3 (3,0)

Table 3: Gardeners response on activity importance. Answers ranged from: *not important*, *little important*, *important*, and *very important*, coded from 1-4. Results are illustrated as: Median (Mean)

These results do not only illustrate levels of importance; in addition, they highlight connections that exist among gardeners and community gardens and allow us to make inferences about possible benefits. Quantitative data clarifies comprehensive evidence to complement our participant and observational notes. For example, we observed that gardeners came to the various gardens to socialize, not only to grow vegetables. Many of them invited their families and friends to the garden and enjoyed presenting their harvest to new visitors as well, especially during event days. One of the project coordinators told us during our first visit that *“people are usually very surprised when they walk by and realize that we have dinner evenings totally free of charge, even letting people take food home if there are leftovers.”* This brings a new perspective to people, one of being open and welcoming to share food to others. We experienced such a feeling on multiple occasions by sharing numerous dinners with the gardeners while conducting the surveys.

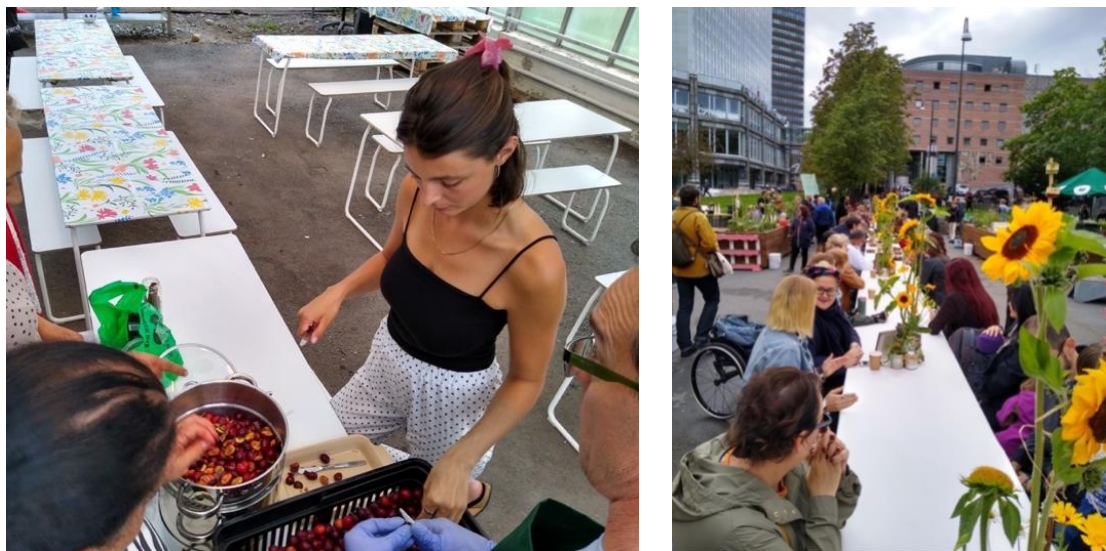


Figure 4: (left) Making juice from plums during an open cafe at Dr. Dedichens greenhouse. (right) Public dinner at Vaterlandsparken (Oslos lengste langbord). Photo: Carolina Hernandez

Visitors reported the surroundings in a few words. The results showed that the words *community*, *people*, *nature*, *food*, and *green* are among the most common characteristics to identify the community gardens (see Figure 5).

When questioning the gardeners’ perception of their own health, our analysis showed that nearly 40% indicated that their health is *very good* and roughly 30% said *excellent* and *good* respectively (Figure 7). Only 2% reported that their health is *bad*. In addition, from field notes at Voksenenga Nærmiljøhage, some participants emphasized that their health is *excellent*, especially after attending the yoga class that was a supplementary activity during an open day event at the garden.



Figure 7: The pie chart is showing results from the primary survey where we asked how their health is at present. The results show clearly that gardeners report good health.

The Table 4 below shows that 30% to 40% of all age groups indicated that their health is *excellent*, except age group 46-60 where the majority reported *good* and *very good*. Three age groups appear to report *fairly good* and *bad* under 10%. Education and occupational status did not show any correlation for health effects.

On the whole, would you say your health is?						
Age Group	Bad	Fairly Good	Good	Very Good	Excellent	Average/mean
16 - 30	0 %	5 %	14 %	41 %	41 %	4,1
31 - 45	0 %	3 %	22 %	44 %	31 %	4,0
46 - 60	4 %	4 %	50 %	39 %	4 %	3,3
61 - 75	7 %	7 %	29 %	14 %	43 %	3,7

Table 4: Presentation of gardeners’ age groups on self-reporting their general health status. To find the average we coded bad-excellent (1-5).

Wood et al. (2015) argues that individuals are more likely to present positive effects on well-being, such as longevity and mental stability when more green areas or well-maintained gardens are located close to their homes. Regarding the proximity to the community, our results show that 75% of the gardeners lived within walking distance to the garden. Many of the gardeners emphasized the importance of having a garden plot close to their home, as many of them live in apartment buildings with no access to a garden (66%). We believe this allows gardeners to maintain moderate levels of outdoor physical activity. For example, we experienced gardeners walking from their home to harvest their carrots for dinner. Although this does not determine impacts on levels of physical activity, benefits on health and bodily health have been found in other communities (Bogstad, 2018; Van den Berg et al., 2010). In conclusion, our results did not show how physically active the gardeners are, but rather they give an indication of how important it is for them to be active in the garden. The respondents reported that doing physical activity while gardening was *important* for them, scoring a median of 3 and a mean of 2,5 on a scale from 1 to 4 displayed in Table 3 above.

In addition, gardeners' viewpoint on how involvement has influenced how they feel at present scored high (Figure 8), on a scale from 1 to 7 (1 = to a little extent / 7 = to a great extent). Analysis shows a median of 5, and an average of 4,5. During an informal conversation with a member, she shared with us that her involvement had encouraged her to be active, by participating in gardening and organizing the weekly cafes even though she had serious chronic health issues. She said, "*at home I feel tired and in pain, but when I come here every week I run around and smile. This gives me strength and I forget about my health condition*". This kind of participant observations allowed us to get first-hand impressions of how gardeners experience the gardens and how it motivates them in emotional and physical ways. Several researchers have made a link between garden participation and health benefits (Litt et al., 2015; Genter et al., 2015) which is in line with our findings.

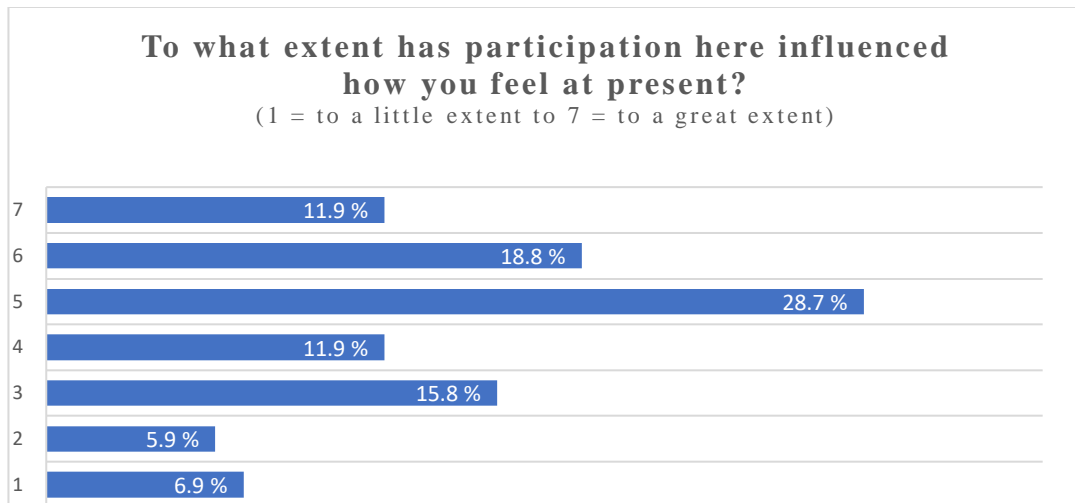


Figure 8: The majority of gardeners indicated that being a member at the various gardens has a positive effect on how they feel at present.

Additionally, results from gardeners and visitors showed us that from their perspective the gardens were well suited for allowing them to disconnect from their daily responsibilities and revitalize mentally. Gardeners answered this question with a median of 6 and a mean of 5,7 ($SD_1=1,4$) while visitors had 5,4, and ($SD=1,3$) respectively. This question allowed us to build material to test for restorative activities following the Attention Restoration Theory framework. In addition, we asked visitors about perceived outcomes from the gardens. For example, 83% of the population had previously noticed the gardening activities in the neighborhood. Also, 85% reported that the use of the place has changed due to the gardening activities. Subsequently, we asked if they perceived that more people, children, and community groups (diversity) use this area, to which 73% said more people, 45% said more children, and 70% said there is more diversity in the group of people who use the area.

In addition to other changes, participants were asked if the presence of the garden has changed their aesthetical experience of the area. Respectively, 80% of the respondents said the place has become more beautiful and 59% said tidier. When it came to safeness, 45% said safer while 26% said unchanged. Noise levels is a more complex variable, since responses depend to a great extent how much time they spend in the area, and their subjective sound tolerance. Results showed 35% unchanged, 20% do not know, 20% less noisy, 13% more noisy, and 13% of the population did not answer this question. Overall, 87% of the participants said that all the changes have been for the better of the place.

¹ Standard deviation

3.3 Self-reports on sense of belonging and connection with nature

3.3.1 Emotions

As described before, *emotions* as a capability can involve multiple functionings, one of them being *sense of belonging*. To analyze it, the primary survey asked the following questions regarding feelings towards the garden: “Do you feel that you belong here?” and “To what extent do you feel that this is your place?” The former being more socially oriented, whereas the latter one indicating a feeling of ownership (see Table 6). Results illustrate a relatively high sense of belonging and ownership between gardeners and their community garden. Interestingly, similar responses were given by visitors, however, they referred to the feeling towards the neighborhood rather than the garden. By looking at the different age groups and gender in particular (see Table 5).

Self-reported sense of belonging							
(1= to a very little extent / 7= to a very great extent)							
Age Group	1	2	3	4	5	6	7
16 - 30	0 %	0 %	9 %	14 %	27 %	32 %	14 %
31 - 45	3 %	6 %	3 %	19 %	28 %	19 %	22 %
46 - 60	4 %	0 %	4 %	25 %	21 %	25 %	21 %
61 - 75	0 %	0 %	0 %	7 %	21 %	36 %	36 %
Gender	1	2	3	4	5	6	7
Women	3 %	1 %	5 %	19 %	23 %	24 %	24 %
Men	0 %	4 %	0 %	19 %	33 %	30 %	15 %

Table 5: Sense of belonging to the garden illustrated by gender and age groups. Higher levels of belonging are seen in older age groups, and with a wider distribution in women.

