

Growing change

An analysis of learning processes in community gardens in
Budapest

Dóra Ádám

Master Thesis Series in Environmental Studies and Sustainability Science,
No 2018:001

A thesis submitted in partial fulfillment of the requirements of Lund University
International Master's Programme in Environmental Studies and Sustainability Science
(30hp/credits)



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Submitted January 15, 2018

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Abstract

Cities have a crucial importance from the sustainability point of view. More than 50% of the global population lives in cities, therefore urban dwellers' environmental knowledge can be of critical importance. Many argue that an important part of environmental knowledge is acquired outside of a formal school setting, therefore in this thesis I explore learning processes connected to community gardens. I define environmental knowledge in the broadest sense possible, taking into consideration all that relates to social-environmental sustainability.

In my exploration of the educational potential of gardens I use a qualitative, multiple case study approach, with two community gardens of Budapest being my units of analysis. Data collection and analysis are supported by two social learning theories: Triple-Loop Learning Theory, which helps me to shed light on what is learned and in what depth, and Communities of Practice Theory, which helps me to investigate how these learning processes happen.

For the collection and analysis of data I follow an iterative approach, collecting and analysing data from one study site initially, then using this to inform the subsequent data collection methods on the second site. Following a methodological triangulation approach, I use multiple qualitative research methods and data sources in both cases to ensure the credibility and internal validity of my research.

One of my main findings is that the structure, history, and composition of the gardens are critical to what is learned and how. Also, even though coordinating associations and coordinators do not explicitly support the sustainability education of the gardeners, these spaces can still provide a rich context for learning about topics such as: gardening and local ecological conditions, waste reduction and composting, use of technologies and communicational tools, community building and management skills, personal and interpersonal skills, alternative lifestyles, and wider social-environmental issues. Most learning happens through interaction with more skilled and engaged members and others from the community, through practice and through the construction and discussion of meanings and identities.

I hope that the findings of this thesis will allow better insight into the processes already in place and inspire further research and action to maximize community gardens' educational potential.

Keywords: community gardens, learning for sustainability, Budapest

Word count (thesis): 13612

Acknowledgements

First and foremost, thank you Henner, Gisela and Felix, without you this really would have never ever happened. And I honestly mean this.

Thanks for all my interviewees who gave me their precious time and attention.

Thanks for everyone who supported me in any way during this process, to friends and family members. Special thanks to the ones who were sensitive and empathic enough to do this in an encouraging way, never putting pressure on me nor making me feel stupid, anxious or angry. You know who you are.

Thanks to Amanda, always replying me right away and sorting it all out.

And well, thanks LUMES Batch 17! Writing this thesis two and a half years after the official deadline felt like a sort of time-travel. Closing this chapter for good now makes me feel nostalgic and makes me remember you all. Such a great life experience we shared!

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List of Abbreviations

VKE: Association of Urban Gardens (**V**árosi **K**ertek **E**gyesülete)

GK: Grundgarden (**G**run**k**ert)

EKPK: First Garden of Kispest (**E**lső **K**is-**P**esti **K**ert)

CG: Community Garden

CoP: Communities of Practice

TLLT: Triple-loop Learning Theory

EE: Environmental Education

SE: Sustainability Education

RQ: Research Question

1 Introduction

1.1 Research context and aim

Cities have a crucial importance from the sustainability point of view. Currently they are home to more than 50% of the global population and this figure is expected to rise to 70% by 2050 (UNFPA, 2015). At the same time urbanites are the greatest consumers of the planet's ecosystem services (Grimm et al., 2015) Therefore, what happens in cities, what urban dwellers do and think will become increasingly important. Nevertheless, it is precisely urbanites who are the most disconnected and alienated from nature (Bendt, Barthel, & Colding, 2013). Consequently, their environmental learning and education will have a decisive impact on our planet's future (Bendt et al., 2013; Russ & Krasny, 2017). Many researchers agree that much environmental learning takes place in informal settings (Falk, 2005; Walter, 2013). Therefore, in this thesis I aim to explore learning processes connected to community gardens (CGs), places which hold great educational potential, with a special focus on "sustainability learning" (Krasny & Tidball, 2009; Kudryavtsev & Krasny, 2012). This concept is understood to encompass all learning processes connected to social-environmental sustainability, including the acquisition of factual knowledge as well as learning that fosters critical thinking or pro-environmental behaviour.

Even though urban agriculture is not new, the practice of growing food in cities has gained a lot of attention in recent years, and CGs are becoming increasingly popular in Europe and elsewhere (Corrigan, 2011). They have also become a popular research topic, with many articles, reports, manuals, conference papers, books and theses published since 1985 stressing their numerous social and environmental benefits (Guitart, Pickering, & Byrne, 2012). However, urban agriculture's popularity among researchers is mainly due to its promise for increasing sustainable food production in an increasingly urbanized world, where food security is threatened by climate change (Martin, 2016; Morgan & Sonnino, 2010).

Martin (2016) reviewed all the claimed benefits of CGs and found that:

- (1) Their potential for food production is only substantial in the Global South. In the North it is very limited, mostly due to high land values and the lack of unpolluted soil

- (2) CGs do contribute to ecological sustainability (e.g. increased biodiversity, reduction of urban heat-island-effect, etc.), but only to the same extent as any other well-managed green area
- (3) CGs contribute significantly to social sustainability through positive impacts on community well-being, neighbourhood satisfaction, mental and physical health, sense of belonging, etc. (Martin, 2016)

Martin also highlights the potential of these spaces regarding their “synergies with social and environmental sustainability, as they can be places for generating social capital, promoting environmental education and advancing social justice” (Martin, 2016).

As a Sustainability Science student, I have found CGs especially intriguing in this last regard, as potential places for linking social and environmental dimensions of sustainability. This was another reason for my focus on environmental education and learning in these spaces.

There are a lot of interesting learning processes in CGs especially in the ones that have explicit educational activities. Nevertheless, because of time and energy constraints I restricted my focus to the learning of gardeners in two CGs of Budapest.

This focus seemed to be appropriate also because most literature on CGs concentrate on the USA or Western Europe and there is relatively little research done on the Eastern European and Hungarian context (Bende & Nagy, 2016; Guitart et al., 2012). Also, even though the bulk of research has been done by social scientists investigating social aspects, most concentrate on the generation of social capital and only a few articles address educational aspects. I could not find a single study focusing on learning or education in CGs in the Hungarian context.

To address this research gap, I choose the following research questions (RQs):

Overarching: How can Community Gardens of Budapest act as hubs for sustainability education?

RQ1: What is the potential of a CG in terms of sustainability education (SE)?

RQ2: How do coordinating associations understand SE? Do they integrate it into their activities? If so, how?

RQ3: How is the learning process from the perspective of gardeners?

RQ3.1 What do they learn?

RQ3.2 How do they learn?

1.2 Outline

To achieve my aim and address my RQs in Chapter 2 I reply RQ1, explore more in detail the Hungarian context and present my cases with the help of a literature review I reply RQ1, explore more in detail the Hungarian context and present my cases. In Chapter 3 I present my theoretical background, Triple-loop Learning Theory and Communities of Practice which guided both the research and analysis. In Chapter 4 I describe my data collection and analysis processes. In Chapter 5 I present and discuss my findings: in 5.1 presenting in detail the particularities of my cases, in 5.2 answering RQ2 discussing the attitude of coordinating associations to SE, in 5.3 presenting the learning process from the perspective of gardeners and in 5.4 putting together all the information and making sense of it. I finish the thesis with some concluding remarks in chapter 6.

1.3 Relevance for Sustainability Science

With this thesis I contribute to addressing the above-mentioned research gap. CGs are places with a great potential for sustainability education in urban areas where such education is much needed. Therefore, shedding light on what exactly happens in and around Budapest gardens is a worthy endeavour.

Palmer & Birch (2017) pointed out the importance of NGOs and other non-formal educational places in sustainability education, therefore this thesis also serves as practical aid for organizations aiming to maximize the educational potential of CGs (Palmer & Birch, 2017). This thesis can be a good basis for further research in this direction.

2 Background and Context

2.1 Context 1: CGs and their educational potential

Many argue that an important part of learning, and most environmental learning, is acquired outside of a formal school setting (Falk, 2005; Walter, 2013). These informal learning spaces include museums, science centres, botanical gardens, aquariums, zoos, visitor centres, parks and gardens (Walter, 2013). CGs are particularly interesting from this point of view because they are very heterogeneous places integrating environmental restoration, social interactions, activism, food security, art and other cultural expressions, thus providing a rich context full of learning and educational potential (Corkery, 2004; Krasny & Tidball, 2009; Kudryavtsev & Krasny, 2012). Krasny and Tidball (2009) have found that CGs present ongoing opportunities for three kinds of learning: (1) learning as acquisition of science content, (2) learning as interaction or participation in different kinds of activities and practices, and (3) social learning among a group of gardeners to address management and policy issues (Krasny & Tidball, 2009). Other authors have also argued that CGs are spaces where people can learn about gardening and local ecological conditions, politics of space, self-organization and social enterprising (Bendt et al., 2013). Nevertheless, all this learning does not happen automatically in any CG but it highly depends on the structure and organization of the gardens, on their programs and activities, and on their educational programs and strategies (Bendt et al., 2013; Krasny & Tidball, 2009; Tidball & Krasny, 2010). Most research on this topic has been done in gardens of the USA and Western-Europe. Hungary provides a very different socio-cultural context and the history of the CG movement also differs tremendously. Therefore, the Hungarian history and approach of the CG movement are very interesting research topics. Thus, I thrive to describe the situation of CGs in Hungary, and more specifically in the city of Budapest.

