



The Grass is Always Tastier on the Fruitful Side

Exploring the Potentials, Opportunities and Challenges of Urban Food Production: A Case Study of Uppsala

Sanaz Kalantari & Rana Toprak
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Swedish University of Agricultural Sciences, SLU
Faculty of Natural Resources and Agricultural Sciences
Landscape Architecture Programme - Uppsala
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- Exploring the Potentials, Opportunities and Challenges of Urban Food Production: A Case Study of Uppsala

Gräset är alltid godare på den fruktbara sidan

- Utforskning av potentialer, möjligheter och utmaningar med urban matproduktion: en fallstudie av Uppsala

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Keywords: Urbanization, Grass lawns, Urban agriculture, Food production, Uppsala, Ultuna Permakultur, Municipal sector, Planning, Establishing, Management, Ecosystems, Human-nature connectedness, Extinction of Experience, Top-down, Bottom-up, Landscape architecture

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Department of Urban and Rural Development

Division of Landscape Architecture



Foreword

We express our heartfelt gratitude to all who have played a crucial role in the completion of this master's thesis. First and foremost, we extend our sincere appreciation to our supervisor, Marcus Hedblom, whose unwavering support and profound knowledge have been invaluable throughout this journey.

Furthermore, we extend our thanks to our examiner Mattias Qviström and assistant examiner Emma Butler and to all the participants who took part in the interviews conducted during our research. The collaboration and openness displayed by the municipal actors and passionate individuals in the field of urban food production were instrumental in providing us with invaluable insights.

Finally, we express our gratitude to our families and friends for their heartwarming support throughout this journey.

As we present this thesis, our aspiration is that it serves as a source of inspiration and offers valuable information on this current, intriguing, and significant subject. Once again, we extend our deepest gratitude to all those who supported and guided us along the way.

About us

Our trajectory is rooted in our long-term engagement in an urban permaculture food park for three years, parallel with our studies in the landscape architecture program. With our team, we transformed two villa lawns and one bigger urban lawn into lush food parks. And In this food park we have experienced, empirically studied and discussed the potential that the transformation from lawn to a productive landscape has to strengthen ecological and social bonds. Through this lens, this interest has been bridged to our studies at advanced level, during our masters' years, in landscape architecture and therethrough we have been motivated to academically investigate the phenomenon in-depth and examine the concerns for the establishment of additional urban food parks in Sweden and Uppsala, since this is what we aim to work with as landscape architects. Our passion is to incorporate regenerative concepts into our work to create places for all life to thrive.



Abstract

Urbanization has globally led to economic and infrastructural growth but has also resulted in environmental degradation, decreased access to fertile agricultural land, increased food demand, and fragmentation of essential ecosystems. These challenges are prevalent in Swedish cities, including Uppsala, where green spaces are predominantly covered by lawns. Concurrently, there is a growing interest in urban food production in Uppsala, with the municipality aiming to promote urban and rural agriculture and examine its feasibility through a political task in the 2023 Goals and Budget. Despite increased awareness of the need for urban food production, there is a significant gap between ambition and infrastructure for promoting it at the municipal level.

This thesis explores the opportunities and challenges in planning, establishing, and managing urban food production on a municipal level, with a focus on transforming lawns into productive urban spaces that can address the human-nature dissociation through the lens of “Extinction of Experience”; a theory which explores human-nature disconnection, where individuals are less likely to value, preserve, and protect the environment, thus exacerbating environmental degradation. We seek to map the complexity of the issue by studying the experience, ambitions and reflections of municipal actors and the potential of urban food production as a pathway to reverse the “Extinction of Experience” by examining the case of Ultuna Permakultur, an urban food production initiative. It is within this context that our thesis is framed.

The findings of this thesis demonstrate that planning and anchoring aspects are the primary concerns within the municipal sector regarding the longevity and sustainability of urban food production in Uppsala. The possibilities and challenges are found to be determined by land ownership and land use, with public spaces presenting the most obstacles due to their public nature, especially for commercial purposes. Examples of solutions from other municipalities where these challenges have been partially overcome are agreements with associations and the regulation of accessibility through official documents and municipal coordination roles for cultivation. However, other land use e.g. vacant land holds greater potential for conversion into food-producing environments than public land. The results also indicate that integrating food production into urban spaces, including public lawns can promote self-sufficiency, foster a deeper connection with nature, and potentially reverse the “Extinction of Experience”. If properly planned and anchored, these initiatives can serve as catalysts for community-building, education, and sustainable transformation, promoting environmentally conscious behaviors to address broader societal issues.

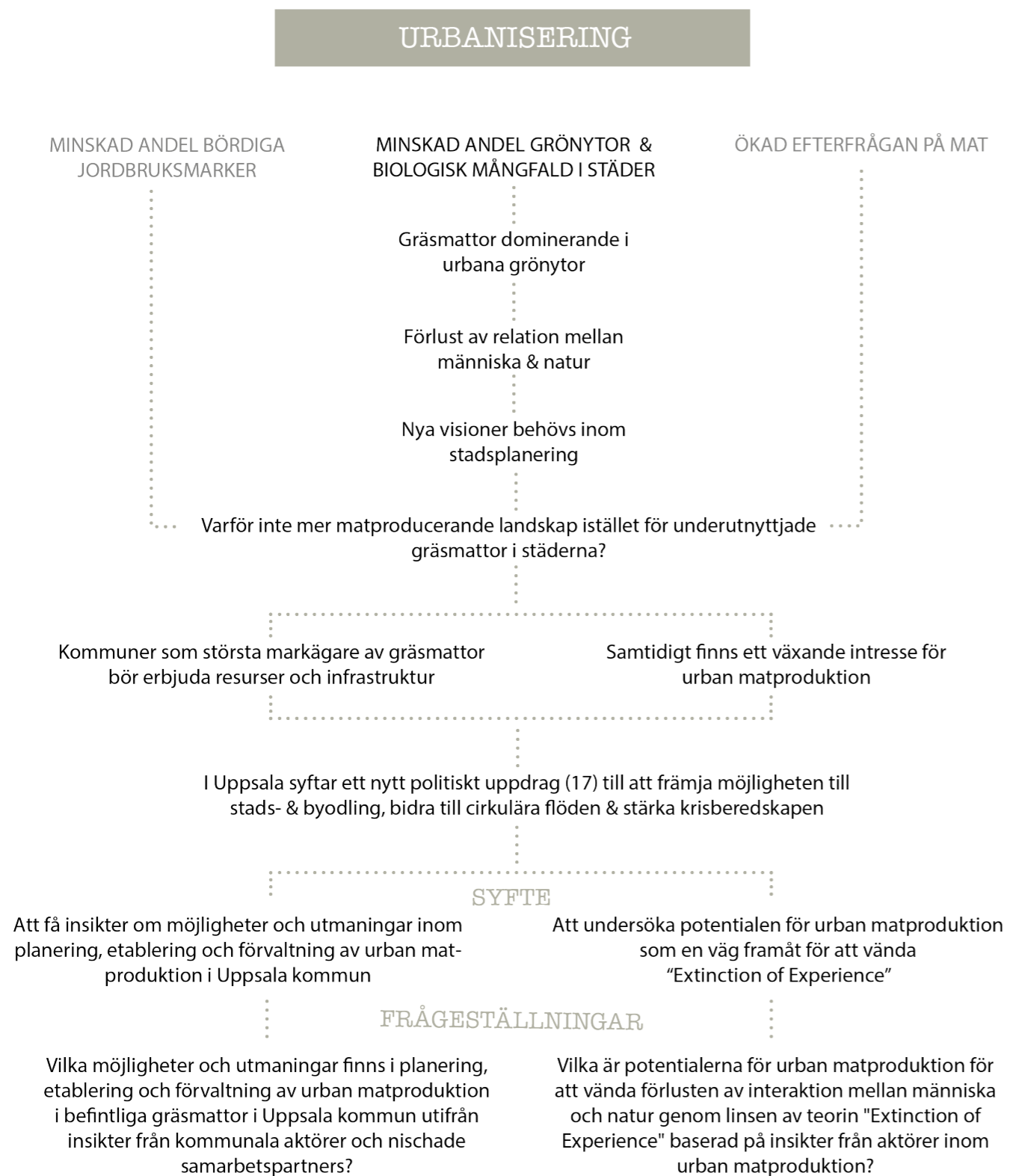
Municipalities can play a vital role by actively supporting local initiatives, providing necessary infrastructure, and adopting proactive sustainability measures for urban food production within Uppsala’s urban and peri-urban boundaries that can address the conflicts arising from urbanization, population growth, and increasing food demand. As landscape architects and planners, we bear the responsibility to promote sustainable planning and design, acting as catalysts for necessary social and environmental transformations. By taking proactive action rather than waiting for crises, we can pave the way towards a more resilient and sustainable future.

Keywords: Urbanization, Grass lawns, Urban agriculture, Food production, Uppsala, Ultuna Permakultur, Municipal sector, Planning, Establishing, Management, Ecosystems, Human-nature connectedness, Extinction of Experience, Top-down, Bottom-up, Landscape architecture

Sammanfattning

Introduktion

I diagrammet nedan illustreras problemrymden från vilken denna uppsats utgår. Utmaningarna med urbaniseringen och dess följder, som visas i diagrammet, mynnar ut i uppsatsens syfte och frågeställningar.



Figur 1: En schematisk skiss som illustrerar problemrymden inom vilken vår uppsats är utformad, med frågeställningarna formulerade utifrån lösningar till de utmaningar som urbaniseringen medför.

Metod

För att besvara frågeställningarna används flera metoder i kombination med varandra:

Litteratursyntes för att samla in och syntetisera information om utvecklingen av urbana grönområden och konventionellt och urbant jordbruk i relation till urbanisering globalt och i Sverige, samt för att utpeka och formulera problemområdet för uppsatsen.

Litteraturöversikt för att studera konceptet "human-nature connectedness" i samband med urban matproduktion, inklusive en bedömning av i vilken utsträckning tidigare forskning har undersökt dess orsaker, konsekvenser och potentiella lösningar.

Semistrukturerade intervjuer för att samla in möjligheter och utmaningar för urban livsmedelsproduktion enligt kommunala tjänstemän och andra nischkompetenser ur planerings-, etablerings- och förvaltningssynpunkt.

Ostrukturerade intervjuer för att samla in data och erfarenheter av Ultuna Permakulturs styrelsemedlemmar för att kontextualisera teorin om "Extinction of Experience".



Figur 2: Denna illustration skildrar Ultuna Permakulturs geografiska läge i förhållande till Uppsala och Sverige, vilket också sätter gränserna för vår uppsats.

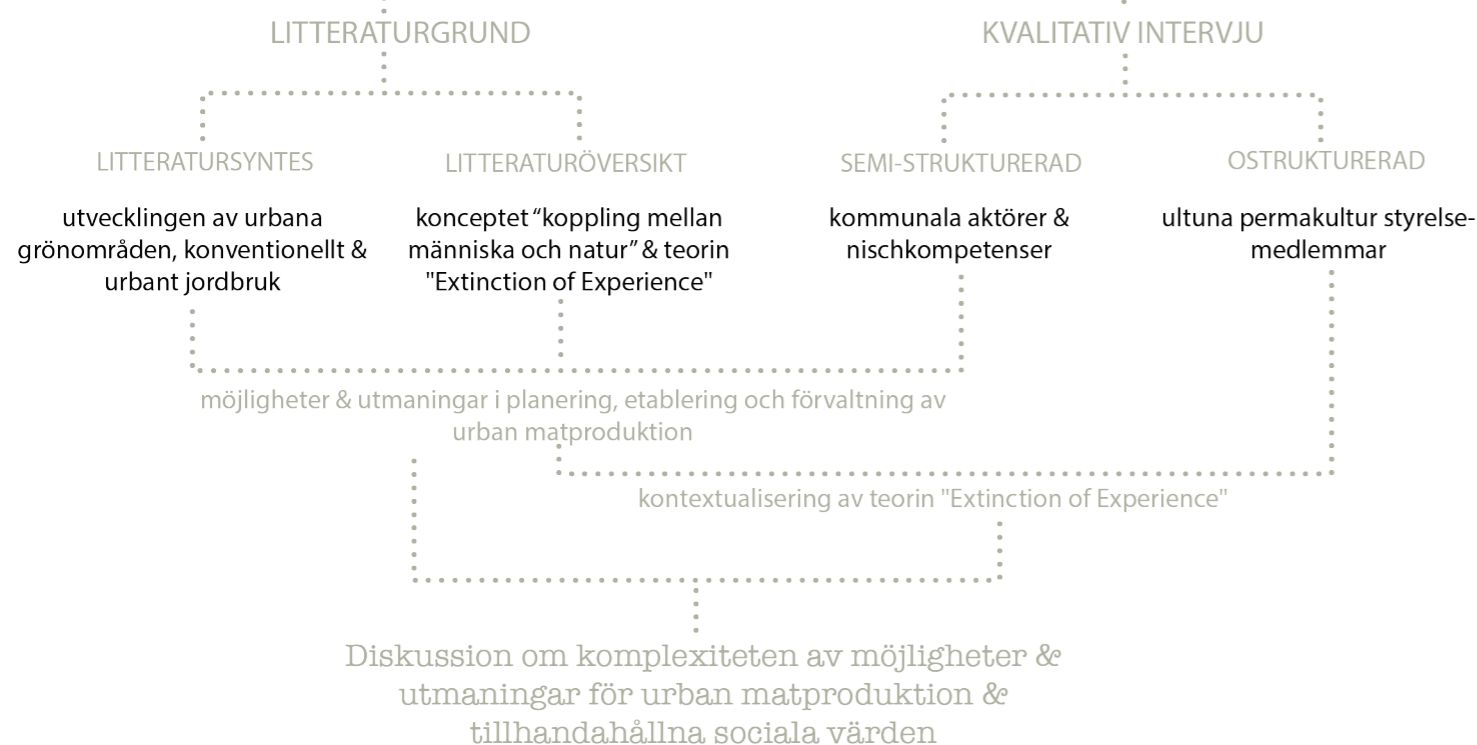
Sammanfattning

FRÅGESTÄLLNINGAR

Frågeställningarna för denna uppsats är tvåfaldiga:

(1) Vilka möjligheter och utmaningar finns i planering, etablering och förvaltning av urban matproduktion i befintliga gräsmattor i Uppsala kommun utifrån insikter från kommunala aktörer och nischade samarbetspartners?

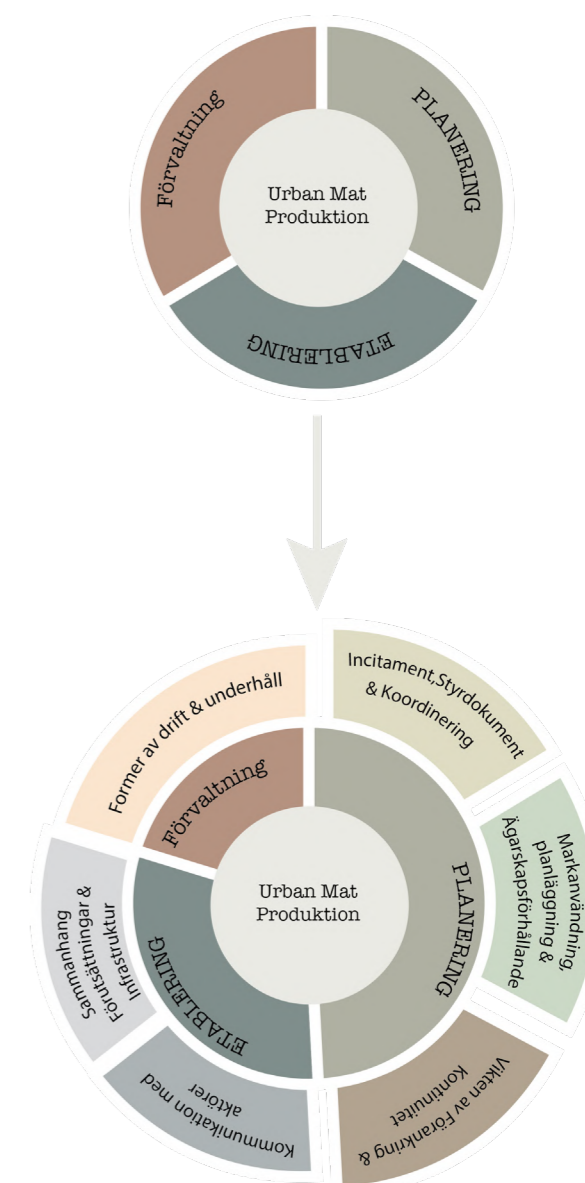
(1) Vilka är potentialerna för urban matproduktion för att vända förlusten av interaktion mellan människa och natur genom linsen av teorin "Extinction of Experience" baserad på insikter från aktörer inom urban matproduktion?



Figur 3: En schematisk skiss som illustrerar de metoder som används i uppsatsen för att besvara frågeställningarna.

Resultat 1 - En spelplan av möjligheter och begränsningar

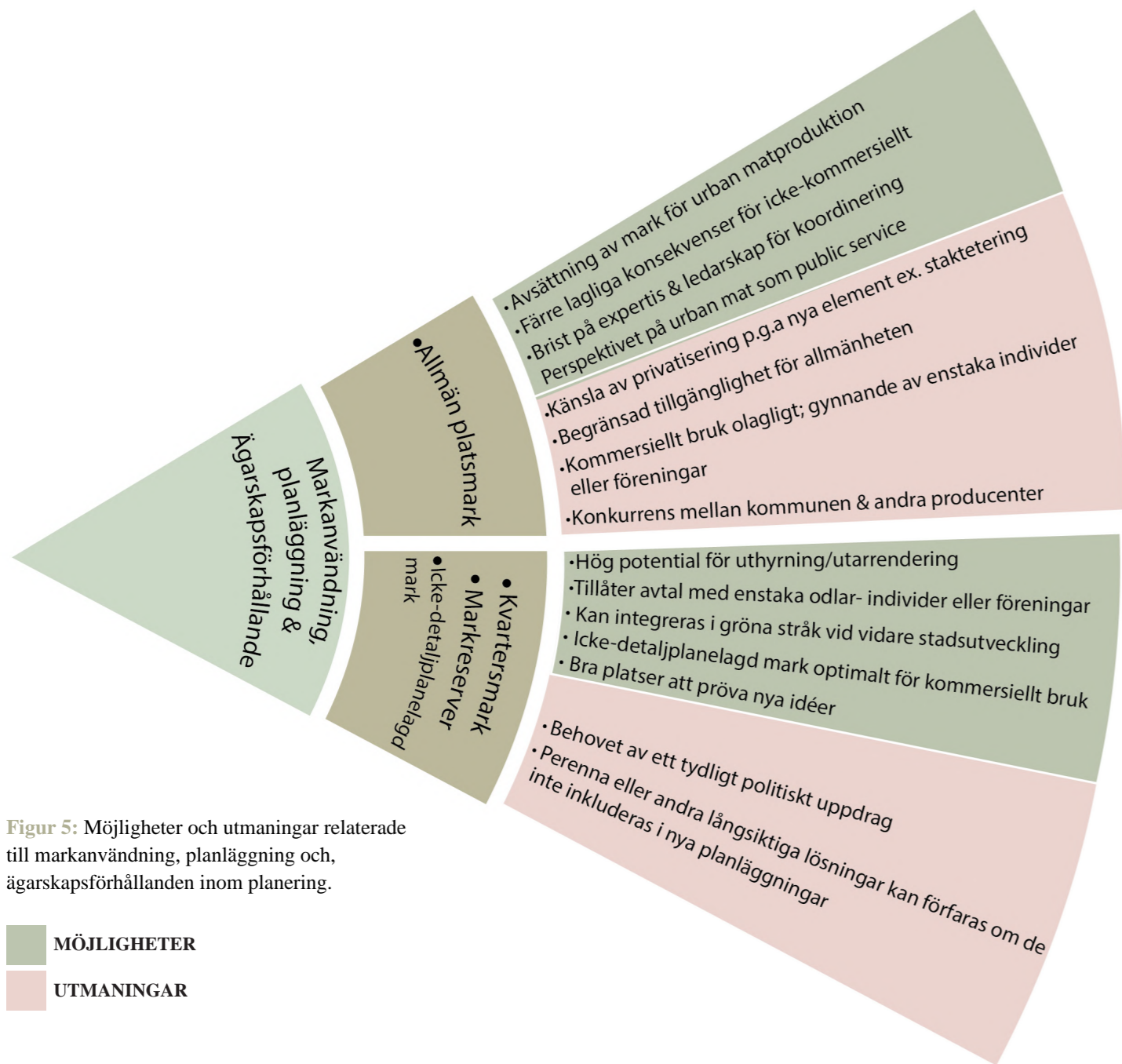
Möjligheterna och utmaningarna förknippade med kommersiell kontra icke-kommersiell urban matproduktion skiljer sig markant. När formen för matproduktion diskuterades med intervjupersoner framträdde marktypen som den mest kritiska faktorn. Enligt många av de intervjuade kan markens placering och klassificering i plandokument och dess placering i staden spela en betydande roll för att forma möjligheter och utmaningar för urban matproduktion. De identifierade typerna av mark med högre potential för urban matproduktion som diskuterades i intervjuerna inkluderar allmän platsmark, kvartersmark, markreserver och icke-detaljplanelagd mark. Det finns begränsade grönområden i form av gräsmattor i centrala delarna av Uppsala jämfört med utkanterna. Det råder dock enighet om att de befintliga centrala gräsmattorna inte är lämpliga för kommersiell matproduktion då grönområden i centrala delar vanligtvis är utformade som allmänna platser vilket begränsas av kommunala lagar. Trots detta diskuteras möjligheten att planera matproduktion i form av gemenskapsodlingar med utbildnings- och demonstrationsändamål på allmän platsmark för att förbättra parkers karaktär och gynna folkhälsan. Enligt intervjupersonerna kan det också argumenteras att matproduktion kan planeras mer omfattande i stadsdelar i stadens utkanter, där det finns större sammanhängande grönområden och större möjligheter för kommersiella ändamål och självförsörjning, med hänsyn till tillgången till mark som väntar på ny bebyggelse i stadens utkant.



Figur 4: Diagrammet ovan illustrerar våra initiala kategorier som vi utgick från. Detta diagram utvecklas med varje avsnitt av kommunintervjuresultaten. Nedanför är det första utvecklingsstadiet efter sammanställningen av intervjumaterialet. Den skildrar att ämnet planering i intervjuerna har tagit ett stort utrymme, följt av etablering. Underkategorierna illustreras också här, vilka är de första indikatorerna på komplexiteten som vi eftersträvar att utforska.

Planering

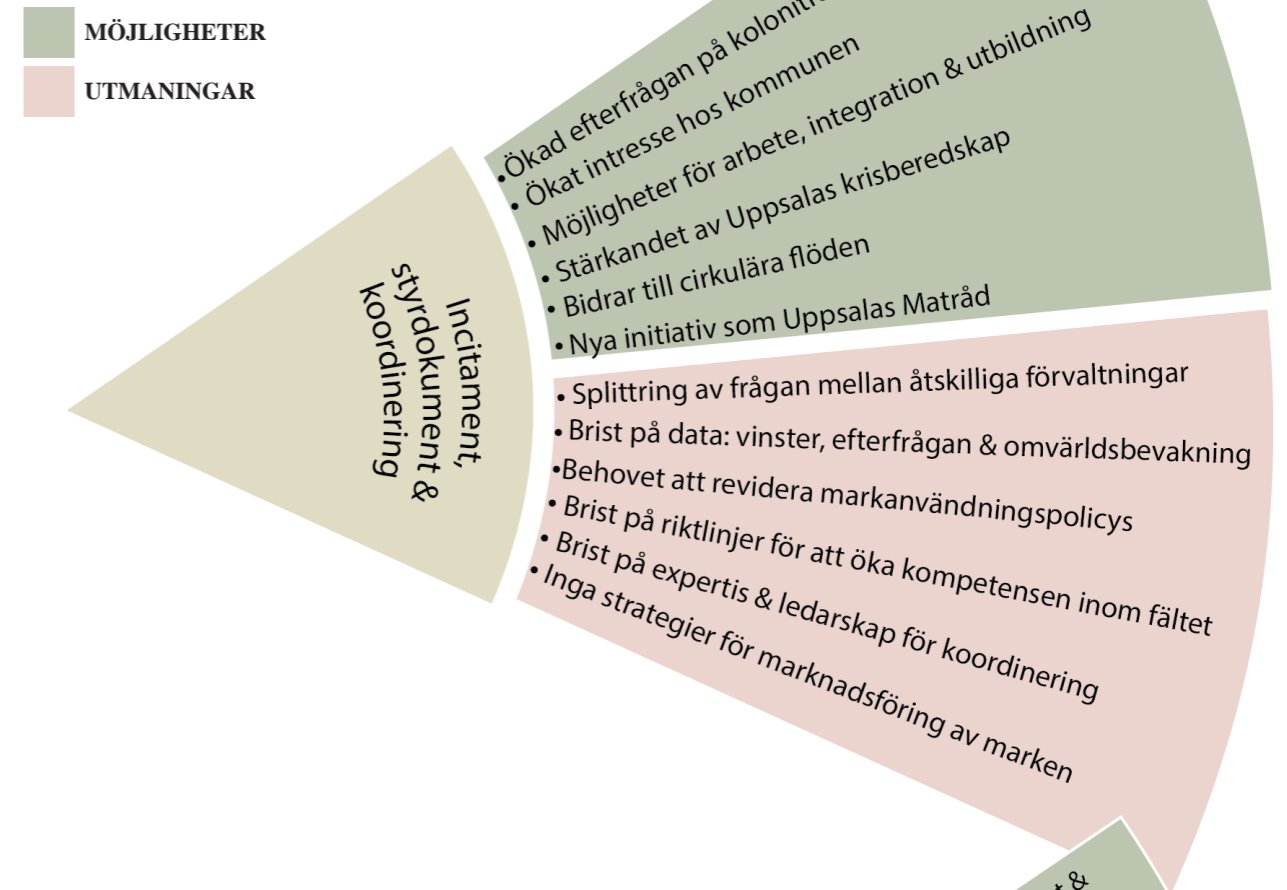
Figur 5, 6 och 7: Dessa grafiska representationer utgör tårtbitar i ett cirkeldiagram som sammanfattar utfallen av intervjuerna med kommunala aktörer och nischkompetens, på ett översiktligt sätt. Dessa specifika tårtbitar belyser möjligheter och utmaningar relaterade till planeringsområdet. Figur 5 tar störst utrymme, där vi ser att när vi diskuterade möjligheterna för matproduktion (kommersiellt och ickekommersiellt) framträdde typen av mark som den mest kritiska faktorn. Planering avser de processer, och policys som utformas på strategiska sätt för att utveckla kommunens mark och vattenanvändning, infrastruktur och hållbarhet.