Another factor for analyzing *emotions* was collective action and sense of accomplishment. Therefore, the survey asked participants to report their capacity to take part in the development of the garden (see third question in Table 6). Gardeners reported positive results, with a median of 6. It is important to note that for this question we had 10 participants who did not answer, reducing our population size to 92.

	Gardeners	Visitors
<i>Do you feel you belong to this place/neighborhood?</i>	5 (5,2)	6 (5,6)
<i>To what extent do you feel that this is your place/neighborhood?</i>	6 (5,2)	5 (5,1)
<i>To what extent do you feel you can affect the development of this place?</i>	6 (5,2)	N/A
<i>How strongly are you connected with nature?</i>	5 (4,8)	5 (4,7)

Table 6: Combined results from primary and secondary surveys on sense of belonging, capacity to contribute, and connection with nature. Results work with a scale (1= to a very little extent / 7= to a very great extent), where the first number is the median and the number in parenthesis is the mean. Results show high levels on each question.

From conversations and observation notes, we had testimonies from participants stating that being part of community gardens has effects of their sense of belonging and loneliness. For example, a woman who migrated to Oslo a few years ago said:

“In the beginning when I didn't have much to do, cultivating helped making the days more eventful. Now I have learnt so much from being involved” I go there 2-3 times per week, even though I live in Gamle Oslo now. - Gardener at Ellingsrud Parsellhage

Participants stated the importance of being involved in a community garden as loneliness in Oslo seemed to be a central topic during conversations. Here a quote from a gardener at Voksenenga:

“It (loneliness) is still a taboo topic. 1 out of 5 are lonely in Norway. About the garden - some people come to the garden to socialize, to be with somebody, to feel like they belong somewhere and to meet people”. - Gardener from Voksenenga Nærmiljøhage

Another gardener at Voksenenga stated the significance of meeting regularly at the garden:

“Having a regular meeting day (every Tuesday) makes people look forward to something each week. You know you will meet somebody that day” – Gardener at Voksenenga Nærmiljøhage

On the other hand, a few visitors showed an adverse perspective from the gardeners, as they did not have the same emotions about the inclusiveness of some gardens. For example, one person who passes by Sagene Takhage weekly to attend yoga classes said:

“The place does not look so inviting. I am not sure how to interact. There are few hang-out spots and it's not a place you only drop in; except when you go to this yoga place or live in one of these buildings”– Member of the yoga studio

At Sofienbergparken a neighbor who walks his dog daily at the park said:

“For me, the place needed better management, more tables around so people can sit nearby, better information material, and better organization with the crops and members. There is still an invisible barrier that can be felt by people passing by.”

3.3.2 Affiliation

To study affiliation, we looked at the different functionings and freedoms that its definition entailed (see Table 2). However, for the scope and limitations of this study we decided to explore the social interactions in our study population. Our first factor exhibiting social qualities was a question in Table 3, where the activity *socialize/be with others* was ranked as important by the majority of the gardeners. To complement this question, we asked about their ability to build social bonds since they became gardeners. In total, 97 % have gotten new friends, and 43% take these relationships off-site, which is a clear indication of benefits in their social circles.



Figure 9: (left) Eritrean bread at Voksenenga Nærmiljøhage during open day event. (right) Pineapple growing at the parcels in Ellingsrud Parsellhage. Photo: Carolina Hernandez.

In our study population, 45 % of gardeners were migrants, showing a high degree of diversity among the selected gardens, which was very clear to us when visiting the gardens. As shown in the pictures, gardeners have tried to cultivate traditional foods and shared traditional coffee and baked goods from their countries. One gardener told us that cultivating was very important for him here in Norway. Back in their hometown, their family and cultural traditions had a strong connection with agriculture and being able to cultivate helped reencounter traditions and cope with cultural differences in Norway. Also, a gardener from abroad said she has tried to teach her food culture to other members

of the garden and even to cultivate traditional crops from home in the garden. Although the size was noticeably different, cultivating it made her glad.

3.3.3 Senses, Imagination and Thought

From the Capability Approach definition of *senses, imagination, and thought*, we decided to mainly focus on aspects highlighting connection with nature. This is because of the relevancy to gardening activities and our involvement in the project Cultivating Public Spaces. Participants were asked to describe their connection to nature by selecting a number. The median for gardeners was 5, with a mean of 4,8 (SD=1,2). On the other hand, visitors scored a median of 5 and an average of 4,7 (SD=1,2). This illustrates a generally high connection among gardeners and visitors.

To draw a more comprehensive analysis, we looked at the differences in age, gender, education level, and place of birth. For example, the older the participant, the higher the probability of connection to be between 6 and 7 (see Table 7). Also, we found that women tended to have a more spread distribution, whereas men had the majority of the responses at 4. For education level and place of birth we did not find any prevailing characteristics

How strongly are you connected with nature?							
(1 = to a little extent / 7 = to a great extent)							
Age Group	1	2	3	4	5	6	7
16 - 30	0 %	0 %	9 %	45 %	27 %	14 %	5 %
31 - 45	0 %	0 %	17 %	36 %	28 %	8 %	11 %
46 - 60	0 %	4 %	4 %	33 %	22 %	26 %	11 %
61 - 75	0 %	0 %	0 %	21 %	7 %	43 %	29 %
Gender							
Woman	0 %	1 %	11 %	31 %	23 %	21 %	13 %
Men	0 %	0 %	8 %	46 %	23 %	15 %	8 %

Table 7: Connection with nature compared to age group and gender in primary survey. Numbers are percentages of the population.

In addition, when we asked gardeners how important it was *to learn about connections in nature* and *to be in contact with nature* while being in the gardens, the most common responses were *important* and *very important* respectively. Moreover, multiple kindergartens and high school groups have

cultivation plots to learn about food production, which can in the long run strengthen feelings of biophilia². Various participants shared information about their bond to the garden.

“We come here to talk about how much our squash has grown, not about our work. That is not interesting here.” - A quote from an informal conversation with a gardener at Voksenenga Nærmiljøhage

“Being in contact with nature again helps them (her family) to feel better being in Norway.” – Gardener at Dr. Dedichens Drivhus



Figure 10: School cultivation bench at Dr. Dedichens Greenhouse. Photo: Carolina Hernandez.

Participation in community gardens has shown evidence of increasing and strengthening appreciation for food and nature (Alamo et al., 2016; Wood et al., 2015, Stafseng, 2019). Although we did not ask questions about food appreciation specifically, evidence from participant observations and field notes confirm claims in literature. For example, a gardener at Sagene Takhage mentioned, *“even though I am young and have many social events, being part of the garden really makes me feel like I can contribute to the development and have gained appreciation for food from the start”*. In addition, a project manager shared that she has seen many children being more enthusiastic to eat vegetables when they grow them themselves. Although she has not asked members directly, she assumed their consumptions and food selection has improved.

² “The so-called biophilia hypothesis states that human preferences towards things in nature, while refined through experience and culture, are hypothetically the product of biological evolution” (Verheij et al., 2008).

4 Discussion

The above findings illustrate that many of the activities, referred as human “functionings” in the Capability Approach, were enabled by the community gardens studied in this research (Sirowy, 2017). Positive effects on self-reported health and well-being were found. The results also show trends that allow us to make inferences on connection with nature and sense of belonging. The following section will examine these results within community gardens in Oslo through the three human capabilities from the Capability Approach.

4.1 Interpretation of results on motivations and well-being

In regard to our first research question which aims to find out what types of activities can be enabled by the gardens and are perceived as most important for gardeners, we found that 12 out of 15 were identified as *important*. These findings have also been experienced in other literature (Capaldi et al., 2014; Soga et al., 2017; Wood et al., 2016). Nordh et al. (2016) finds similar results when studying traditional allotment gardens (kolonihage: private gardening plots with a small summerhouse attached) in Oslo. In the study, having a place for children to play, a place to cultivate and to be in contact with the outdoors are the main reasons for getting involved. The two latter motivations directly align with our findings. However, using the garden as a place to interact with children was not necessarily important for those participating in our survey. This difference may be due to the presence of a small summerhouse in the allotment gardens. Nordh et al. (2016) also point out the self-reported benefits of using the garden. For instance, meaningful activities, social life, and the garden as a “respite from the city life” were the main factors. This correlates to our findings as many of the activities chosen by the gardeners (*meditative activities, socialize, be in contact with nature, contribute to the development of the area*) are examples with direct and indirect links to those three factors. In addition, from the secondary survey we found that for visitors it was clear to recognize the core elements of community gardens, as the most common words when asked to describe the place were *community, people, nature, food, and green*. Using a word cloud to illustrate how visitors of the garden experience the place was very useful to get an impression of what predominantly stands out to them.

In addition, when analyzing the results on current levels of life satisfaction in gardeners, we found that their results show positive records of satisfaction (Figure 6). Satisfaction with life, among other variables such as happiness and neuroticism are often used by researchers in the area of subjective well-being (Eid and Larsen, 2008). In this study, the question “*When you think about how you feel*

nowadays, are you largely satisfied with life, or largely dissatisfied?” allowed us to study how our sample reports on one common variable for evaluating well-being, which is life satisfaction. Similar findings have been observed before. A study by Van den Berg et al. (2010) found that users in allotment gardeners had a higher life satisfaction, reduced loneliness, fewer health complaints and better overall health and well-being than non-users. In addition, community gardening might also play a key role in promoting health and well-being in the more vulnerable groups in society through the development of social support and cohesion (Wood et al., 2015). For example, in a study of urban gardens in Barcelona, gardeners categorized physical and psychological benefits as the second most valuable benefit of gardening (Calvet-Mir et al., 2017). It requires low intensity activity that can be done without the mind consciously allowing it, which in the case of the elderly and other vulnerable groups, can be a great tool for encouraging mobility.