2.2 Context 2: CGs in Hungary and Budapest

Community gardens (CGs) in Hungary are typically much younger than their counterparts in the USA and Western Europe: the oldest gardens in Hungary are only 6 years old. They also have different histories and cultures. One of the most striking differences is that there are few strong community-lead, bottom up initiatives (Lovász, 2013). Hungary is a relatively new democracy: during generations, guidance and order always came from the top- down and everything bottom-up was regarded as suspicious and undesirable. This governance model lead to general disinterest and distrust, still prevalent in Hungarian society. Hungary is an extremely individualistic country, with a high

preference for a loosely-knit social framework where individuals are predominantly to take care of themselves and their closest ones (Hofstede Insights, 2017). Therefore, it should not come as a surprise that in Hungary the level of community participation and involvement is very low. CGs are mainly organized through top-down approaches and there is always a need for a person who plays the role of a “catalyst”:, a highly motivated individual, to launch and keep these initiatives alive (Bende & Nagy, 2016).

When it comes to CGs in Budapest one can find a complex and unstructured picture regarding property background and other characteristics (Lovász, 2013). It is not easy to get an overall grasp on how many and what kind of CGs exist in the country and in the capital. KÉK (Centre of Contemporary Architecture) has just recently started a project where they map, register and describe all CGs of the country and publish the data on their website, but it is still far from being complete. Currently there are 29 active CGs in Budapest according to their data (KÉK, 2017). The oldest gardens of the city were initiated five years ago (2012) and most gardens (21) are owned by local municipalities. In many cases (6) the same municipalities are also responsible for the coordination, but in most cases the coordination is done by non-profit organizations. The Association of Urban Gardens (Városi Kertek Egyesülete-VKE) and KÉK seem to have a key role, each of them coordinating and advising 6 gardens. In this thesis I try to investigate the learning processes happening in two of the community gardens, one lead by VKE and another one that is a grass-roots garden.

Table 1. Ownership and coordination of the CG's of Budapest(KÉK, 2017)

Ownership	Coordination
Municipalities (21)	Municipalities (6)
Private Companies (5)	VKE (6)
Religious organizations (1)	KÉK (6)
Schools (1)	Other non-profit organizations (4)
No data (1)	Religious organizations (1)
	Schools (1)
	Grassroot/Neighbourhood Associations (2)
	No data (3)

3 Theoretical frameworks

According to Yin (2009), within a case study, a priori developed theoretical proposition is needed that guides both data collection and analysis (p. 18). Many theories have been found useful to describe adult environmental learning in CGs: theories of communities of practice, social learning, place-based education and transformational learning amongst others (Krasny & Tidball, 2009; Walter, 2013). A full comprehensive overview of these theories and their full integration into this research is beyond the scope of this thesis. Therefore, in this thesis I regard learning as a process that happens through a “system of interactions among learners and their social and bio-physical environment” (Tidball & Krasny, 2010). I do this with the help of two social-learning theories, Triple-Loop-Learning Theory (TLLT) and Theory of Communities of Practice (CoP).

First, I selected TLLT. This theory has generally been used in the organizational learning field, but I have found a few examples where it was used in a different context, for instance to evaluate the learning outcomes of university courses (Nicol, 2013). TLLT seemed to be a good framework to shed light on what is learned in the CGs (RQ3.1) and in what depth. Nevertheless, I have found, that at least in my case, it was not very helpful to shed light on how these learning process happen (RQ3.2). So, I decided to complement it with another theory, Theory of Communities of Practice (CoP) posteriorly, in the analysis phase.

3.1 Triple-Loop-Learning Theory (TLLT)

TLLT provides a framework that allows me to categorize and differentiate various kinds of learning, happening at various levels. It has been demonstrated that knowledge and awareness of environmental issues in themselves do not necessarily lead people to change their behaviour patterns towards more sustainable lifestyles (Kollmuss & Agyeman, 2002). If education really is to have an impact it should go beyond simple transfer of knowledge and it should rather be based on critical thinking, reflection, and involve the clarification of values and goal setting (Tilbury & Wortman, 2004).

With these in mind I was curious whether CGs have sufficiently comprehensive educational strategies and learning processes for gardeners to reach such deep levels of learning. The TLLT framework helped me with that. According to this, learning can happen at different levels (loops), starting from a

shallow (single- loop) through to deep (triple-loop) learning (Marshall, Coleman, & Reason, 2011). Complete learning includes not only the question of ‘Are we doing things right?’ (single loop) or ‘Are we doing the right things?’ (double loop) but extends to ‘How do we decide what is right?’ (triple loop) (Eksvärd, 2010).

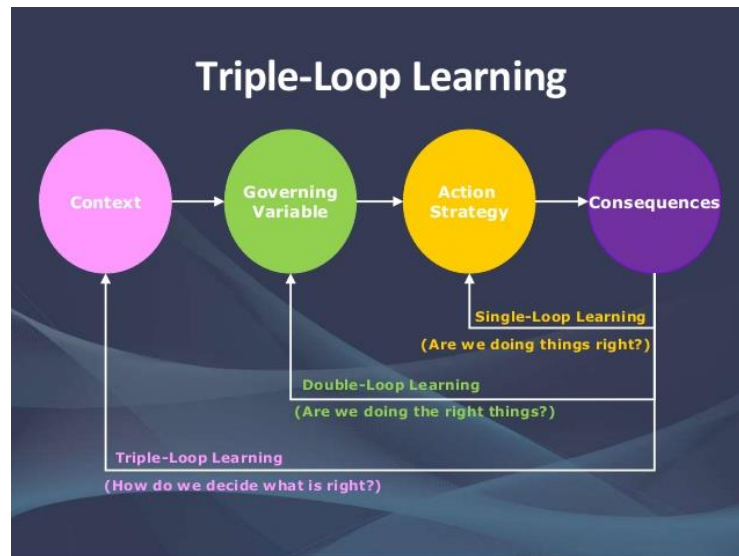


Figure 1. Guiding questions for Triple-Loop Learning (Olivier Serrat, 2013)

3.1.1 TLLT in a sustainability context

To apply this within a sustainability context I used Nicol’s (2013) article as an inspiration, in which he uses TLLT for the evaluation of one of his courses for future environmental educators. Eksvärd (2010) cites Ahmed and Wang in pointing out that “changes in behaviour and lifestyle also involve processes of ‘un-learning’ of existing beliefs and methods, and of ‘re-learning’ through experience”, therefore for a complete transformational change an integrated learning is needed. (Eksvärd, 2010; Wang & Ahmed, 2003). Marshall et al. (2011) also claim that the integration of the three loops provides opportunities that may be “potentially radical, transformational and profoundly relevant for the exploration of the issues of justice and sustainability where everything is uncertain and open to different interpretations”(Marshall et al., 2011). Therefore, in this thesis I aim explore learning processes happening at all three levels.

3.1.2 Description of the loops of learning

As Figure 1 shows, different loops of learning correspond to different kinds of questions. The single loop can be described as “shallow learning”, a small-scale, tangible change “adjusting actions” where people engage in lifestyle choices responding mostly to an external stimulus, without really questioning the guiding principles of our actions (Argyris & Schön, 1996; Reed et al., 2010). Nicol operationalized it as clear behavioural changes that his students experienced connected to the course (Nicol, 2013).

The double-loop learning already reconsiders and reflects on guiding principles, representing a medium-scale change. In the process of reviewing and questioning assumptions people also engage in a process of values clarification and change (Argyris & Schön, 1996; Nicol, 2013). Nicol (2013) describes that when one “extends the boundaries of individual agency to bring about changes in wider spheres of influence” (Nicol, 2013).

Triple-loop learning goes even deeper, it is seen as learning that also reflects on context and power as part of learning. It challenges the values, norms, and higher order thinking processes that underpin assumptions and actions and involves the reflection on purpose, identity and an understanding of the situation as a whole (Marshall et al., 2011). It is a large-scale change, where “the transformation of people’s lifestyles takes place and paradigm shifts become possible” (Nicol, 2013).

3.2. Communities of Practice (CoP)

CoP theory is a social learning theory that suggests that learning happens through the participation in processes taking place in a particular environment or context (Krasny & Tidball, 2009; Wenger, 2000). I have considered CoP theory insightful for my RQs because it helps to shed light not only on what is learned in a community, but also on how this learning happens (subRQ3).

Reed (2010) defines social learning as a “process of social change in which people learn from each other in ways that can benefit wider social-ecological system” (Reed et al., 2010). Wenger (1998) defines social learning concentrating on the individual, he uses it to refer to an individual learning that happens as a result of interaction, or participation going beyond the engagement in certain activities. He talks about a more encompassing process of being active in the practices of a certain

social community, and constructing identities in relation to these (p. 4). Therefore, a comprehensive social learning theory, deals with all four components that characterize social participation as a process of learning and knowing (Wenger, 1998, pp. 4–5).



Figure 2. Components of social learning (Wenger, 1998, p. 5)

Wenger defines the components as the following:

“(1) Meaning: A way of talking about our (changing) ability – individually and collectively – to experience our life and the world as meaningful.

(2) Practice: A way of talking about the shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in action.

(3) Community: A way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognisable as competence.

(4) Identity: A way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities” (Wenger, 1998, p. 5)

3.2.1 CoP and learning for sustainability

CoP has been widely applied in the sustainability context. Krasny and others mention CoP theory concretely in the context of CGs (Krasny et al., 2015; Krasny & Lee, 2010; Krasny & Tidball, 2009; Tidball & Krasny, 2011). They claim that a good example is the learning process of beginners about plants and gardening practices from more experienced gardeners (Tidball & Krasny, 2010). CoP creates increased awareness on social-environmental issues through contact with well-informed community activists (Tidball & Krasny, 2010). Bradbury and Middlemiss (2007) also used CoP theory to study the role of learning in sustainable CoPs (Middlemiss, 2007)

CoP theory is very comprehensive social theory. In this thesis to start with I apply the definition to see whether the selected CGs can be considered CoPs at all. According to Wenger (1998, 2000) a group can only be considered a CoP if it is characterized by: a (1) joint enterprise, or shared domain of interest (e.g. gardening) (2) mutual engagement through which members bond and form a community that enables them to learn from each other and (3) shared repertoire of tools, language (jargon, metaphors) and stories (Wenger, 1998, 2000). So, using this framework I explore whether CGs of Budapest can be considered CoPs in the first place, and if so is whether the types of learning taking place surpass mere technical knowledge sharing regarding gardening.