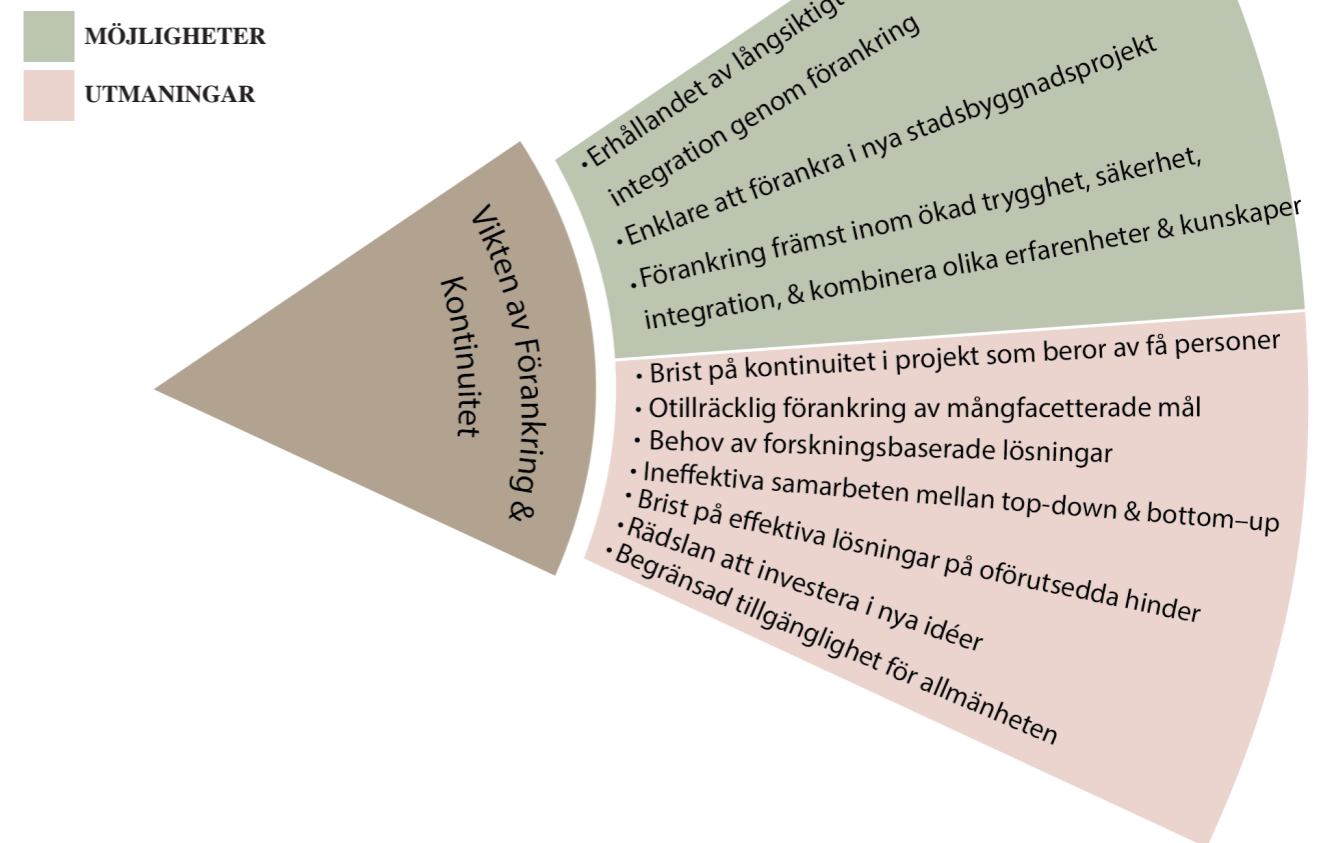
Figur 5: Möjligheter och utmaningar relaterade till markanvändning, planläggning och ägarskapsförhållanden inom planering.

MÖJLIGHETER
UTMANINGAR

Figur 6: Möjligheter och utmaningar relaterade till incitament, styrdokument och koordinering, inom planering.



Figur 7: Möjligheter och utmaningar relaterade till förankring och kontinuitet, inom planering.



MÖJLIGHETER
UTMANINGAR

Etablering

Figur 8, 9 och 10: Dessa grafiska representationer utgör tårtbitar i ett cirkeldiagram som sammanfattar utfallen av intervjuerna med kommunala aktörer och nischkompetens, på ett översiktligt sätt. Dessa specifika tårtbitar belyser möjligheter och utmaningar relaterade till etablering respektive förvaltningsområdet. Etableringen syftar på de fysiska förutsättningarna och förvaltning syftar på drift och skötsel av platsen.

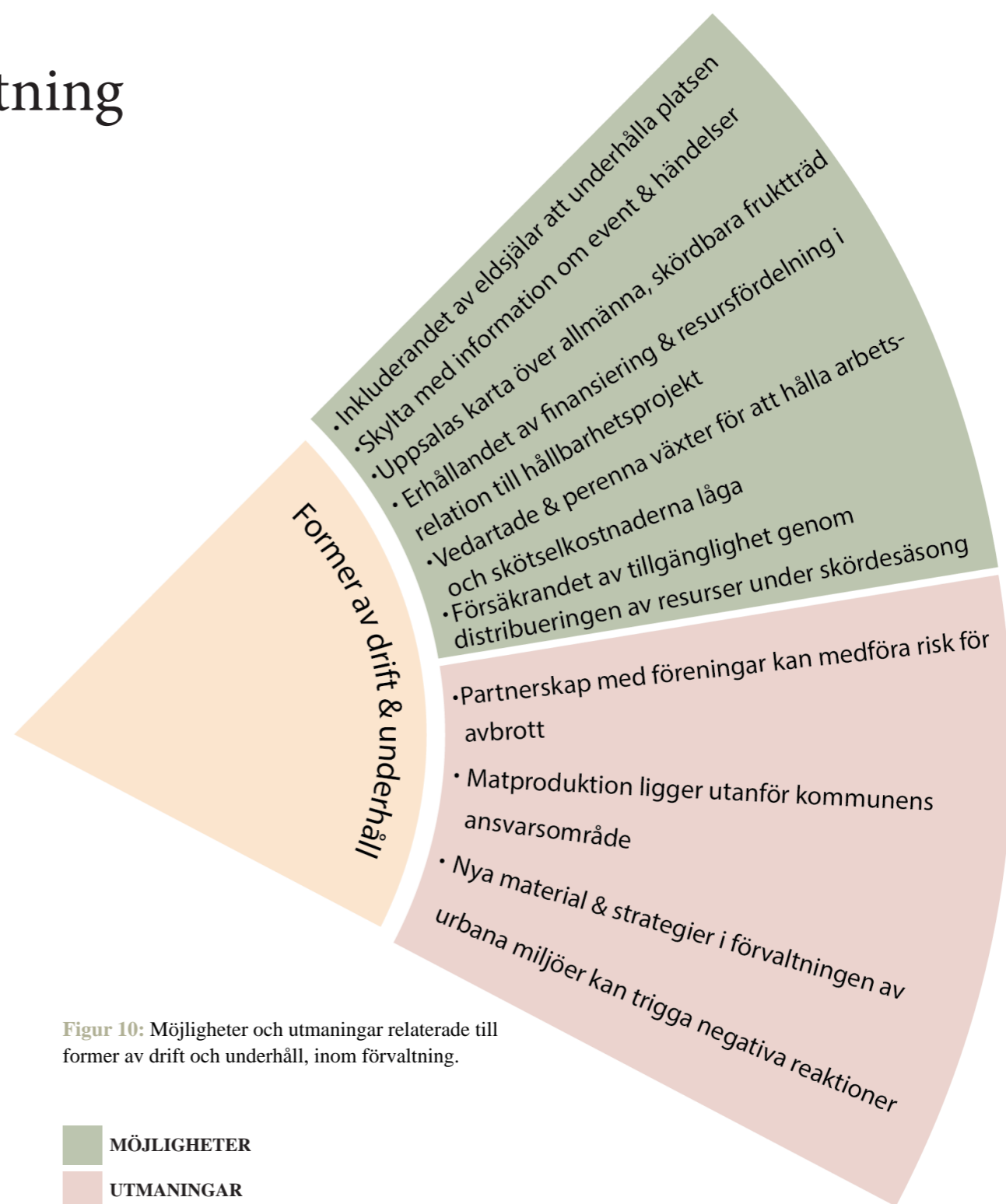
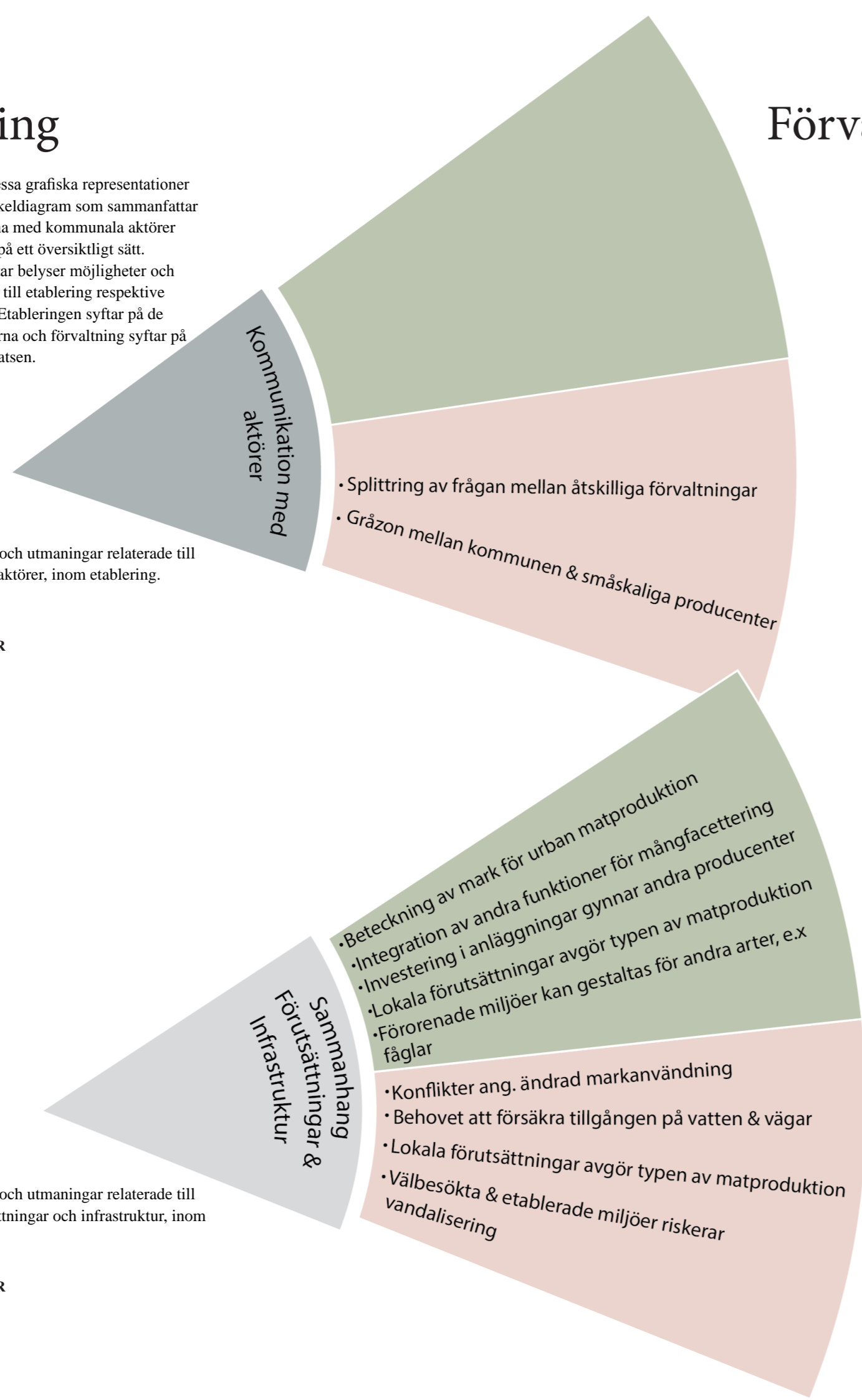
Figur 8: Möjligheter och utmaningar relaterade till kommunikation med aktörer, inom etablering.



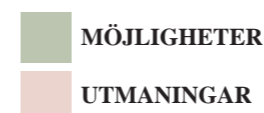
Figur 9: Möjligheter och utmaningar relaterade till sammanhang, förutsättningar och infrastruktur, inom etablering.



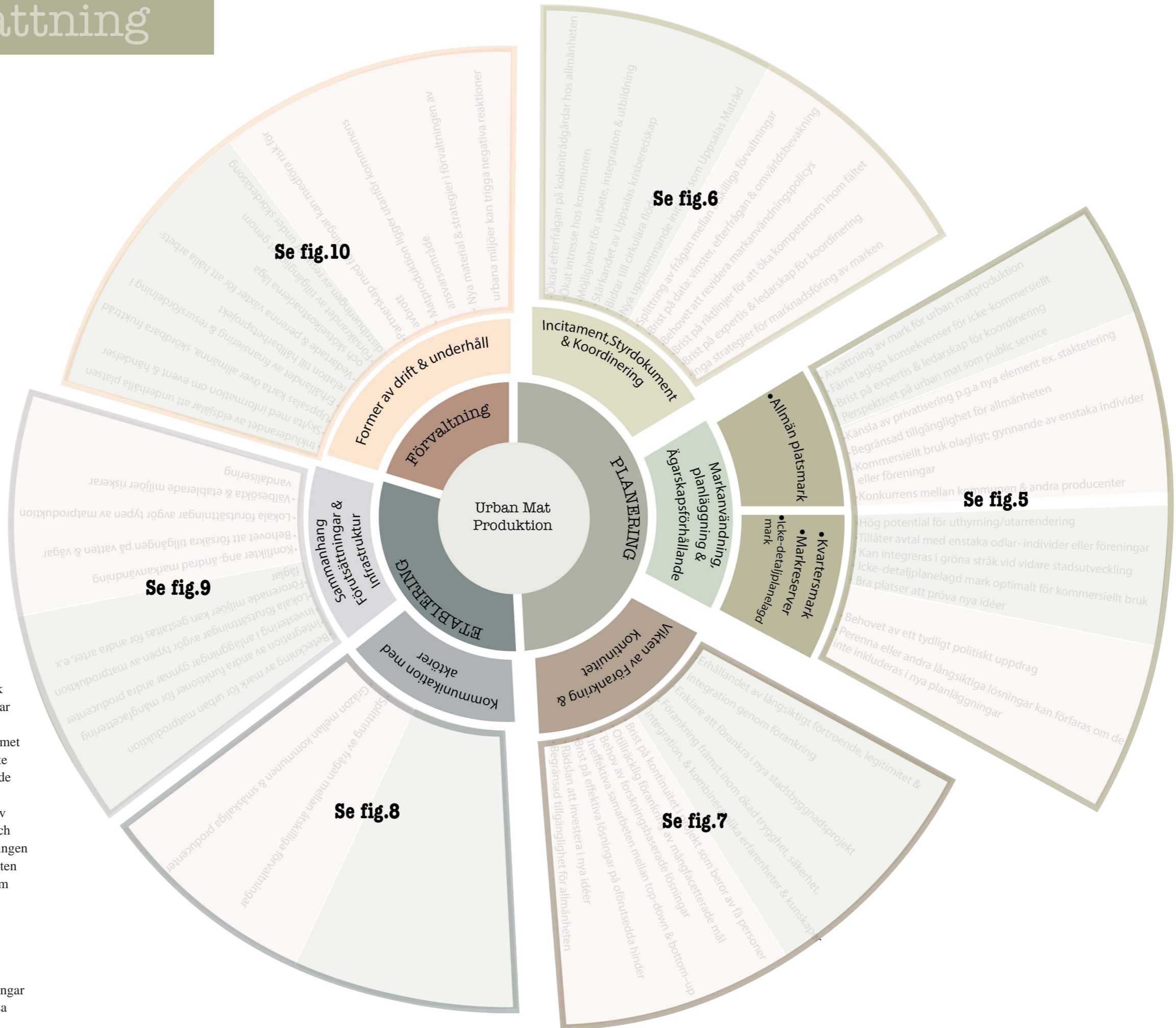
Förvaltning



Figur 10: Möjligheter och utmaningar relaterade till former av drift och underhåll, inom förvaltning.



Sammanfattning



Figur 11: Ett cirkeldiagram som ger en överblick över komplexiteten av möjligheter och utmaningar i planering, etablering och förvaltning av urban matproduktion inom Uppsala kommun. Diagrammet är endast representativt för komplexiteten och inte för detaljerad läsning. För detaljer, se de hänvisade siffrorna inuti diagrammet. Vi kan observera att ämnet planering har tagit upp en betydande del av diskussionen i intervjuerna, följt av etablering, och dessa verkar därmed mest avgörande för utvecklingen av urbana matproduktionslandskap. Inom kontexten av planering framkommer i sin tur marktypen som den mest avgörande faktorn när man diskuterar matproduktionens form (både kommersiell och icke-kommersiell).

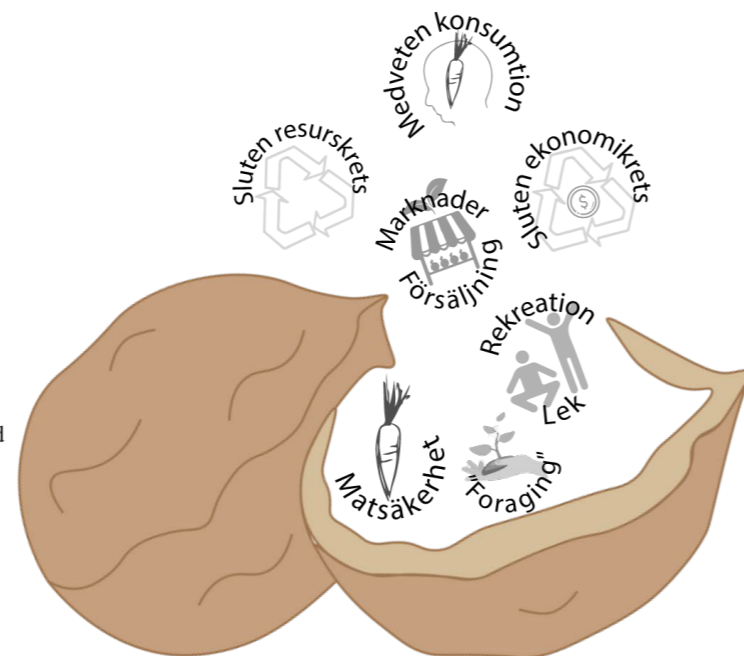
En viktig aspekt från intervjuerna som inte inkluderats i detta diagram är de potentiella lösningar som användes eller föreslogs i intervjuerna. Dessa kommer att listas under avsnittet "Lärdomar".

Resultat 2 - Att vända på "Extinction of Experience" genom urban matproduktion

Utifrån Ultuna Permakulturs medarbetare och kontextualisering av teorin "Extinction of Experience" kan vi konstatera att denna plats kan på flera sätt och nivåer skapa möjligheter och orientering för användaren att få en starkare koppling till naturen. Genom att erbjuda utbildningsplattformar, distribuera och sälja skörden till lokalbefolkningen samt främja en känsla av tillhörighet för de som engagerar sig i platsens skapande och förvaltning, har matparken enligt intervjuade möjliggjort meningsfulla aktiviteter och interaktioner som gradvis har gett dem en ny syn på

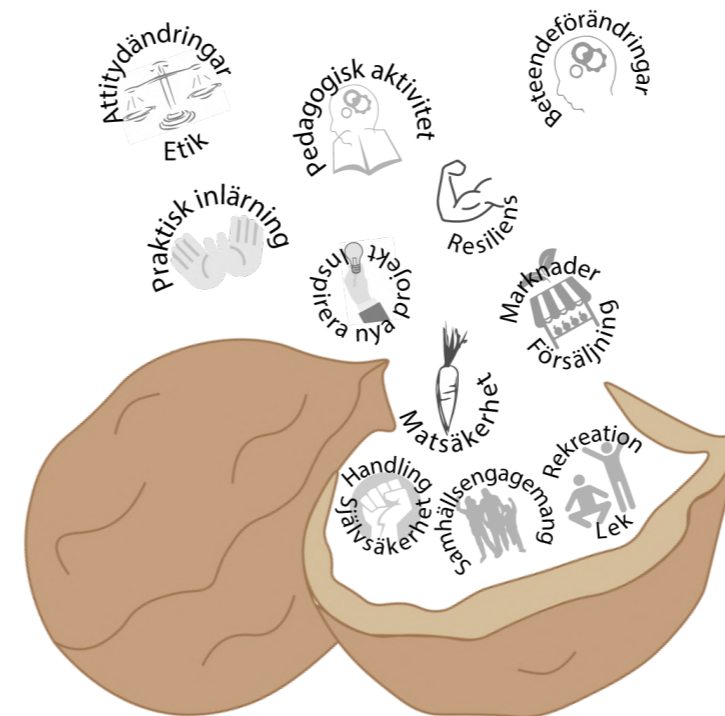
omvärlden och konkreta verktyg för att återknyta med och vårda naturen i högre grad jämfört med förr. Det är dock viktigt att sätta detta i kontext och förstå nivån av interaktion som krävs för att bygga och stärka relationer.

Figur 14: De identifierade värdena från "food/yield provision and distribution", erhållna genom intervjuer med styrelseledamöterna i Ultuna Permakultur i ett nötskal.

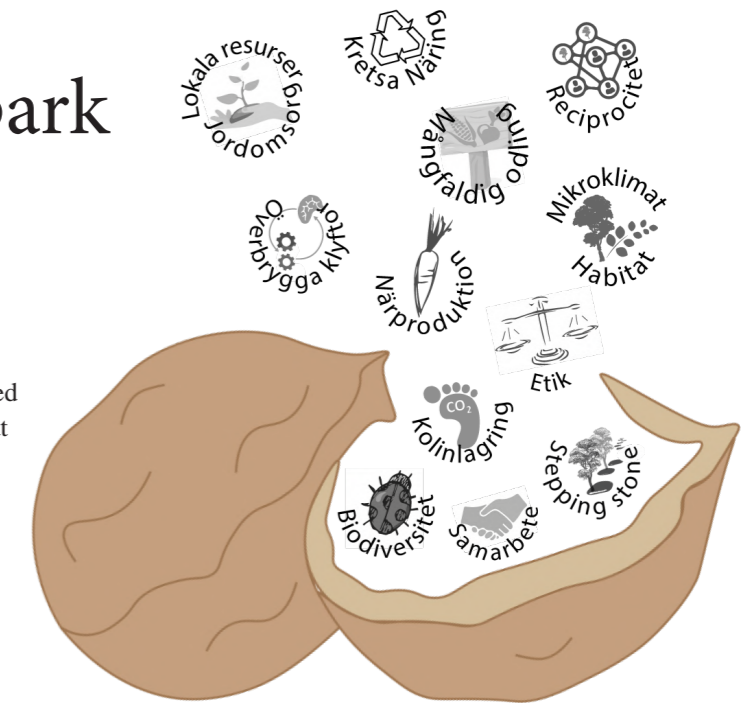


Värden i Ultunas Matpark

Figur 12: De identifierade värdena från "making place", erhållna genom intervjuer med styrelseledamöterna i Ultuna Permakultur, i ett nötskal.