When it comes to other aspects of well-being, such as mental and physical health, our sample of gardeners showed positive indicators of self-reported health (Figure 7), including high levels of perceived importance in physical activity, meditative rituals, and learning accomplishments (Table 3). By health, the purpose was to let the participants make their own self-assessment of how they feel about their general health status, including overall physical, mental and social well-being. However, this question can be influenced by external factors or subjective perceptions of health. It is important to interpret these results with caution as they can be an expression of random variations. For instance, surveys were conducted during events with a diversity of themes (“dugnad”, festivals, community dinners, yoga sessions, baking courses, open cafes etc.). Therefore, it can be argued that the gardeners could have been stimulated by for instance the social environment or weather conditions. As mentioned, some participants emphasized that their health is excellent right before attending a yoga session in the garden. From descriptive field notes, we observed a tendency for some participants to be eager to report “positive” responses which may have been induced by various external factors, leading to the potential of having response bias. Response bias is when participants have the tendency to respond inaccurately (Furnham, 1986). This kind of biases are found in research involving self-reporting such as in our case – surveys. A possible explanation may be the phrasing of the question, the tone of voice of the researcher or the surrounding setting. This could potentially drive the participants to respond in an extreme way, especially if it relates to the motivations of the participants. The fact that we as researchers were aware of this limitation in our study design, minimized the risk of focusing solely on this method. Our analysis does not show the gardeners individual judgement of their own health, whether being physical, mental or disease status, but only their perceived general health status on the selected days, which may vary from day to day. Statistics

from Oslo Kommune (2016) shows that 82 % reported their health as *very good* and *good* in 2015 when asked in a personal interview about their general health status. This could mean that our sample is typical for Oslo's citizens. However, in other bodies of literature effects on health benefits have been found through gardening activities. According to Alaimo et al. (2016) through a scientific literature review on recreational gardening, it is indicated that gardening enhances good mental health status through a number of paths, including stress reduction, social inclusion, contact with nature as well as an improved sense of well-being. Another review of 20 studies that compare mental illness in urban and non-urban areas found that people residing in urban places are more likely to develop mental illness, to suffer from anxiety and mood disorders (Wood et al., 2015). In fact, Calvet-Mir et al. (2017) state that the recognition of various cultural services can be highly linked to the challenges of having an urban lifestyle. The isolation in human contact and the loss of ecological knowledge are some of the symptoms of urbanization, for which Alaimo et al. (2016) states that community gardens provide “a place for individuals to directly experience the process of growing food in addition to the vast array of emotional and social processes that link the gardening experience to health and well-being” (p. 304).

Regarding physical health, we noticed that being involved in the gardening activities required a moderate level of activity. Physical activity should not be understood as exercise. Examples of physical activity in community gardens that were observed during data collection included digging, harvesting, watering and weeding. A study from the Netherlands found that people living within 1- and 3-kilometer distance from green areas reported different health effects. More green space in people's living environment contributed to less feelings of loneliness and fewer health complains (Maas et al., 2009). Also, being able to be active in the gardens was an important activity that encouraged participation in our sample (Table 3). “Green exercise” is a term used when being physically active while exposed to nature (Wood et al., 2015). Literature shows that “green exercise” provides mental well-being benefits. Regarding physical activity among gardeners and visitors, Van den Berg (2010) conducted a study to compare these two groups of physical activity. The study found that the plot owners were more physically active compared to their non-gardening neighbors. According to the World Health Organization (WHO), (2018) there are significant health benefits by doing physical activity, including reduced risks of diabetes, hypertension, depression and stroke just to mention a few. It is recommended to do at least 150 minutes of moderate physical activity throughout the week. Only one-third of the population currently achieve this recommendation in Norway (Hansen et al., 2015).

In contrast, several other studies have shown little to no association between health outcomes and public green spaces. The authors have concluded that the lack of association might be because green spaces are abundant in the cities, and thus very exposed to the citizens (Lee and Maheswaran, 2019; Picavet et al., 2016; Annerstedt et al., 2012; Richardson et al., 2010). This could also be true in Oslo, as the city is perceived as a green city where 95% of the inhabitants have access to a public green space within 300 meters distance (Oslo Kommune, 2019c). A recent study done in Oslo found no clear association between urban green spaces and lifestyle health disorders in Oslo. However, the findings showed that self-reported mental disorders were the only positive results associated with greenness (Ihlebak, 2017).

Lastly, a framework that allowed us to study well-being benefits of the community gardens was the Attention Restoration Theory by Kaplan. The theory states that being in contact with natural environments even on the smallest scale, such as viewing nature from a window, can have micro-restorative effects on health and mental stability. In our results, gardens showed capacity to be suited for disconnection from daily life, as evaluated by gardeners and visitors (see section 3.2). Kaplan also recognizes components in nature as restorative environments, for instance the feeling of *being away*, *fascination with the surroundings*, *extent of the physical environment*, and *compatibility* between “natural setting and human inclinations,” as qualities that help individuals recover from mental fatigue (1995, p. 174). In our sample of gardeners, many human functionings that included such elements were highlighted. For example, the garden allowed them to get away from daily routines, have time to think and reflect, learn about connections in nature and be in contact with nature, to master new skills and to do meditative activity (Table 3). The Attention Restoration theory suggests spending more time in natural environments can be an effective mechanism to “time-out” from daily attention demanding duties which can be associated with a modern, busy and stressful life (1995). For which, we found that being in nature through gardening can be an important tool to allow participants to recover from attention fatigue and to reduce stress. In addition, we asked visitors who lived in the neighborhood about their perspectives on different aesthetic changes caused by the garden. This question sought to study potential restorative experiences due to changes in visual appeal of the neighborhood and community involvement. Findings shows that from an aesthetic view, the gardens had become more beautiful, calm, and safe places. Especially for the case of Vaterland, which is located in Grønland, one of the most vulnerable and crime prompt areas in Oslo, visitors claimed that the presence of the garden has made the area safer. In addition, people noticed that the gardens had made the green areas more livable as they agreed to the changes contributing for the better of the area, including more public attendance and more local activities. A study in

Barcelona has also supported such aesthetic benefits (Calvet-Mir et al., 2017). In conclusion, our findings show that community gardens in Oslo are qualified by gardeners and visitors as places for getting restorative experiences. However, literature found about restoration in urban agriculture is still limited (Weber & Trojan, 2018).

4.2 Self-reports on sense of belonging and connection with nature

As discussed in the methods, we used three aspects of the Capability Approach to study sense of belonging and connection with nature. They were *emotions*, *affiliation* and *senses, imagination & thought*. Results on sense of belonging, either to the garden or the neighborhood, indicated high levels of belonging, ownership and inclusion, which associates with the capability of *emotions*. Similarly, Bogstad (2018) points out the key role of gardens for transforming an empty public space into a “purposeful activity within the local community” when doing her case study at Voksenenga Nærmiljøhage. Even for neighbors around the area, the garden brought the feeling of pride in a district that has somehow been stigmatized for a low status quo (ibid). Similar findings can also be found in literature (Nordh et al. 2016; Litt et al., 2015). Teig et al. (2015) say “environments where individuals feel connected to one another tend to be environments where individuals feel they could take action together” (p.1). Improving a sense of belonging can also reduce loneliness, which was mentioned by many gardeners in our sample. A study done by Vrålstad for Statistics Norway (SSB) about quality of life and social relations, showed new statistics of people that undergo loneliness in Oslo (2017). Indicators have shown that loneliness is more common among people that have a low level of education, employment, or income. Regarding location, the study shows that Oslo scores higher in loneliness compared to other cities in Norway (ibid.). Also, relatively more women than men experience loneliness. Three times as many of those who experience poor health also experience loneliness, compared to those who say they have excellent or very good health (Thorsen and Clausen, 2009). Other studies show similar results (Berg et al., 1981; Tornstam, 1988; Luanaigh and Lawlor, 2008). Poor health can lead to more loneliness and feelings of loneliness can cause poor health. Analysis showed a stronger connection between loneliness and mental health than between loneliness and physical health (Thorsen and Solem, 2005). Therefore, a common meeting place that stimulates social bonds and cognitive fulfilment can be crucial for reducing the feeling of loneliness. A low-threshold opportunity like community gardening can function as a social meeting place where people meet neighbors and other people from the local community. In our sample, psychosocial activities were corroborated to be important at the gardens in Oslo.

Moreover, to study *affiliation* as a capability we looked into the social interactions gained through the participation at the gardens. As mentioned in the results, gardening allowed the creation of many social relationships and in some cases strengthened them well enough to go beyond the garden interests. Similar findings are seen in a systematic research review made by Genter et al. (2015) where in multiple cases strong social bonds are built through the participation in allotment gardens. When it comes to cultural inclusion, different cases around the world have used community gardens as a tool for social cohesion and well-being for minority groups (Mok et al. 2014; Alaimo et al. 2016). In a study of urban gardens in Barcelona, gardeners categorized social and cultural benefits as the most valuable rewards of gardening. This was also perceived in our sample as almost half of the gardener's population was migrant, which stood out during the event days as they would usually bring their families along, in addition to traditional foods and other cultural traditions. That gave us important evidence on how gardening in Oslo can be used as a multifunctional tool to increase multicultural understanding among native Norwegians and aid cultural adaptation for migrants. In addition, this allowed us to extrapolate on possible social benefits from community gardens, which has also been claimed by other studies where “urban agriculture efforts are well positioned to help citizens cultivate lasting relationships across lines of difference and amidst significant power differentials—relationships that could form the basis of a community’s collective capacity to shape its future” (McIvor and Hale 2015).

Lastly, to evaluate the capability on *senses, imagination, and thought*, we looked into how gardeners and visitors perceived their connection with nature. Although we found high levels of connection with nature in both populations, gardeners and visitors, the results do not justify cause and effect because of the possibility of external variables affecting the relationship and because our results do not show an exclusive correlation between gardeners and high connections with nature. A possible explanation for this could be the geographic advantage that Oslo has as a city, as out of 454 square kilometers of total area, 300 sq. kilometers are from the Marka forest (Oslo Kommune, 2019d). Nevertheless, the results still depict some level of connection rather than no connection at all and serves as information to describe characteristics that exist in a sample of the population of gardeners in Oslo. For example, our sample shows a positive correlation between older age and connection with nature, as well as women feeling more connected with nature in different levels than men. This gender differences has been observed in previous studies (Mayer and Frantz, 2004). In addition, other studies show that spending time doing gardening activities can unleash feelings of biophilia, which innates the human tendency to seek connections in nature (Calvet-Mir et al., 2017; Verheij et al., 2008). Similar findings stating strong connections with nature when participating in regular

gardening are found in a study on garden allotments in the UK (Wood et al., 2015). Nordh et al. (2016) discuss the general tendency for Nordic communities to appreciate outdoor activities and being in nature, which is not only visible in their findings, but in other studies as well (Litt et al., 2015; Evensen et al., 2016; Bogstad, 2018; Veen & Eiter, 2018; Stafseng, 2019). It is also important to point out that this study found high levels of satisfaction with life, and similar results were also observed before (Capaldi et al., 2014).

4.3 Validity and Reliability

Reliability and validity are crucial when investigating what was intended to investigate (Thatcher, 2010). All phases of the research – from data collection through analysis and discussion we will examine and to build up the reliability and validity, as for defining and measuring potential biases. In terms of reliability and validity, literature shows that applying closed-ended questions can lead to more accurate data and more definite analysis. According to Fowler & Cosenza (2009, p. 398), they have observed that “the answers are probably more reliable and valid when a list is provided than when the question is asked in open form”. In our case, the majority of our questions were closed ended with the exception of two questions from the survey that were open ended. This required us to categorize them in order to get a conceptual overview. However, categorizing them was not simple, as many responses would overlap with each other in factors such as family, friends, and nature. For that reason, we could only use them for showing indicators rather than supporting evidence.