4 Methodology and research plan

4.1 Epistemological and Ontological considerations

During this thesis I adopt a critical realist approach to ontological and epistemological issues. According to this, “there exists a reality ‘out there’ independent of observers” (Easton, 2010, p. 120). In practice this allows me to engage with the „actual” and „empirical” and try to explain the unobservable processes through these. In the same time, I also need to keep in mind that these observations might be fallible. Social situations are very complex, so observations are “unlikely to reveal completely and lead to their full understanding” (Easton, 2010, p. 128; Fairclough, Jessop, & Sayer, 2007).

4.2 Research phases

To explore learning processes in CGs of Budapest I decided to use a qualitative, multiple case study approach, with two CGs being my units of analysis. The study is qualitative in nature and I do not aim to explain nor test any theory or hypothesis. Rather, I aim for providing an in-depth insight to the unique situations and processes taking place in the two selected sites and try to draw some valid conclusions from these.

The research process had three phases. The first phase was an exploratory phase, where I conducted a literature review, content analysis (websites, FB pages, media appearances) and informal interviews with stakeholders and experts. This helped me to (1) refine my research questions (2) elaborate a research plan to address these (3) select the cases to study. In the second phase I first conducted a pilot case study research with a semi-structured interview, two focus groups and field visits. In the third phase I conducted a second case study with an on-site visit, seven semi-structured interviews and content analysis.

4.3 Research strategy: Case study

To address my research questions a case study research strategy seemed to be the most appropriate. Yin (2009) defines a case study as “an empirical inquiry that investigates a contemporary phenomenon in depth within its real-life context” (p. 18). He recommends using this strategy if we

have such a phenomenon in our focus, if we have little control over behavioural events and our RQs ask exploratory “what” questions or “how” and “why” questions (Yin, 2009, pp. 11&9).

Within the different case study types I would describe mine as a descriptive, exploratory one.

4.4 Selection of the cases: The First Community Garden of Kispest and Grundgarden

For the selection of the cases I compiled all information I could find about the gardens of Budapest. Then first I pre-chose the ones that:

- (1) were established at least 4 years ago to ensure stability and adequate potential for learning
- (2) had clearly stated an interest in organic gardening
- (3) indicated having educational activities of some kind
- (4) would allow me to contact their members

This has left me with a list of five gardens: one coordinated by VKE, two by KÉK, and two grassroots. I contacted all of them and ended up investigating two, The First Community Garden of Kispest (Első Kis-Pesti Kert, EKPK) and Grundgarden (Grundkert, GK).

4.5 Data collection

I followed an iterative approach for the collection and analysis of data: I had collected and analysed data from the first case study site and I used this to inform the subsequent data collection method on the second site. This led to changes in the methods I used in the second case. Following a methodological triangulation approach, I made sure to use multiple methods and sources of data in both cases to ensure the credibility and internal validity of my research (Bryman, 2012, p. 435).

Literature review

Literature review was the main research method used for identifying the topic of this thesis. It was essential to gain a comprehensive overview on what has already been published on the topic,

identify a knowledge gap, identify appropriate theories and research methods (Bryman, 2012). I used peer reviewed papers that I had found in the Google Scholar Database.

Content analysis

Both gardens have FB pages, blogs and several media appearances. Their informal analysis constituted an important source of secondary information in all phases of the research and during the analysis it provided important additional data for triangulation.

Informal conversations

Exploratory informal conversations with stakeholders and experts helped me identify my research topic and questions. Informal conversations allow the researcher to be a more integral part of the unfolding activities and also to understand these better from the participants' viewpoint (DeWalt & Dewalt, 2011). During the research I kept a fieldwork journal that I also used in the analysis phase for triangulation.

Focus groups

During my first fieldwork (in EKP) focus group conversations were the main methods of data collection. It seemed to be a good choice because I wanted to explore a specific topic in depth and I thought that shedding light to how individuals act as parts of the group and how they respond to each other would be of importance regarding the learning processes (Bryman, 2012, p. 503).

Focus groups were organized around 3 main topics:

- (1) personal story and experience in the garden
- (2) learning processes since they joined the garden
- (3) the garden, its objectives and role in the wider community.

The conversation followed a semi-structured interview-guide partly elaborated with the help of the theories mentioned above. Mostly open-ended questions were asked to leave space for the participants to talk.

I conducted two focus groups: on the 15th of September 2017, with 5 participants lasting 1 hour; and on the 1st of October 2017 with 4 participants lasting an hour and a half. The participants of the groups were selected through two field visits. Everyone was included to the focus groups who volunteered to participate.

Both focus groups were recorded and transcribed ensuring the reliability of the research (Bryman, 2012).

Even though the focus group conversations revealed important information, I also encountered limitations of this technique: because both groups were dominated by one participant, I felt I did not access the detailed and nuanced personal learning stories of the participants. This was one of the main reasons why I decided to use qualitative, semi-structured individual interviews for the second case.

Qualitative interviews

My primary empirical data in the case of GK came from in-depth, individual, qualitative, semi-structured interviews.

I conducted eight interviews (one in EKPK and seven in GK) between 7th of September 2017- 8th of November 2017. All interviews were conducted in Hungarian and in person except for one that was conducted via Skype. All interviews lasted around an hour.

Interviewees were selected through purposive sampling (coordinators of the gardens) and additionally through snowball and convenience sampling. I contacted all gardeners through the garden's FB page and interviewed everybody who replied to me and agreed to participate.

All interviews were conducted using open ended questions from an interview guide (see Appendix) that was developed in accordance with the theories chosen and followed the topics I had already explored during the focus group discussions (Yin, 2009, p. 19).

All interviews were recorded and transcribed and preserved ensuring the reliability of the research(Bryman, 2012).

Field visit and observations

Field visits and observations were important complementary methods of data collection in both cases. All important data (observations regarding the space, participants, interactions, etc.) were noted in a fieldwork journal and were transcribed electronically (DeWalt & Dewalt, 2011).

4. 6 Limitations and ethical considerations

Various drawbacks of my research collection methods need to be acknowledged. Due to time constraints I could only conduct two case studies. Moreover, in each case I had used different methods, so their comparability is a potential limitation.

Focus group participation was quite low: I talked to everybody who volunteered, but still, I could only conduct two, whereas three or four would have been preferable. The participation of a popular and dominant member of the garden in both conversation also meant a considerable limitation as it may have blocked new emerging ideas and opinions.

I also had a very limited number of observation days. In GK I was unable to do participant observations in the garden as my research period was after the gardening season.

Interviews and focus groups also have clear and considerable limitations when it comes to the study of something so complex as learning. Learning processes embodied in and produced through interaction and practice are often tacit and cannot be expressed verbally (Bendt et al., 2013). I tried to remediate this with the use of other methods, e.g. field observations, but more time and a much greater expertise would have been needed to address this appropriately.

Ethical challenges may arise during research done with human beings (Bryman, 2012). To minimize these, I made sure to inform all participants about purpose of my research, asked for their consent to record the conversations and explained what I would do with the recordings. Later I changed all the names to ensure anonymity.

4.7 Data analysis

During this study all interviews and focus groups were selectively transcribed. Data was subsequently analysed with the help of QDA Miner, a qualitative data analysis software. This analysis compromised

both deductive and inductive coding. As a first step, I derived codes from my main theories (TLLT and CoP) and identified interview segments directly related to these. Secondly, I applied open coding to identify emerging main themes. These left me with a total number of 14 coding categories. Findings were complemented and compared with findings from field observations and document and media analysis.

5 Findings and Discussion

In the following chapter I answer my RQs with the help of concepts derived from the theories. But first, I describe my cases in greater detail, as I have found that their characteristics have an important impact on the learning processes happening in them.

5.1 Case of revelatory cases

This research started as a single-case study, investigating the processes taking place in EKPK. According to Yin (2009) a single-case study is acceptable if it is a revelatory, representative or typical case (Yin, 2009, p. 52). Nevertheless, after conducting the research in the EKPK I felt the need to add a second case. EKPK seemed a homogenous garden in terms of participation (local, elderly) with only single-loop learning processes going on so I was curious how is the situation in a different garden. The literature also stresses the benefits of multiple cases, so I decided to add GK (Yin, 2009, p. 18). I used the knowledge gained during the first study to optimize the data collection methods for the second; thus, the two data sets are not directly comparable.

5.1.1 Basics on EKPK and GK

EKPK and GK are the oldest gardens of the city; they were founded in the same year. Members have individual plots, and both gardens are closed from the public with a fence and a gate and can only be visited when a gardener is around. Both are chemicals free. Table 2 shows the basic information about the gardens.

Table 2. Basic information on EKPK and GK (KÉK, 2017)

	EKPK	GK
Year of Foundation	2012	2012
Owner	Municipality of District XIX	Futureal Zrt. (private)
Coordinating and partner organization	VKE	grassroots, Messzelátó Association
Total area	926 m ²	640 m ²
Cultivated area	290 m ²	400 m ²
Collectively managed area	173 m ²	none
Number of individual plots	26	40
Size of individual plots	4,5 m ²	8 m ²
Gardeners	predominantly retired people and some families with small children	diverse age and background

These two gardens have considerable differences when it comes to ownership and coordination. EKPK is owned by the municipality and is officially coordinated by VKE while GK's territory is owned by Futureal Zrt, the development company responsible for the urban renewal and revitalization of GK's district (8th). GK does not have an official coordinating body, it is organized in a grassroots manner. Its partner organization, Messzelátó Association, is an NGO that promotes sustainable urban lifestyle choices.