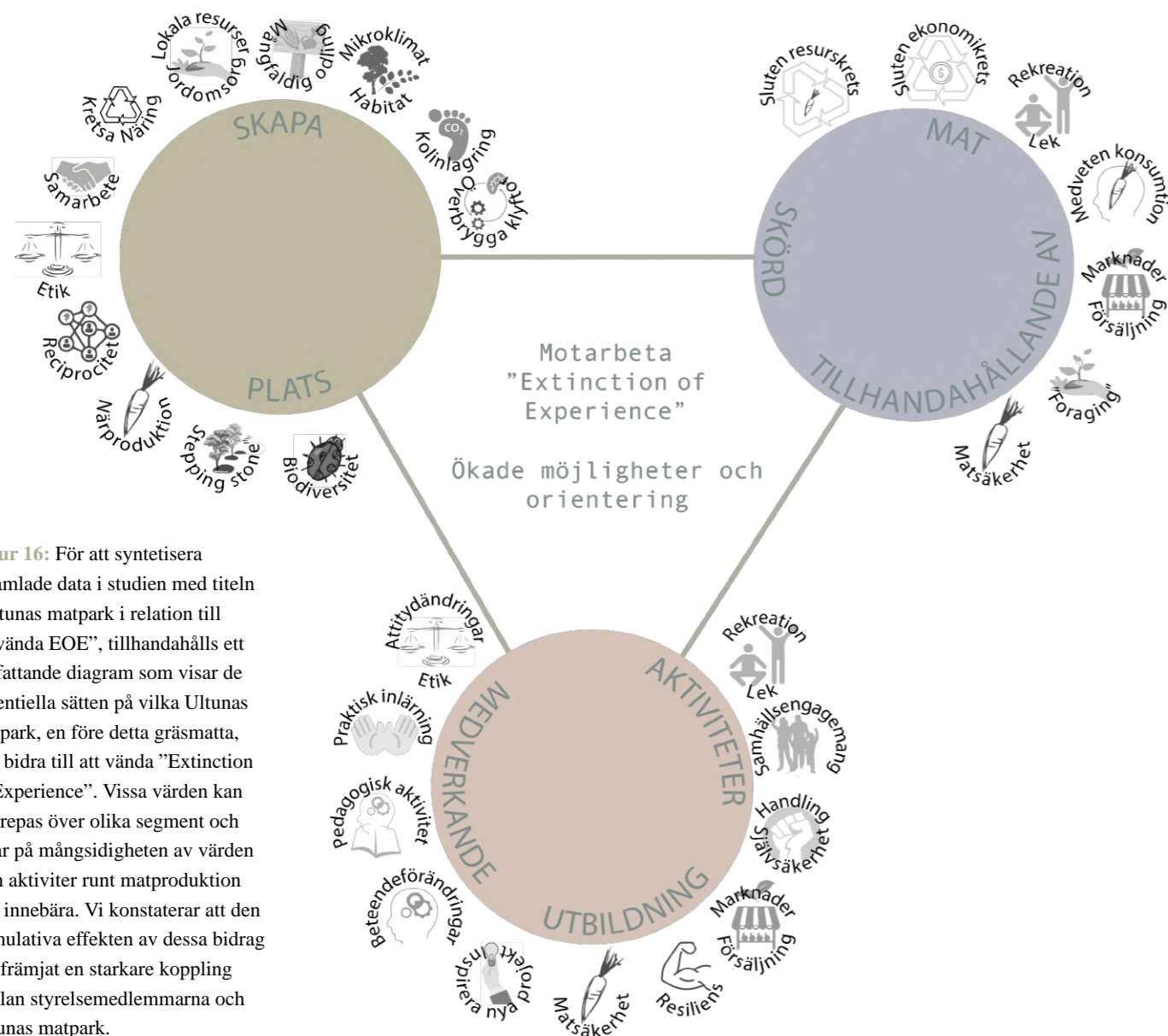
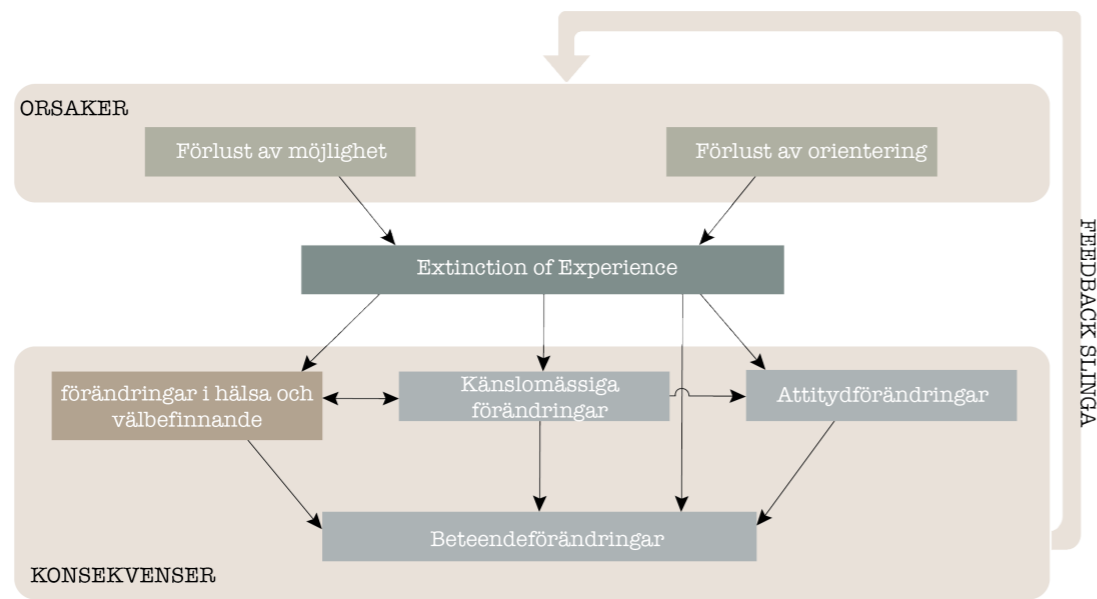


Figur 13: De identifierade värdena från "activities, participation and education", erhållna genom intervjuer med styrelseledamöterna i Ultuna Permakultur i ett nötskal.



Sammanfattning

Figur 15: Diagrammet representerar en omritning av Soga och Gastons feedbackloop-modell (2016), som illustrerar orsaker och konsekvenser förknippade med förlusten av interaktion mellan människa och natur ("Extinction of Experience"). Det är utifrån detta diagram som *resultat 2* analyseras.



Figur 16: För att syntetisera insamlade data i studien med titeln "Ultunas matpark i relation till att vända EOE", tillhandahålls ett omfattande diagram som visar de potentiella sätten på vilka Ultunas matpark, en före detta gräsmatta, kan bidra till att vända "Extinction of Experience". Vissa värden kan upprepas över olika segment och visar på mångsidigheten av värden som aktiviteter runt matproduktion kan innebära. Vi konstaterar att den kumulativa effekten av dessa bidrag har främjat en starkare koppling mellan styrelsemedlemmarna och Ultunas matpark.

Lärdomar

Utifrån Ultuna Permakulturs styrelsemedlemmars rapporterade upplevelser kan vi konstatera att matparken har skapat djupare kopplingar och meningsfulla band till naturen för sina engagerade. Detta har uppnåtts genom att erbjuda utbildningsplattformar för att överbygga kunskap och praktik inom urban matproduktion, distribuera och sälja produkterna till lokalbefolkningen samt främja engagemang och förvaltning av platsen. Enligt styrelsemedlemmarna har dessa aktiviteter och interaktioner gradvis förändrat deras sätt att tänka och gett dem ett konkret verktyg för att vårda och utbyta med naturen.

Det är dock viktigt att kontextualisera och förstå nivån av interaktion som krävs för att bygga starka relationer med naturen. Frekvensen och typen av interaktion kan vara avgörande för att främja meningsfulla relationer. Det kan vara relevant att fråga om erfarenheter och observationer från styrelsemedlemmarna i Ultuna Permakultur är tillräckliga för att bedöma potentialen för urban matproduktion att bidra till att vända på "Extinction of Experience".

Figur 11 visar komplexiteten i planering, etablering och förvaltning av urban matproduktion utifrån kommunala aktörer vilket kan diskuteras i samband med de värdena som enligt styrelsemedlemmarna genereras i Ultunas matpark. Det kan diskuteras att inte alla de värden som presenteras i figur 15, som tillhandahålls av Ultuna Permakultur, nödvändigtvis är tillämpliga inom alla typer av markanvändning. Dessutom kan ett potentiellt hinder för effektiviteten i urban matproduktion anses vara de underliggande målen som styr dess genomförande. Om det primära syftet till exempel är barnpedagogik, som vi har sett i Örebro kommun, kan det anses

ske på bekostnad av samhällsengagemang eller självförsörjningsaspekten. Utifrån vår synvinkel utgör detta den samtida förståelsen av komplexiteten (figur 11) - men vi argumenterar för att skilda mål inte nödvändigtvis är motstridiga; istället kan de komplettera och stärka varandra när de strategiskt planeras och samlas under paraplyet "självförsörjning inom naturens gränser" - som vi har sett i vår studie av Ultuna Permakultur.

En annan intressant aspekt vi fann är att urban matproduktion av tillfällig karaktär, såsom tematiska perioder eller evenemang, föredras på centrala platser (allmän platsmark), som en stärkande del av den befintliga platsen, och som knutpunkt för kollektiva aktiviteter. Detta kan diskuteras i samband med "Extinction of Experience". Som intervjuerna med styrelsemedlemmarna i Ultuna Permakultur har visat skulle EOE kunna motverkas och potentiellt vändas genom att möjliggöra relationsbyggande mellan platsen och dess användare genom mat. Vi resonerar att även om tillfällig urban matproduktion kan diskuteras ha betydande positiva konsekvenser, är det viktigt att utforska kontinuitetsaspekten i hur detta kan påverka sambandet mellan människa och natur. Vi menar att tillfällig matproduktion medför omfattande resursinvesteringar - och även om den i viss mån kan skapa relationer, menar vi också att förlusten av möjlighet och orientering måste motarbetas aktivt och kontinuerligt för att främja en betydande beteendeförändring. Vi anser det därmed nödvändigt att investera i långsiktiga lösningar.

Sammanfattning

Väsentliga insikter som är värdefulla att beakta och vidareförmedla till Uppsala kommun är följande: För närvarande, enligt våra observationer och studie, råder ett paradoxalt dilemma, vilket skapar utmaningar när det gäller att besluta vilken väg som bör följas för att främja den urbana matproduktionen.

Dilemman uppstår när våra omedelbara behov kolliderar med den starka viljan att driva frågan framåt, samt de långsamma kommunala processerna. Bland de processer som de kommunala deltagarna i studien har lyft finns omdefiniering av markanvändning, planläggning samt behovet av forskningsbaserat arbete, vilka behöver en omfattande koordineringsprocess. En viktig aspekt är att forskning vanligtvis involverar ett forskningsobjekt. Detta innebär att det skulle vara värdefullt att starta pilotprojekt och genomföra forskning samtidigt eller i följd. Dessutom finns det redan nationell och internationell forskning där nya projekt för urbana matproduktion har utforskats. Denna forskning har lett till insikter som kan bana vägen för utvecklingen av nya strategier. För Uppsala kommun skulle detta kunna vara till hjälp för att inte börja utan en forskningsgrund.

En ytterligare betydelsefull insikt är att inga möjligheter framkom angående ”kommunikation med aktörer”, vilket tydligt påvisar ett behov för Uppsala kommun att etablera en robust infrastruktur för att främja omfattande dialog och samordning med åtskilliga parter. Utöver dessa observationer följer nedan en sammanställning på lösningar och idéer som kommit upp eller antytts under intervjuerna med kommunala aktörer och nisch-kompetens.

Följande är de potentiella lösningarna eller angreppssätten som har framkommit i intervjuerna angående kommunal planering och som kan bidra till att förenkla processen för att främja Uppsala kommuns expansion av urbana matproduktionsområden.

Planering:

- *Se till att fler och tydliga politiska uppdrag tillkommer*
- *Samla kunskap från tidigare exempel - omvärldsbevaka*
- *Samla erfarenheter och perspektiv genom interna dialoger inom kommunen och externa dialoger med medborgare, samt andra kommuner*
- *Skapa nya positioner inom kommunen t.e.x. odlingsamordnare, odlingsstrateg samt/ eller koordinator, som kontinuerligt bär huvudansvaret för frågan*
- *Hyra in nisch-expertis genom samarbeten med föreningar*
- *Beräkna antal kvm odling/kapita*
- *Skapa karta över befintlig aktivitet och potentiella miljöer för expanderingsområden av urban matproduktion som även kan höja stadens attraktionsvärden*
- *Samarbete, koordinering och dialoger mellan landskapsarkitekter, planerare, skötare, förvaltare, forskare samt samhället*
- *Samarbeten med bl.a. Boverket för möjliggörandet av odlingsaktiviteter för ökandet av lokal matproduktion i samförstånd med community gardening utan att behöva ingå större ändringar i detaljplaner*
- *Skötselavtal med föreningar för att gynna både allmänheten, kommunen: tillhandahållande av mat, aktiviteter & effektiv skötsel*
- *Annonsera att kommunen behöver och är öppen att höra förslag, idéer, krav och behov kring urban matproduktion från befolkningen för att se hur arbetet bör utvecklas vidare och vilka intressen i samhället som kan besvaras*
- *Marknadsföra att äta mer lokalproducerat samt producera mer av det vi äter*
- *Starta pilotprojekt för att kartlägga fördelar & brister*
- *Involvera forskare för mer pålitliga analyser & ökad livslängd & utveckling*

- *Beräkna ekologiska och ekonomiska vinster för att påvisa fördelarna t.ex. kolinlagring, generering av resurser och kapital*
- *Samarbete mellan landskapsarkitekter, planerare & skötare & förvaltare*
- *Stärkandet av förankring genom anställning av fältarbetare för utbildningar & guidade turer*
- *Intern samordning bör genomföras för att utveckla ytterligare strategier och verktyglåda för att hantera återkoppling från samhället och forskningen.*

När det kommer till etablering och förvaltning flyter de potentiella lösningarna ihop då de står i nära relation till varandra.

Etablering och förvaltning:

- *Erhålla viss flexibilitet vid utvecklingen av nya projekt och idéer, där tidskrävande och kostsamt arbete som tydliga ritningar för varje detalj i första hand inte prioriteras*
- *Prioritera hands-on samarbete ute på fält för att förkorta sträckan mellan planering och etablering, och snabbare erhålla feedback för fortsatt planering*
- *Åtgärder krävs för att hålla samman och igång föreningar och föreningars aktivitet och kontinuitet*
- *Kommunikation och medborgardialoger i tidiga planeringsskeden*
- *Tidig integrering av estetiska och sociala värden*

Slutsatser

Vi tror på att genom att integrera matproduktion i stadsmiljöer exempelvis i allmänna gräsmattor kan vi skapa mångfunktionella miljöer som möter både sociala och miljömässiga behov, såsom att öka självförsörjningen, främja en djupare koppling till naturen och förhoppningsvis vända

”Extinction of Experience”.

Samarbete mellan toppstyrda och gräsrotsinriktade metoder är avgörande för att hantera brådskande miljöproblem, särskilt inom området för matproduktion i städer. Vi anser att kommuner kan spela en viktig roll genom att vidta medvetna åtgärder för att stödja lokala initiativ, tillhandahålla nödvändig infrastruktur och anta proaktiva åtgärder för hållbarhet.

Samtidigt som lokal självförsörjning kan anses vara nödvändigt, konstaterar vi att det måste stärkas med sociala och utbildningsmässiga aktiviteter som tar upp bredare samhällsfrågor. Vi drar slutsatsen att urbana matproduktionslandskap har potential att vara mångfacetterade platser som erbjuder mer än bara matproduktion och biologisk mångfald; om de är välplanerade och förankrade kan de fungera som katalysatorer för gemenskapsbyggande, utbildning och hållbar omställning. Genom initiativ som det studerade fallet kan vi visa omvandlingen från traditionella gräsmattor till matproducerande landskap som främjar miljöansvar, ökar engagemang och platsanknytning samt uppmuntrar medvetet beteende gentemot miljön.

Som landskapsarkitekter har vi ett stort ansvar att främja (långsiktigt!) hållbar planering och design, och vara den drivande kraften bakom nödvändiga samhälls- och miljöförändringar. Genom att vidta proaktiva åtgärder istället för att vänta på att en fler kriser inträffar kan vi bana vägen mot en mer motståndskraftig och hållbar framtid.

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Definitions and Abbreviations

Urban food production

Given the lack of an established definition for urban food production, we deemed it necessary to formulate our own definition in order to define the scope of our approach. Our definition posits that urban food production refers to landscapes that are intended for commercial or non-commercial food production, and can be managed and operated by the private sector as well as communities, associations or the municipality. However, during the beginnings of our interviews with actors on the topic of urban food production, we opted not to introduce our own definition, but instead sought to gain an understanding of how the concept is defined and discussed within their respective contexts and perceptions. This approach enabled us to identify various opportunities for different types of food production and their respective purposes, as well as the locations where such opportunities could occur.

Human-nature connectedness

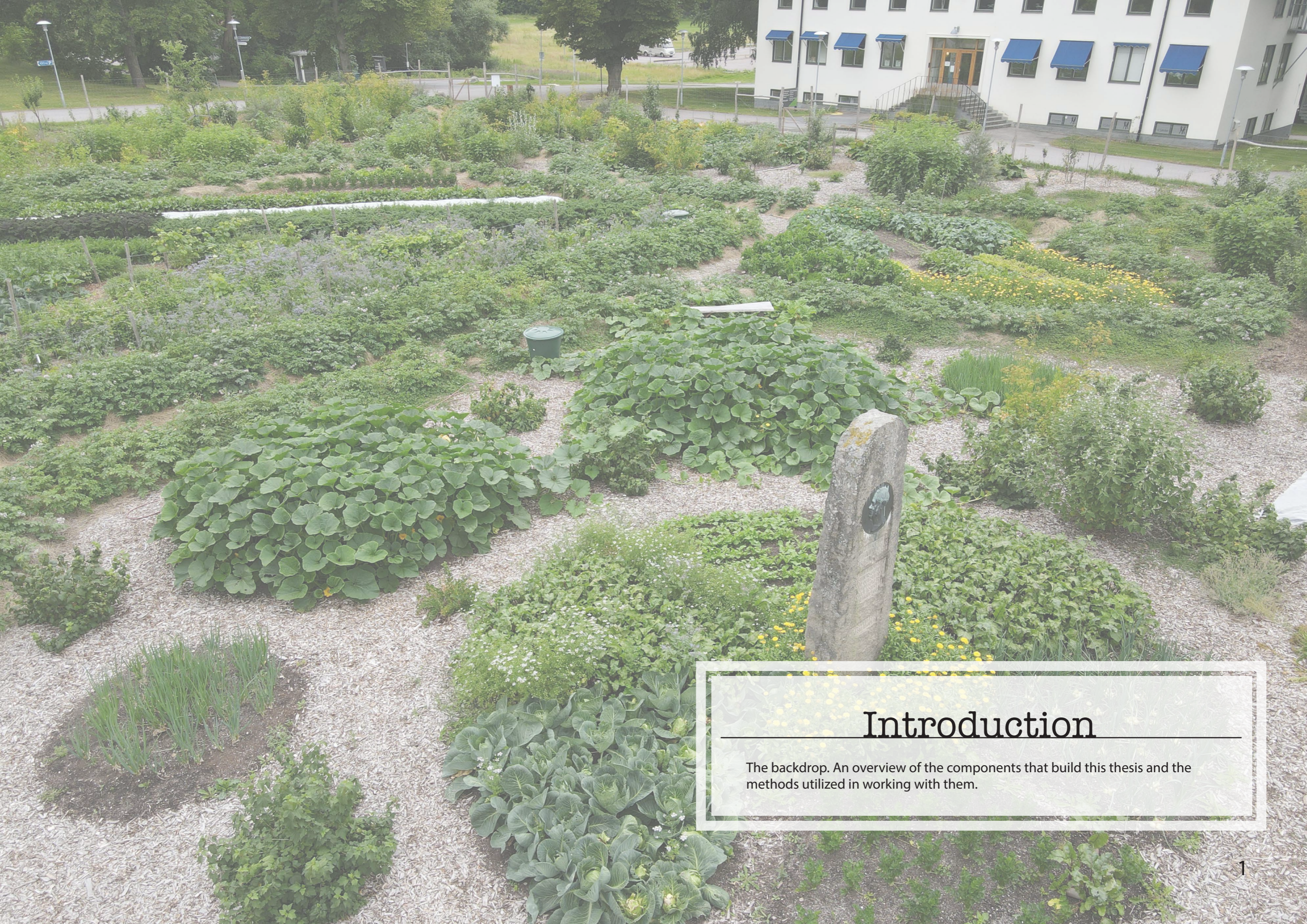
Human-nature connectedness is a complex concept that encompasses material connections (such as resource extraction and use), experiential connections (involving recreational activities in green environments), cognitive connections (including knowledge, beliefs, and attitudes), emotional attachments and affective responses, and philosophical perspectives on humanity's relationship with the natural world (Ives et al. 2017).

Extinction of Experience (abbrv. EOE)

The process of lost human-nature connectedness and interaction was coined by Robert Pyle in 1978, as the "Extinction of Experience" describing that with the dissociation that comes with a growing distance between human and nature, humans are less likely to value, preserve and protect it, which in turn results in further biodiversity loss and environmental degradation (Pyle 2002).

Ultuna Permakultur

Ultuna's food park was initiated in 2020 by the formal non-profit organization Ultuna Permakultur, who aim to demonstrate the potential that the unutilized lawns in urban environments carry (Ultuna Permakultur 2023).



Introduction

The backdrop. An overview of the components that build this thesis and the methods utilized in working with them.

1. Introduction

More than 55% of the world's population currently lives in urban environments and this number is expected to rise to 68% by 2050 due to rapid urbanization (UN 2018). In other words, the population is estimated to continually increase to 9,7 billion people by 2050 of which two-thirds will live in urban areas (ibid.). While urbanization can enable economic and infrastructural growth and provides opportunities for finding jobs, public and private services, educational possibilities and a wide range of cultural experiences there are also many downsides. These are low availability of housing, inequality and social segregation and environmental degradation (Boverket 2019; European Commission 2020). As urbanization grows cities are expanding in agricultural rich areas as well as in areas rich in biodiversity (UNFPA 2007). This expansion invades and reduces fertile and productive land and fragments important ecosystems (ibid.).

The more natural landscapes being transformed into built environments, the less areas within and around cities can be used for food cultivation. Further, larger cities demand more food while the distances to transport it increase (UN 2018). These circumstances, with fewer people living in the countryside and working with agriculture, lead to agricultural massproducing monocultural fields using pesticides and chemical fertilizer to be able to feed the growing population (FAO 2014; Lanz et al. 2018). Thus unsustainable agricultural practices, acting as a major factor of deforestation and loss of biodiversity, puts great pressure on our natural systems and planetary boundaries (Rockström & Klum 2015; FAO 2022). In e.g. a publication by the Secretariat of the Convention on Biological Diversity, the UN explains that for supporting biodiversity, cities and infrastructure “depends on a new urbanization vision, including more sustainable supply chains and reduced food waste measures, and innovations such as urban gardens and city farms.” (Secretariat of the Convention on Biological Diversity 2019:167). Thus, it is in the

context of visioning innovations of urban gardens and city farms that we frame our thesis.

In working to meet the increasing economic and social needs, as well as ecological sustainability, there is a need to further increase urban green spaces' multifunctionality through e.g. urban cultivation and agriculture (Van Leeuwen et al. 2010). Present use of urban green spaces are highly focused on specific features, mainly for recreation and to a larger extent lawns (Hedblom et al. 2017). Urban and peri-urban food production has also been stated as a tool for its potential to enhance food security, “improve the resilience of urban populations and benefit biodiversity by reducing the pressure for further conversion of distant ecosystems to cropland to feed growing urban populations” (Secretariat of the Convention on Biological Diversity 2019:168) and potentially for reconnecting people to nature.

In the context of Sweden, the countryside has been depopulated by almost 80% during the last two centuries, leaving the countryside with only 10% of the whole population and the remaining 90% in urban areas (SCB 2015; 2022). The challenges of urbanization, similarly permeate the cities in Sweden and Uppsala is not an exception, which entails a growing lack of greenspaces due to e.g. densification (SCB 2010; Boverket 2016). Despite this, the green areas are dominated by 58.9% lawns in Uppsala (Hedblom et al. 2017). Although lawns as cultural phenomena offer e.g. aesthetic values, playgrounds for children, potential habitat for species, their contribution to sustainability with their monocultural character, costly management and increase of pesticides and fertilizer could be questioned and alternatives should be explored and considered (Runfola et al. 2013; Hedblom et al. 2017; Ignatieva et al. 2015; Johnson 2013). Thus, although FAO (2022) emphasizes the need for further food production and small-scale practices closer to and within cities, Swedish cities nevertheless consist of lawns instead of nature

for biodiversity or places for food production. Alternatives to lawns need to be considered and one way forward reducing the monocultures, and increasing multifunctionality could be food production. In Uppsala the municipality manages 43.8% of lawns (Hedblom et al. 2017). According to Ignatieva et al. 2017, many lawns are not directly used for the recreational purposes that they are intended and their research shows that people do not appreciate vast monotonous lawns but rather prefer a variety of spaces that stimulate all of the senses and provide more activities (Ignatieva et al. 2017).

Concurrently, the interest for urban food production is growing with movements and incentives emerging in different municipalities such as “Stadsbruk” in Malmö and Göteborg, municipal cultivation-coordinators in Lund and Södertälje, and other initiatives in Skövde, Stockholm and Uppsala, where underutilized urban lawns are reclaimed as food producing and community building landscapes. In Uppsala, the interest for urban food production is growing and gaining popularity continually and it takes various forms e.g. community gardens, allotments and urban food parks.^{1 2 3}The interest and the need of urban food is now being manifested not only by bottom-up enthusiasts and private initiatives but has also recently permeated top-down sectors e.g. the municipal Goals and Budget of 2023 (Mål och Budget 2023), in Uppsala Municipality. The reason is to tackle Agenda 2030 and the UN's 17 global sustainability goals (Uppsala Municipality 2023). Assignment 17 in Goals and Budget of 2023 in Uppsala municipality (2023:24) aims to “Promote the possibilities for urban and village farming and investigate the conditions for a locally anchored food supply that contributes to circular flows and strengthens Uppsala's crisis preparedness” (Uppsala Municipality 2023:24).

¹ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

² Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

³ Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

⁴ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

Finally, having food grown close to where people live also increases the reconnection to nature (Secretariat of the Convention on Biological Diversity 2019:168). This is something that needs to be dealt with (ibid.). The disconnection to nature has caused an unawareness and illiteracy of how and where food is grown, harvested and delivered to the market (Bellotti 2010; Ives et al. 2018). This has been found to be one of the main factors to lead to alienation between people and the natural world, resulting in further loss of natural habitats and biodiversity (ibid.; Miller 2005). This process was coined by Robert Pyle in 1978, as the “Extinction of Experience” describing that with the dissociation that comes with a growing distance between human and nature, humans are less likely to value, preserve and protect it, which in turn results in further biodiversity loss and environmental degradation (Pyle 2002). Thus, one major importance of increasing food in cities might contribute to further human nature connectivity. Although there is a growing recognition of the potential of urban food production, internationally, nationally in Sweden as well as locally in Uppsala, there is a massive gap between the ambition and the infrastructure for it on a municipal level. The municipality as one of the major landowners carries a great potential and a will to serve as a link therein between policy and implementation.⁴ Those responsible for assignment 17 in Uppsala municipality state the need for understanding why and how to expand the concept and increase its prevalence within the municipality and how to fill the gap between knowledge and practice (ibid.). Essential to this, is understanding the possibilities and challenges for planning, establishment and management of urban food production to e.g. reverse the Extinction of Experience and develop strategies to facilitate its prevalence.

1. Introduction

1.1 Aims

There is a recent outspoken policy (2023) to investigate the potential of urban food production in Uppsala Municipality. However, at the current state, strategic locations and infrastructure for expansion and potential of urban food production in Uppsala have not yet been fully explored. Thus a main outcome of this thesis will be insights into the opportunities and challenges in planning, establishment, and management of urban food production and mapping out the complexity of the issue using Uppsala as a case study on transforming lawns. This study further aims to investigate the potential of urban food production as a way forward to reverse the Extinction of Experience. The aim is to provide new ways forward in the planning, establishment and management of urban food production for politicians, main owners and managers of urban lawns, urban farmers, local communities, local food oriented organizations and entrepreneurs.

1.2 Research Questions

The research questions for this thesis are twofold:

1. What are the opportunities and challenges in planning, establishment, and management of urban food production in existing lawns in Uppsala Municipality based on the insights from municipal actors and niched collaborators?