During our data collection, we were usually two researchers, and in some instances, we were also accompanied by researchers from Cultivating Public Spaces. This allowed us to practice analyst triangulation throughout the whole process; field work, data collection, analysis of data and discussion. Sharing the information between each other helped the research get an in-depth review of the findings and observations. Using multiple observers adds more perspectives and sheds light on blind spots during the data collection and analysis. Reliability issues are associated with subjectivity (Babbie, 2010). Hence, checking in with each other and with the research team, allowed to control the observer’s subjectivity.

In order to strengthen validity, we have used triangulation method by gathering data from a survey, participant observation and informal conversations which could confirm the findings. If the findings we have obtained are in accordance, we can be sure that the data collected is valid (Zohrabi, 2013). For example, in some cases observations in the gardens have confirmed results obtained from the

survey, therefore providing a better understanding of the motivations of gardeners in Oslo related to their well-being, sense of belonging and connectedness to nature. In addition, we had two contrasting populations that allowed us to analyze the results of some questions that were included in both surveys from a more objective viewpoint. The question about connection with nature (see Table 6) is an example of it. Here we could not say that gardeners are intrinsically more attached to nature than visitors. It could be that the study population we had at hand for the visitors were very connected with nature in other ways, which did not exclude them from ranking high in our scale (see Table 7). Lastly, we also applied triangulation of sources by looking at secondary data, specifically on similar studies in Oslo and similar farms. That way, we could see if our results would vary in a small or big extent from the studies conducted previously. We also managed to compare and support findings among studies, that way illuminating the field of research on community gardens in Oslo. However, it is important to point out that the data collection period happened during the autumn on selected event days. Therefore, the replicability of our research is challenging, as the participants might report differently in a different setting and at a different time of the year. Additionally, passersby or the secondary population are people who randomly passes by the garden, and do not share the same characteristics as our main population being gardeners. Consequently, the results presented cannot be applied in other areas.

4.4 Implications for further research and practice

This research was done through a collaboration between the research project Cultivating Public Spaces and our master thesis at the Faculty of Biosciences. During our research, we were able to apply material developed by researchers and members from CPS, which allowed us to build on previous empirical research on social and emotional benefits of urban agriculture. However, the level of complexity of human-nature relationships goes beyond what this research could attain. Although implications can be drawn for how community gardens can influence quality of life and well-being, in addition to a perceived potential for multifunctional green spaces. This research has an exploratory profile and thus further research is necessary to determine relationships found in a greater depth. In this research, indicators show positive results of sense of belonging and connection with nature in participants, for both gardeners and visitors. Evidence of this has been observed before (Martin & Czellar, 2016; Litt et al., 2015). However, the complexity of these factors needs to be further addressed in order to determine cause and effect relationships. One suggestion can be to apply a different conceptualization of connection with nature and sense of belonging, which might provide different results. Mayer and Frantz (2004) apply the connectedness to nature scale (CNS) and the

new environmental paradigm (NEP). In addition, we found positive results in life satisfaction among gardeners, for which we suggest further exploration, given that we also found high levels of connection with nature. In a study by Capaldi et al. (2014) a small positive correlation was found between these two factors. Findings with a stronger correlation significance can provide useful information to aim political decisions for improving public quality of life and well-being on the local and national level. Our research has provided insight on gardeners' motivations for participating, some of them being consistent with other literature (Capaldi et al., 2014; Soga et al., 2017; Wood et al., 2016; Nordh et al., 2016). However, additional analysis of the challenges for participating could shed light on a more comprehensive view of urban agriculture in the Norwegian setting. A follow-up research and a continued study on the topic over time could strengthen the validity of this practice and therefore encourage future implementation of urban agriculture in different green spaces within cities in Norway (Ihlebak et al., 2017; Bogstad, 2018).

During our field work and analysis, we discovered that our sample benefited from diversity in age, occupational status, and background profile. Almost half of the population of gardeners were migrants, which allowed us to shed light on how urban agriculture in a city like Oslo can strengthen multicultural ties and aid integration. On the other hand, it was challenging to establish differences among gender as more women were willing to participate in our survey than men. Therefore, encourage for future research to increase the number of total participants as well as having the same number of gardeners and visitors. For instance, our visitor sample allowed us to build inferences on how the presence of community gardens can affect the community around. However, to explore a more profound effect of the indirect effects of community gardens, future research should expand on visitors' reasons for not participating. In addition, the development of our sample was dependent on participants' availability on selected event days and their desire to be a part of the study. Therefore, having a more strategical random sampling method could perhaps illuminate different views on social and emotional benefits of urban agriculture. Nevertheless, this study provides a rich foundation of a sample of the population of gardeners in Oslo that can be used in connection with other studies to highlight deeper relationships and aspects of urban agriculture. In addition, we provided aesthetic perspectives of how urban agriculture, besides providing a space for social activities, can also offer restorative experiences by creating changes in the landscape, noise control and safety. These findings have been observed before (Evensen et al., 2016) and can be useful for influencing decision making in urban planning. In fact, a recent literature review done on the restorative potential of green urban agriculture suggests more opportunities for exploration on urban green areas as there is little practical use due to limited research (Weber & Trojan, 2018). Therefore,

this research can in connection with other studies in Oslo (Evensen et al., 2016; Nordh et al., 2016, Bogstad, 2018; Veen & Eiter, 2018; Stafseng, 2019) serve as evidence of the development of urban agriculture, which has been facilitated by the municipality of Oslo. In addition, it can be an important tool for encouraging further development of the city's public green spaces and its multifunctional use.

5 Conclusion

In this research we collect data that provided an understanding of the lived experiences of participants who take part in the community gardens. This study is different from previously conducted studies in Oslo (Nordh et al., 2016; Bogstad, 2018; Veen & Eiter, 2018; Stafseng, 2019) in the way that it takes a broader perspective, by studying seven different gardens, two population surveys (primary and secondary/tertiary) and by using two conceptual frameworks: Nussbaum (2011) and Kaplan (1995). Similar studies that apply only the Attention Restoration Theory have provided fruitful results (Nordh et al., 2016; Bogstad, 2018). However, one of them suggests that applying further conceptualization of quality of life through the Capability Approach by Nussbaum can highlight underlying characteristics beyond her research (Bogstad, 2018). For example, Stafseng (2019) applies the central capabilities in two cases in Oslo using a different set of capabilities from the ones of this research. This means that in connection with the present results, the development of a database highlighting the qualities of urban agriculture for affecting quality of life is becoming richer and more valuable for practical use.

The aim of this research has been to explore what motivates gardeners to participate in community gardens in Oslo and whether the source of motivation shows reinforcement of quality of life aspects, as described by the Capability Approach by Martha Nussbaum. In addition, we aim to build further on the work of Kaplan & Kaplan (1989) by evaluating the qualities of urban natural settings, in this case community gardens, for providing restorative experiences to the community around. We used the observations of people visiting the gardens, as they are presumed to not have the same symbolic attachment to the garden as the gardeners, and thus can provide a more objective description of the aesthetic and social changes the garden provides.

Our findings provide valuable insight to community gardens in Oslo. For example, we found that the gardens provide multiple activities that are important for the people having the closest contact with it. Some of the benefits overarching the results are the capacity for gardeners to be in contact with

nature, learn about cultivation and connections with nature, socialize with others, contribute to the development of the area and others (see Table 3). Our findings do not only show motivational factors for participation, but also, they represent what types of human functionings are enabled by urban agriculture, based on the Capability Approach. For the scope of this research, we focused on two aspects provided by three of the capabilities developed by Nussbaum. They are connection with nature and sense of belonging, which are represented by the capabilities: *emotions*, *affiliation*, and *senses, imagination and thought*. Results show a relatively high sense of belonging and ownership (*emotions*) between gardeners and their community garden, in addition to positive feelings towards their capacity to contribute to the development of the place (see Table 6). In addition, visitors experience similar levels of sense of belonging and ownership; however, they refer to the neighborhood instead of the garden.

Urban gardens have previously shown qualities for allowing people to come together and shape friendships (Litt et al., 2015; Erwein, 2014; Wood et al. 2016; Teig et al. 2009). This study was not an exemption, as roughly the entire population of gardener's report to experience new encounters with people as they participate in the gardens, and almost half of them also claim to take their relationships outside the garden limits (*affiliation*). In addition, our population illustrates a sample with nearly half of its participants to be migrant. This is an interesting finding that provides an insight of the capacities that gardens have to be an arena for multicultural learning and integration, as well as shedding light to aspects of urban agriculture that have not been discovered in previous studies in Oslo. Lastly, we evaluated self-reported connection with nature from gardeners and visitors (*senses, imagination and thought*). Interestingly, we found a strong connection with nature in both groups studied. As previously discussed, it is suggested to not take this result as cause and effect as there might be other factors influencing connections with nature. For example, Oslo is a city with a broad range of green infrastructure (Marka forest) that can predispose citizens to perceive nature very close to them.

This thesis aimed to investigate gardeners' self-reported health and quality of life. Based on face-to-face surveys, online surveys, observation and informal conversations it can be concluded that gardeners feel satisfied with life and the majority of the primary participants self-report their health as good and very good. It is important to note that other variables might be influencing and therefore is not used to support evidence of causality. The majority of urban farmers report that participating in the community gardens clearly has a positive impact on how they feel at present. In addition, gardeners and visitors recognize the potential of the gardens to be suited for relaxation. Gardeners

feel they can disconnect from everyday life, do meditative activities, bond with nature and revitalize mentally, which goes hand in hand with the attention restoration theory by Kaplan (1995). Visitors can recognize positive changes in the use of the place since the garden is in place, with more people, children and diversity groups using the garden. These results are important factors to consider the potentials of community gardens.

This study contributes to the frontier of knowledge on urban agriculture in Oslo. By exploring a specific population, we were able to learn more about the current relationships that exists between certain variables during a period of time. That being said, it is important to have in mind that further studies that explore these findings in greater depth and for a longer period are necessary for strengthening validity and replicability. Nevertheless, given the rapid urbanization and modern indoor lifestyle, the need to reconnect with nature and value the natural services that our ecosystems provide can be essential for ensuring a future with high levels of human well-being, as well as ecological well-being. A statement that has also been made by the UN-Sustainable Development goals (United Nations, 2019). This research aims to serve as a reminder of the perceived benefits of small-scale human-nature connections that can function as health promoting mechanisms and preventive work for public urban green spaces.