There are also differences in the size of cultivated areas: in case of EKPK 31% of the total area is cultivated, whereas in GK this number is 62,5%. EKPK is bigger in total area but there are fewer and smaller individual plots combined with a bigger collectively managed area (19% of the area). In GK, on the other hand, there are only individual plots and no collectively managed areas apart from a few rows of flowers by the entrance. Nevertheless, this does not mean that in GK there is no communal work to be done: the garden does not have running water, so watering requires a communal effort: a group responsible for the filling of the water tanks each week. Moreover, there are communal social areas with seats, tables and fireplaces. In EKPK the communal area is also bigger, and there is an additional one outside, accessible to the entire neighbourhood.

Another difference is the constitution of gardeners. EKPK only people from the 19th district can apply for plots and there is a long waiting list; in GK the possibility of joining is opened to anyone who is willing to undertake some volunteer work can join. Therefore, in EKPK gardeners are

predominantly retired residents from the surroundings, and a few families with small children; there is relatively low turnover of gardeners, with several members who have been there from the very beginning. GK's gardeners are very diverse, with people from different districts, ages, occupations and interests, but a relatively high number of singles between 25-35. There is high turnover of gardeners, mainly due to moving and other private life changes. One interesting thing is that women seem to be a majority in both gardens.

GK's diversity is reinforced by its location. It is much more centrally located than EKPK. The location of the gardens is shown on Figure 3. EKPK is in the 19th district, an outer, poorer suburb. GK is in the 8th district, a central, dynamically changing neighbourhood that historically has been among the poorest, which is now subject to a large scale urban revitalization project.

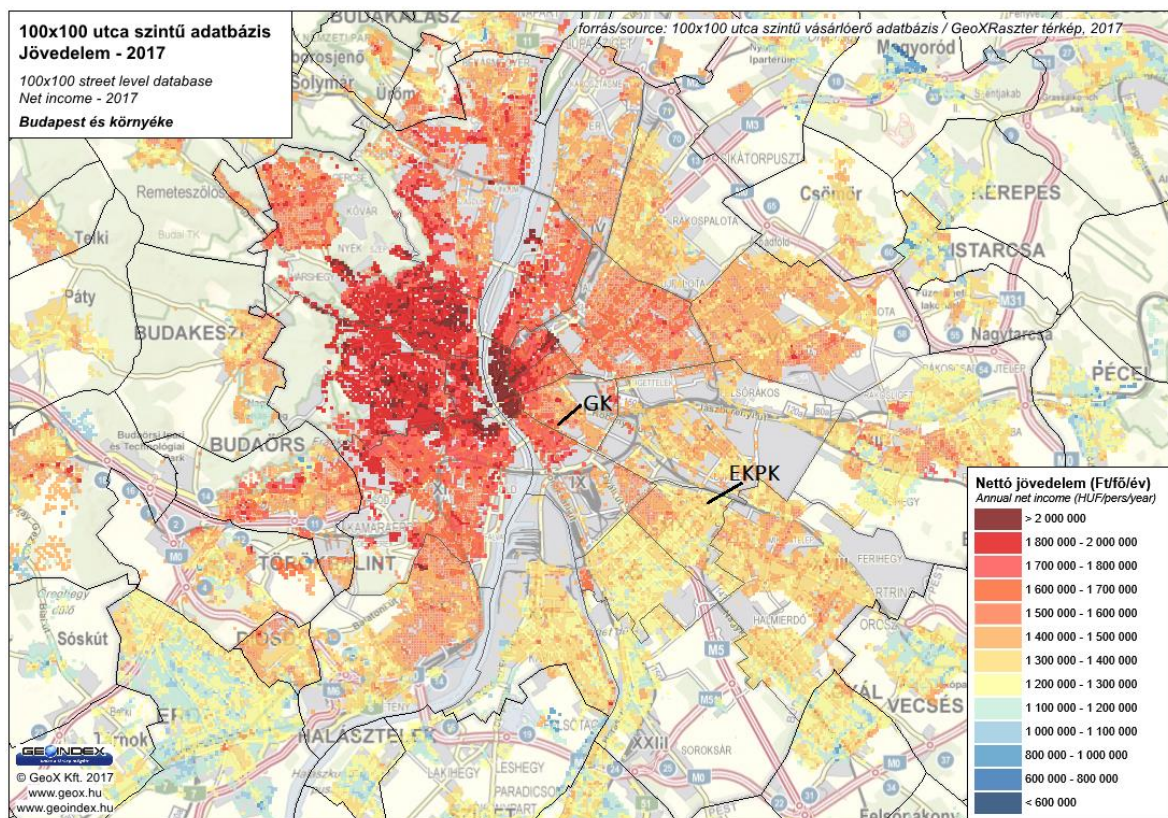


Figure 3. Annual net income Budapest and surroundings, 2017 (“GeoIndex,” 2017)

5.1.2 EKPK and GK more in depth

Taking a closer look at the two gardens one can find significant differences in their history and in their structures too. This section presents the most interesting characteristics and differences I have identified.

EKPK

EKPK is the first of 8 gardens established by VKE, an association that practically consists of one man: Gábor Rosta. Rosta considers himself the founder and main promoter of the CGs movement of the city. Having a background in organizational development in the private sector, Rosta sees CGs as organizations that need a well thought-out development plan. He puts a lot of emphasis on the funding process, working closely with the municipalities for 1,5 to 2 years before the establishment of a garden. He believes in long-term plans, so the legality and the long-term sustainability of his projects are crucial for him: EKPK is built on a site that is owned by the municipality and is unsuitable for any future construction because important water pipes lie under the territory. The close relationship with the municipality also extends to financial matters: the municipality financed all major costs around the founding and still supports the garden occasionally. For the most part EKPK is independent financially. They do not have any major costs and can cover expenses by collecting a symbolic monthly membership fee. For these reasons, EKPK is the only CG of the city whose long-term survival seems to be guaranteed.

Rosta is actively present in the life of his gardens taking on the role of the coordinator for the first season. Rosta worked closely with the group of gardeners in EKPK too, coordinating all major tasks and supporting the group in their way to become a well-working community. He organized courses, regular formal and informal meetings and activities to build trust, helped members to get involved and even to find their individual competences and potential roles in the community. After the first season key persons were identified who could take on the role of a coordinator.

EKPK has a relatively permanent community, with many of its members being present from the very beginning. The garden now is run by a coordinating body of four people, each of them responsible for a different area. They still hold regular meetings. Decisions are first discussed in this coordinating group and then presented to the wider community through emails or at meetings. Everybody is allowed and encouraged to vote and express opinions on these issues. One member, Éva Kis, is especially active in the coordinating group, taking a leading role with more responsibilities than

others, initiating, coordinating and leading all events and activities taking place in and out of the garden.

The gardeners from EKPK organize a few open activities each season, represent the garden in different local events (car-free day, Earth day) and have a strong connection with local primary schools. Students from the neighbouring school have a plot in the garden and many schools have regular activities in there (called “biology class in the garden”).

GK

GK, established in the same year as EKPK, has a totally different history. It was founded by Zsuzsa Keszthelyi, a local green and civil activist from the neighbourhood and it was inspired by the CGs of Copenhagen. It started as a more spontaneous and smaller-scale project, where the gardeners were Keszthelyi’s friends and acquaintances. The launch of the garden was financed by tenders. The current territory of the community is their third: as they are in a neighbourhood that is subject to a large-scale neighbourhood revitalization project, and their gardens are plots owned by the developer company, they are continuously forced to move. They also struggled with funding issues. These had a very destructive impact on the community of the garden: from the original members almost, no one is active any longer.

Currently they are already at the very edge of the development project, so their future is very questionable: they don’t know how long they can stay nor where to go next if they lose this territory too. Having said that the community has a good relationship with Futureal the project developer: they use their territory legally and Futureal supports GK even financially.

GK is a grassroots garden, meaning that they do not belong to any association and are independent from the municipality. The latter is intentional: they feel that it would be a political statement to have municipal support, and they aim to make the garden independent, and a space free of politics. Not being part of any association presents difficulties when applying for funding, so currently they are working on the establishment of the GK Association, an organization with aims like community building, promotion of urban sustainability, education. Gardeners can choose whether to join the GK association, or not.

GK’s structure can be described as concentric circles. In the middle is a team of five to ten core members, then more and less active gardeners and then there is a circle of people who belong to the community, but do not own plots in the garden. Gardeners pay a small membership fee each month

and have a full vote when deciding things. Other members of the community are free to come and participate in any activity but most of them do not pay a membership fee and do not have the right to vote.

The garden is led by a team of coordinators, three at the moment, all responsible for a different area. Decisions are made depending on the topic: sometimes the three coordinators decide and sometimes the whole group decides by consensus. They publish everything on the internal Facebook page of GK for transparency.

GK has some regular activities: they have regular meetings twice a year and in the summer season they have many informal meetings and joint project common works, among others the Wednesday potluck. In winter they have GKKlub, a monthly meeting opened to the public where they show movies and organize discussions or practical workshops. They also organize regular seed exchanges.

Another interesting feature of this garden is that here not only individuals can get a plot, but associations too. In the past many NGOs were present in the garden (Messzelátó, Menedék-Migration Aid, Food not Bombs, Menhely for the support of homeless people, etc). These groups often organize events and their presence creates interesting learning opportunities.