2. What are the potentials of urban food production to reverse the loss of human-nature interaction through the lens of the “Extinction of Experience” theory based on the insights from actors within urban food production?

The backdrop



Figure 17: A schematic sketch illustrating the problem space within which our thesis is situated, with the research questions formulated in response to the challenges brought about by urbanization.

1. Introduction

1.3 Methods

The thesis carries twofold intentions. The first is to carry out a viability study on the planning, establishment and management aspects of increased urban food production with Uppsala municipality as a case study for barriers and possibilities of implementing urban food. We map out and identify stakeholders and parties, in the planning, establishment and management of urban food production. To enable evaluating Uppsala as a case in a wider Swedish perspective we will map and approach other municipalities as well although the focus is on Uppsala. We will ask officials at Uppsala municipality, additional officials in other municipalities as well as actors engaged. The reason we did not base this part of the thesis on literature, in comparison to the next part of the thesis, is that we are specifically interested in the actors' understanding of the importance of the issue at hand since the actors' perspectives will presumably shape and influence the future of the issue on municipal level. Based on the selection of interviewees, questions for semi-structured interviews were prepared. The details of both approaches will be specified below. To compile the results of this section, a diagram with the information gathered from the semi-structured interviews will be presented and later discussed in the discussion at the end of the thesis.

The second is to investigate in what ways increased urban food production potentially contributes to bringing humans closer to nature by contextualizing the theory of "Extinction of Experience." This is interesting as many of the municipal actors pinpoint the importance of understanding and working with and incorporating the social dimensions of urban food production, into future work. We provide an in-depth study of the literature on food production in urban environments, as well as of the conceptions and theories including scientific articles and grey literature (mainly book) regarding human-nature connectedness is carried out to form an

understanding of the researched subject area. The theory of "Extinction of Experience" is then utilized to design and formulate the second question about people's experiences in contributing to an urban food park located in Uppsala, to later analyze and rebound their experiences against the theory. To compile the results, a diagram with the information gathered from the non-structured interviews will be presented and later discussed in the discussion at the end of the thesis.

To answer the research questions, several methods are used in combination with each other: non-structured and semi-structured interviews, literature synthesis and a review of relevant literature. The two-fold content of this thesis will be synthesized, nuanced and explored further in the discussion section.

In the interest of transparency, it is important to disclose our active involvement in urban food production, particularly in the Ultuna Permakultur project, which serves as the subject of study in this thesis. We acknowledge the potential effects this involvement may have on the "Method Critique", addressed in section 4.2."

1.3.1 Literature Foundation

A literature synthesis has been carried out to gather and synthesize information on **the development of urban green spaces** and **conventional and urban agriculture** in relation to **urbanization** globally and in Sweden, and to pinpoint and formulate the problem area for the thesis. This method was consequently employed to establish a foundation that illuminates how the various contexts interrelate and manifest themselves across different scales, their interconnectedness, and to identify angles of approach through which we can engage with the complexity. Subsequently, these later identified angles of approach (**Planning,**

establishment and management within the municipal sector) served as a basis for further delving into the selected perspectives.

Since we aimed to study the societal impacts of urban food production and how it can affect human's behavior and attitudes toward nature, a literature review has also been executed. This **to investigate the concept of human-nature connectedness in connection to urban food** including an assessment of the extent to which previous research has examined its causes, consequences, and potential solutions. Consequently, the field of Environmental Psychology emerged as a suitable framework for our study, with the specific objective of investigating the theory known as the "**Extinction of Experience**". This theory was chosen to narrow our research focus and provide a foundation for understanding how urban food production can tangibly contribute to enhancing human-nature connectedness. Importantly, this particular aspect of urban food production and its relationship with human-nature connectedness has not yet been extensively explored within academic literature.

Social→Environmental Psychology→Extinction of Experience

In order to generate an appropriate literature list to review, we started by searching on available databases such as Scopus, SLU library, Google scholar, Web of Science and Garden, Landscape & Horticulture Index to find relevant references regarding urban food production in a global and Swedish context respectively and theories within human-nature connectedness. Due to the extensive number of search results, we have narrowed down our selection through the delimitation-bar, to scientifically reviewed articles, books and book chapters and also student publications from the year 2010, written in Swedish and English. Based on the titles, we have pinned articles from the first

five pages in the databases, after which we read the abstracts and conclusions and determined which ones to proceed with. This was done because the relevance of the results diminished after approximately the 3rd or 4th page.

Keywords and phrases when searching for relevant literature were:

- **The loss of human-nature interaction**
- **Human-nature relationship AND Environmental impact**
- **Human nature connectedness AND food production**
- **Lawns AND Uppsala**
- **Urbanization AND (food production)**
- **History urban food production**
- **Urban Food Production AND Extinction of Experience**
- **Extinction of Experience AND gardening**
- **History of Urban Agriculture**
- **Urbanization AND (Human-Nature Connectedness)**
- **Urbanization AND agriculture**
- **Urbanization AND biodiversity**

Additionally, a significant way of finding relevant sources of information was through marking important references within the first found references. From these, new sources were found, making the literature review a consistent segment throughout writing the thesis. When skimming, we took the year of publication into consideration and sought to opt for the most recently published sources. Student publications were also, as mentioned before, utilized but merely as inspiration from which we could find additional academic, peer reviewed articles and also books (that in some case where classified as gray literature and have thus not been peer reviewed).

1. Introduction

1.3.2 Qualitative interviews

Qualitative interviews were conducted for two purposes in this thesis. First, **semi-structured interviews** were conducted to gather opportunities and challenges of urban food production according to **municipal officials and other stakeholders** from a planning, establishment and management point of view. Second, **non-structured interviews** were carried out with **Ultuna Permakultur** to collect information and experiences for contextualizing the theory of “Extinction of Experience”. These approaches will be explained in detail, below. Prior to each interview, a verbal and written consent was collected from each participant in conjunction with each interview.

For the semi-structured interviews, we prepared a list of questions within the frames of our thesis. From these, initial questions were asked to the interviewees, upon which the discussion developed based on their answers and reasoning. Matters discussed in the interview sessions were developed and carried on to the other sessions to gain a deeper perspective on the issue and investigate possible differences and solutions to the same issues. This is to later compile the results of the interviews as a dialogue between all the interviewees, where we can piece together answers or reasoning for concerns. In order to facilitate the discussion, image- and video material from Ultuna Permakultur was shown in later stages (to avert from coloring their preconceptions) of the interviews, to illustrate and exemplify what urban food production on urban grass lawns can constitute. Thus, the discussions revolved around, and were based on, the transformation of urban grass lawns.

Semi-structured interviews with prominent actors such as municipal officials, entrepreneurs and competencies were chosen as the interview method for this part to leave the opportunity to find new and more discussion points and directions

(see appendix 2 for the questions). Furthermore, this method allowed us to conduct a participant-centered, and contextually comprehensive approach for extracting people’s thoughts and insights (data that might not be visible or approachable in municipal documents and publications and can have great impact on organization around the subject of urban food production) and offered an interactive and iterative research process.

Twelve identified actors were contacted and asked through mail to contribute to this thesis by participating in approximately 45-60 minute interviews. In total 9 interviewees participated, 8 in person and one on Zoom. The locations were: two in Örebro municipality, five in Uppsala municipality, one in Hedemora while the person from Lund municipality was interviewed through Zoom due to long distances. The interviews were recorded using a cellphone and important points and reflections on important themes and their corresponding minutes were noted. The material was later transcribed manually through listening, pausing and writing. The material was again read through multiple times and analyzed. When analyzing, common and recurring themes were identified during the thorough reading and were marked in coded colors. Sections with the same color were then gathered under the identified themes and were systematically assembled and synthesized to form a fluid dialogue in which the different lifted aspects are being rebounded against each other. Eight different themes emerged within the planning, establishment and management of urban food production, in which opportunities and challenges are identified and presented, while conversing to one another.

Non-structured interviews were used in Ultuna Permakultur, a previous grass lawn, which has been transformed into a food park. This is the contrast that we seek to underline, as underutilized surfaces such as the lawn at Ultuna deliver less of the values

and relations attached to connectedness toward nature, than that of natural parks and allotments (see Soga and Gaston’s work on Extinction of Experience 2016; 2019).

For the interviews conducted with the contributors of Ultuna Permakultur, the non-structured method was chosen so that it did not limit the respondents’ responses to the question guidelines (see appendix 1 for the guidelines). This method allowed us to ask open-ended questions which could easily be followed up to touch upon interesting points and new avenues of exploration. We were careful not to exert any interference or undue influence upon the contents of what was being said, we rather strived to refocus the interview upon the primary topic at hand in instances where the interview became irrelevant or tangential. Since the context is discussing values with the board members, allowing individuals to express their perspectives without imposing limitations in the form of predefined questions provided us with deeper insight. By adopting this approach, we aimed to gain a comprehensive understanding from their standpoint rather than imposing our own, as would have been the case with a structured or semi-structured interview format. This was important as the aim of the interviews is to gather experiences and reflections to contextualize urban food production’s potential contribution in reversing the Extinction of Experience.

The board members were asked to contribute, during one of the garden workdays and five of them responded positively. The interviewees were informed about the aim and research questions of the thesis and that the data collected would be analyzed to extract the social and ecological values and consequences of their interactions in the garden. The interviewees ranged from ages 23-28 (three women and two men) and the subjects have been anonymised and will receive replacement names to facilitate the writing and discussions in text. The reason for the anonymisation is for them to freely express their thoughts and beliefs free of restrictions. They will be named Sara, Cecilia, Nareh, Kevin and Arvid.

We spent two working days in the garden conducting 45-60 minute interviews with each board member. On the first working day, which took place on a Saturday morning in February, two of the interviews were executed. On the following Sunday, the remaining three interviews were executed. We followed along as the interviewees performed different tasks in the garden. The discussions during the interviews were recorded by cell phone for transcription and important points were noted with the corresponding minute. Based on the notes and markings during transcription, we extracted focal points that could be linked to the Extinction of Experience feedback-loop.

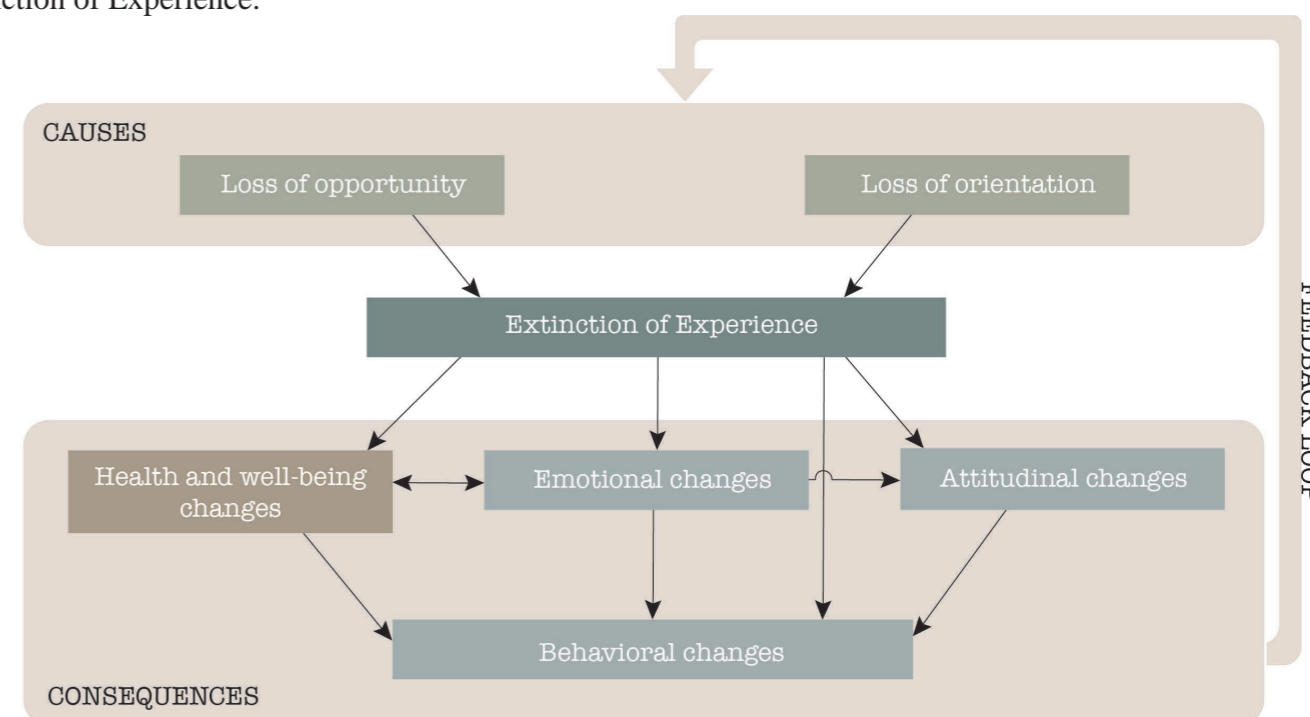


Figure 18: This diagram represents a redrawing of Soga and Gaston’s feedback loop model (2016), illustrating the causes and consequences associated with the loss of human-nature interaction (“Extinction of Experience”).

1. Introduction

RESEARCH QUESTIONS

The research questions for this thesis are twofold:

(1) What are the opportunities and challenges in planning, establishment, and management of urban food production in existing lawns in Uppsala Municipality based on the insights from municipal actors and niched collaborators?

(1) What are the potentials of urban food production to reverse the loss of human-nature interaction through the lens of the "Extinction of Experience" theory based on the insights from actors within urban food production?

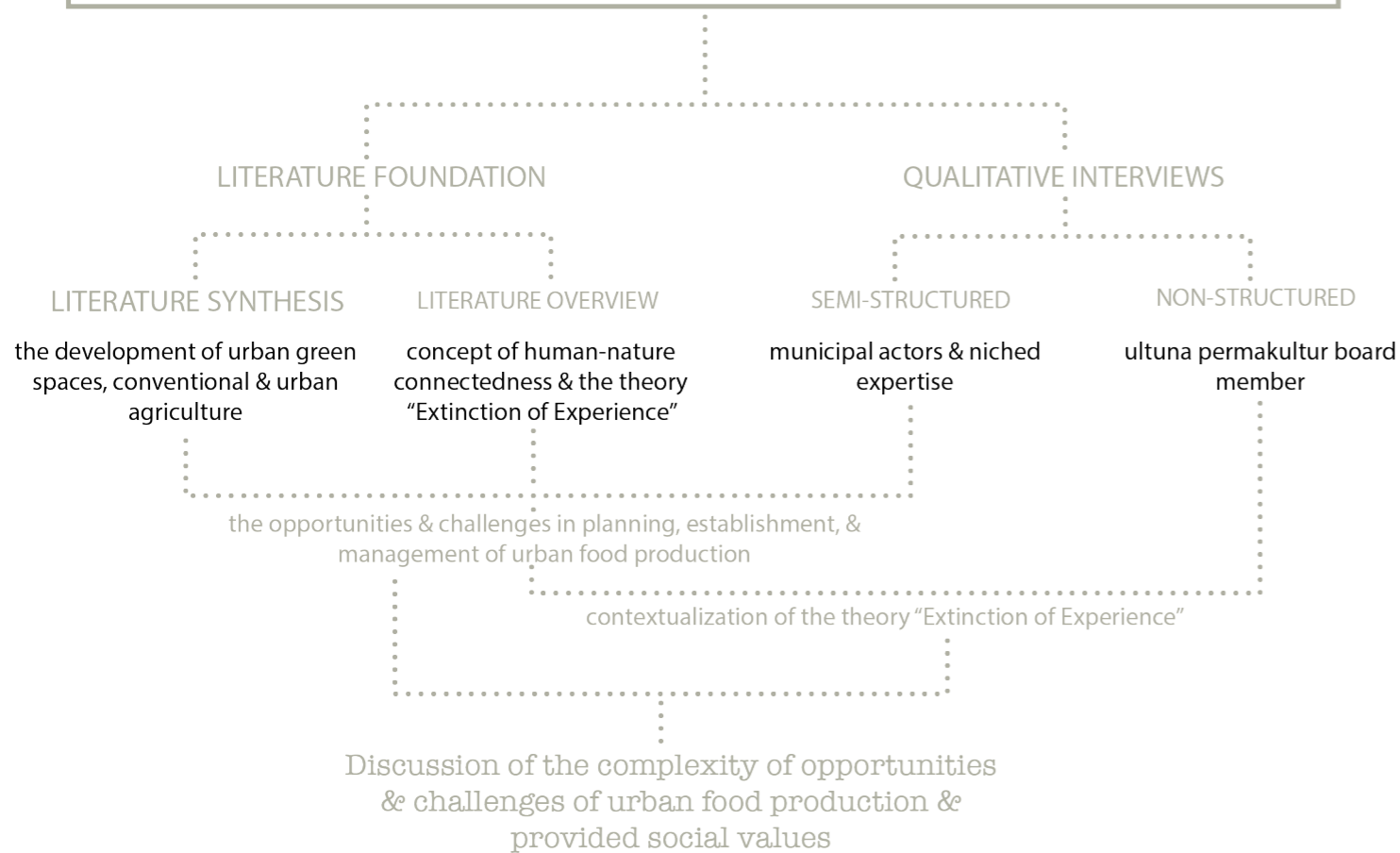


Figure 19: A schematic sketch illustrating the methods employed in the thesis to answer the research questions.

1.3.3 Delimitations

The following delimitations applied to this thesis were primarily drawn in order to narrow down the study and to focus on the specific area of interest. This to ensure the feasibility of the thesis within the given resources and constraints.

The thesis addresses concerns related to the **expansion of urban food production** within **planning, establishment and management** in **Uppsala Municipality**, with interviewees selected accordingly. The limitation in focusing on the planning, establishment, and management of urban food production stems from the aforementioned introduction, where the objective was to examine the top-down approach for increasing urban food production. In order to narrow down the scope within the various sectors and actors associated with this subject within a municipality, we opted to delve deeper into the aspects of planning, establishment, and management. As aspiring landscape architects, thus planners, our intention was to gain a comprehensive understanding of our role and potential contributions in developing infrastructure to foster the growth of urban food production.

In order to provide a deeper contextual understanding, encompassing similar potentials and challenges that have emerged and been addressed in other municipalities, additional **municipal actors** and **niche expertise** were included in the interviews. This was done to present the possibilities and challenges within a broader framework of Swedish cities and to demonstrate the intricate nature of these possibilities and challenges according to the insights of various actors involved. Moreover, the inclusion of interviews from a wider range of municipalities helped to add multiple dimensions to the discussions. This approach was particularly valuable as Uppsala Municipality is relatively new to this inquiry, which could have limited the scope

of the findings. Consequently, the interviews with other municipalities were conducted prior to those with Uppsala.

To further narrow down the scope, the emphasis is placed on **underutilized lawns**, which constitute the largest proportion of urban green spaces, as a prime target for the implementation of urban food production initiatives. This linkage aligns with the subsequent section of the thesis. In this section a specific focus lies on exploring urban food production's potential to foster **social values related to the connection between humans and nature**. Considering the broad nature of the concept of human-nature connectedness, the theory of **Extinction of Experience** from the field of environmental psychology was selected as a means to narrow down the scope. To provide contextualization to the theory, the case study of **Ultuna Permakultur**, a food production initiative, was chosen, and the insights and experiences of its **board members'** in their own interactions with the site, as well as those of others, have been examined.

Another compelling factor influencing our decision to choose Ultuna Permakultur as a research site stems from our direct engagement in the design and establishment of Ultuna's food park during our student years. This hands-on experience has sparked our curiosity to delve deeper and explore the values it cultivates further. The reason we have selected Ultuna Permakultur, an urban food park, is not to neglect the role of the natural forests and the like in urban environments, rather our reasoning turns to many underutilized surfaces such as lawns in parks, residential areas, university facilities and other various grass-covered lands.



Results - Food Production in Urban Areas

In this section, we intend to address the first research question. To accomplish this, we begin by presenting data collected from the literature synthesis (3.1) to give a background on urban food production through history. Subsequently, we provide an overview of the interview outcomes (3.2) involving municipal actors and nich competencies.

2. Results 1

2.1 From Cityscapes to Dinner Plates

In Sweden, until 200 years ago, 90 percent of the citizens were sustaining themselves and their families through farming (SCB 2020). Food was locally produced and consumed far into the 20th century until after the second world war, where urban areas were utilized for self sufficiency in times of crises (Larsson 2015; Israelsson 1996). The industrial revolution came to redefine the purpose of a city and the production of food in urban areas. The developments of tools and machines around this time gave a heightened efficiency within agriculture in the beginning of the 19th century, and production speed increased (Myrdal & Morell 2001). This rapid change forced farmers to move to the cities to find work and improve their welfare which in turn resulted in a rapid urbanization and even more unemployment due to a concentrated population (ibid.).

Soon, there were too many people and a shortage of housing leading to the emergence of temporary solutions such as shack settlements. A famine period added to the uncertainty and became a strong contributing factor for 1.4 million Swedes to emigrate to America during the 1860s (Lindkvist 2007; SCB 2022). Shortly after the cities of the industrial revolution proved to lack vital infrastructure for health and sustenance, a new era under the name “own-house-movement” (egnahemsrörelsen) arose as a counteraction to industrialism, urbanization and emigration in Sweden, in the end of the 19:th century (Lindkvist 2007). A wide range of urban citizens in the middle class were demanding houses with small plots and ideas of garden cities (trädgårdsstäder), allotment gardens (koloniträdgårdar) and big-courtyard blocks (storgårdskvarter) - and the edible landscapes had returned to the urban context (ibid.).

Yet, during the 1950s, Swedish welfare increased, calming the famine and distress, leading to

the rise of the functionalism-period. The lawn is a relatively recent cultural and ecological phenomenon which emerged as a universal prefabricated element to the growing concept of affordable and accessible urban recreation, together with the functionalistic movement from 1930s and forward in Sweden - this function was allocated to as well public, as private urban green spaces (Wilke 2006; Ignatieva 2017). These lawns are characterized as artificial grass-dominated plant communities primarily intended for ornamental or recreational purposes (Ignatieva 2017). As the pressure to sustain oneself with food and needs decreased and everything was easily accessible in the markets, the Swedes’ role as producers of their own wealth changed into consumerism - and grass lawns became the new dominating feature of greenspaces, replacing the previous gardening plots. This trend of lost contact with the resources grew to become a national and in turn global culture, with the growth of the globalized market economy (Wilke 2006; Ignatieva 2017).

As mentioned in the introduction, while lawns as cultural phenomena may offer e.g. aesthetic values, playgrounds for children, potential habitat for species, their contribution to sustainability with their monocultural character, costly management and increase of pesticides and fertilizer could be questioned and alternatives should be explored and considered (Runfola et al. 2013; Hedblom et al. 2017; Ignatieva et al. 2015; Johnson 2013). Many lawns are not directly used for the recreational purposes that they are intended and survey-based research has shown that people do not appreciate vast monotonous lawns but rather prefer a variety of spaces that stimulate all of the senses and provide more activities (Ignatieva et al. 2017).

In summary, from the pioneering ancient Islamic paradise gardens and the indigenous ecosystemic approach of edible forests 7000 years ago - to the

20th century’s modern practices of foodscaping, edible green infrastructure and urban food commons - edible features have always been permeating the urban landscapes, going in concert with urban history itself. The concept has ebbed and flowed, hand in hand with sociocultural circumstances (Wilke 2006). It is further explained that times of financial crisis, for example the one that took place in 2008, show the potentials of food production in urban areas for *“creating networks of reciprocally supportive people, providing hopeful alternatives to the failing main-stream systems, and improving community livelihood, food security, and ecosystem services.”*(Riolo 2018, p:2). This development has since grown from being initiated by grassroots level, into also being included in formal research, municipality plans- and policies, reinforcing the concept in urban planning. A great example is the initiative by Food and Agriculture Organization of the United Nations (FAO) where urban food forestry is recognized in the document “Guidelines on Urban and Peri-urban Forestry”, as a valuable and beneficial tool to deal with the UN Sustainable Development Goals 2 (Zero Hunger) and 11 (Sustainable Cities and Communities). Among the statements in this document is *“Eliminate policy and regulatory barriers to the development of urban ‘food forestry’ and promote coordination among municipal authorities and civil society actors on food production in urban forests.”* (FAO 2016, p:86).

2. Results 1

2.2 A Field of Opportunities and Challenges

This section is a result of our semi-structured interviews with nine interviewees. Seven interviewees are municipal officials working within planning, establishment or management of urban green spaces, of which four are from Uppsala, two from Örebro and one from Lund. Additional two interviewees carry niche expertise within urban food production and have experiences working together with the municipalities. The compilation of expertise is selected to cover opportunities and challenges of urban food production within the municipal context of Uppsala. Although, to give a nuanced and deepened understanding of these

opportunities and challenges, officials from Örebro and Lund municipality who have previously worked with similar questions were involved in the interview. As urban food production is a relatively new concept within the municipal context of Uppsala, we look into the experiences of other municipalities to give more context and advance the scope of the interviews. The interviewees' understanding of the inquiry as a point of departure, has laid the basis for a categorisation of areas of opportunities and challenges within municipal context, which has emerged during our analysis of the interview materials.