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Appendices

I. Gardening initiatives and event days summer/autumn 2019

Overview of the urban agriculture initiatives in Oslo

This document provides an overview of the various urban agriculture initiatives and is derived from unpublished data from the Cultivating Public Spaces research project. Pictures are taken from Google Maps.

Ellingsrud Parsellhage

- Established 2016
- Size: 20x40 meter
- Allotment garden with 54 participants (according to new video) (2018)
- Participants pay 50 kr a year for a lot
- Organised by Anne Grete Orlien (retired) on a volunteer basis
- Bymiljøetaten, Oslo Kommune owns the land, agreement between them and the organizer



Events:

- August 24th: Open Day

The allotment garden was started from an idea posed at a local community conference about climate. After some six months Anne Grete got an agreement with Bymiljøetaten for 20x40 meter in an area next to a farm and a sports hall. The area is regulated for sports, but they apply every other year to get the exemption. They started with 7-8 boxes in 2016, increased to 21 in 2017 and have now 34. There are 54 participants and there is now a waiting list. Aktivitetsskolen is there with children.

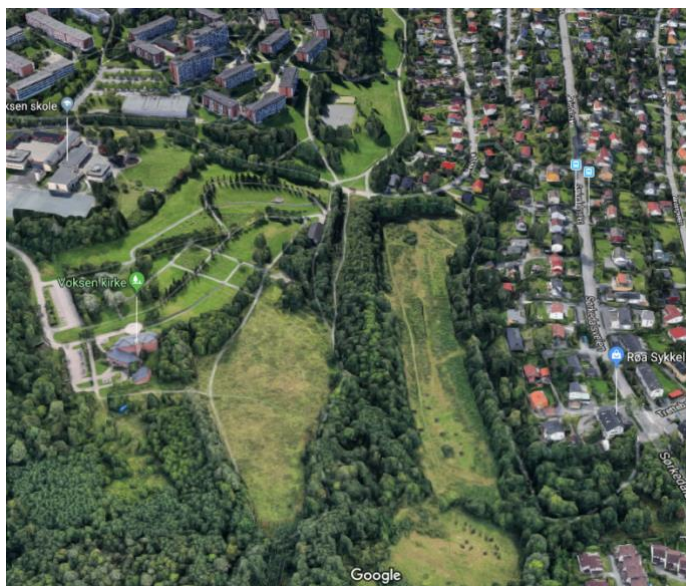
Voksenenga Nærmiljøhage

- Established 2017
- Size: around 1000 m² (1 daa)
- Community garden and allotment garden (60 lots á 25 m²)
- Allotment gardeners pay 1000 kr a year for one lot
- Organised by Pernille Leivestad, Landscape architect, in a 60% position, dependent on grants and donations to keep the position
- The land is owned by Gravferdsetaten who has an agreement with Bydel Vestre Aker who rents the land to the Association (forening). Long time till the land will be used as cemetery
- Main motivations: public health, social meeting place

Events:

- August 24th: Open day
- September 3rd: Harvesting
- September 14th: Grønn Glede

Started with an idea by Landscape architect Pernille Leivestad in 2016, found collaborators in Bydel Vestre Aker and Voksen church. Got funding from Gjensidigestiftelsen (450 000) to start and have no secure income. Many different activities are organized over the season, both for participants in the community garden and allotment holders. They employ youth and have a garden club for children during summer. Money for these activities come from Områdeløft, Velferdsetaten and Bufdir.



Losæter, Bjørvika

- Established in 2012 as 100 allotment gardens (Herligheten)
- Size: ca 7000 m² (total)
- Community garden managed by Bybonden, Allotment gardens, lots for organizations, bakehouse, Herb garden managed by Herbanists, bees managed by Oslo Aviary & Apiary
- Allotment garden has 100 lots composed of 5 pallet collars (1m² each). Distributed to people living in the area around.
- Vegetable community garden around 1000 m²
- Participation is free with everything, donations accepted at events etc.



Events:

- September 13th – 14th: Losæter festival
- On Wednesdays: Community Dinner open for all

Very complex case with many actors and many activities. It is initiated by Bjørvika Utvikling on behalf of the owners of the land in Bjørvika to develop public spaces in this new district of Oslo. The land is planned to be a public space, but none of the planned buildings around are built yet. It is developed as art in public space, and the artist collective Future Farmers has been involved in the process from the beginning. It started with 100 allotment gardens in 2012 and has developed since that through a grain field to vegetable community garden and since 2016 a bakehouse shaped like a boat, designed by the artists. The community garden is managed by Bybonden who is hired full-time by the farmers union. His activities include giving courses, organizing volunteers, hosting visitors including everything from foreign journalists to kindergarten children. He is also representing the place in interviews and other media pieces. The volunteers include organizations working with topics related to the place, passers-by who are interested etc. Everything related to the financial aspects goes through Bjørvika Utvikling. They have started an association (Foreningen Losæter) who has the responsibility of the place, but they don't really have much influence on what actually happens.

Dr. Dedichens drivhus, Trosterud

- Established 2015 (Foreningen Dr. Dedichens Grønne Torg)
- Greenhouse 600 m² with tables for growing vegetables
- Allotment style organisation, people rent parts of the tables for growing
- Greenhouse owned by Omsorgsbygg and rented out to the association

Events:

- Wednesdays: Open Café



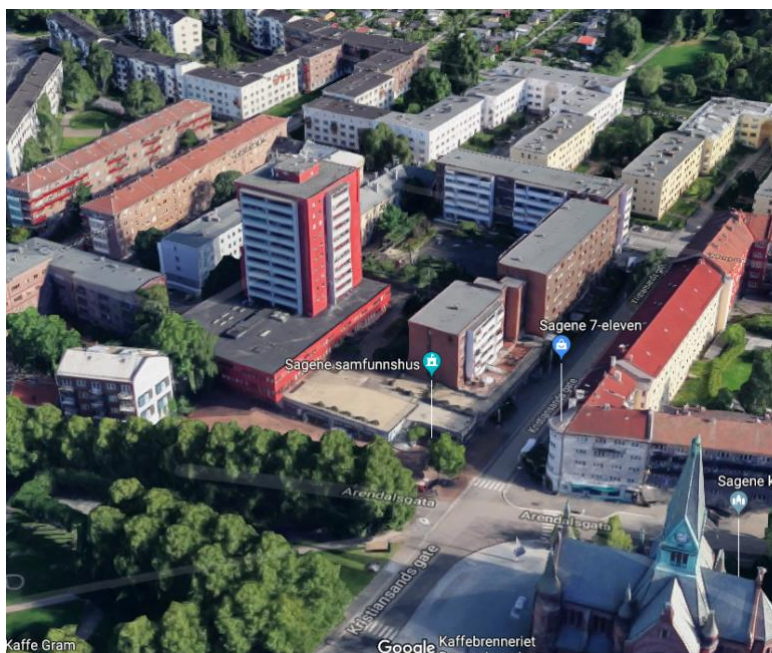
In a large greenhouse built by the psychiatrist Dr. Dedichen in the early 1900s a group of local enthusiasts took matters into own hands when they saw the building remaining unused. They formed an association and managed to get a deal with the owner of the building (Omsorgsbygg, Oslo Kommune) and funding for renting it (Alna Bydel). This is an area with high immigrant population and social security recipients. The aim revitalising the greenhouse was creating a place where people of all ages and cultures can meet, exchange knowledge and promote integration of immigrants. It's all volunteer run with some financial support for events and equipment from different funds. There haven't been long waiting lists, but all the tables have been in use the past years. They have developed a collaboration with the allotment garden just down the street and other relevant actors in the area. With the new development plan the allotment garden has to give way to a sports hall, and the plan is to move it up to the area around the greenhouse, making it an urban gardening park. This process is slow and frustrating for the people involved, but it will be interesting to see the development. Important questions to ask is how will all this be maintained? Today the greenhouse is run by volunteers, but we've seen time and time again that it's not sustainable. Today the annual rent of 150 000 kr is paid by Alna bydel, and they are dependent on that support to keep it going.

Sagene Takhage

- Established summer 2018
- Productive area of about 300 m² with beds on ca 1/3 of the space. More space for social events
- Community garden run by volunteers. Officially Økologisk Norge (formerly Oikos)
- Ground owned by OBOS borettslag

Events:

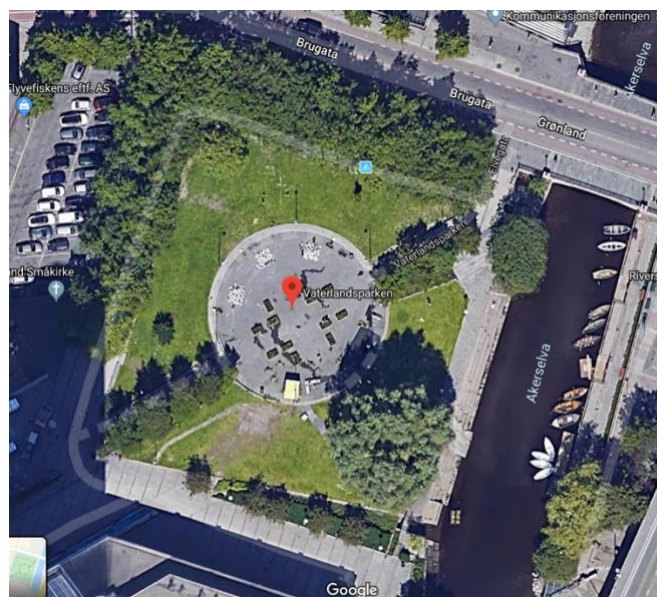
- September 3rd: Dugnad
- September 8th: Lunch
- September 10th: Dugnad
- September 17th: Dugnad



The rooftop garden located on top of Sagene Samfunnshus was established by a group of gardening enthusiasts with a strong desire to try rooftop farming. Long process of getting the right permissions and agreements, both technical, but also getting the borettslag to agree that it was a good idea.