5.1.3 EKPK and GK as CoPs

Before applying CoP theory for the learning processes happening in the gardens, first I had to investigate if EKPK and GK show characteristics of a CoP. Table 3 and 4 show the results of this research.

Table 3. EKPK as a CoP

EKPK		
Mutual engagement	Joint enterprise	Shared repertoire
continuous communal events (grill parties, potlucks)	gardening	commonly cultivated areas: herbs, plants, bushes, trees
regular events opened for the public	core members: environmental education of future generations	communal areas and garden furniture
collective workdays: monthly cleaning, seasonal works, regular workdays for the management of communal areas	community building	composting system
core members going several times a week		shared tools
monthly meetings		<i>stories</i> : a shared satisfaction being part of a supportive community, being able to spend time in a green space
online interaction: mailing list, Facebook presence: discussing current issues, exchange of tips, tricks, recipes		

Table 4. GK as a CoP

GK		
Mutual engagement	Joint enterprise	Shared repertoire
regular communal events (potluck on Wednesdays)	gardening (for some)	commonly cultivated areas: row of flowers, bees
regular events opened for the public (“GKKlub”)	community participation, community building	communal areas and garden furniture (e.g. fireplace)
regular gardening meetings (twice a year)	for core members: establishment of an association with clear goals that can apply for funding	composting system
core members going several times a week	for core members: have a wider impact on society by showing example: sustainable urban lifestyle alternatives, community	shared tools and a wooden house to store them
online interaction especially on Facebook discussing current issues	for core members: build relationships, also with other CGs	<i>stories</i> : a wish to stay in this territory longer, to find a permanent place for the garden
		<i>stories</i> : is 20% gardening and 80% community (exact numbers up for discussion)

These tables show that both gardens exhibit many characteristics of a CoP. Nevertheless, it is interesting to note that joint enterprise is not as obvious in GK as in EKPK. In GK, gardening itself is a secondary function for many of the participants: community participation and community building are primary. In both gardens I could identify a smaller group of highly motivated members (“core members”) that have different, “more ambitious” joint enterprises than the rest of the gardeners. They function as “smaller CoPs” within the bigger ones.

5.2. Coordination and Sustainability Education

In this section, I aim to explore the attitude of coordinating associations towards SE. As I mentioned in section 2.1, CGs were found to be places with an enormous potential for sustainability learning, but the learning outcomes are highly dependent on the quality, structure and continuity of educational programs in place. Originally in this section I aimed to explore how coordinating

associations understand SE and what strategies they apply to achieve their educational goals, if any (RQ2). Nevertheless, soon enough I have discovered that there are no real coordinating associations, VKE being constituted by one person, and GK being a grassroots garden organized in a bottom-up manner. Hence, I have extended the question and reframed it as how SE is understood not only by coordinating associations but also by garden coordinators and by any gardener who is interested in it and has organized any activity around it. After examining the learning processes that actually take place in the gardens from the perspective of gardeners in 5.3, in 5.4 I will come back to explore the relationship between the planned learning, and the actual outcome.

EKPK

VKE, the coordinating association of EKPK has several sections on its website dedicated to the benefits of urban gardens. Many of them are connected to SE. Table 5 shows all the educational potentials and benefits VKE sees in a CG. On the website of the EKPK garden itself there were no explicit references to education, nor benefits of gardening.

Table 5. Educational benefits of CGs according to VKE (“Városi kertek,” 2017)

networking, building relationships
gardening, producing own food
long-term thinking and planning
new value system, alternatives to consumerism
democracy, cooperation, proactivity, self-governance
tolerance, communication across ages and cultures
food security, first steps towards self-sufficiency
food conservation techniques
biodiversity, local ecological conditions
composting
increased awareness on environmental sustainability
meaningful, healthy ways to spend free-time and release stress

The interview with Rosta, head of VKE, showed a somewhat different approach. Here, Rosta highlighted the uselessness of any kind of SE, saying that people are “sick and tired” of hearing about serious and complex environmental problems. He thinks that these issues cannot be solved anyway:

it is too late, humanity is heading towards its doomsday and the world as we know it today will be over within 100 years. He thinks that gardens rather should be places where community building happens, where people learn to connect, to communicate, to cooperate and spend time in a meaningful and healthy way. He especially sees them as important places for the elderly who otherwise would suffer from loneliness and isolation but here they get a chance to connect, and also to challenge themselves guiding groups and leading EE activities.

Therefore, Rosta has not organized any SE activity for the gardeners in any of the gardens of VKE. However, he puts a lot of emphasis on community development, leading it himself in the first season and supporting the new coordinators in their jobs. He also finances technical courses the gardeners would like to take, e.g. a two-year-long training on ecological gardening organized by a local university.

EKPK is 5 years old now and from the second year independent from VKE. Gardeners are free to organize any activity they wish to. Éva Kis, the “leader coordinator” is very interested in sustainability and EE. She has been a volunteer at Jane Goodall Institute for years and she has clearly brought in this environmental and educational angle to EKPK. However, educational activities do not target gardeners, but future generations. Kis, with the support of VKE, applied and won funding to establish an EE program in the garden. She has built up a good relationship with many primary schools from the district that come to the garden regularly for ‘Biology classes’. The framing of the activities is positive and solution oriented: the goal is to show children that gardens and plants are very interesting and spike their interest and love for the environment by a closer, physical connection to nature. Activities are playful and include herbs identification games, bug collecting competition and games to identify recyclable and compostable wastes.

GK

GK does not have a website like VKE or EKPK, only a blog (last entry in 2016) and two Facebook pages, an internal and a public one. Therefore, there is no written record on their goals, or educational strategies or activities. GK is organized in a bottom-up manner, meaning that most processes happen “spontaneously”. Every member has an equal say, and anyone can suggest new activities any time. None of the coordinators seem to have a stronger voice, therefore learning processes also happen in this spontaneous, organic way. I will look into these more in depth in the next sections where I explore these learning processes, trying to shed light on what gardeners learn and how.

5.3 Learning processes from the perspective of gardeners

In this section I answer my third RQ using concepts derived from the theories. In 5.3.1 I explore what gardeners learn and in what depth using TLLT: is their learning process confined to factual knowledge or do they experience transformational learning? In 5.3.2 I use CoP theory and explore how this all happens.

5.3.1 What is learned?

I have identified the main learning topics in the gardens and grouped them into 7 categories. While in EKPK only 3 of these were present, in GK almost all of them. The topics are described and analysed below and their relevance for sustainability will be discussed further in later sections.

5.3.1.1 Learning topics in EKPK and GK

Gardening and local ecological conditions

This learning topic was by far the most important one in case of EKPK and in GK it was also mentioned in all interviews. In both places gardeners said they had found out a lot about plant types and varieties and concrete gardening tips and tricks. In both cases organic gardening practices were highlighted. In EKPK, Kis took a course on ecological gardening and afterwards she disseminated her knowledge, teaching the community about organic pest management, plant combinations, seasonal varieties and the importance of biodiversity and ecological balance in the garden. In GK core members also try to use organic methods, many of these inspired by permaculture principles. In GK's history soil had a crucial importance as they had to move three times and every time they had different conditions. So, they have learned about the importance of good quality soil and also about how to make the most out of difficult conditions. GK also has experienced difficulties in stable and easily accessible water supplies (GK 3 has no running water), therefore some gardeners have also learned about water efficient gardening techniques. In both gardens plots are small, so efficient use of space is also a learning outcome for many.

Waste reduction and composting

Both gardens have a composting system and in both places, many of the gardeners seemed keen on discussing this topic. The installation and use of the composting system brought with it a lot of factual knowledge on how composting works, how to build up a well-working system and what can

and cannot be put into the compost. In GK some gardeners have even learned how to build a compost toilet and installed one in the garden. In case of GK it also meant an increased awareness on waste issues, the importance of waste reduction and reuse and alternatives to consumerism (e.g. repair cafes).

Use of technologies and communicational tools

In EKPK most gardeners are pensioners. As the main tools of communication are the mailing list and Facebook, everybody is encouraged to learn to use these. Also, internet is very helpful when one needs information on gardening tricks or other technical issues. The municipality organizes internet literacy courses for elderly and some of the gardeners took it to be better connected. Although this might not seem directly related to sustainability, this learning process is still important as the efficient use of internet can be a good starting point of accessing other than printed press and materials, therefore show other points of view and reinforce critical thinking.

Community building and management skills

In both places core members reported improving in getting organized and distributing tasks and responsibilities among themselves. In both gardens there is a coordination team now, with each member specializing to a certain topic. In both cases gardeners figured out this structure for themselves, instead of leaving the whole responsibility to one person. In GK coordinators reported learning a lot about community building in practice, facilitating, mentoring, mediation and conflict resolution.

Personal and interpersonal skills

In GK many of my interviewees reported to experience an improvement in their social skills. Some of them self-reported themselves as “loners”, “socially awkward” or “not much of a people’s person” and expressed their amazement about how nice and powerful it ended up feeling like being part of the community. The most important topics they highlighted were: learning how to connect, cooperate, share responsibilities, how to trust others, how to manage and solve conflicts and misunderstandings in a group and on the individual level, how to express opinions, take initiative and be proactive, and how to organize and lead events.

Alternative lifestyles

Some gardeners reported changes in their lifestyles since they joined the garden. And not only in the sense of an improvement in life-quality, although many reported this too. In EKPK many reported spending more time outdoors and feeling more connected to others and more at home in the neighbourhood since they garden. But belonging to a CG can have an even larger impact on lifestyles. One of the core members of GK said that being part of the garden has helped him considerably in leaving behind a serious addiction and stay sober until today. From the sustainability point of view more interviewees from GK reported that in the garden they learn about more sustainable lifestyle choices and they feel inspired and supported in choosing these options. Among others they have mentioned: joining food cooperatives, buying at farmers' markets, using environmental-friendly cleaning and washing products, preparing and using natural cosmetics, eating less meat. From the social point of view in GK a member also highlighted intercultural learning and increased ability to understand different points of view.