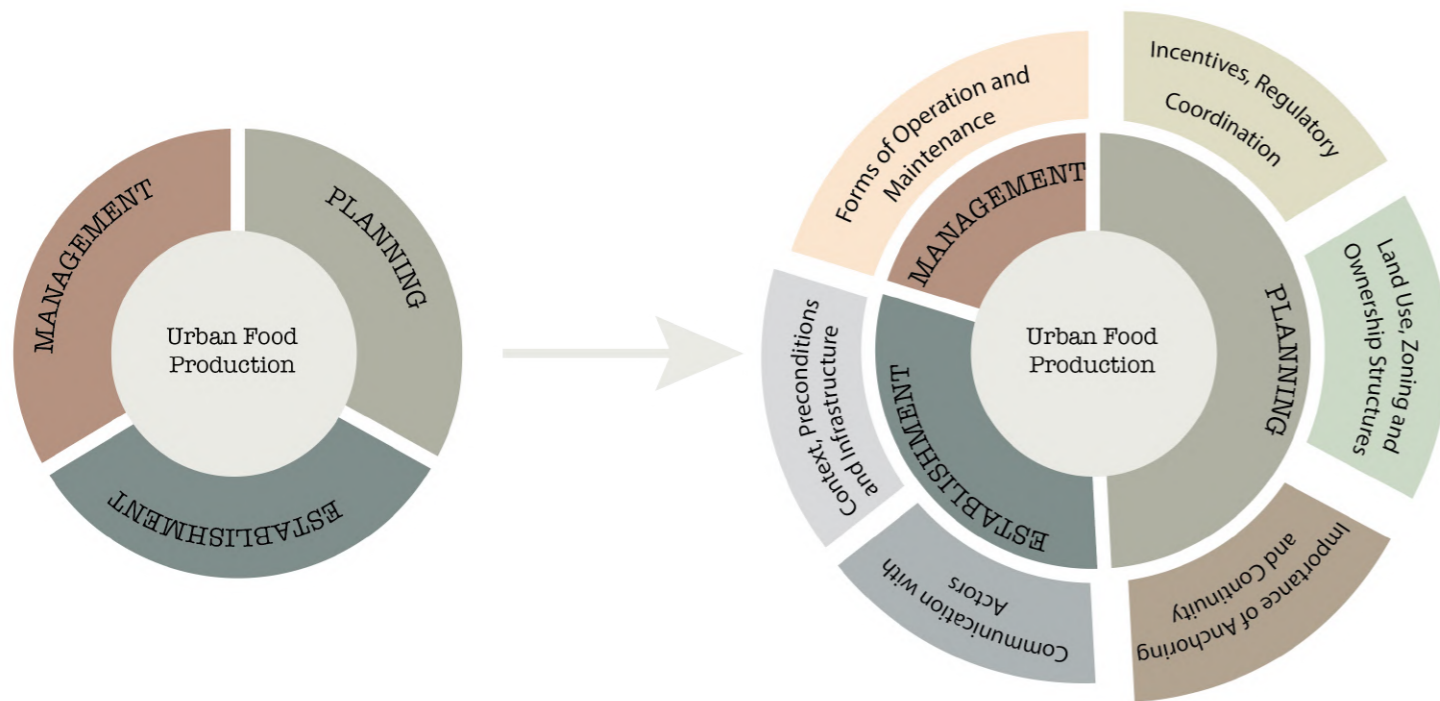


Figure 20: The diagram to the left illustrates our initial categories which we departed from. This diagram evolves with each section of the municipality-interview results. To the right is the first evolution-stage after compiling the interview material. It depicts that in the interviews, the subject of planning has taken a major decisive space in relation to urban food production, followed by establishment. Sub-categories are also illustrated, which are the initial indicators of the complexity.

2.2.1 Planning

Planning refers to the processes, plans and policies that are formed in a strategic way by and in relation to the municipality to plan and develop land and water management, land use, the provision of services and infrastructure, as well as to raise matters around ecological, economic and social sustainability within a municipality's geographical boundaries (Boverket 2021). In this thesis however, discussions about the municipalities' internal organization also fall under this heading. This is due to the answers we received when we asked regarding the role of planning in facilitating and providing infrastructure for urban food production in the interviews. The three categories which have been identified in the interviews around planning are: **Incentives, Regulatory Documents and Coordination; Land Use, Zoning and Ownership Structures; Relevance of Continuity and Anchoring.**

2.2.1.1 Incentives, Regulatory Documents and Coordination

The issue of food and the ambitions for local production are growing in Uppsala municipality. The municipality's Goals and Budget for 2023 is a guiding document with four focus areas, divided into assignments, that guide the municipality's work (Uppsala municipality 2023). Focus area 3, dealing with climate change, contains three clearly defined assignments related to green issues. One of these, mission 17, aims to create employment opportunities, integration, and social interaction by promoting the possibilities of urban and rural farming. The assignment also aims to investigate the conditions for locally anchored food supply that contributes to circular flows and strengthens Uppsala's crisis preparedness. Elisabet Jonsson, the city gardener in Uppsala municipality, describes her position as a strategic role within the city planning department to develop and protect green issues, with a particular focus on strengthening public health, safety, climate, and biological diversity in green areas. She works at a comprehensive scale and is responsible for overseeing the utilization, establishment, and planning of pre-existing parks.

Sara Rydeman¹, a landscape architect in the municipal planning department, explains that she currently works as a project manager for the new project "hospitalsträdgården" in Uppsala municipality. She describes that so far, in the municipality's work, opportunities for cultivation have mainly been provided through land dedicated to allotment gardening for private individuals, for which the municipality has developed guidelines to promote equality. This way of working has also been highlighted by Jonsson². She described one of the main reasons leading to the creation of task 17, to be the long waiting queues for allotment plots that have been noted by politicians and given more space and opportunities through, where opportunities and suitable locations for expanding cultivation can be explored.³

Helena Nordström-Källström⁴, a strategic community planner with a focus on food production and rural development, highlights that a concrete starting point for developing urban food production initiatives is measuring demand and profits from urban farming through research and

¹ Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

² Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

³ ibid.

⁴ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

2. Results 1

data collection. Nordström-Källström also notes that the municipality is interested in monitoring the strategies of other communities and municipalities. For this reason, we draw upon examples from other actors who have worked in urban food production in other municipalities. Janine Österman⁵, cultivation coordinator at Lund municipality, describes a strategy for measuring demand in Lund municipality based on calculating the number of square meters of cultivation per capita, which provides concrete figures to base discussions on when expanding urban farming infrastructure. In Malmö, the Stadsbruk project, as described by Cyrille Gaubert⁶, former project manager, aims to enable cities to work with urban farming on a strategic and practical levels within planning. Gaubert describes the project's efforts to "assign economic value to the benefits of increased urban, commercial farming to provide concrete figures on profits for the municipality".⁷

Rydeman⁸ points out that the municipality recognizes the need to revise its land use policy with a focus on identifying opportunities and prerequisites for urban agriculture beyond just allotment gardens. At present, the municipality aims to create a map of existing activities and potential sites for future potential establishments in preparation for the next comprehensive plan. According to Rydeman, to ensure a uniform structure and organization, this work should result in clear guidelines or similar documents to develop competence in the field. Österman⁹ from Lund municipality highlights the process of developing Lund's policy documents, emphasizing the importance of including internal dialogues on

how and with what the municipality can contribute, as well as dialogues with agricultural actors. She also emphasizes the importance of compiling experiences and good examples from various municipalities in Sweden and internationally to investigate viable strategies for municipal planning. This is also stressed by Nordström-Källström¹⁰ as an important step in Uppsala municipality's work. In order to work with policy documents and the development of similar guidelines, various forms of roles and responsibilities were discussed in all interviews. The role of "Cultivation Strategist", which in other municipalities such as Lund and Södertälje is seen as having the primary responsibility for cultivation issues, working as a resource and advocate for cultivation interests, providing input in various projects and to landscape architects, and being involved in the planning process, was discussed as an important component for driving the issue according to Österman¹¹. However, for Uppsala municipality, a major challenge according to all interviewed individuals within Uppsala municipality has been that there is a split regarding the issue across different departments and the issue has not received much attention. For the time being, this role has been assigned to a group of officials from various departments, including rural development, planning, comprehensive planning, land and exploitation, and urban planning. However, neither of these offices has the task as its primary focus, and they receive limited resources to devote to the issue as mentioned by Nordström-Källström¹². To address the challenges associated with the cultivation strategist role, where all responsibility and cultivation-related work falls on one person,

Österman¹³ in Lund municipality explains that the role must be clearly defined – for example, with the aim of bridging the gray area between the municipality and local cultivation associations and small-scale producers, and coordinating numerous offices within the municipality for important issues.¹⁴ The gray area is also emphasized by Gaubert:

*There is a gray area between the municipality and small-scale producers where a lot is happening but it is very chaotic, so we saw the need for something like a Food Policy Council, as seen in other countries such as the USA, Switzerland, and England, where a non-profit organization can take responsibility for food issues and involve people in a democratic process where ideas are generated, cooperation is increased, and policies are developed.*¹⁵

This is a matter that Gaubert has taken to initiate and lead, previously in Malmö and now in Uppsala, under the name "Uppsala Food Council".¹⁶

The possibility of having municipality employees driving the issue has not been considered in Uppsala municipality as the issue has been previously managed by non-commercial associations, and the municipality's contribution has primarily been to provide land. However, the continuity and structure of the work with this type of operation may be at risk, as mentioned by all interviewees in Uppsala municipality. One of the risks discussed regarding association-driven issues was the potential consequences if the association's board resigns. To tackle this issue, Rydeman¹⁷ and Jonsson¹⁸ emphasize the importance of exploring

new forms of associations and collaborations, as well as conducting a needs analysis of the active actors in the field, which can result in a model for urban agriculture.

It is stressed, however, that the identification of interest and needs should not only come from the municipality but also organizations and initiators that can turn to the municipality with requests. Both Rydeman¹⁹ and Nordström-Källström²⁰ highlight the significance of having the infrastructure to enable, support, offer, and evaluate the feasibility of these requests.

Mimmi Beckman²¹, a planner in the parks department of Örebro municipality, highlights that integrating edible landscapes into the city requires a strategic palette of ideas and measures for accessible and flexible work. This strategy may involve regulations to support the involved groups, hiring individuals who can drive activities, and contributing to achieving other goals such as galvanizing new associations or engagements. It may also involve planning environments that are directly operated by the municipal park management or similar entities and are publicly available for harvest. Overall, she believes that a staffed operation may be the most stable option, but successfully integrating edible landscapes into municipal planning requires careful consideration of various factors and a comprehensive plan and vision for edible environments that takes different perspectives into account.²²

5 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

6 Cyrille Gaubert, Business manager Stadsbruk Botildborg, Founder of Uppsala Matråd, Uppsala, interview, 2023-03-02

7 ibid.

8 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

9 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

10 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

11 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

12 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

13 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

14 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

15 Cyrille Gaubert, Business manager Stadsbruk Botildborg, Founder of Uppsala Matråd, Uppsala, interview, 2023-03-02

16 ibid.

17 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

18 Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

19 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

20 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

21 Mimmi Beckman, planner, Örebro municipality, interview 2023-02-28

22 ibid.

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In order to establish a comprehensive plan and vision, documentation and guidelines for the use of land for production purposes are required, which are currently lacking in Uppsala municipality, as described by Nordström-Källström.²³ Two specific areas of action that she discussed as playing a significant role in facilitating the use of land for commercial cultivation are taxation and marketing. At present, there is no taxation or set of rental prices that can be used to determine the cost or rent for the use of municipal land for cultivation purposes. There are also no strategies for marketing the land, where the public can be informed about its availability and intended use.

Nordström-Källström explains that it is therefore of significant importance to develop and implement documents that introduce appropriate taxation and marketing methods that describe a framework and guidelines for the municipality to offer necessary infrastructure, increase awareness of the land's availability for production among interested parties, and keep prices economically affordable.²⁴

2.2.1.2 Land Use, Zoning and Ownership Structures

Another important aspect that emerged in all the interviews and was discussed as crucial for the opportunities and challenges of urban food production concerned ownership, land use, and zoning for commercial and non-commercial purposes. The concerns and potentials of urban food production, as an alternative to the large percentage of lawns on green spaces in Uppsala, were thus discussed in relation to the types of land that emerged in the interviews: public land, residential land, vacant land, and non-detailed planned land.

highlight the risks associated with commercial use of public areas such as parks, squares, and streets. The main concern is that commercial use may limit accessibility for the general public, as public areas must meet various needs and be available to everyone in society. During the interviews, three legal and regulatory issues were primarily raised by all interviewees from Uppsala Municipality in relation to planned land designated as public areas (particularly parks): that the municipality may not compete with other producers, privatization of the land through leasing of public land for commercial food production as a sole purpose, and leasing to a private company or association to profit from public areas.

Nordström-Källström²⁵ argues that one reason why the issue of urban agriculture is so complex and touches on so many different aspects is that currently there is no designated category for urban agriculture as a land-use in planning. As a result, the subject is not addressed in a structured manner, unlike the clear emphasis and protection afforded to agricultural land, which is designated as a national interest and is included in both regional and local land-use plans. This suggests that while urban agriculture does not necessarily need to be designated a national interest to receive attention, it is important for determining the type of protection and restrictions assigned to its land use. Jonsson²⁶ explains that, as part of Task 17, it is in the municipality's interest to plan for a new type of land use for urban areas designated for agriculture in the next regional plan.

Regarding non-commercial food production, both Nordström-Källström²⁷ and Jonsson²⁸ explained that the legal implications are fewer when food production is not limited to private use and economic gain, but can be linked to social activities, education, and community building. However, during the conversation with Jonsson²⁹, a reflection arose about the amount of available land in the city and how it should be used for public needs. Examples of how the large open spaces in parks are used today were mentioned, such as children's play areas, flower beds, benches for the elderly to rest and socialize, picnics, and gatherings. Jonsson discussed that food production may be better suited for more peripheral parks in areas such as Valsätra, Gränby, and Flogsta, neighborhoods built during the 1960s and 1970s with larger contiguous green spaces, unlike what is considered to exist in central locations.³⁰

Public Land (Allmän platsmark)

In all interviews conducted with representatives from Uppsala Municipality, the interviewees first

²⁵ *ibid.*

²⁶ Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

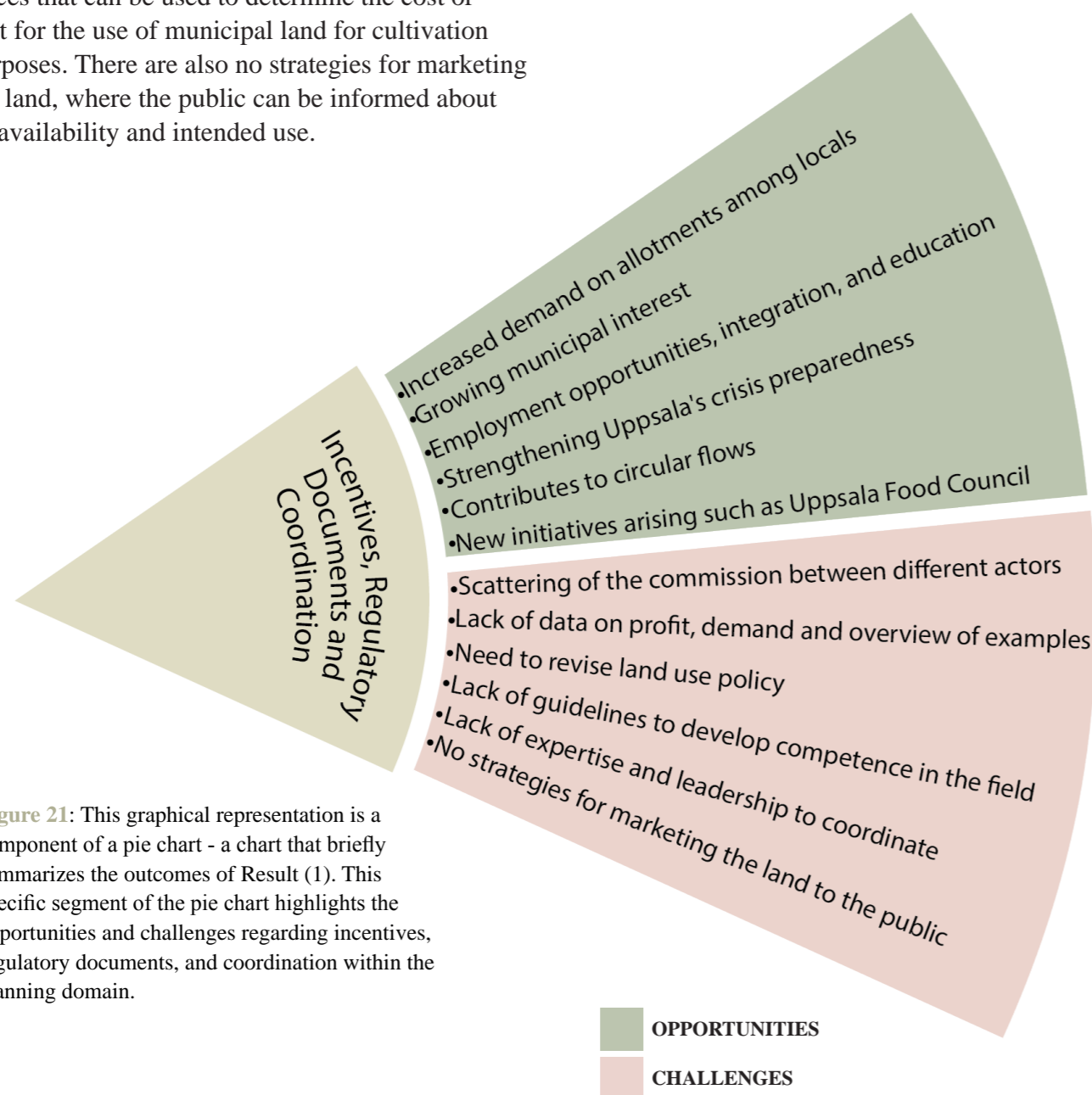
²⁷ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

²⁸ Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

²⁹ *ibid.*

³⁰ *ibid.*

Figure 21: This graphical representation is a component of a pie chart - a chart that briefly summarizes the outcomes of Result (1). This specific segment of the pie chart highlights the opportunities and challenges regarding incentives, regulatory documents, and coordination within the planning domain.



²³ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

²⁴ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

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At the same time, all interviewees in Uppsala municipality mentioned that another good opportunity is to allocate land for cultivation from the outset in new planning. Paola Ponzio³¹ (who described herself as a strategic community planner at the urban planning department, with a focus on green structure, nature, water, and climate adaptation in the physical environment) explained this further. She argued that allocating land prior to new planning can be done. This might be a bigger opportunity to plan for urban food production, as changing physical planning - which is required to cultivate on existing detailed planned land - due to its administrative nature comes with high costs and consumes much time. In the case where the physical planning should be changed, four different municipal officials, two from Uppsala, one from Lund, and one from Örebro, expressed their reflections that yet a solution may be to collaborate with private property owners and facilitate activities there instead.^{32 33 34 35} This was suggested to be applicable in both commercial and non-commercial contexts. At the same time, from our side, we discussed why planning needs to be changed if the area is perceived as and is public and contributes to the public good. One aspect raised by Österman³⁶ to investigate this is to collaborate with higher authorities such as Boverket to enable cultivation activities on public land for residents aimed at increasing local food production rather than just promoting community gardening.

“What is the limit for privatization?” This question was raised by us in the dialogues, with various answers. The following is a compilation of the diverse responses. In Uppsala municipality,

all four interviewees highlighted that the issue of privatization and its potential barriers is a recurring topic of discussion among those working with park-related issues. Five out of the seven interviewed municipal staff members (including all in Uppsala) seemed to agree that areas designated as public land in the detailed plan do not allow on-site cultivation activities since such activities are associated with, and often lead to, fencing, creating a private atmosphere unless clearly communicated as open to the public. The experiences related to the desire of private allotment gardeners to protect their cultivation and harvest from outsiders, which creates a sense of privatization and restricted access for the public, seemed to have a negative connotation among several interviewees in Uppsala municipality. In Lund municipality, Österman³⁷ explained that they have a different perspective on this issue and argue that it depends on how private and public benefit is perceived and defined. Their definition is reflected in, for example, the non-commercial food forest/garden and cultivation on public land, which they justify as a win-win situation, where the public can pick local fruit during the season, the association responsible for the area signs a maintenance agreement (skötselavtal), takes care of the area and shares the harvest, and opens up for harvesting, events, tours, and education, and the park still functions as a public place for recreation.³⁸

However, all four individuals in Uppsala municipality also reasoned that an exception for non-commercial cultivation on public land may be applicable if the cultivation is deemed to directly benefit the park in terms of serving the public. However, this argument does not apply

to commercial use, which has been defined as inappropriate due to legal barriers. Examples of how cultivation can be considered beneficial include if it can be conducted in conjunction with other practical activities such as education, vocational training, and social integration.^{39 40 41 42 43}

From a different perspective, the discussion of investment of taxpayers’ money was raised by Nordström-Källström in terms of accessibility for all citizens on public land. Meaning that since everyone pays taxes, which go to the investment in new areas, the *“new areas need to be accessible for everyone”*.⁴⁴

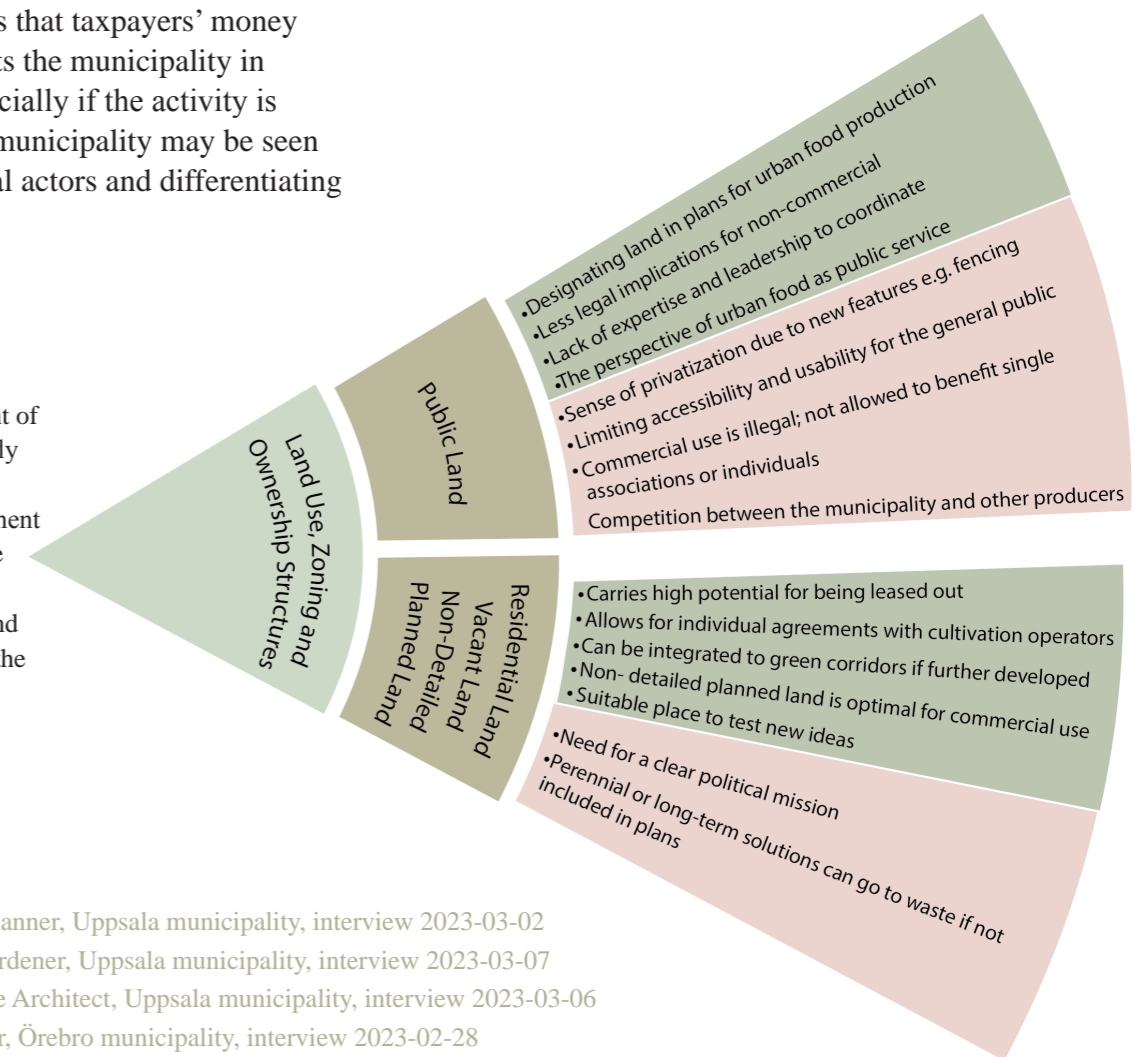
According to the Municipalities Act, parks must by definition be accessible to everyone. In order to enable cultivation and the like, the municipality needs to provide access to water, roads, and fences on its land, which means that taxpayers’ money is spent on this. This puts the municipality in a difficult position, especially if the activity is commercial, where the municipality may be seen as investing in individual actors and differentiating between citizens.

These challenges require investigations of various subsidies and labor market measures where activities, especially commercial ones, can be funded elsewhere. This in itself requires a systematic approach and a range of measures that can be used to address issues in municipal planning and management, where, for example, *“different departments in the municipality can collaborate to overcome barriers”*.⁴⁵

Another approach presented by Philipp Weiss⁴⁶, an agroforestry cultivator working with several municipalities to create urban food production, is the possibility of planning and maintaining plant environments consisting of perennial systems of trees and shrubs that do not require annual turnover when cultivation on public land becomes too complex.

Figure 22: This graphical representation is a component of a pie chart - a chart that briefly summarizes the outcomes of Result (1). This specific segment of the pie chart highlights the opportunities and challenges regarding land use, zoning and ownership structures within the planning domain.

OPPORTUNITIES
CHALLENGES



31 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

32 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

33 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

34 Mimmi Beckman, planner, Örebro municipality, interview 2023-02-28

35 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

36 ibid.

37 ibid.

38 ibid.

39 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

40 Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

41 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

42 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

43 Helena Nordström-Källström, Strategic Community Planner, Uppsala municipality, interview 2023-03-02

44 ibid.

45 ibid.

46 Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

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Residential Land (Kvartersmark)

As a result of the difficulties encountered in relation to public space, other municipalities highlighted how they manage the situation by turning to a different type of land, namely, residential land. The Swedish National Board of Housing, Building, and Planning defines residential land as *"land that, according to a detailed plan, is not public space or water area but is primarily intended for buildings for private purposes or public activities. The municipality must always specify the use of residential land in the detailed plan"* (Boverket 2023).

In several discussions with stakeholders from Lund and Örebro municipalities, residential land has been mentioned as a type of land use that allows for individual agreements with cultivation operators, who can, in turn, involve other interested parties in the cultivation process. In Lund's case, as located on different zoning plans, including residential land. With the goal of connecting the gardens to schools and care facilities located at the *"Kunskapsparken"* situated on the residential land, Lund Municipality is seeking a local actor (an association or organization) that they can sign a maintenance agreement with. This is considered to be an effective solution, perhaps in combination with having a municipally procured contractor (kommunalt upphandlad entreprenör) who can ease the municipality's workload. Lund is still in the testing phase of this approach, but Österman argues that *"residential land is more forgiving in a legal sense for the design of various types of agreements"*⁴⁷

⁴⁷ ibid.