Vaterlandsparken

- Established summer 2018
- Organized by Bymiljøetaten cooperating with district of Grünerløkka and Gamle Oslo
- Stina Maria Lindholm from district Gamle Oslo is the project leader
- Hagecrew engaged in drifting and making activities in the park
- Run by youth working during summer
- Main goals: social, green and sustainable



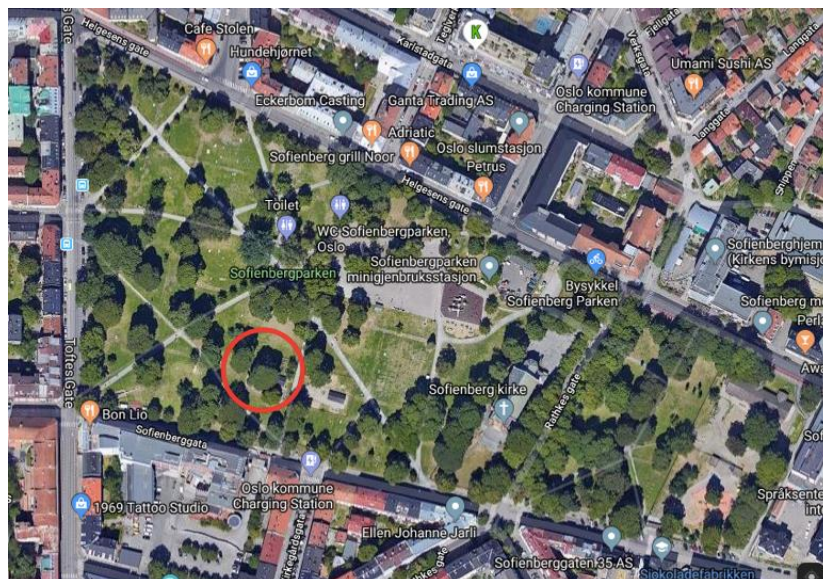
Event:

- “Oslo’s longest community dinner table” September 5th, 2019

The park is located between residential area of Grønland and hotel and event area with Plaza and Spektrum, with visitors from around Norway and the world. The park therefore has an unclear identity: Does it belong to the neighborhood or for visitors and people passing by? The ambition is to create an urban life in the park and to change the use and user groups. The diverse and vibrant Grønland district is characterized by poverty problems and high scores on negative living condition statistics. Around the park itself there are several dining places with a charged clientele. The area is notorious for noise and violence. During the summer of 2019 there were 37 youth workers with guidance of project leaders who were employed over a timeframe of 13 weeks that drifted and worked with activities at the park. The goals were to make the park more attractive for different groups, to change the use of the site and to facilitate participation and involvement among local actors. (Rodeo Arkitekter AS (2019). *Erfaringer fra «Sommer på Vaterland»*)

Sofienbergparken

- 40 boxes for people to rent and some areas for display. Some boxes are for kindergartens nearby
- Organized by district Grünerløkka
- A nursery with shelves and led lights
- No fences
- A small house which is open for all with a code to get inn where people can lend games (croquet and badminton for example) for free
- Activities like for example workshops in cultivation



II. Preliminary criteria for selection of cases

Cultivating Public Space (unpublished document)

Project objectives:

to contribute knowledge for a sustainable compact city development by providing insights on how urban agriculture can enhance the quality of life in a compact city, and how urban agriculture can be systematically integrated in urban public spaces in Norway.

To identify added social value of UA interventions in urban public spaces

- The major focus of the project is social sustainability, in particular the concerns related to the quality of life and social justice in a compact city.

Challenges related to

- Densification processes and the quality of outdoor spaces
- Privatization and commercialization of public space
- Urban loneliness/exclusion/marginalization

Research gap

Most UA research focuses on semi-private community gardens or urban farms. The focus of this project is on a systematic integration of UA in urban public spaces, ensuring its accessibility for large and diverse segments of urban populations.

The major challenge here is how to reconcile the needs and expectations of different groups of users, i.e. how facilitate UA projects that benefit the public (the secondary and tertiary users) while allowing individuals directly engaged in UA (the primary users) to fulfill their needs.

- **Primary users:** persons who actually use the artifact (urban farmers)
- **Secondary users:** persons who occasionally use the artifact (neighbours, school groups, NAV clients...)
- **Tertiary users:** persons who are affected by the use of the artifact or make decision about the artifact (city dwellers at large, tourists, local authorities...)

Module 3

- *In which ways the existing UA initiatives in Norway influence the quality of life of their users and social dynamics in compact city neighborhoods in Oslo region?*
- *What are the unaddressed potentials of UA in improving the quality of life in Oslo region, based on the theoretical discussion (Module 1), international experiences (Module 2), and a dialogue with Norwegian project users?*

Preliminary criteria

- Widely used public spaces within densification areas
- Different types of user (primary, secondary, tertiary); potential conflicts

- Different functions/activities/objectives
- Different degrees of privacy/publicness and accessibility
- Different ownership status of public space (privately owned and regulated as public space vs. publicly owned and regulated as public space)
- Opportunities for engagement
- Established vs. newly developed
- Top-down vs. bottom up (planning, governance, maintenance...)
- Short term vs. long term funding
- Volunteer based/social entrepreneurship vs. employment based

0=not representative 1=partly 2=fully X=yes								
CASES 2018 - filled in des.2017 –to be updated! - updated aug 2019	Ellingsrud parselhage	Snippen park (ikke igangsatt)	Losøtra	Grønlands flytende hage	Voksenhagen nærmiljøhage	«Urbant landbruk på Schous»	Sagene Takhage	Dr. Dedicthens Grønne Torg
Widely used public spaces within densification areas	2	x	2	0	2	2	1	1
Different types of users	1	2	2		2		2	2
primary	x	x	x	?	x		x	x
secondary	x	x	x	?	x		x	x
tertiary	x	x	x	x	x		x	x
Different functions/activities/objectives	1		2		2		2	2
collective gardening/CSA?	2		1		2		2	2
allotment	2		2		2		0	2
therapeutic	X		x		x			
educational	X		x		x		x	x
Degree of publicness and accessibility	2		2		1		2	1
Opportunities for engagement (?)	2		2		2		2	2
Ownership status of public space (privately owned and regulated as public space)	0				0		2	0
vs. publicly owned and regulated as public space)	2				2		0	2
Stage/organisation								
Well-established	1		x		1		0	1
Newly started	x		0		1		1	
Planned		x	x		x			
Top-down (planning, governance, maintenance...)	0		x		0		0	0
Bottom up	1		x		x		2	2
Short term funding	1		x		x		2	2
Long term funding							0	0
Volunteer based/social entrepreneurship	2		x		x		2	2
Employment based	0		x		x		0	0
Other?								

0=not representative 1=partly 2=fully X=yes marked=interesting for Module 3? marked=interesting for other Modules	Dr. Dedichens drivhus	Parkens grøde	Sagene kultur/samfunnshus (på taket)	Vaterlandsparken (ferdig avviklet) Ny runde?	Keyserløkka 1	Keyserløkka 2	Bikuben (bykuben?)	Holmlia nærmiljø hageprosjekt	Ola Narr (snakk med Estrella på Snippen)	Hageerw (diverse steder)	OBOS Ulven	OBOS Veterinærhøgskolen	Sagene kulturhus (på taket)	Spiselige Sagene	Garmeriet –Bygdøy kongsgård	Tak for maten
Widely used public spaces within densification areas						0					-	-		1	0	0
Different types of users						1									1	1
Primary (members)						x										?
Secondary (neighbours)						x									x	x
Tertiary (passers-by)																
Different functions/activities/objectives																
collective gardening/CSA?																
allotment																
therapeutic																
educational																
Degree of publicness and accessibility																
Opportunities for engagement (?)																
Ownership status of public space (privately owned and regulated as public space)																
vs. publicly owned and regulated as public space)																
Stage/organisation																
Well-established						x										
Newly started																
Planned											x	x				
Top-down (planning, governance, maintenance...)																
Bottom up																
Short term funding																
Long term funding																
Volunteer based/social entrepreneurship																
Employment based																
Other?																

0=not representative 1=partly 2=fully X=yes marked=interesting for M3? marked=interesting for other Ms																						
Widely used public spaces within densification areas																						
Different types of users																						
Primary (members)																						
Secondary (neighbours)																						
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Top-down (planning, governance, maintenance...)																						
Bottom up																						
Short term funding																						
Long term funding																						
Volunteer based/social entrepreneurship																						
Employment based																						
Other?																						

III. Primary Survey



Norges miljø- og
biovitenskapelige
universitet

Spørreundersøkelse urbant landbruk

Dette er en spørreundersøkelse til forskningsprosjektet Cultivating Public Spaces, ledet av Norges Miljø og Biovitenskapelige Universitet (NMBU). Vi ønsker å stille noen spørsmål om ditt forhold til urban dyrking og hvordan du bruker stedet. Spørreundersøkelsen er anonym. Har du et par minutter?

1) Hvor er intervjuet gjort?

- | | | |
|----------------------------------|--------------------------------------|---------------------------------|
| <input type="radio"/> Voksenenga | <input type="radio"/> Sagene Takhage | <input type="radio"/> Vaterland |
| <input type="radio"/> Ellingsrud | <input type="radio"/> Losæter | <input type="radio"/> Annet |
| <input type="radio"/> Schous | <input type="radio"/> Dr. Dedichen | |

2) * Hvorfor er du her i dag?

3) * Hvor ofte er du her?

- | | |
|---|--|
| <input type="radio"/> Daglig | <input type="radio"/> Noen ganger i måneden |
| <input type="radio"/> Noen ganger i uka | <input type="radio"/> Månedlig |
| <input type="radio"/> Ukentlig | <input type="radio"/> Mindre enn en gang i måneden |

4) * Når ble du involvert i aktivitetene her?

5) * Hvordan hørte du om stedet for første gang?

- | | |
|---|--|
| <input type="radio"/> Gikk forbi | <input type="radio"/> Gjennom sosiale medier |
| <input type="radio"/> Gjennom venner/bekjente | <input type="radio"/> Annet |

6) * Har du vært med siden oppstarten av stedet?

- Ja
 Nei

7) * Hvis ja, hvilken rolle hadde du?

- Initiativtaker
 Gruppemedlem

8) * Hadde du dyrket egne grønnsaker før du ble med i hagen/stedet?

- Ja, i stor grad
 Ja, i liten grad
 Nei

9) * Har du egen parsell her?

- Ja
 Nei

10) * Har du noe fast ansvar for fellesaktiviteter her?

- Ja
 Nei

Her følger en liste over aktiviteter en kan gjøre her.

11) Hvor viktig er hver enkelt aktivitet for deg?

Ikke viktig Litt viktig Veldig viktig

Dyrke egne grønnsaker/matauk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lære mer om dyrking av grønnsaker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lære mer om sammenhenger i naturen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Være i kontakt med naturen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sosialisere/være sammen med andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Praktisere norsk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fysisk aktivitet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lek med barn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tid til å tenke/reflektere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Komme bort fra hverdagens krav	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gjøre aktiviteter som for meg er meditative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nye utfordringer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mestring av nye ferdigheter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bidra til utvikling av nabolaget/stedet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bidra til å skape trygghet i nabolaget	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Annen aktivitet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12) * Vennligst fyll inn annen aktivitet (hvis aktuelt)

13) * Har du blitt kjent med nye mennesker fra nabolaget ditt i forbindelse med ditt engasjement i hagen?