Increased awareness on global social-environmental issues

In GK some gardeners reported finding out about global social-environmental issues through gardening or through activities organized in the CG. The concrete topics they mentioned were: learning about the long-term consequences and unsustainability of current, mainstream agricultural practices, environmental impact of capitalism, consumerism, waste and plastics, questions of representation and limitations of democracy. One gardener also mentioned to hear about inspiring solutions to these too, e.g. Degrowth and other environmental movements.

5.3.1.2 Depth of learning

In this section I try to present the outcomes of data analysis from the TLLT perspective. TLLT differentiates between "levels" of learning, single one being the first, shallower type of learning and triple one being an intense, transformative learning type where paradigm shifts happen, and even identity might change. In EKPK I have only identified single-loop processes whereas in GK I have seen examples of all three. Nevertheless, I have found that these loops are all part of an integral process, representing a different phase in a learning cycle and in practice their separation felt artificial and difficult sometimes. Therefore, I have decided to discuss them together.

I have found that most learning processes in the gardens belong to single-loop learning. There is a lot of factual learning regarding gardening tips and tricks that I have considered "zero-loop learning" as per se knowing about gardening techniques does not necessarily translate into something positive

for sustainability. Learning about organic gardening, local ecological conditions and plant varieties, biodiversity, soil quality, composting and recycling I have already considered single-loop learning. In GK some members also claimed to find out about global environmental issues as well as about what can be done on the individual level to address these.

Nevertheless, even when the interviewees self-reported “sustainable” lifestyle changes, I have considered these single-loop learning, if they came about more because of “group pressure” or other external reasons and were not an outcome of an internal value clarification process.

Of course, within the scope of this research deciding if a behavioural or a life-style change happens because of an internal value clarification process is complicated. I have considered these changes as signs of a double-loop learning only if I could identify obvious signs of it. I have considered signs if my interviewees: (1) clearly expressed experiencing a change in their assumptions and perspectives (2) expressed proactivity in taking their experiences further and make a bigger impact (e.g.: trying to install a recycling system at work) (3) expressed experiencing conflicts and clashes where they had to discuss and defend their new choices and way of thinking. I have identified double-loop learning in case of four people in GK.

I have found triple-loop learning the most difficult to operationalize to this context. Also, because I have found that there is some conceptual unclarity in literature as well as a lack of empirical research on it. I could identify two examples of triple-loop learning, both in GK. In both cases I could see a clear storyline starting from single-loop, going through double-loop and ending up with a triple-loop learning. In case of Berta Torgyan, who self-reported herself totally unaware of anything sustainability-related before the garden, this meant: starting composting at home after seeing it in the garden (single-loop), getting into a small conflict with the neighbours to install a recycling system in the building and raising awareness on waste reduction at work (double), learning and thinking about alternatives to consumerism and capitalism, joining a Degrowth group as a volunteer (triple-loop).

Kinga Fetyko is an ex-gardener, who is still an active part of GK’s community despite moving away. She is a Biologist and worked in agricultural research and she arrived partly to the third loop through her work, where she realized how unsustainable the classical agricultural practices were (single-loop). In the garden, she started to experiment with permaculture, soon becoming the biggest advocate and teacher of organic gardening methods in GK as well as the biggest advocate of other important changes such as cooking local, organic and vegan for the garden’s public events or change

the plastic plates and cutlery (double-loop). Soon she also started to question the unsustainability of the whole system: she left her job and moved to the countryside and she is dreaming of starting an organic farm soon (third-loop).

Fetyko describes experiencing a “radical change” thanks to the CG. Also, because she has experienced a deep, transformative learning process regarding the power of a well-working community too. She has described herself as more of a loner, an individualist, who has lived most of her life in an authoritarian and highly hierarchical environment. In GK, organized very democratically, she met a completely different system and way of thinking and functioning. Currently Fetyko is a big promoter of the CG movement in the small city she lives in.

5.3.2 How do gardeners learn?

So how does all this learning take place in practice? What are the mechanisms through which gardeners learn facts about plants, composting, waste reduction, communication and many more? How do they move from the shallow to deeper levels of learning? To answer these questions, I looked for patterns in the interviews and use key concepts from CoP theory (written in italic below) as a framework to present them. The concepts I will use, (just as the concepts of the TLLT), describe phenomena that in reality are interrelated and embedded in each other and they interact in most learning processes. Therefore, even though in this section I try to separate them to make a stronger connection to theory, at times I discuss them together, especially when I analyse examples from GK.

EKPK

Practice

In EKPK much of the learning happens through *practice*, where gardeners learn by doing, by experimenting with different gardening methods. Sharing resources and perspectives sustain their mutual engagement.

Community

Community also plays a crucial role. Some gardeners have experience in gardening, another was professionally trained in organic gardening and others mentioned that they look up information in books and on the internet. All this knowledge seems to be shared afterwards because in EKPK there is a very strong emphasis on supporting each other. From the sustainability point of view sharing

information on organic gardening methods and other topics, such as waste reduction or protection of biodiversity, is important.

Identity

Identity seems to play a role too: in EKPK there is a strong emphasis on getting new members involved and making them feel part of the “core community” where they already know all the basics rules of cooperating. Gardeners active in leading environmental education activities also construct new identities, as “experts” on gardening and environmental topics.

Meaning

And finally, a joint construction of *meaning* also happens through discussions, when gardeners discuss what it means to be a CG and what does this entail. This is especially true because EKPK claims to be an “environmentally friendly” garden. Kis, the motor and catalyst of the gardening community has brought in many topics for discussion. According to her “now everyone’s head is fully green here in the garden” thanks to her constant talking and enthusiasm about “green” topics. Unfortunately, the focus-groups did not allow me to explore this further and see how other gardeners experience this.

It is worth highlighting that even though this was not mentioned explicitly in any of the focus groups, EKPK has a quite strong and functional community, possibly thanks to the conscious community-building efforts of VKE at the beginning. Thanks to these, people seemed to have improved awareness about how to be part of the community, what roles they can take, how to perform efficiently and how to collaborate and take on responsibilities. EKPK has a lot of common spaces as well as commonly cultivated areas but they do not seem to have difficulties in distributing and carrying out joint projects and they have regular formal and informal meetings where participation is relatively high.

GK

Practice and community

In GK, the semi-structured interviews allowed me to get deeper insight into the individual processes. Here, learning through *practice* and *community* also has a primary importance. Just as in EKPK, in GK learning about gardening tips and tricks happens mostly by doing, experimenting and by learning from each other. Similarly to EKPK, here the garden also had a member who was an expert of the

topic. Fetyko is not an active gardener anymore, but is an active member of the community even though she has moved away from the city. When she was present she regularly organized trainings for the community where she taught about gardening inspired by permaculture principles. She also tried to convey her holistic view on agricultural processes that lead to a holistic view on the entire system. Four of my interviewees mentioned that Fetyko and other engaged members inspired them in many ways, not only to a new way of gardening but also for “more sustainable”, “greener” lifestyle choices and decisions.

Meaning

The construction of *meaning* is also important in GK. During the winter Klub meetings anybody can suggest activities, or topics and movies related to gardening, community, or sustainability. These occasions are opened for the public and always include discussion where participants try to make sense of what they have seen or heard and what that translates to in their lives. The Klub aims to encourage members to be proactive, bringing in topics that interests them, and organizers encourage participants to express their opinions, ask questions, reinforcing this way critical thinking.

Fetyko also started discussions about sustainable gardening practices and lifestyle through a Facebook group that she originally initiated for her friends but later added interested GK members too. Here a construction of meaning happens when members try to find out and discuss what it means to be “green” or “sustainable” and what needs to be done.

Identity

Identity, or “learning as becoming” can also be observed clearly in many cases. As I have mentioned before, GK has a structure that could be described as concentric circles. The ones at the periphery can still feel part of the garden; one does not need a plot to belong here. Two of my interviewees were in fact no longer active gardeners, but still identified as being part of the *community* somehow; one of them is planning to apply for a plot again to reintegrate. Another interviewee has just acquired a plot but has been an active community member before this for more than a year, helping in the joint projects and works and attending regular meetings. Coordinators are also *constructing identities* by being the experts and the people responsible for certain tasks. Gibbon is one of the oldest coordinators who now is one of the people responsible for community-building. He told me about the many courses and trainings he attended thanks to the garden on coordination, mentoring, facilitating and mediation to become better at these and can serve well the community as a

coordinator. In his case GK really meant an *identity change* as it is his main tool and “work therapy” to stay sober.

In a way it is also a kind of *identity change* that members experience when they talk about how being in the *community* has improved their interpersonal skills and how they have realized how proactive they can be, as well as how to express themselves and stand up for themselves and the causes they care about. They have also expressed that through participation in the *community*, in the *common practice*, and by resolving problems together, they have changed considerably from only believing in hierarchy and independent work to have faith in and enjoy collaboration and cooperation. All this can be interesting from the sustainability point of view as these processes reinforce critical thinking, proactivity and they counteract the traditional Hungarian individualism, teaching people the basics of a real democracy.

Conflicts and difficult situations also can present valuable learning opportunities that involve many components at the same time. They present a learning opportunity through the *identity construction* of the coordinators, who are many times expected to resolve these conflicts. *Meaning*, or “learning as experience” is another component: conflicts frequently present opportunities to re-discuss rules and rethink what it means to meaningfully engage in the community. It even provides the opportunity to clarify main values and question underlying assumptions (e.g. limits of democracy).