⁴⁸ Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

⁴⁹ ibid.

⁵⁰ Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

⁵¹ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

⁵² Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

⁵³ Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

⁵⁴ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

Vacant Land (Markreserver)

Jonsson⁴⁸ mentioned another type of land with potentially fewer legal challenges that might have potential and opportunity for transformation for cultivation and edible environments. These were areas located in the city's periphery, which we interpret as 'reserved land for development or exploitation'. Reserved land for public purposes is defined in the Planning and Building Act (PBL) as follows: *"Provisions on reserved land for public purposes are used to regulate that an area is reserved to provide space for a certain public purpose"* (Boverket 2022).

Jonsson explained that municipal lands located around the city, reserved for future urban development, are temporarily leased out to farmers and were also discussed as having the potential to be leased out to other agricultural actors. However, when approached with the question of instead establishing long-term orchard and perennial cropping systems to promote diversity, food security, and climate adaptation for short-term presence, one suggested solution raised by Jonsson⁴⁹, Ponzio⁵⁰, Nordström-Källström⁵¹ and Rydeman⁵² was to establish long-term systems on reserved land, which can later be integrated into the new plans as part of a green corridor to the newly built areas nearby. One solution that was raised was to establish long-term systems on reserved land, which can later be integrated into the new plans as part of a green corridor to the newly built areas nearby. However, a clear political mission is needed to put this into action, Jonsson⁵³ continued. Weiss⁵⁴, who has worked with for example Södertälje municipality, pointed out that

they have decided on implementing control figures for maintaining and consciously increasing their urban agriculture, where the number of edible trees and bushes planted each year is monitored and documented.

Non-detailed planned land (icke-detaljplanelagd mark)

Three out of four respondents from Uppsala municipality have discussed the optimal land type for both commercial and non-commercial use, with a particular possibility for commercial production. An example cited by all interviewees from Uppsala municipality was the Hospital Garden located in Ulleråker, where a new type of land use will be defined. Another aspect discussed was the potential for cultivation in the Hospital Garden, given its historical role in cultivation and self-sufficiency with greenhouses, large orchards, and exotic plants.^{55 56 57 58} Similarly, Österman⁵⁹ from Lund municipality argued that non-detailed planned land could be a good opportunity to test cultivation activities and planning and management systems, leading to changes in planning processes.

2.2.1.3 Importance of Anchoring and Continuity

Discussions with several interviewees from various municipalities revealed that the feasibility

of increasing urban food production is associated with how anchored the ideas are within society, including politics, research, the public, and authorities. Five out of nine interviewees reasoned that enabling anchoring in the planning phase should involve communicating the ideas and strategies for increased urban food production with all relevant parties and obtaining support, legitimacy, and integration in a manner that can be sustained and developed in the long run.^{60 61 62 63} This was most strongly discussed in municipalities that, in comparison to Uppsala municipality, had made more progress in planning for and implementing edible landscape in urban planning. This group includes Österman from Lund municipality, as well as Gustav Älgå (park engineer and project manager) and Mimmi Beckman (strategic planner), both from Örebro municipality, and Weiss, who worked with Västerås municipality in addition to these two municipalities. All three interviewees reasoned that anchoring could create a foundation for dialogues, collaborations, and exchanges among all relevant parties to build preparedness and a toolbox for addressing the consequences of the implemented strategies - and Weiss and Nordström-Källström reasoned similarly.

Weiss⁶⁴ and Nordström-Källström⁶⁵ have argued the significance of local food production as an important anchor point to achieve climate goals, strengthen biodiversity, improve public health,

⁵⁵ Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

⁵⁶ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

⁵⁷ Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

⁵⁸ Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

⁵⁹ Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

⁶⁰ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

⁶¹ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

⁶² Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

⁶³ Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

⁶⁴ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

⁶⁵ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

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and enhance crisis preparedness. However, they argue that this anchor point seems to be lacking today. Among other anchor points, the significance of local food production to increase security and integration, and to combine diverse experiences and knowledge have been pointed out by all nine interviewees. Nordström-Källström⁶⁶ also discussed the value of eating and producing locally to strengthen the self-sufficiency aspect in society. This means producing more of what we eat locally and consuming more of what we produce, as Uppsala's local production of raw materials does not correspond to our consumption patterns today. Another proposed way to anchor these ideas is through pilot projects that can demonstrate the benefits and shortcomings of climate and health, which can also be studied by researchers for more reliable analyses that can extend the longevity and development of the ideas.^{67 68} Gaubert⁶⁹ also pointed out that one way to do this is by collecting both ecological and economic accounts, where the proportion of stored carbon, the amount of generated resources and capital, is presented to increase awareness of the value of urban farming.

The anchoring of urban food production in society has been discussed from a perspective of social sustainability, as it can contribute to increasing security, social cohesion, and active leisure, as well as support children's play and development. This approach has been used to strengthen the anchoring of urban food production within Örebro municipality.^{70 71} Beckman⁷² suggested that anchoring could be strengthened through the employment of staff by municipalities, housing companies, or other actors, such as the "Odl i stan" project in Malmö, which became a foundation after its establishment. The importance of staffing for the continuous maintenance and supervision of projects was emphasized by eight interviewees, who reasoned that it would create security, community, energy, and order, thus providing stability and continuity.^{73 74 75 76 77 78 79 80} Another interesting discussion regarding anchoring, raised by five interviewees, has been that it could lead to behavior change in society. It was reasoned that anchoring could prevent vandalism and reduce wear and tear on new environments, by providing opportunities for hiring knowledgeable individuals who can provide teaching and guided tours as a

service.^{81 82 83 84 85}

Regarding the significance of expanded food production in urban environments, Älgå⁸⁶ and Beckman⁸⁷ suggested that while it is not the only right answer to tackle all the crises we are facing, such a transformation can stimulate thoughts and lay the foundation for change in sustainability and food production in the minds of both children and adults. This reflection arises from Örebro municipality's work with edible landscapes, primarily from the perspective of children's development, where they collaborated with Emma Crawley, who examines edibility and cultivation from an educational perspective. Despite the good arguments, a major obstacle, raised by five interviewees, may be that municipalities do not have sufficient resources and personnel for additional resource allocation, and that it is also challenging to overcome investment fear when ideas and systems have not been tested previously.^{88 89 90 91 92} The importance of collecting good national and international examples and anchoring decisions on changes in a clear and

common vision was emphasized by several interviewees.^{93 94 95 96 97}

The discussion among municipalities that have already implemented various food production projects (Lund, Örebro) revolves around the idea that anchoring such projects within the management and planning departments of the municipality may lead to coordination and collaboration among stakeholders, potentially resulting in more efficient and cost-effective solutions to problems that may arise. For instance, it was reasoned that to effectively implement changes, landscape architects and planners should collaborate with those responsible for the management and procurement of maintenance.^{98 99} ¹⁰⁰ In the case of Örebro municipality, for example, the opportunity to anchor the concept of edible environments within the various departments of the municipality as well as with politicians provided flexibility and support for the approach, design, and implementation of the project. One example was:

Since working with such landscapes was new, detailed

81 *ibid.*

82 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

83 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

84 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

85 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

86 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

87 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

88 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

89 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

90 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

91 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

92 Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

93 *ibid.*

94 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

95 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

96 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

97 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

98 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

99 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

100 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

66 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

67 *ibid*

68 Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

69 Cyrille Gaubert, Business manager Stadsbruk Botildborg, Founder of Uppsala Matråd, Uppsala, interview, 2023-03-02

70 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

71 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

72 *ibid.*

73 *ibid.*

74 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

75 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

76 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

77 Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

78 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

79 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

80 Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

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*construction drawings were not necessarily needed and were developed as the project evolved and sometimes on-site.*¹⁰¹

It was mentioned that it provided deep insights and less resource consumption that could be invested elsewhere.^{102 103 104} It was noted that this internal coordination was crucial in preventing ideas for food-producing urban landscapes from being met with resistance and fears alone, and instead offering infrastructure to facilitate development. A municipal service with a centralized responsibility for coordination of cultivation was discussed in all nine interviews as having a significant impact on driving the issue forward. For instance, when the issue is spread across different departments or met with resistance within organizations, a coordinator role can increase longevity and continuity and ensure that the issue gains traction.

Four of the interviewed individuals have discussed the possibility of anchoring the idea of urban food production through new construction projects, in which all parties involved can be coordinated from the beginning, as opposed to the case with already established environments. This could make it easier to include necessary infrastructure such as root cellars. As well in this case, it has been emphasized that it is important to spread information in all relevant circles, from the municipality to researchers, and to ensure that all parties agree from the outset, before continuing to collaborate. In both Lund and Örebro, the urban

food production projects have been followed up by various researchers, which has been explained as having strengthened the anchorage of the ideas within the municipality and provided a basis for continued work.^{105 106 107 108}

From a continuity perspective, the interviewees from Lund and Örebro municipalities have identified significant challenges, as the long-term success of such projects depends on the will and ambition of both individuals and organizations. It has been discussed that organizations can be perceived as independent entities but are in fact a product of the circumstances, perspectives, and efforts of different individuals.^{109 110 111 112} The following quote exemplifies this perspective:

*In municipalities, political governance, leadership, and the background, education, and interests of employees greatly influence which issues are prioritized and how they are handled. This may be a reason why discussions about the value of urban food production tend to fluctuate, and efforts are primarily directed toward acute needs.*¹¹³

This has been highlighted as a crucial challenge for both continuity and anchoring by the interviewees from Lund and Örebro municipalities. Österman provided an example of how the production format can affect the continuity of a project. If the format is association-driven, food production depends on the association staying together, which is difficult

101 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

102 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

103 Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

104 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

105 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

106 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

107 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

108 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

109 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

110 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

111 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

112 Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

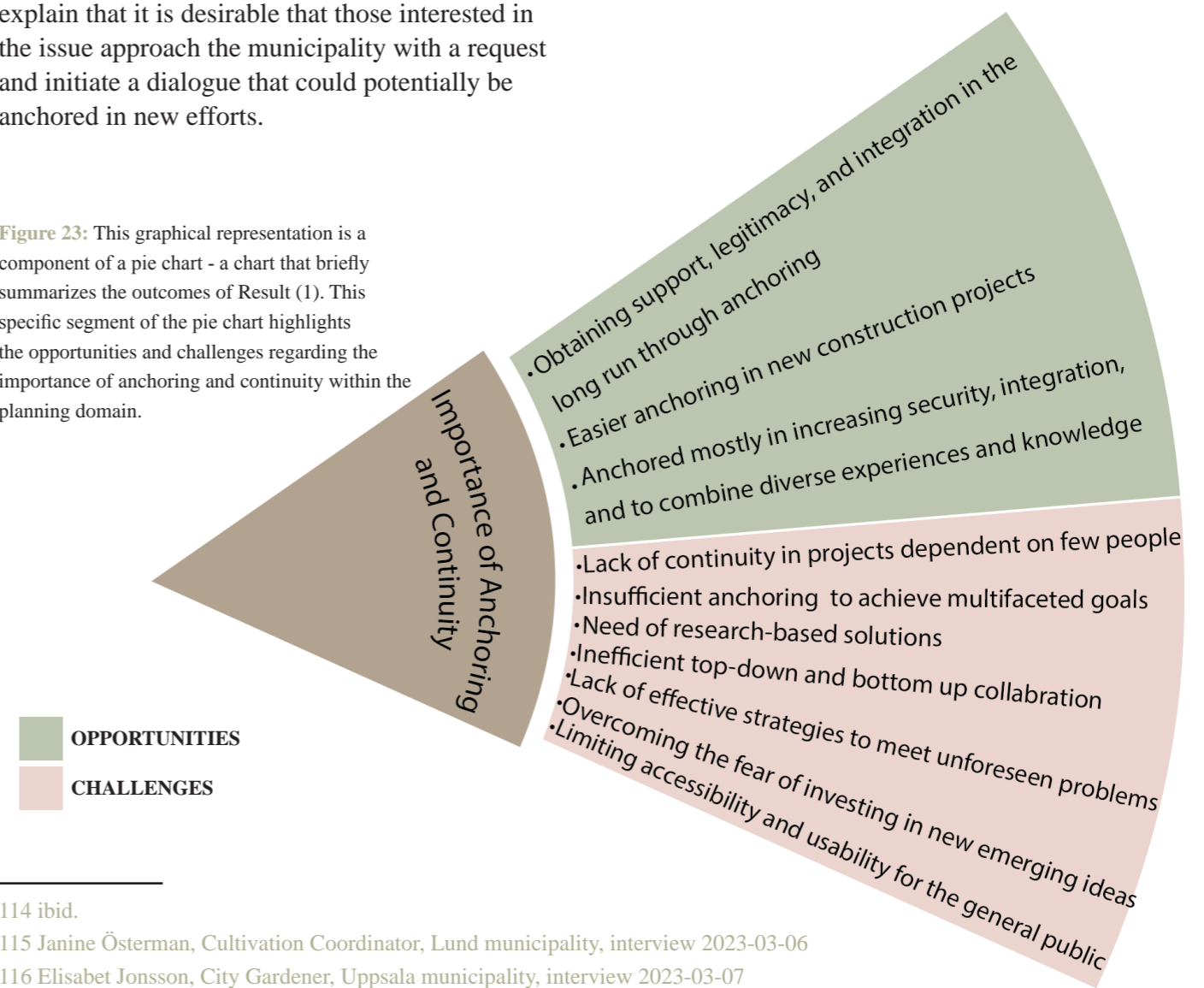
113 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

to regulate. Therefore, it is sometimes advocated that such areas should be able to stand on their own with minimal maintenance needs. However, it has also been discussed that possible anchoring points may weaken in this scenario.^{114 115 116 117}

A challenge with anchoring ideas from top to bottom, i.e., from the municipality to society, has been discussed by both Örebro and Uppsala municipalities as initiating an interest and investing in its development without knowing the community's attitude toward the issue.^{118 119} They explain that it is desirable that those interested in the issue approach the municipality with a request and initiate a dialogue that could potentially be anchored in new efforts.

Lease agreements are an example of how the municipality creates new opportunities and opens up land for new activities and projects, such as gardening, where individuals interested in running such activities have raised the issue with the municipality. The municipality's desire in these cases is for a long-term project that will result in a well-maintained and engaging area that is abiding, and a realistic expectation that the municipality and politicians do not possess all knowledge.¹²⁰

Figure 23: This graphical representation is a component of a pie chart - a chart that briefly summarizes the outcomes of Result (1). This specific segment of the pie chart highlights the opportunities and challenges regarding the importance of anchoring and continuity within the planning domain.



114 ibid.

115 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

116 Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

117 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

118 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

119 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

120 ibid.

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2.2.2 Establishment

Establishment implicates opportunities and challenges in initiating and physically setting up urban food production, based on a municipal perspective. This includes discussions about various potential constructors and conditions needed for the construction process. The two categories which have been identified in the interviews around establishment are: **Communication with actors; Context, preconditions and infrastructure.**

2.2.2.1 Communication with Actors

Communication and collaboration with various stakeholders in the establishment of urban food production, have been identified as a critical strategy. However, the entire process, from start to finish, relies on effective communication and collaboration. Discussions surrounding these elements have permeated other identified aspects, but here we aim to highlight their overarching importance. Collaborating with diverse actors is crucial for planning more edible environments and urban food production. Six of nine interviewees emphasized that the potential of designated areas for transformation should be identified and planned in consultation with farmers, residents, nearby businesses, and all other concerned parties to overcome potential conflicts and establish good relationships among all parties. Inclusion of stakeholders can take various forms, such as continuous citizen dialogue, workshops, and other activities to navigate interests and concerns. Additionally, ways to inform, involve, and regulate the use of the established location have been discussed, including signage and staffing to highlight who manages the site and how it can be used by visitors and the public.^{121 122 123 124 125 126}

121 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

122 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

123 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

124 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

125 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

126 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

127 ibid.

128 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

2.2.2.2 Context, Preconditions and Infrastructure

According to Ponzio and Nordström-Källström, the site is of great importance for the establishment of various food-producing landscapes and should also be studied from a social perspective as challenges and opportunities vary depending on factors such as location, visitor density, and socio-economic conditions. Ponzio discussed that well-visited and established sites are at risk of destruction and vandalism, as well as conflicts regarding the changed usage areas. A crucial strategy to address this issue is through citizen dialogues and co-creation. Opportunities look different in more remote and newly developed areas.^{127 128} Another important point in this context is according to four of interviewees that the municipalities that were included in the interviews and have examples of diverse edible urban landscapes have reported no significant problems with vandalism or similar issues, but rather complaints regarding the aesthetic of the place where residents reacted to the transformation of the site from a lawn to edible plantings with organic material as a ground cover. The problem was solved by replacing the organic material with flower beds as undergrowth to fruit-

bearing trees and berry bushes.^{129 130 131 132}

Ponzio¹³³ mentioned courtyards as another possibility for housing cooperatives and landlords to take responsibility for maintenance and integrate residents in the establishment and care of the area. However, the accessibility of the area was discussed as being limited to the public, which reduces the risk of damage and vandalism. According to Ponzio, the accessibility of the area should be defined in conjunction with the purpose and design of the edible landscape.

Other factors that could pose opportunities or challenges were discussed by all interviewees, such as soil properties, contamination, sun and shade conditions, slopes, and adjacent natural or environmental conditions. Therefore, it is of importance, according to several interviewees, to investigate these factors to define the type of urban food production and vegetation possible on the site.^{134 135 136 137 138} For instance, Weiss noted that where there is no possibility for edible plantings for human consumption due to heavy metals in the ground, orchards and berry shrubs could be useful for birds and insects.

In dialogues with Nordström-Källström¹³⁹, it was also suggested that some infrastructure prerequisites are necessary regardless of the model of food production and responsible parties. It can be limiting if the site for cultivation or food production lacks access to water or available roads for trucks and other transport vehicles to enter and unload.

129 Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

130 Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

131 Mimmi Beckman, Planner, Örebro municipality, interview 2023-02-28

132 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

133 Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

134 ibid.

135 Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

136 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

137 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

138 Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

139 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

140 Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

141 Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

142 Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

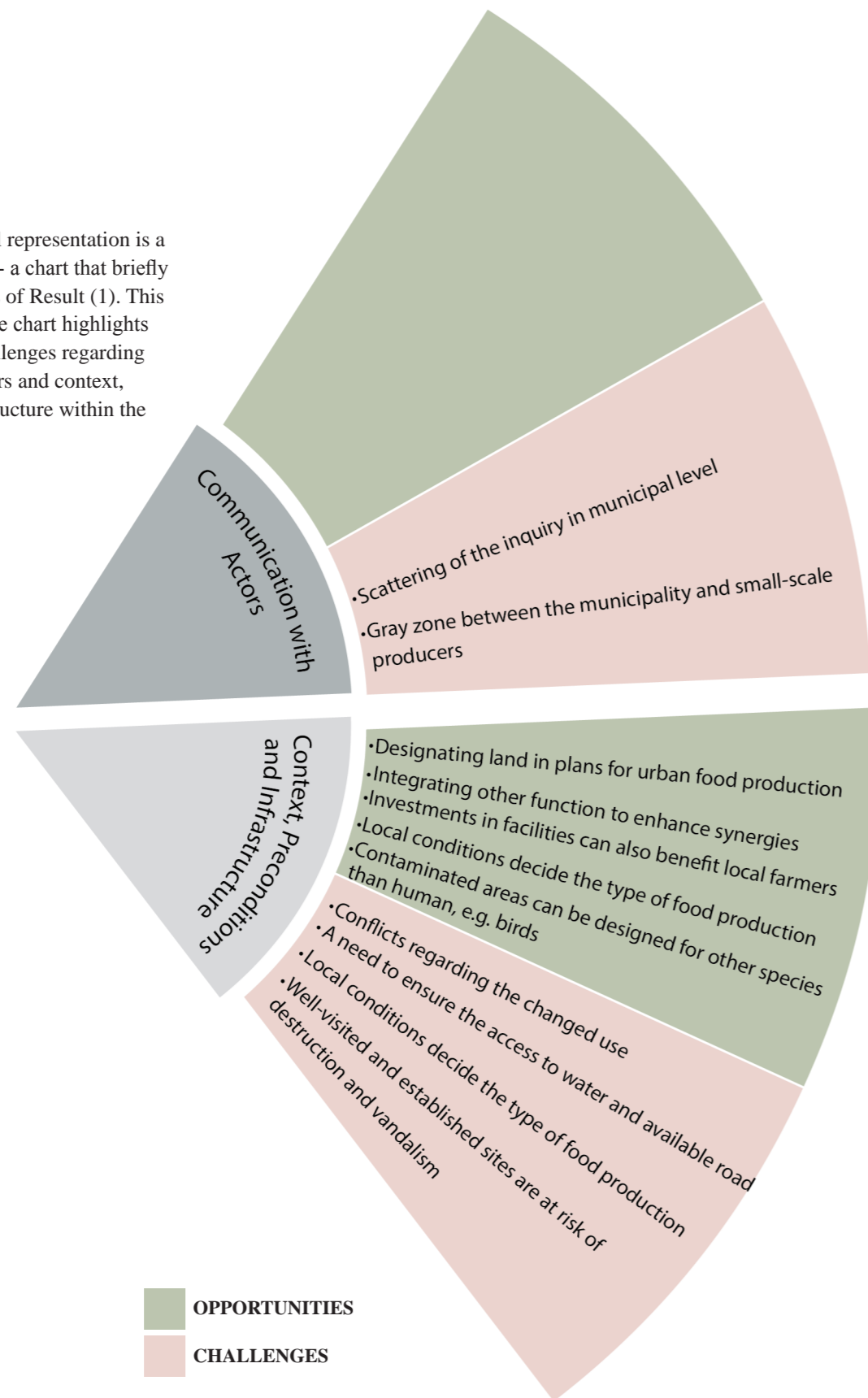
Rydeman¹⁴⁰ has marked the importance of the possibility of combining food production with other functions to optimize the use of space in multiple areas. For instance, a greenhouse that accommodates other types of activities such as a shop, a learning environment, a course site, and a café can strengthen the consumption of local food. In this case, the greenhouse can act according to Rydeman as a center for various cultivation actors and a place for synergies between them, the community, and the municipality.

Increased urban food production presents a significant opportunity, where infrastructure investments in facilities such as storage, logistics centers, and packaging factories can also benefit local farmers who currently have to transport their products over long distances for packaging and storage.¹⁴¹ The establishment of increased local food production has also been discussed by Weiss as a way to help local nurseries expand their range and expertise in plant breeding. This can as argued by Weiss, in turn, affect prices in the market, which are currently too high, and increase the possibility of planting edible environments.¹⁴²

Another limitation of having edible plantations in urban environments can be the risk of soil compaction due to surrounding traffic and overcrowding, as discussed during our interview with Weiss. Solutions to this have been discussed with him, where compaction can be reduced by surrounding plantations with lower fences,

2. Results 1

Figure 24: This graphical representation is a component of a pie chart - a chart that briefly summarizes the outcomes of Result (1). This specific segment of the pie chart highlights the opportunities and challenges regarding communication with actors and context, preconditions and infrastructure within the establishing domain.



2.2.3 Management

Management refers to the processes and types of maintenance of a particular area and seeks to investigate by whom and how these areas could be managed according to the municipality. This, as the municipality wants to develop different types of collaborations and build cultural, environmental and artistic values. The form of management is often decisive for building, among other things, security, engagement and life quality in society (Boverket 2022). The category under which we place the interviews around management is: **Forms of Operation and Maintenance.**

2.2.3.1 Forms of Operation and Maintenance

using thorny or towering vegetation, and planning clearly defined paths of gravel or wood chips.¹⁴³ Management and maintenance have been significant topics of discussion in eight out of nine interviews. Österman¹⁴⁴ provides a comprehensive overview.

The desire to experiment with new approaches and provide society with their benefits is evident, but realizing these visions requires organized work methods and regulations to ensure that the ideas do not remain as ambitions. Additionally, it is essential to consider post-operation management to ensure that the outcome is aesthetically pleasing, functional, and beneficial for the growers. Two main issues have arisen regarding who should cultivate, manage, and care for the land and who should have access to the resources and land.