- Mange
 Noen
 Ingen

14) * Om du har fått nye venner her, treffer du disse også utenom dette stedet?

- Ja
 Nei

	I svært liten grad						I svært stor grad
15) * Ta stilling til følgende spørsmål:	1	2	3	4	5	6	7
Opplever du at du hører til her i nabolaget?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I hvilken grad opplever du at dette er ditt nabolag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	I svært liten grad						I svært stor grad
16) * Tenk på dette stedet i sin helhet.	1	2	3	4	5	6	7
I hvilken grad opplever du at stedet er egnet for avkobling fra hverdagen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17) * Er dette stedet i gangavstand for deg fra der du bor?

- Ja
 Nei

18) * Har du tilgang til egen hage der du bor?

- Ja
 Nei

19) * Har du tilgang til egen balkong der du bor?

- Ja

Nei

20) * Har du barn som også er involvert her?

Ja

Nei

Under spør vi deg om *din egen vurdering av din helse*

21) * Stort sett, vil du si at din helse er

Utmerket

Meget god

God

Nokså god

Dårlig

Svært fornøyd

Svært misfornøyd

1 2 3 4 5 6 7

22) Når du tenker på hvordan du har det for tida, er du stort sett fornøyd med tilværelsen, eller er du stort sett misfornøyd?

I liten grad

I stor grad

1 2 3 4 5 6 7

23) I hvilken grad har deltakelse her innvirkning på hvordan du har det nå for tida?

24) * Alder

25) * Kjønn

Mann

Kvinne

Annet

26) * Er du født i Norge?

Ja

Nei

27) * Er dine foreldre født i norge?

Ja, begge

Ja, en av dem

Nei

28) * Hva er din høyeste utdanning?

Grunnskole Videregående skole Univ/høgskole 3 år - Univ/høgskole 4 år + Annet

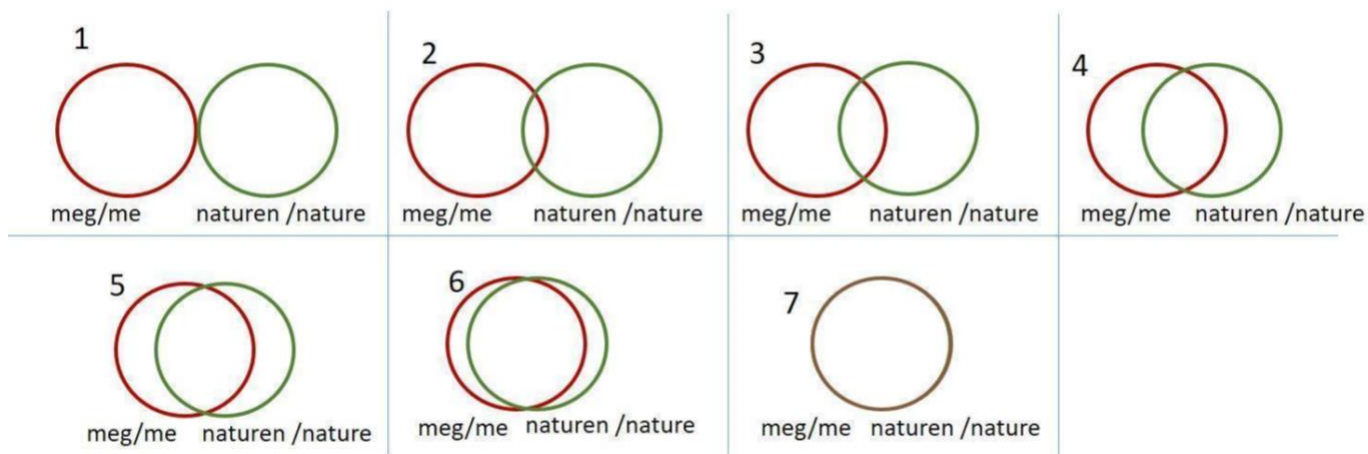
29) * Hva er din yrkesstatus?

- I arbeid – deltid
- I arbeid – heltid
- Skoleelev/student
- Ikke i arbeid
- Pensjonist
- Annet

Hvilken av figurene over beskriver best ditt forhold til naturen. **Hvor sterkt forbundet er du med naturen?**

- 1 2 3 4 5 6 7

Kryss av på ett eller flere av svaralternativene



31) * Er du involvert i noen av følgende urbane dyrkeinitiativ?

- Voksenenga Nærmiljøhage
- Losæter
- Sagene Takhage
- Ellingsrud Parselhage
- Dr. Dedichens Drivhus
- Ingen
- Annet

IV. Secondary/tertiary survey



Norges miljø- og
biovitenskapelige
universitet

Spørreundersøkelse urbant landbruk sekundær/tertiær

Hei, vi kommer fra Universitetet på Ås, NMBU, og vil gjerne stille deg noen spørsmål om dette stedet. Undersøkelsen er anonym. Har du ett par minutter? Dette er en spørreundersøkelse til forskningsprosjektet Cultivating Public Spaces, ledet av Norges Universitet for Miljø og Biovitenskap (NMBU).

1) Hvor er intervjuet gjort?

- | | | |
|----------------------------------|--------------------------------------|---------------------------------|
| <input type="radio"/> Voksenenga | <input type="radio"/> Sagene Takhage | <input type="radio"/> Vaterland |
| <input type="radio"/> Ellingsrud | <input type="radio"/> Losæter | <input type="radio"/> Annet |
| <input type="radio"/> Schous | <input type="radio"/> Dr. Dedichen | |

2) * Hvorfor er du her i dag?

3) * Bor du i nabolaget?

- Ja
 Nei

4) * Kan du beskrive hva du ser rundt deg med noen stikkord?

5) * Har du tidligere lagt merke til dyrkingsaktivitetene her?

- Ja
 Nei

6) * Opplever du at det har endret bruken av stedet?

- Ja
 Nei

7) * Hvis ja, hvordan har dyrkeaktiviteten endret bruken av stedet?

	Flere	Uendret	Færre	Vet ikke
Mennesker som bruker området	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Barn som bruker området	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grupper som bruker området (mangfold)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Opplever du at det har endret din opplevelse av stedet?

8) * Stedet har blitt

- vakrere uendret mindre vakkert Vet ikke

9) * Stedet har blitt

- ryddigere uendret mindre ryddig Vet ikke

10) * Stedet har blitt

- tryggere uendret mindre trygt Vet ikke

11) * Stedet har blitt

- mer støyete uendret mindre støyete Vet ikke

12) * Samlet sett, vil du si endringene er til

- det positive
 det negative

13) * Er dette et sted du kunne tenke deg å bruke mer tid?

- Ja
 Nei

14) * Kunne du tenke deg å delta i dyrke-aktivitetene her?

- Ja
 Nei

15) * Har du tilgang til egen hage der du bor?

- Ja
 Nei

16) * Har du tilgang til egen balkong der du bor?

- Ja
 Nei

17) * Dyrker du egne grønnsaker?

- Ja
 Nei

	I svært liten grad			I svært stor grad			
18) * Ta stilling til følgende spørsmål:	1	2	3	4	5	6	7
Opplever du at du hører til her i nabolaget?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I hvilken grad opplever du at dette er ditt nabolag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	I svært liten grad			I svært stor grad			
19) * Tenk på dette stedet i sin helhet.	1	2	3	4	5	6	7
I hvilken grad opplever du at stedet er egnet for avkobling fra hverdagen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20) * Alder

21) * Kjønn

- Mann
 Kvinne
 Annet

22) * Er du født i Norge?

- Ja
 Nei

23) * Er dine foreldre født i Norge?

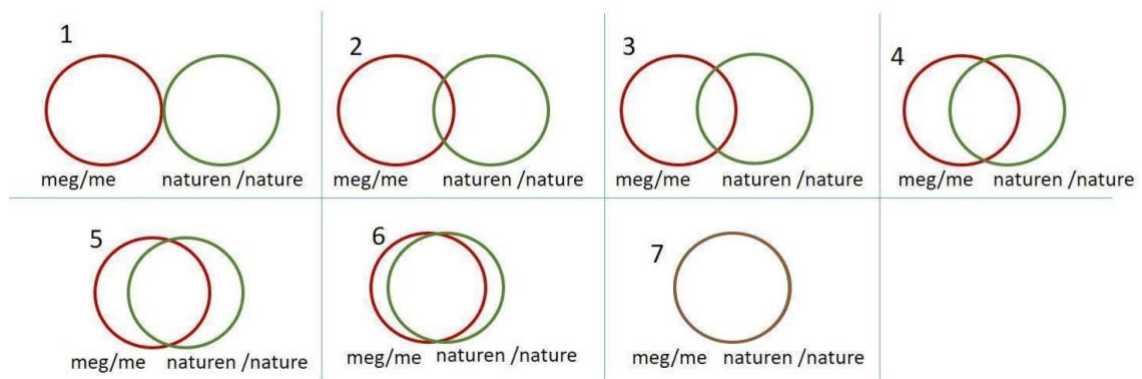
- Ja, begge
 Ja, en av dem
 Nei

24) * Hva er din høyeste fullførte utdanning?

- Grunnskole Videregående skole Univ/høgskole 3 år - Univ/høgskole 4 år + Annet

25) * Hva er din yrkesstatus?

- I arbeid – deltid I arbeid – heltid
 Skoleelev/student Ikke i arbeid
 Pensjonist Annet



26) * Hvilken av figurene over beskriver best ditt forhold til naturen. Hvor sterkt forbundet er du med naturen?

- 1 2 3 4 5 6 7

Kryss av på ett eller flere av svaralternativene

27) * Er du involvert i noen av følgende urbane-dyrkeinitiativ?

Voksenenga Nærmiljøhage

Losøter

Dr. Dedichens Drivhus

Sagene Takhage

Ellingsrud Parsellhage

Ingen

Annet

V. Field-notes

WEEK 35

Dr Dedichens Drivhus

At Dr Dedichens people were very welcoming. Although we didn't have much time to stay longer, we got the feeling that people usually stay there for more than a couple of hours, so we are planning to come again to gain the trust of people. People were very interested in our survey and the reflection behind the questions.

They were united. Although there has been some organizational conflicts, they helped each other out and enjoyed the time together.

It seemed to us that they lacked organizational teams. However, many of the initiative members were there collaborating.

Estimate of 15 people with the responsibility of growing

There are many schools coming each week for cultivation activities and learning

Sofienbergparken

Today we went to Miljøhuset at Sofienbergparken and På Schous to check out the cultivation boxes. In the first case, we could not find anyone working at the boxes during the time we spent there. There wasn't any project manager or gardener. This made our survey collection passive as it was hard to find people with experience at the site. After some time, we met a by passer walking his dog, when we went to talk to him, we realized he had knowledge about the place and some of its development. He shared with us how in the past year, the garden has been from a fenced garden to an open/no barrier garden. He commented that the change had made the place feel more open for newcomers and curious people. However, he didn't like that there had been a sign at the entrance of the place stating, "please do not cross, people are cultivating in this place". He said that even though the place had no fences anymore, there was still an invisible barrier that can be felt by people crossing by. He suggested that the place needed better management, more tables around so people can sit nearby, better information material, and better organization with the crops and members.