One last thing to highlight regarding the learning processes in GK is the importance of the garden’s connections. GK’s is particular in the sense that here associations and NGOs can also have a plot and can use the garden for their activities. Among these Messzelátó’s importance is crucial. The NGO won funding for the garden several times and organized many workshops and trainings here and involved the gardeners in many of their activities. They provided the gardeners the opportunity to participate in the “New Flavour of your Life”, a project funded by the EU (Grundtvig) that promoted “active citizenship and health awareness through gardening in towns and cities”. Here participants got the opportunity to travel, visit other CGs and share with international participants from five countries their experiences and good practices. Another great connection highlighted by many interviewees is their close connection to the local Transition Network Initiative. They collaborated several times and several gardeners took part in their training sessions on leadership, coordination, mentoring and mediating.

5.3.3 Putting it all together

At the end of this research process, I have concluded that CGs are, in fact, places where a lot of learning happens through social participation and involvement in a practice. Not all of them are relevant for sustainability, but some are. This is interesting in light of the fact that none of the CGs have SE for gardeners in their focus, and the coordinator of VKE even seemed somewhat hostile towards it.

As I have mentioned before, I used different research methods in the two gardens, therefore there are certain limitations regarding the comparability of the two cases. Nevertheless, in this section I attempt to put together everything I have observed and identify some interesting differences and similarities that I consider valid.

Background and structure

Unsurprisingly, the background and structure of the gardens seem to have an important impact on the learning processes. In EKPK, situated in an outer suburb with gardeners who are predominantly pensioners, I have observed mostly single-loop learning processes. Here most gardeners (and all my interviewees) are pensioners so this difference in the depth of learning processes compared to GK might be because people in this life-stage in a calm district are less likely to experience big, transformative changes, than younger people living in a vibrant neighbourhood full of events and all sorts of grassroot initiatives. The pensioners in EKPK still learn, they all talked very enthusiastically about gardening and the community and many of them seem to follow Éva Kis's sustainability-related initiatives.

The main sustainability related activity EKPK has is their EE program for local schools. These are led by Kis, with some support from other gardeners. They seem to agree on that sustainability depends more on future generations, therefore it is important to show children how beautiful and interesting the garden is and how nice it is to be more connected to nature. This attitude somewhat reflects VKE's coordinator, Rosta's who claimed that problem-focused EE should not be a task of a CG as children learn about these in schools and from the gardeners everybody knows and worries about these already. My research, nevertheless, has not confirmed this latter point. Enthusiasm and activity in the conversations seemed to drop considerably when sustainability issues (or their solutions) were the topic (Kis being the only one talking) and even though most professed to care and be "nature lovers", my observations showed that this does not seem to translate into concrete, tangible actions.

Most gardeners do not take compost waste to the garden from their homes even though they live close by, they do not seem to care about where their seeds come from, the garden's events produce a lot of plastic waste and they do not serve organic or local food but a lot of meat and sugary drinks. Obviously, these latter ones can also be out of economic reasons, most organic and high-quality food is financially out of reach for a regular Hungarian pensioner.

EKPK is a stable garden that has not struggled during its existence; therefore, it is possible for them to have such a well-developed EE activity for children. GK, a garden that had to move three times already and has a high turnover of members, started out with (and continues to have) equally ambitious plans. However, in practice much of the time and energy of its gardeners was spent on securing the mere survival of the garden, so long-term thinking and planning could not be a priority. Still, GK has an impressive variety of activities and processes going on, especially now that they are experiencing a calmer period. It is now that they have the time and energy to start dreaming bigger and setting up an association that could, for instance, secure future funding and host activities. Also, the hardships GK has experienced seem to also have had some positive impacts: the core team has become stronger and some members seemed to find their strength and proactivity in these times, where they really needed to become active to save the garden and its community.

In both gardens the importance of certain individuals was striking. In EKPK Éva Kis has become a sort of "charismatic leader", people like and follow her naturally. If she were not part of the garden it is unsure how important ecological gardening methods or EE would be. Her absence would definitely have an adverse impact on the community itself too, as she is the main promoter of community building.

In GK the structure is very different, there is no one "leader" without whom the whole community would drastically change. Based on the stories this also seems to mean that "regular" members are more proactive and take more the initiative. Still, members seem to have a considerable influence on each other here also. Fetyko has inspired many with her attitude towards sustainability, another coordinator inspired others with his attitude towards peaceful, attentive conflict resolution and another, who is a social worker and trained community builder, was highlighted by others as a source of inspiration for social activism.

One of my assumptions in the beginning of the research was that CGing will necessarily attract people who are interested in sustainability and communities, especially in a garden like GK that is central, more visible and "hip" than EKPK. This has proved to be only partially true. In GK

coordinators and many gardeners are, in fact, also interested in some of these things, but not all of them and not to the same degree. Some were clearly more interested in belonging to a community and ended up going through a transformative, triple-loop learning, some were more interested in community building and in the social aspects of the garden and ended up learning a lot about environmental sustainability and gardening. Or the other way around: I have spoken to gardeners who came simply for the gardening experience and ended up learning about wider issues including social and environmental justice.

In this sense, I think the diversity of members in GK is something very valuable. Of course, diversity also implies more conflicts, but these, if handled well, are not necessarily bad. The diversity of GK is thanks to both its position and its openness. In GK most meetings and events are public, anyone can apply for plots, even people without a plot can become members and even associations can join. The latter have brought in very valuable learning opportunities and inspiring connections, even international ones. This differs considerably from EKPK, which is very embedded and important in its local context, but not outside of it.

The community of GK is also very open towards other CGs of the city: they constantly seek dialogue and they are the main organizers of the “Night of CGs”, an event that takes place once a year where all CGs open for the public with different events. With that they seek to reinforce the connection between the gardens as well as make CGs more visible by showing the public an “alternative urban reality” where people grow their own food and form a supportive community.

This “leader-free” structure in GK together with the open-mindedness and apparent tolerance of the community also seems to encourage members to bring in their own ideas and initiatives and develop both their personal skills and their critical thinking. This, again, can partly be attributed to the age difference: older Hungarian generations, more present in EKPK, might feel less comfortable with non-hierarchical structures and have more difficulty in learning completely new ways of interacting.

A last considerable structural difference between the gardens I would like to highlight is their legal status. EKPK is very much supported by the municipality and this confers a lot of advantages: they have a long-term place and financial stability, and this allows them to plan for longer and elaborate more complex activities. Nevertheless, this also brings certain constraints. As I have mentioned GK is intentionally independent, perhaps because the 8th district is famous for its pro-government mayor, whose values are very different from the ones the garden represents. GK is “politics free”, but if one day they decide to become politically active places of resistance and activism, they could probably do

that without losing everything. EKPK could not do the same and their activities will always be confined to those that the municipality considers useful, or at least harmless.

Topics, depths and ways of learning

Regarding the learning topics and depths of learning there are also some similarities and differences in the gardens. At this point I consider it interesting to refer back to table 5. that I have developed based on VKE' s website, which synthesises well the learning potential of CGs. Table 6. shows these again, complemented with an analysis of whether these have been accomplished or not in the gardens. This serves also as a summary of many things that have been discussed so far.

Table 6: Accomplishment of learning potential EKPK&GK

Learning topics	EKPK	GK
gardening, producing own food	✓	✓
long-term thinking and planning	✓	×
new value system, alternatives to consumerism	×	✓
democracy, cooperation, proactivity, self-governance	to some extent	✓
tolerance, communication across ages and cultures	?	✓
food security, first steps towards self-sufficiency	×	to some extent
food conservation techniques	?	?
biodiversity, local ecological conditions	to some extent	to some extent
composting, waste management	✓	✓
increased awareness on environmental sustainability	to some extent	✓
meaningful, healthy ways to spend free-time and release stress	✓	✓

Gardeners in both places felt that being part of the CG has increased their quality of life considerably. Being part of a community means a lot to the elderly in EKPK as well as to those in GK. For many this is the very first supporting community they feel part of.

In both gardens there has been some learning on self-governance: EKPK started with one coordinator and GK with none, yet both independently ended up with the same structure where a coordination team with specialized tasks leads the garden. Both gardens seem to have an efficient and functional system for decision-making and both seem effective in organising the common tasks.

To end this section, I would like to highlight one last thing regarding the depths of learning processes. Although from this research only GK seemed to experience double- and triple-loop learning processes I would like to stress that single-loop learning is also very important. Single-loop learning is also very valuable, it shows where people are at that moment, sheds light to their current value system and is a necessary step towards deeper levels. At the same time, it can already have very similar tangible effects than a triple-loop learning when it comes to certain concrete behaviours.

6 Conclusion

Community gardens are physical spaces with true potential for connecting the social and environmental dimensions of sustainability (Martin, 2016), therefore they are interesting places to study for a sustainability science student. Martin (2016) highlights three of these points of intersections generating social capital for community development, promoting environmental education, and advancing social and environmental justice (Martin, 2016). During this thesis I have explored the second point. Nevertheless, as all three are interconnected I inadvertently also touched upon the other two.

I have found that CGs in Budapest are indeed places where social capital is generated: community building has a vital role in both studied gardens, and all gardeners highlighted an increased life quality due to their membership in the community as well as spending more time outdoors.

Regarding the third aspect (advancing social and environmental justice) I have found that in Budapest, contrary to their foreign counterparts, CGs are perceived as recreational and as spaces strictly without political discussions. This seems to limit their potential as spaces of change and movements, especially in the cases of gardens that are owned and coordinated by municipalities.