In Lund municipality, Österman¹⁴⁵ describes, the management of edible parks occurs in collaboration with associations responsible for planting, harvesting and events. One risk

of managing edible parks in partnership with associations is the potential that the association might disband. Österman emphasizes the need for measures to sustain association activity, which can become a challenge if left unaddressed. One opportunity, highlighted by Österman, but also by Jonsson¹⁴⁶ and Nordström-Källström¹⁴⁷ (Uppsala municipality), and Weiss¹⁴⁸, is to allow devotees (employees committed to the place) to manage and maintain the area, which could ensure continuous enthusiasm and maintenance. It is discussed that accessibility can be secured by distributing resources during the harvest season and by setting up signs to inform about events.^{149 150 151} This is also discussed to aid avoiding undesired harvesting of immature fruits or excessive harvesting of individual trees. One possibility, already implemented in Uppsala municipality, as a solution to another limitation- windfall, is a mapping of fruit-bearing trees accessible to the public.^{152 153 154}

¹⁴³ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

¹⁴⁴ Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

¹⁴⁵ *ibid.*

¹⁴⁶ Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

¹⁴⁷ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

¹⁴⁸ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

¹⁴⁹ *ibid.*

¹⁵⁰ Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06

¹⁵¹ Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

¹⁵² Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

¹⁵³ Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

¹⁵⁴ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

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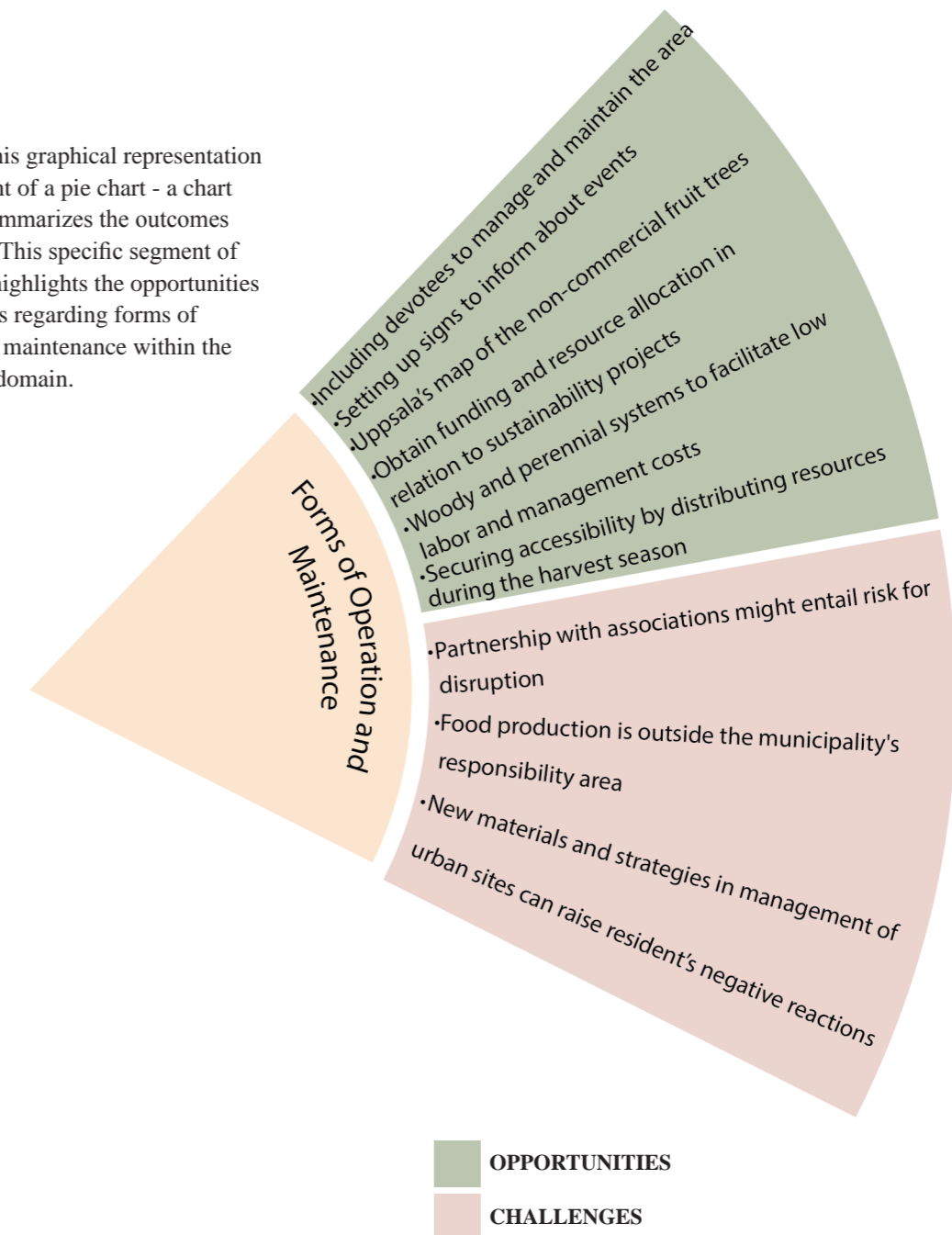
In the interviews with Uppsala municipality, it is explained that food production is not within the municipal responsibility. Therefore, the municipality mainly contributes to commercial projects by leasing out land, which involves management agreements with those responsible for the project (Ponzio, Jonsson, Nordström-Källström, & Rydeman). Regarding non-commercial projects, it is discussed that the management can vary depending on the resources available to the municipality. Municipal employees or various forms of associations can be connected to such projects. Additionally, it is discussed by five interviewees that urban food production could possibly occur in conjunction with social sustainability projects, security measures, and the like, to obtain funding and resource allocation.^{155 156}

^{157 158 159}

Discussions on management of food-producing landscapes have also focused on production methods, including cultivation and forest gardening. In the case of forest gardening - integrated perennial systems of trees, shrubs and herbs - challenges in management have been identified regarding succession. For example ground cover in the initial stages have raised negative reactions among residents in Örebro.

For example, wood chips used as the primary This has been resolved by replacing the layer with a flower planting that early on provided color and volume to the site. One opportunity of this perennial system has been the low maintenance and management cost, where traditional methods have been avoided and labor intensity reduced, through the niche expertise of Weiss and his team, and the flexibility of Älgå and his team in the municipality. A lesson learned presented is the importance of making edible environments aesthetically appealing from the beginning, with, for example, flower beds.^{160 161}

Figure 25: This graphical representation is a component of a pie chart - a chart that briefly summarizes the outcomes of Result (1). This specific segment of the pie chart highlights the opportunities and challenges regarding forms of operation and maintenance within the management domain.



¹⁵⁵ Elisabet Jonsson, City Gardener, Uppsala municipality, interview 2023-03-07

¹⁵⁶ Paola Ponzio, Strategic Planner, Uppsala municipality, interview 2023-03-02

¹⁵⁷ Helena Nordström-Källström, strategic community planner, Uppsala municipality, interview 2023-03-02

¹⁵⁸ Sara Rydeman, Landscape Architect, Uppsala municipality, interview 2023-03-06

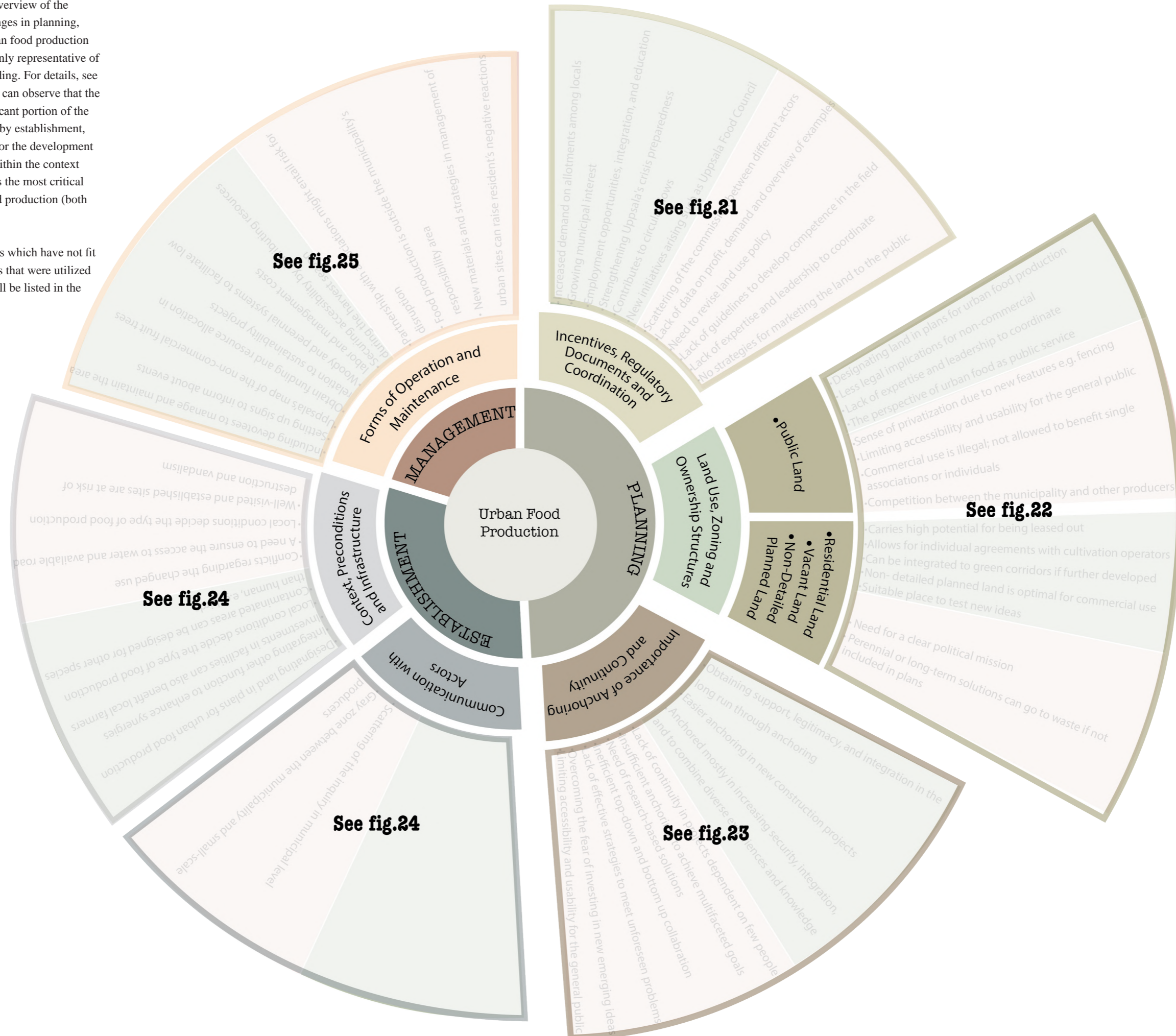
¹⁵⁹ Janine Österman, Cultivation Coordinator, Lund municipality, interview 2023-03-06


¹⁶⁰ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02-21

¹⁶¹ Gustav Älgå, Park Engineer, Örebro municipality, interview 2023-02-28

Figure 26: A pie chart providing an overview of the complexity of opportunities and challenges in planning, establishment, and management of urban food production in Uppsala municipality. This chart is only representative of the complexity and not for detailed reading. For details, see the referred figures inside the chart. We can observe that the topic of planning has occupied a significant portion of the discussions in the interviews, followed by establishment, and thus appear to be the most crucial for the development of urban food-producing landscapes. Within the context of planning, the type of land emerges as the most critical factor when discussing the form of food production (both commercial and non-commercial).

An important aspect from the interviews which have not fit into this chart are the potential solutions that were utilized or proposed in the interviews. These will be listed in the discussion (see: 4).



A photograph of a person's hands holding a large, round, orange pumpkin with green stems. The person is wearing a white, textured sweater. The background is a blurred outdoor setting with green foliage and a blue sky.

Results - Reversing the Extinction of Experience Through Urban Food Production

In this section we intend to examine the second research question. We examine the possibilities of using food parks as links for human-nature connectedness. Thus we analyze the results from the literature review of human nature connectedness and "Extinction of Experience" theory (4.1). We then analyze the interview results from five interviewees in an urban food park (Ultuna Permakultur) and contextualize how their view on the park and the values and interactions they find within it might link to these theories (4.2). The purpose of this results section is then to see how this links to the overall opportunities extracted from the previous section.

3. Results 2

3.1 Human-Nature connectedness

Ives et al. (2018) describe that the relationship between human and nature has been a subject of science for centuries, and alongside increased acknowledgement of environmental crises in recent decades, society's detachment from nature has been put forward as a fundamental reason for unsustainability (e.g., Pyle 1993; Folke et al. 2011; Dorningar et al. 2017; Ives et al. 2018). Ives et al. (2018) lift the many different fields that have emerged in means of reconnecting society with nature, upon the common assertion (in disciplines such as conservation biology, sustainability science, environmental psychology and environmental education) that humanity's accelerating disconnection from the natural world is contributing to the environmental crises (Folke et al. 2011; Nisbet et al. 2009; Fischer et al. 2012; Frantz & Mayer 2014; Zylstra et al. 2014). As described by Ives et al. (2018)

Human-nature connectedness is a multifaceted concept incorporating (1) material connections such as resource extraction and use; (2) experiential connections such as recreational activities in green environments; (3) cognitive connections such as knowledge, beliefs and attitudes; (4) emotional attachments and affective responses; and (5) philosophical perspectives on humanity's relationship to the natural world. (Ives et al. 2017)

These facets are considered to cover different aspects within a spectrum from external through to internal connections where the former refers to e.g. physical appropriation or engagement (experiential and material connections) and the latter to e.g. emotions or worldviews (cognitive, emotional and philosophical connections) (Ives et al. 2018). An added dimension to scrutinize this spectrum is the scale from individual to societal through which these facets operate and be evaluated - it is though important to consider that the dimensions are interrelated and thus should act in symphony with each other (ibid.). One example of the interrelatedness of these

facets can be found in the act of fostering regional self-sufficiency through e.g. houses being built in locally sourced material and urban dwellers growing food in various formats (Ives et al. 2018). Such interventions contribute in building human-nature connectedness on multiple facets. Taking a closer look at local food production and gardening, material reconnection can occur by strengthening local ties with local ecosystems and resources and declutching the urban population's consumption patterns from their associated effects on ecosystems elsewhere - while simultaneously enhancing local self-sufficiency (ibid.). Further, growing food can enable experiences and knowledge of ecosystem functions and natural processes providing cognitive development and emotional attachment in the form of social cohesion (Bendt et al.2013; Pitt 2014). Cognitive development and feedbacks between the consumer and the production landscape can be expanded through providing transportation and source information when selling or distributing products (Hawkes & Acott 2013; Firth et al. 2011).

Such interventions are likely to have a profound impact in urban settings where urban dwellers are especially disconnected from experiences of nature leading to the "Extinction of Experience" (Pyle 1993; Miller 2005; Soga & Gaston 2016; Ives et al. 2018). This alludes to expanding urbanization and the following urban lifestyles' implications for human's emotions, attitudes and behavior towards the natural world, which in turn determines both human- and nature well-being (ibid.).

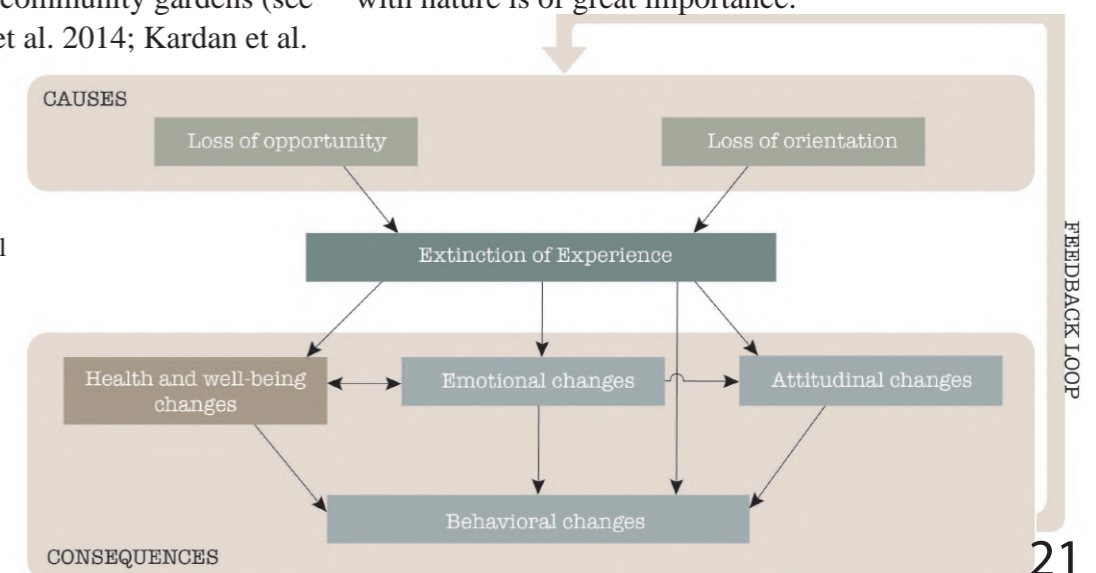
3.2 The Extinction of Experience

The theory of "Extinction of Experience" (abbrv. EOE) has been formulated to explain the progressive loss of human-nature interaction, which has emerged due to urbanization and the assumption therein that socioeconomic growth and development occurs at the expense of the natural environment (Miller 2005; Pyle 2002; Soga & Gaston 2016). The progressive loss entails, among other consequences, the decrease of affinity toward nature, a declining graphic in pro-environmental behavior and attitudes, and deterioration of public health and well-being (Soga & Gaston 2016). This phenomenon is explained to be a fundamental threat to reversing the environmental degradation, which further disconnects people from the natural world (Miller 2005). To break this vicious cycle, urban environments dedicated to biodiversity conservation and natural processes which provide foundations for meaningful interaction with the natural world, need to be designed in a close proximity to where people live and work (ibid.). Such solutions have been mentioned in the work of many researchers such as Soga and Gaston (2016), according to whom the interaction between human and nature does not necessarily have to take place in their engagement with pristine or wilderness areas, but also could take place in other green environments such as e.g. urban parks, planted vegetation, allotments and community gardens (see Soga & Gaston 2016; Lin et al. 2014; Kardan et al.

2015; Van den Berg et al. 2010).

The causes for Extinction of Experience are explained as loss of opportunity and orientation which will be expanded upon. Loss of opportunity is explained by Soga and Gaston (2016) as one of the main causes of the extinction of experience, where the loss of human-nature interactions is amplified due to reduced opportunities where humans can come into direct contact with and experience nature (Soga & Gaston 2016). Decline in biodiversity and impoverishment of local flora and fauna in urban environments constitutes further barriers to the provision of opportunities for people to interact with nature on a daily basis (Turner et al.2004; Samways 2007). Loss of orientation is mentioned by Soga and Gaston (2016) to be the second major cause of this phenomenon. This loss is described as a result of the human's declined emotional affinity toward nature, which has an imperative impact on their connectedness to and the frequency of their visit and time spent in natural environments and places (Mayer & Frantz 2004; Nisbet et al.2009). Before expanding on this we shall depict and explain the feedback loop by Soga and Gaston (2016), to build a reasoning about the causes and consequences of the loss of interaction between humans and nature and why an increase in opportunities for humans to interact with nature is of great importance.

Figure 27: This diagram represents a redrawing of Soga and Gaston's feedback loop model (2016), illustrating the causes and consequences associated with the loss of human-nature interaction ("Extinction of Experience").



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According to our interpretation of Soga and Gaston (2016), the loss of human-nature interaction, followed by loss of opportunity and orientation, creates disaffection toward nature, which in turn causes a feedback loop that can aggravate the consequences of this loss, leading to further apathy and disconnection from nature (Soga & Gaston 2016). It is important to take into consideration that there are likely other potential factors that may not be represented in this diagram (ibid.). The first factor, namely people's orientation toward engaging with nature, affects the future personal orientation and willingness to engage and experience nature. Direct experience of nature heightens the possibility of people showing disposition to visit and experience nature - even though in some cases it can occur several decades later in life (Bixler et al. 2002; Ward Thompson et al. 2008). The second factor concerns the wilting of an individual's orientation toward nature that *"may also influence that of other individuals, especially those in younger (and therefore future) generations."* (Soga & Gaston 2016:5). As argued by Chang and Monroe (2012), the extent to which a child develops emotional connectedness to nature and is willing to experience it, is influenced by the society in which the child is grown up, where parents, teachers and peers act as an active mediator of beliefs and lifestyles. The third factor which is changes in public attitudes toward nature is derived from *"people's loss of value of nature and environmental norms and concerns"* which may even impair the opportunity to experience nature (Soga & Gaston 2016:5). A decrease in *"publicly acceptable standards with regard to environmental health"* can also emerge from this feedback loop, which can lead to a phenomenon called *"shifting baseline syndrome"* (Pauly 1995). A phenomenon caused by environmental degradation with a generational effect, where people's measurement of environmental conditions is based on what they experienced in their childhood and the new conditions in which they were raised becomes the accepted situation and thus the normal one (Pauly

1995). In conclusion, the feedback loop represents how declining pro-environmental behavior - such as conscious and local consumption, making donations in favor of nature conservation and recycling resources - may cause further loss of opportunities for a direct connection to and experience of nature (Soga & Gaston 2016). As formulated by Pyle (2002): *"The extinction of experience is thus a cycle whereby impoverishment begets greater impoverishment."* (Pyle 2002:11)

To touch upon the consequences, people's behavior toward nature is strongly influenced by the rate of their interaction with it. Lin et al. (2014) suggest that the main causes of peoples' lost connection to nature are more important to explore and work with, than beginning to increase urban greenspace availability, to encourage park visitation. The loss of interaction with nature is explained to undermine emotions such as interest in and affinity toward it - which are key factors for invoking environmental initiatives as well as for psychological health and wellbeing in adults and children (Capaldi et al. 2014; Lisberg-Jensen 2011). The attitudinal impacts of nature are explained, through international surveys, to expand in the initiated direction throughout a lifetime - where a person who has not grown up surrounded by nature and green areas also ends up not displaying pro-environmental behavior - until encountered by experience and knowledge later, in adulthood (Scott et al. 2014). The health and wellbeing, emotional and attitudinal changes are directly associated to an individual's emotional connectedness to nature, view on environmentalism, and their tendency to participate in pro-environmental movements and thus to behavioral changes (Wells & Lekies 2006; Collado et al. 2015). This emphasizes not only that green areas are spread and accessible but also that they ought to allow wide ranges and variations of interaction between people and between people and nature. This, to build changes in attitude toward nature, *"including the values they place on it, their*

beliefs concerning the environment, their perceived norms of environmental ethics, and their willingness to protect nature" (Soga & Gaston 2016:5-6).

In the subject of extinction of experience, the urban food parks are introduced for dual purposes. Firstly, as a tool of increasing connection, interaction and exchange with nature, to increase pro-environmental behavior. Secondly, to visualize and create infrastructure and concrete tools in order to facilitate pro-environmental actions such as growing food. This, based on the knowledge from the cross-sectional research of Nord et al. (1998) and Prévot et al. (2018), suggesting that pro-environmental behaviors are more often displayed by individuals participating in nature-related activities such as community gardening, birdwatching or citizen science.

To examine the potential of urban food production in contributing to rebuilding human-nature connection, non-structured interviews with the board of an urban food project have been

conducted, in which the elements of design, and its contributors' experiences is analyzed through the lens of the Extinction of Experience theory. Ultuna Permakultur in Uppsala has been selected as a study subject with the purpose of contextualizing how the causes of the Extinction of Experience feedback loop can be dealt with through urban food production. The authors of this thesis have connections to the organization as two of the founding members and active subjects of the organization. Even though we have chosen to disassociate ourselves from the organization and take other member's experiences and knowledge into consideration as an empirical study, it is worth mentioning that being part of the project for three years has given thorough insights of the aim and the work of the organization and thus helps in gathering and presenting the information in a strategic manner. As much as this may be a strength, it is important that the authors as well as readers bear in mind that their preconceptions prior knowledge may affect their interpretations and thus understanding of the subject.

3.3 Objectives of Ultuna's Food Park

The case Ultuna's food park was initiated in 2020 by the formal non-profit organization Ultuna Permakultur, who aim to demonstrate the potential that the unutilized lawns in urban environments carry (Ultuna Permakultur 2023). The case Ultuna's food park, was initiated in 2020, by the formal non-profit organization Ultuna Permakultur, who aim to demonstrate the potential that the unutilized lawns in urban environments carry (Ultuna Permakultur 2023). Among their objectives are: enriching biodiversity, acting as stepping stones to surrounding nature and at the same time producing food for inhabitants and seeking to cultivate a permanent human culture (permaculture) in cooperation with nature through enhancing local collaboration, production and

consumption (ibid.). The purpose of the project is to challenge the status quo of urban design and conventional agriculture and the project emerged to showcase how environmental, social and economic crises of our times can be dealt with in a concrete way in practice (ibid.). In the results from the interview, Cecilia¹⁶² from the board of the organization explains that taking care of the soil as the main source of life, creating a diverse cropping system, providing habitats for various insects and animals, sequestering carbon by integrating perennial systems of trees and shrubs and strengthening the local ecosystem have all been accommodated in the 3600 km² plot, creating a platform to bridge the gap between knowledge and practice. Cecilia explains further that their

¹⁶² Cecilia (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

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board consists of 9-10 board members of various backgrounds and competencies such as landscape architecture, rural development, environmental communication, biology and agro-economy, on masters' and doctoral levels. The land that the park is established on is owned by a private landowner, Akademiska Hus, and by agreement, is available for Ultuna Permakultur to conduct its activities. In connection with the first year, Akademiska Hus sponsored the association with a starting sum of SEK 100,000 for the project, to provide for its own necessary needs to get started, and has since provided furniture and deer fencing.¹⁶³

Ultuna Permakultur seeks to present a new method of handling entangled structural problems and “generate a guidance to focus on the roots of what we seek to heal, rather than finding temporary solutions to isolated parts of the problem, which tends to export and troubleshoot the matters”.¹⁶⁴ This is advocated through the aim of consciously designing, building and maintaining resilient cultures in direct relation to the matters and resources in our natural ecosystems in favor of sustainability, Cecilia explains. To give more context, we turn to the gray literature of the researchers who coined the concept of permaculture, Bill Mollison and David Holmgren. Looking into Cecilia's explanations, a way of concretely doing what she states, is by building communities and relations with and around food, energy and diversity which the word “permaculture” is coined from (Mollison & Slay 1991). The word is an abbreviation of “permanent (agri)culture” (ibid.). This entails long lasting, self-sustaining production and exchange systems, that are disconnected from the difficult large-scale entangled structural problems, facilitating livelihoods that are more lenient to the other organisms in our ecosystems (ibid.).

Founded upon three ethical principles, permaculture offers a framework describing the mutual benefits that are thought to come from embracing the connections between human's ethical role as part of the ecosystem, and the well-being of nature (Holmgren 2002). Firstly Care of the earth, highlights the importance of recognizing the humans' role as a species in the web of species that compose the earth. Secondly, Peoplecare reminds to build systems and designs for the wellbeing of the human mind and body. Thirdly, Fair Share is a result of combining the first two, and focuses on balancing the distribution of resources; recognizing that the earth has limited resources, and that the resources need to be shared by many beings (ibid.). These ethics are understood by Sara¹⁶⁵ of the board of Ultuna Permakultur as follows:

*Permaculture does not separate humans from other beings, not plants either, and also considers future generations that depend on our conscious guardianship of the natural resources and systems on earth, that provide us with water, food and shelter. So permaculture teaches us how to govern our needs in order for this to be possible, through the skills of conscious co-creation and generation of a surplus of resources to be shared with others. And that I think is the core to permaculture ethics. It is not about limiting people from being free or thinking freely, or enforcing limitations. It is about building stability and resilience with our human culture, through respecting and honoring other beings' needs.*¹⁶⁶

These three ethical principles result in several applicable principles that provide practical tools to be applied through which Ultuna's food park has been designed and implemented (Ultuna Permakultur 2023).