The guy has experience in urban agriculture, and himself, he is part of a Biodynamic agricultural community. He criticized some of the aspects of the way the garden was managed and suggested more learning courses and involvement from the initiators of the project. He said that the location, terrain selection and plants cultivated indicated poor management and knowledge about cultivation techniques.

In På Schous, we did not find anyone who we could speak to. The cultivation boxes looked abandoned and overgrown.

Thoughts: How to balance public space and private growing areas?

WEEK 36

Voksenenga

Met with members and yoga participants proudly showing the garden.
We had lunch together in the greenhouse.

We talked a lot about loneliness in an urban city: *“It is still a taboo topic. 1 out of 5 are lonely in Norway. About the garden - some people come to the garden to socialize, to be with somebody, to feel like they belong somewhere and to meet people”*

“We come here to talk about how much our squash has grown, not about our work. That is not interesting here.” - A quote from an informal conversation

“Having a regular meeting day (every Tuesday) makes people look forward to something each week. You know you will meet somebody that day” - gardener

Some reflection on the process of conducting the survey - ended up with some good and valuable conversation in between the questions.

Sagene Takhage

A passerby who had been to a yoga class passes by weekly had comments regarding the garden: *“The place does not look so inviting. I am not sure how to interact. There are few hang-out spots and it’s not a place you only pass by; except when you go to this yoga place or live in one of these buildings “.*

Dr. Dedichens

Due to the weather, Dr. Dedichens was closed on Wednesday September 4th.

Losæter (same day as above)

We were able to conduct some surveys at Losæter.

Rina: Since this was such an informal hangout/dinner making/socializing event, it felt quite un-appropriate to pull up the iPad. I conducted the first survey on the iPad which I felt I was “disturbing” the moment and activity. We were sitting quite tight at the table cutting vegetables. I decided to continue the surveys on my phone, as the participants didn’t see it as time consuming and “annoying”. In my experience people tend to avoid participating when they see the iPad when I approach them (e.g. Sofienbergparken)

Sagene Takhage (grillfest)

During the grillfest, I noticed that people recognized Sagene Takhage and many greeted (blank) while they were passing by. One of the volunteers who was there had a small conversation with me in which he agreed that being part of community gardens affects the sense of belonging and sense of loneliness in its participants. He said he had noticed it on others, and even though he is young and has many social events, being part of the garden really makes him feel like he can contribute to the development and has gained appreciation for food from the start. Other people who came by, including kids were very grateful that the food was for free and were very happy to know that it came from the rooftop.

WEEK 37

Dr. Dedichens Drivhus

During the cafe event, I had the chance to speak with (blank) about the organization of the greenhouse and the future developments. (blank) told me that a big quantity of cultivation table owners are schools and private individuals. There used to be a whole table designated for community work. However, the products were mainly for sales instead of inhouse consumption. That happens more during the Spring, so they do not have sales right now. Also, he mentioned to me about the community garden a few meters away. Over there they have more participants, in the way of allotment rental. Because of changes, they will have to move the community garden to where the greenhouse is. That is set to happen in the next year. Where they have more plans for renovating the greenhouse along with making the green area around it suitable for boxes and allotments. They want to commercialize as well. In the community garden and in the greenhouse, they have a long list of people waiting to get a space to grow. They have priority for women who are immigrants and for people who have been in war.

For the two ladies I did the survey on, who were primary, to cultivate was very important for them. Especially because they have had family traditions and past with agriculture. Being in contact with nature again helps them feel better to be in Norway.

Ellingsrud

Ellingsrud has been there for 33 years. **The start date was 1973** and they had support from Bymiljøetaten. 20 members started the initiative.

It was around a sport facility, in an area of 200,000sq meters.

In 2017 they decided to start the allotments, along with school activities. 60 members were then also barnehager and ungdomsskoler.

They have støtte and fast medlemmer. Also joined CPS, Spirende Oslo and others. They make nabolgsfester and even people who are from nearby neighborhoods like Ensjø also join.

Their funding so far will go until 2020, then they will have to reapply. This time with the theme of forest (Skog)

Their plan is to get a house where they can have an informational center and other utilities

In the area they have composting boxes and also receive manure from nearby farm. Their process starts from March-May and continues through summertime when they water most.

She said that it brings a lot of benefits to social life.

The prices to get a box are very cheap. Only 50nok per box, plus you get soil and tools.

About their eating habits she has not asked members directly, but she assumes their consumptions and food selection has improved. **She has seen many kids being more enthusiastic to eat vegetables when they grow them themselves.**

“People are very proud of what they grow. It brings happiness, doesn't matter if it is a lot of harvest or not”

Migrant woman #1: She told a story about her home country. Also, how she has tried to teach her traditional food culture to other members and even plant vegetables from home in the garden. The size was definitely different, but she could grow! Her daughter has enjoyed participating.

Migrant woman #2: She's been in Oslo for almost 3 years. In the beginning when she didn't have much to do cultivating helped making her days more eventful. Now she says she has learnt so much from being involved. She goes there 2-3 times per week, even though she lives in Gamle Oslo now.

(blank) says that people are usually very surprised when they realize that they have dinner evenings totally for free and even letting people take food home if there is leftovers

Loneliness: people come here to socialize, not only to grow vegetables. A feeling of belongingness.

A mix of people - three generations

VI. Codebook

Question: How important are the following activities you can do here for you?

- *not important: 1*
- *little important: 2*
- *important: 3*
- *very important: 4*

VII. NSD



Beata Sirowy

1432 ÅS

Vår dato: 05.03.2018

Vår ref: 59171 / 3 / STM

Deres dato:

Deres ref:

Vurdering fra NSD Personvernombudet for forskning § 31

Personvernombudet for forskning viser til meldeskjema mottatt 13.02.2018 for prosjektet:

59171	<i>Cultivating Public Spaces: Urban agriculture as a basis for human flourishing and sustainability transition in Norwegian cities (BYFORSK project/ Forskningsrådet)</i>
Behandlingsansvarlig	<i>Norges miljø- og biovitenskapelige universitet, ved institusjonens øverste leder</i>
Daglig ansvarlig	<i>Beata Sirowy</i>

Vurdering

Etter gjennomgang av opplysningene i meldeskjemaet og øvrig dokumentasjon finner vi at prosjektet er meldepliktig og at personopplysningene som blir samlet inn i dette prosjektet er regulert av personopplysningsloven § 31. På den neste siden er vår vurdering av prosjektopplegget slik det er meldt til oss. Du kan nå gå i gang med å behandle personopplysninger.

Vilkår for vår anbefaling

Vår anbefaling forutsetter at du gjennomfører prosjektet i tråd med:

- opplysningene gitt i meldeskjemaet og øvrig dokumentasjon
- vår prosjektvurdering, se side 2
- eventuell korrespondanse med oss

Vi forutsetter at du ikke innhenter sensitive personopplysninger.

Meld fra hvis du gjør vesentlige endringer i prosjektet

Dersom prosjektet endrer seg, kan det være nødvendig å sende inn endringsmelding. På våre nettsider finner du svar på hvilke [endringer](#) du må melde, samt endringskjema.

Opplysninger om prosjektet blir lagt ut på våre nettsider og i Meldingsarkivet

Vi har lagt ut opplysninger om prosjektet på nettsidene våre. Alle våre institusjoner har også tilgang til egne prosjekter i [Meldingsarkivet](#).

Vi tar kontakt om status for behandling av personopplysninger ved prosjektslutt

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Ved prosjektslutt 30.11.2020 vil vi ta kontakt for å avklare status for behandlingen av personopplysninger.

Se våre nettsider eller ta kontakt dersom du har spørsmål. Vi ønsker lykke til med prosjektet!

Marianne Høgetveit Myhren

Siri Tenden Myklebust

Kontaktperson: Siri Tenden Myklebust tlf: 55 58 22 68 / Siri.Myklebust@nsd.no

Vedlegg: Prosjektvurdering

Personvernombudet for forskning



Prosjektvurdering - Kommentar

Prosjektnr: 59171

Du har opplyst i meldeskjema at utvalget vil motta skriftlig og muntlig informasjon om prosjektet, og samtykke skriftlig til å delta. Vår vurdering er at informasjonsskrivet til utvalget er godt utformet, men navn og kontaktinformasjon til daglig ansvarlig må påføres skrevet.

Personvernombudet forutsetter at du behandler alle data i tråd med Norges miljø- og biovitenskapelige universitet sine retningslinjer for datahåndtering og informasjonssikkerhet.

Du har opplyst i meldeskjema at personopplysninger publiseres. Personvernombudet har lagt til grunn at du innhenter samtykke fra den enkelte informanten til publiseringen. Vi anbefaler at hver enkelt informant får anledning til å lese og godkjenne sine opplysninger før publisering.

Prosjektslutt er oppgitt til 30.11.2020, jf. informasjonen til utvalget. Det fremgår av meldeskjema og informasjonsskriv at du vil anonymisere datamaterialet ved prosjektslutt.

Anonymisering innebærer vanligvis å:

- slette direkte identifiserbare opplysninger som navn, fødselsnummer, koblingsnøkkel
- slette eller omskrive/gruppere indirekte identifiserbare opplysninger som bosted/arbeidssted, alder, kjønn
- slette lydopptak

For en utdypende beskrivelse av anonymisering av personopplysninger, se Datatilsynets veileder:

<https://www.datatilsynet.no/globalassets/global/regelverk-skjema/veiledere/anonymisering-veileder-041115.pdf>

VIII. Capability Approach

	Capability (Nussbaum 2011)	Initial operationalization
1.	Life	crime prevention
2.	Bodily health	recreation, access to green areas, reduction of environmental pollution, organic food
3.	Bodily integrity	crime prevention
4.	Senses, imagination and thought	tactile and symbolic qualities of design; public art; spiritual and artistic practices; collective action; UA as a learning arena
5.	Emotions	development of a sense of belonging
6.	Practical reason	participation in the development, management and maintenance of UA interventions
7.	Affiliation	various forms of social interactions; social inclusion/nondiscrimination on the basis of race, gender, age, economic status
8.	Other species	relation to nature (plants, animals); environmental impacts
9.	Play	recreational activities
10	Control over one's environment.	(a)political: participation in decision-making; (b) material – influence on one's physical settings

Central Human Capabilities. *From Sirowy, (2017)*



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