Regarding their potential as educational spaces I have also found that compared to their foreign, especially American counterparts, CGs in Budapest lag behind: none of them has such a comprehensive and well-structured educational programme that we can find in some gardens abroad (Krasny & Tidball, 2009; Tidball & Krasny, 2011). Nevertheless, due to the significant socio-cultural and historical differences these comparisons might not be fair. Moreover, I have still found that valuable learning takes place in the gardens of Budapest, some that can even be considered high quality environmental learning: members learning about autonomy, information sharing and involvement in decision making (Evely, Pinard, Reed, & Fazey, 2011; Pretty, 1995).

CGs can be considerably different from each other, even within the same city: I have found that the structure, history, location, constitution and certain members have a decisive impact on what and how is learned. Therefore, instead of presenting generalizable conclusions, first I would like to highlight the strongest points of each garden that can serve as examples of good practice. Then I will collect some key points to answer my overarching RQ.

EKPK is uniquely well-planned. Everything around the setup of the garden was thought-through: the long-term funding, the location that allows the garden to exist on the long-run, the design with many common spaces and commonly cultivated areas, and the involvement of new members and identification of the new coordinators. This preparation took nearly two years, but it really seemed to pay off. Just as the good relationship VKE reached to have with the local authorities. EKPK was the very first garden that managed to gain the confidence and support of a municipality setting a milestone this way for the whole CG movement of the city. All this is important from the SE point of view because this background has allowed the garden to go further and set up educational programs for children.

I consider GK's strongest point their openness and diversity. GK interacts not only with the neighbourhood but, through its many public programmes and connection to associations, to the wider city as well as with the international gardening scene. This has presented very valuable learning opportunities for the gardeners. GK's efforts to connect to other gardens of the city is also valuable. A network of CGs would be great for knowledge and skill sharing as well as for a better visibility and representation.

When I started this thesis, I was curious to explore how can CGs of Budapest act as hubs for SE. After synthesizing the findings from my case studies and literature review I would highlight the following key points. I have found that openness and interaction with the wider community are key aspects. In CoP literature this is called "boundary interaction", an interaction that happens between the ones belonging to the CoP and the ones that are not (Wenger, 2000). This in fact seems to increase learning opportunities as it means that members of the CoP constantly need to explain and clarify their practice and values. Therefore, a good visibility of the garden can be important as it not only attracts potential new members but also curious outsiders.

Diversity of organized public and non-public activities also seemed to be key aspects, especially if these go beyond gardening and relate to wider social and ecological topics and practices. Diversity of participants might also contribute to an increased learning experience, especially if there are some stable and motivating key members that can show and teach good practices to the ones receptive to them. These "experts" play a crucial role, therefore if the SE potential of a garden is to be increased it is fundamental to have at least a couple of these people.

A garden that is a hub for SE is also well-connected. It is embedded in the local neighbourhood having a good relationship with local schools and organizations. But it also has connections on the

city level, with NGOs, associations and other organizations working around similar social-environmental goals. Belonging to a national and international network and participate in knowledge sharing activities also increase considerably the educational potential of these places.

Seeing the current situation of the Hungarian gardens, these key points mostly indicate points for improvement. Nevertheless, it is a worthy endeavour. Budapest is the capital of an EU country with 1,741,041 habitants, with a respectively big ecological footprint (“World Population Review,” 2017). The sustainability education of its citizens is crucial and CGs seem appropriate places for this. They can be places that bring nature closer as well as connect neighbours and strangers. This last one could also become a first small step towards changing the typical Eastern-European atmosphere of mistrust and low community participation.

Even though further exploration and analysis would be needed I consider these points a good basis for further exploration and action. In my opinion to investigate and take further the educational potential of these gardens an action-oriented research would be recommendable, where a comprehensive social-environmental educational programme is developed and set up in a garden. This could lead to more concrete ideas on how to maximize on these spaces’ potential. This could be taken even further by adding cases from neighbouring countries, shedding light on further Central-Eastern European particularities and filling the existing research gap even better.

Some might argue that changing individual attitudes and behaviours is useless for sustainability. Nevertheless, I gain strength from thinking it otherwise, and see the world as members of GK do: “never believe when they say that you are small and stinky to make a difference, everybody has a lot of power and can induce significant changes any time. You just need to start, others will follow” (Gibbon, GK).

7 References

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8 Appendices

Appendix A List of interviewees

EKPK

Gábor Rosta, coordinator of VKE	06-09-2017
Focus Group 1	15-09-2017
Focus Group 2	28-09-2017

GK

Orsolya Bálint	20-10-2017
Kinga Gabriella Fetyko	23-10-2017
Berta Torgyán	31-10-2017
Gábor Kovács	27-10-2017&11-05-2017
Ferenc Kling „Gibbon”	30-10-2017
Réka Czabán	02-11-2017
Viki Takács	08-11-2017

Appendix B Semi-structured interview guides

RQ2: How does VKE (Városi Kertek Egyesülete-Association of Urban Gardens) understand Sustainability Education? Do they integrate it into their activities? If so, how?

interview with Gábor Rosta, coordinator/leader of VKE

Recap briefly who am I and what my research is about

factsheet: name, position, etc.

-Can you tell me a bit about yourself? How did you end up working with CGs and what is your main role?

-Does HE participate actively in these activities? Does HE have a personal contact with the garden and gardeners? or only coordinating from the distance?

-Please describe VKE shortly-brief history and how does it work (members? structure?)

-What are VKE's main goals and how are they developed? (Do they have a document on this apart from the website?)

-What are their main activities?

-It is mentioned on the website that education is important for them, what do they mean by this exactly? What are their main educational goals? – Do they aim at giving factual knowledge, practical skills? Do they try to 'open their eyes', challenge their views? (debates) provide transformational experiences?

(Anybody responsible at the organization for the educational activities I should talk to? (no))

-How does this look like in practice? What kind of activities do they have to address these educational goals? How regular are they? What is their scope?

-Who is the main target of these educational activities? Do they have anything targeting the gardeners? If yes, what? May I join any of these?

- Can/Do the gardeners put forward topics/issues/techniques they would like to learn about?

-Do they monitor somehow the success of their educational programmes? Do they reflect on them in any way?

-How is the participation in these activities? Lot of people come? Always the same or different ones?—Does HE participate actively in these activities? Does he have a personal contact with the garden and gardeners? or only coordinating from the distance?

-What would they like to gardeners learn/take away from this community gardening experience? Do they think they succeed?

-Do they aim to raise awareness on wider sustainability issues related (and unrelated) to gardening/food? If yes how?

-Do they aim to change gardener's behaviours and encourage them to lead a more sustainable lifestyle? If yes how?

-Do they encourage critical thinking in any way? If yes how?

-Do they encourage members to be active politically? (Activism, volunteering, etc.) If yes how?

-Has he observed any changes regarding any of these in the gardeners (last 4)? (more factual knowledge, more awareness, change in lifestyle)

- Is the garden/its activities/ its network used to spread information about learning activities which take place elsewhere?

-Can I contact him by email/phone in case I need clarification or further explanation on something?

Interview with Éva Kis coordinator of the CG, main responsible of educational activities taking place in the garden

-Can you tell me a bit about yourself? How did she get involved and what is her role now exactly? What were her main motivations for joining? What are her main motivations now to stay and be so active?

-Does sHE participate actively in these activities? Does sHE have a personal contact with the garden and gardeners? or only coordinating from the distance?

-Shortly describe the garden please-how many gardeners? how diverse is the group (age, gender, status, background-wise) How many of them are active? (Do they happen to have a list where they keep track of these things?)

-How is the fluctuation in the garden? Who are the oldest and most active members? Is there a strong community in the garden?

-What are their main educational goals?

-Who is the main target of these educational activities? Do they have anything targeting the gardeners? If yes, what? May I join any of these?

-Do they monitor somehow the success of their educational programmes? Do they reflect on them in any way?

-How is the participation in these activities? Lot of people come? Always the same or different ones?

-What do they think gardeners learn/take away from this community gardening experience?

-Do they aim to raise awareness on wider sustainability issues related (and unrelated) to gardening/food? If yes how?

-Do they aim to change gardener's behaviours and encourage them to lead a more sustainable lifestyle? If yes how?

-Do they encourage critical thinking in any way? If yes how?

-Do they encourage members to be active politically? (Activism, volunteering, etc.) If yes how?

-Has she observed any changes regarding any of these in the gardeners (last 4)? (more factual knowledge, more awareness, change in lifestyle)

-Can I contact her by email/phone in case I need clarification or further explanation on something

she could also be counted as one of the oldest and most active participants—also questions from RQ3

RQ3: What is the learning process from the perspective of gardeners? What and how do they learn?

interview with the gardeners

factsheet name, age, gender, status, job, since when involved, gardening alone or with family

-Can you tell me a bit about yourself? How did you end up here in this garden? What were your main motivations for joining?

-How do you like the experience? Do you still have the same motivation as in the beginning or have they changed somehow?

-Do you feel you are improving and learning here? If yes, in what ways? If answer no: *

-Have you learned something incredibly new here? (moments of epiphany) something "lifechanging"?

-Do you ever think about environmental issues? Why/why not?

-Do you try to "behave" environmentally friendly? Something you try to do differently? If yes Why? (/Why not) how? since when?

-Are you involved in anything sustainability related apart from gardening? (volunteering, activism, etc.) Since when? If they joined recently the other activity: do you think that your experience in the CG might have influenced your decision to get active? Why are you involved in these activities?

-Does this "raised awareness" cause any conflicts with your family/relatives/friends/at work etc.? Has it ever happened that you had a discussion where you had to explain yourself or defend yourself?

-Why are you not involved in these kinds of activities?

-What do you think is the impact/effect of these activities on you and your community?

-Can I contact you by email/phone in case I need clarification or further explanation on something?

*

-Would you like to learn here?

-How can learning in the garden be facilitated for you?

-What learning activities would you like to see and why?

Appendix C Pictures of EKPK and GK

EKPK







GK