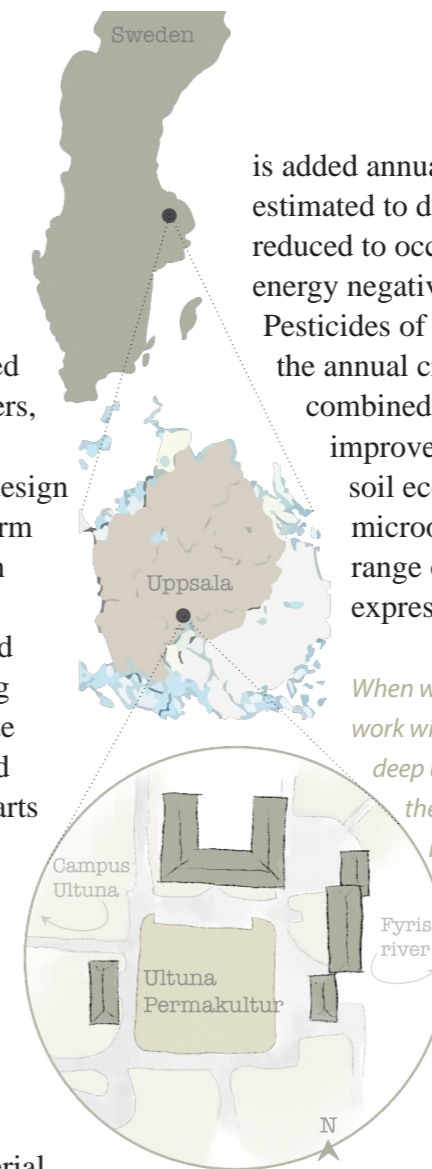
We seek to investigate the undertaking to engage contributors and users with the park and through

3.4 The Case Ultuna's Food Park

In this section, the results will be narrated based on the non-structured interviews with Ultuna Permakultur's contributors around their experiences of and connection to nature through this park. Through the interviews we are to navigate the information, the collected body of knowledge is described through three angles of approach. These are delimited to: **Making space for human-nature reciprocity** (e.g. elements of design, systems' description), **Activities, Participation & Education** (e.g. civic involvement), **Food/Yield Provision & Distribution** (e.g. sales, fairs).

3.4.1 Making Space for Human-Nature Reciprocity

that gain an understanding of how the park's components are designed to facilitate connection to nature. The following is an explanation of the fundamental design ideas that have been implemented in this park, collected from one of the initiating board members, Kevin¹⁶⁷ of the organization. Ultuna's food park is constructed by two main design strategies; perennial plantings in the form of food forests encircle a middle region reserved for annual, polycultural plant beds.¹⁶⁸ These two systems are designed to support each other through providing services such as creating a microclimate and protection, circulating nutrition and attracting beneficial insects.¹⁶⁹ These parts are described to be connected through curvy paths that are intended to slow down the visitors' movement and invite to rest and exploration.¹⁷⁰ As the design, through the principles of permaculture, is nature-based and seeks to emulate the natural cycles in nature, it strives for practices with minimal external input. Mulching material



is added annually, water irrigation is minimized and is estimated to decrease each year, maintenance work is reduced to occasional weeding and completely cuts out energy negative work such as mowing and tilling.¹⁷¹

Pesticides of any kind are not utilized and fertilizer for the annual crops is made from local weeds. Thus this combined system aims to contribute to ecological improvement through the regeneration of the soil ecology and the life of the bacteria and microorganisms which could attract a wide range of animals in the food web.¹⁷² Kevin expresses his personal insights:

*When working in this way one needs to learn how to work with nature, which creates conditions to build a deep understanding of how ecosystems function, and therethrough one can build a deeper relation to nature.*¹⁷³

Figure 28: This illustration depicts the geographical location of Ultuna Permakultur in relation to Uppsala and Sweden, which also sets the boundaries of our thesis.

¹⁶³ Cecilia (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

¹⁶⁴ ibid.

¹⁶⁵ Sara (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

¹⁶⁶ ibid.

¹⁶⁷ Kevin (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

¹⁶⁸ ibid.

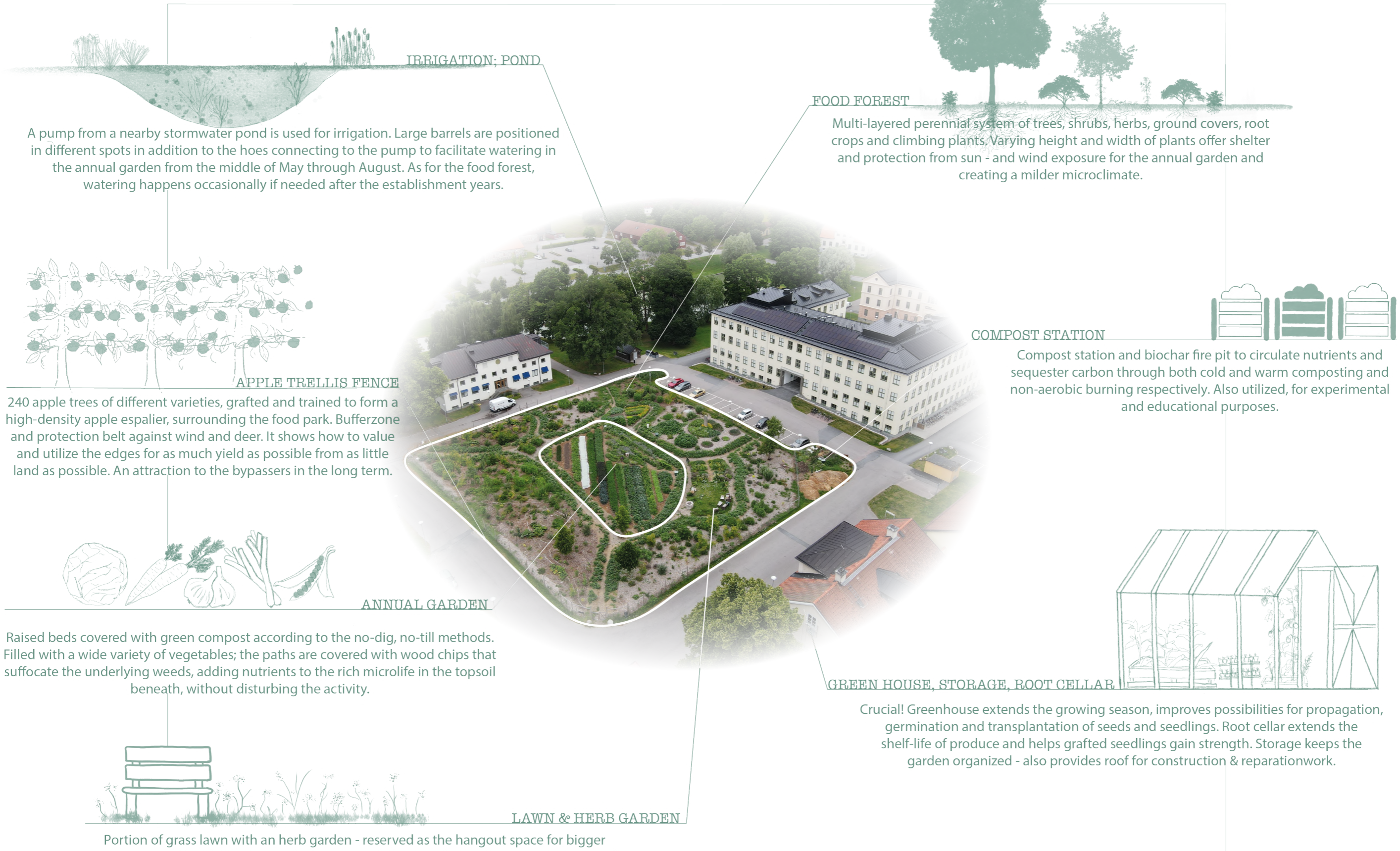
¹⁶⁹ ibid.

¹⁷⁰ ibid.

¹⁷¹ ibid.

¹⁷² ibid.

¹⁷³ ibid.



IRRIGATION; POND

A pump from a nearby stormwater pond is used for irrigation. Large barrels are positioned in different spots in addition to the hoses connecting to the pump to facilitate watering in the annual garden from the middle of May through August. As for the food forest, watering happens occasionally if needed after the establishment years.

FOOD FOREST

Multi-layered perennial system of trees, shrubs, herbs, ground covers, root crops and climbing plants. Varying height and width of plants offer shelter and protection from sun - and wind exposure for the annual garden and creating a milder microclimate.

COMPOST STATION

Compost station and biochar fire pit to circulate nutrients and sequester carbon through both cold and warm composting and non-aerobic burning respectively. Also utilized, for experimental and educational purposes.

APPLE TRELLIS FENCE

240 apple trees of different varieties, grafted and trained to form a high-density apple espalier, surrounding the food park. Bufferzone and protection belt against wind and deer. It shows how to value and utilize the edges for as much yield as possible from as little land as possible. An attraction to the bypassers in the long term.

ANNUAL GARDEN

Raised beds covered with green compost according to the no-dig, no-till methods. Filled with a wide variety of vegetables; the paths are covered with wood chips that suffocate the underlying weeds, adding nutrients to the rich microlife in the topsoil beneath, without disturbing the activity.

GREEN HOUSE, STORAGE, ROOT CELLAR

Crucial! Greenhouse extends the growing season, improves possibilities for propagation, germination and transplantation of seeds and seedlings. Root cellar extends the shelf-life of produce and helps grafted seedlings gain strength. Storage keeps the garden organized - also provides roof for construction & repairwork.

LAWN & HERB GARDEN

Portion of grass lawn with an herb garden - reserved as the hangout space for bigger events, equipped with benches and tables from old barn walls. An element to invite people who maybe instinctively would not find the park attractive to then slowly get acquainted with the tastes, diversity and functions of the garden.

Figure 29: This illustration and its accompanying sketches depict the entirety of the Ultuna Permaculture project and its components upon our observations of the project.

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3.4.1.1 Making place

The food forest (see figure 29) that frames the annual cropland in the center of the garden is described by Cecilia¹⁷⁴, to consist of a multi-layered perennial system of trees, shrubs, herbs, ground covers, root crops and climbing plants. On this surface larger nut trees such as Turkish hazel (*Corylus colurna*) grow with smaller fruit trees such as apple (*Malus domestica* spp.), plum (*Prunus domestica*) and cherry (*Prunus* spp.) and berrybushes of e.g. gooseberry (*Ribes uva-crispa*), currant (*Ribes* spp.) and blue honeysuckle (*Lonicera caerulea* var. *kamtschatica* spp.) together with herbs like mallow (*Malvaceae* spp.), mint (*Mentha* spp.), oregano (*Origanum vulgare*) and blackberry (*Rubus* subg. *Rubus*).¹⁷⁵

The aim, Cecilia explains, is to add further dimensions to the local ecosystem, mimicking the pattern and lushness of the forest. Varying height and width of plants with different structures offer shelter and protection from sun - and wind exposure to other strata in this highly diverse part. In addition, they are aimed to mitigate wind movements, creating a shelterbelt for the annual garden and creating a milder microclimate.¹⁷⁶ An additional benefit of this interconnected perennial system is explained by Cecilia to be nutrient cycling both under and above the soil surface. A symbiotic and cooperative network of fungi is described to establish themselves on or within plant's roots that reach different depths in the soil and absorb nutrients. Mycorrhizal networks, as this root fungal system is called, enable an exchange of water and nutrients between the plants' roots with the fungi and with each other, aiding the plants to reach the vital nutrients.¹⁷⁷ Cecilia depicts her

experience passionately:

*Working here, the food forest gives us an opportunity to learn how to grow bearing trees and shrubs while we enjoy, because everything is accessible for us to eat, and we recognize that all of our other senses are also stimulated by the fragrances, vibrant colors and rustling of animals and busy work of bugs that we haven't come into contact with before. We hoped that visitors also would take their time to familiarize themselves with this place and we can see now, three years later, that this is actually happening.*¹⁷⁸

The annual part of the Food Park is also completely covered in mulching material; the paths are previous grass lawn, now covered with wood chips that suffocate the underlying weeds, adding nutrients to the rich microlife in the topsoil beneath, without disturbing the activity, as explained by Nareh.¹⁷⁹ The beds are explained to function likewise, previously grass lawn, now covered with raised greencompost beds according to the no-dig, no-till methods of regenerative agriculture. She describes how the entire surface of beds and paths feeds and enriches the original soil, boosting its diversity in microlife, microbes and fungi rather than depleting it. Nareh explains her perceived benefits:

*Helping the system thrive means that we can have more quality time spent in the garden, instead of hard, sweaty work, showcasing ways of prioritizing ecosystem health and human health equally high.*¹⁸⁰

The annual garden, Nareh explains, is filled with a wide variety of vegetables that are selected according to the interests and preferences of its contributors and customers. By trying and varying between different crops, she explains that they learn how to handle different plant families in order to improve the conditions and further minimize the needed work around each crop. Among the vegetables that grow are carrot, beetroot, kale, cabbage, chard, beans, peas, turnip, pumpkin, potato, and previously corn has been tested. There is also a vineyard full of grapes with an understory of blooming herbs, displaying relatively new varieties of vines adapted for northern temperate conditions as the food park is in climate zone 3-4, Sweden, described to attract an abundance of pollinators among other interested and mesmerized visitors.¹⁸¹

In combining annual cultivation with the perennial food forest system, the designers of the food park sought to secure yield that could sustain an average vegetarian diet at least in season, Cecilia explains. Her reasoning is that only relying on perennials and fruit and nut trees for this is a risk as the yield from woody plants are highly dependent on the weather conditions which tend to be inconsistent. Thus, the annual and perennial garden are designed to act complementary to each other in terms of production. The income from the annual garden also ensures that the economy of the garden can go around. The harvest from the 3600 square meters food park has been weighed and summed up each year, and the estimation is that the park produces over 4 tons of food annually.¹⁸²

174 Cecilia (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

175 ibid.

176 ibid.

177 ibid.

178 ibid.

179 Nareh (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

180 ibid.

181 Nareh (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

182 Cecilia (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

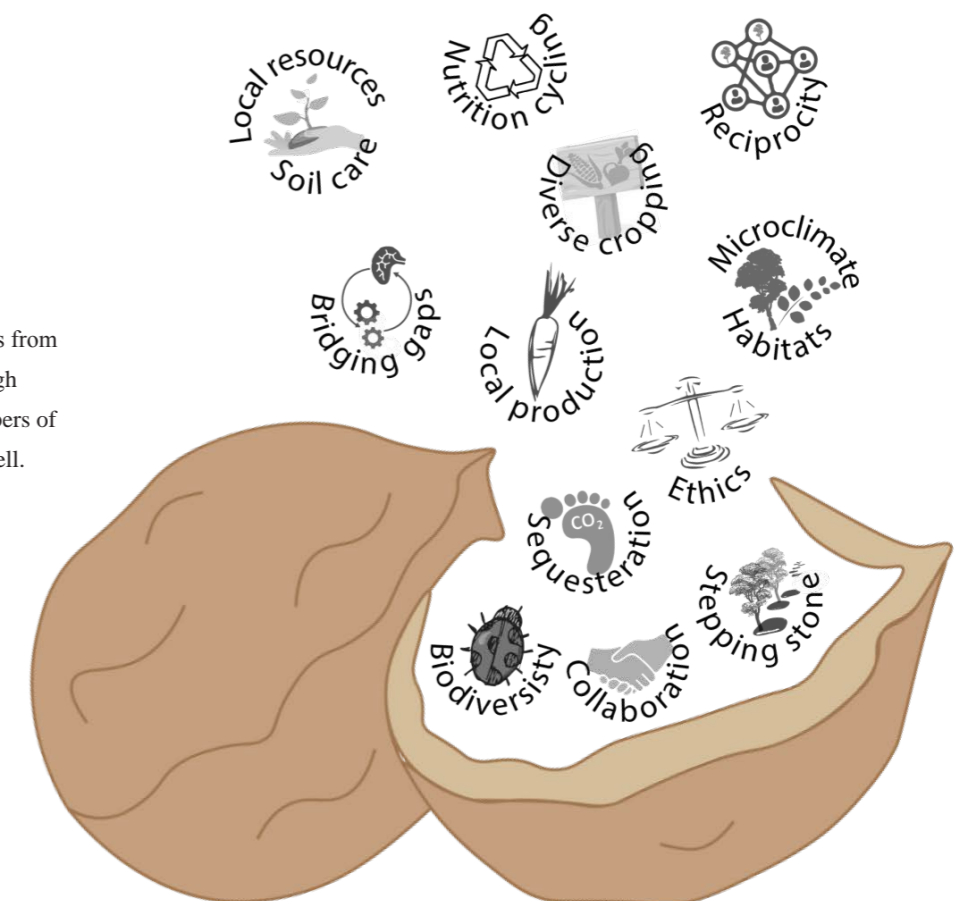


Figure 30: The identified values from “making place”, obtained through interviews with the board members of Ultuna Permakultur - in a nutshell.

3. Results 2

3.4.1.2 Activities, participation and education

Sara¹⁸³ explains that, with the aim of reaching out to a wider target group to build stewardship and strengthen community-bonds with local food and ecosystems, the board of Ultuna Permakultur organize regular food park tours and educational excursions, independently and in collaboration with other organizations and institutions. Different approaches are described to be used for those engaged to learn about the work that is being done in Ultuna's food park.¹⁸⁴ Besides having previous knowledge and experiences of nature and ecology, other ways of learning are mentioned by Cecilia:

I joined this group because I wanted to take action when it comes to my food and be a part of an organization that works with environmental issues. I wanted to learn how to grow my food so I came with no previous deep knowledge in ecology, ecosystems or natural systems, but I still have built a strong bond to this place and developed an interest for learning how nature sustains itself and generates the resources it needs so I started to ask. Now I understand more about how the different species help each other, and to what we are giving life. The important part was that I had passionate colleagues to ask and who could explain it all to me, calmly. So a good way of learning is through practice where knowledge can be presented or displayed on the spot either through tours, lessons or maybe even signs in the food park.¹⁸⁵

In addition to taking own initiatives for learning, Cecilia¹⁸⁶ explains that tours are given to provide an overview of the park design describing the components with a focus on how local resources can create closed cycles and strengthen the local and in turn the global ecosystem. This through discussion around how this food park

and a network of such parks can contribute to reduced imports and minimized usage of fossil fuels, building soil health, and most importantly expanding human's understanding of one's role as a part of the ecosystem while being an architect of it.¹⁸⁷ Cecilia explains:

Galvanizing citizens to reflect on and direct their daily choices in relation to the health of our environment and natural resources through food, is discussed and reasoned upon during these food park tours.¹⁸⁸

The organization is contacted by the university sector, schools, private offices and other disciplines to arrange educational excursions, as highlighted by Nareh:

The garden serves as a platform for discussions around societal and ecological change and transition. Young and old visit the garden. /.../ We make sure to talk with them about small-scale food production that shows how to cultivate new views and ideas on how urban citizens could, in harmony with nature, provide for their needs without having to cause irreversible huge interventions in the natural systems. They should rather learn how to generate the resources they need for sustenance in connection with where they live. It is so rewarding for us to see so many questions that arise on such tours that go beyond the physical design of the place and mirror individuals' reflections on their contribution to social and ecological resilience and their ethical role.¹⁸⁹

Looking from the lens of the "Extinction of Experience" theory, if these opportunities that the board members passionately speak of are carried out with the effects that they intend, it can mean that Ultuna Permakultur allows for change of

behavior by nudging its visitors to form a deeper connection with the food they consume or as expressed by Sara "gain insights on how a concrete solution could counteract the unsustainable patterns such as extensive consumption, which our modern life is built upon."¹⁹⁰ What Sara says can be linked to counteracting both the loss of opportunity and orientation according to the EOE feedback loop, by offering tours that partly invite more people to the food park, and partly provide knowledge about how the ecosystem works at the site, on the basis that the shared knowledge has a consistent effect on the thinking of the listeners. According to the feedback loop, loss or gain of opportunity and orientation are fundamental to whether the EOE increases or decreases respectively. Sara¹⁹¹ also explains that the food park acts as a source of inspiration for new analogous projects in accordance with local food production to flourish, one example that is mentioned by Sara is that two of their visitors in one of the park tours were so impressed and inspired that they made the decision on the spot to transform their lawn on their newly purchased property into a food-producing garden:

By getting tips and recommendations on how they can get started on their journey towards self-generating, they have transformed their land into a mini version of the food park in Ultuna including a food forest and an annual garden which provides for their family. The garden has not made them self-sufficient on vegetables or fruits as they just started their journey but the joy of having own-produced raw materials and a new collective activity with their children has enriched their family life, they have told us many times since they started the journey.¹⁹²

Nareh¹⁹³ explains that social resilience and food security are among subjects that, through networking and social gatherings in the park, bring depth and new layers for discussions around cultivation of both food and minds. This, as a way to enhance resilience and food security in practice:

Through our educational programs we aim to develop an ecological, urban, and sustainable agricultural model for a wide range of practitioners that challenges the status quo of urban planning and conventional agriculture. We are examining new methods for enabling and delivering food to amplify the environmental and social values. We believe that unutilized grass lawns as public spaces should be reclaimed for their great potential to produce food in connection with cultivating soft social values in favor of the ecology of our landscapes. So we are showing the locals that our cities, with cooperation and dedicated design aligned with our ecosystems and its resources, could become more sustainable.¹⁹⁴

In terms of activities, Nareh¹⁹⁵ explains that the organization facilitates four main engaging event types; planting and harvesting, establishment and workdays, on-spot market days and garden fairs. The first two activity types are combined with music and distribution of warm homemade food and drinks, along with home baked goods like "fika" and bread - all made as much from the harvest of the garden as possible.¹⁹⁶ This theme, she explains is also pursued in the fairs, though the food then tends to be more complex and is thus sold. The food and "fika", made from their produce, is observed and explained by Nareh to be a great magnet, alongside the teamwork and their willingness to spread knowledge, and the opportunity of exchanging perspectives,

183 Sara (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

184 ibid.

185 Cecilia (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

186 ibid.

187 ibid.

188 ibid.

189 Nareh (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

190 Sara (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

191 Sara (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

192 ibid.

193 Nareh (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

194 ibid.

195 ibid.

196 ibid.

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conceptions and methods around sustainability and regeneration.¹⁹⁷ Cecilia explains:

*We actively emphasize these immaterial gains and do our very best to honor them during the events and on our social media posts around the events, as a way to embody the societal shift that we want to realize, where soft values, people care, knowledge cultivation and conscious action and exchange are prioritized. People gain the understanding that they have the capability to make change and influence society, and do not have to only wait for 'the others' or 'the legislators' to take action against the crises that we are facing.*¹⁹⁸

She further explains:

*I see myself as an activist for the environment and human rights, but my way of doing it is perhaps a little different from what we usually see in other contexts. I try to exercise my activism through putting my effort into creating an example of what I seek, so instead of informing people of the negative consequences of our actions, which is also an important part of the equation, I play the part of showing how to deal with the issues in practice, meaning I try to depend less on the resources that I cannot create myself, here and now. In this case, it is about the food and natural resources that my life depends on. I think that can contribute to the other types of activism and make it accessible and apprehensible for the people to act productively and constructively upon their frustrations and worries.*¹⁹⁹

This way of reasoning can also be found in the works of Miller (2005) and Hawken (1993), who explain that a fear of the future or an expectation that stating harsh facts will motivate change, is not an efficient and constructive approach and might on the contrary, have an opposite effect of paralyzing the receiver. Instead it is important to understand where the barriers between the receiver and shifted attitudes lie (ibid.). They argue that it is in the lost understanding of what systems

¹⁹⁷ ibid.

¹⁹⁸ Cecilia (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

¹⁹⁹ Cecilia (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

²⁰⁰ ibid.

surround human life, and the species that humans depend on, which ultimately connects to a broader web of life (ibid.). The lack of understanding for this is described as “a widening gap between people and the natural world” (Miller 2005:1), which is discussed by Robert Pyle (2002) to lead to collective ignorance and ultimately collective indifference. He reasons that due to our modern lifestyle we are not individually in need of survival techniques as our ancestors, thus fostering “individual’s sophistication in the ways of the wild” is not considered a necessity which in turn can be discussed to have a great impact on “ecological depreciation and collapse” (Pyle 2002:312). Consequently, to inspire conservation activism, making this first step of building knowledge and connections visible and accessible to society, by facilitating an understanding for other species and their connections to humans, is emphasized (Pyle 2002; Miller 2005). The reason that activism is being mentioned here is that this, as an act to protect and care for nature, is an indicator of attitudinal changes. Changed attitudes are described by Soga and Gaston (2016) to encompass the values placed on nature, beliefs concerning the environment, perceived norms of environmental ethics, willingness to protect nature and likelihood of engaging in environmentally friendly actions. Meaning attitudinal changes contribute to behavioral changes and emotional changes which are fundamental for taking part in events and activities where interaction with and orientation toward nature can arguably grow, potentially decreasing the EOE. Looking back into the quote from Cecilia²⁰⁰, we can extract that this might be the case for her and possibly other board members, but can not draw conclusions for a broader group of people that might be less engaged. Though the aspect of community engagement was also highlighted by Arvid:

*The hard work that we put in together during working events is proof in action that meaningful activity wakes the inner urge to invest energy and endure hardships in order to actualize a collective vision of making our urban society more resilient. It is also proof that the interest and request for such places and activities as ours is strong and growing.*²⁰¹

Arvid²⁰² also mentioned that even on the very first work day, when the organization had no big following, they had over fifty people digging out paths in half frozen clay and snowy, windy weather, while still having fun; *“We had and have a purpose and the intention to make the best of our way towards it.”* Arvid²⁰³ further explains that in their different events today, several dozens of people show up with their families of all ages and backgrounds and new people show up each time. The board member explains how diverse groups of elderly people and unemployed people, as well as exchange students, families with young children and youths have expressed that they have found a belonging to the food park and garden work, and show this through coming, even in days where picnicking or staying inside were better alternatives to the physical labor outside.²⁰⁴

This method of opening up the food park for work seems to allow for all the more people to build a relation to the garden and according to what the board members experience, allows the visitor to build an understanding for the positive impact that humans can have for the ecosystems and human sustenance, raise a relation and appreciation for the locally produced food and an understanding for the idea of regenerating the lands and cultivating meaningful activities - and of how one can build a garden or spread an idea of their own.

Arvid²⁰⁵ also emphasizes that anyone is welcome

²⁰¹ Arvid (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

²⁰² ibid.

²⁰³ ibid.

²⁰⁴ Arvid (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

²⁰⁵ ibid.

to the garden events, regardless of previous knowledge or experiences in garden work or planting and harvesting. While the topic discussed above has been mainly related to behavioral change, there are complex intertwinings among this and health and wellbeing, emotional change and attitudinal change toward nature, meaning one can lead to another and they often occur in concert with each other (Soga & Gaston 2016). As for health and wellbeing, there is no way for us to relate what we extract here to improvements in medical terms from for example ecopsychology where cognitive and other health related improvements in connection to nature have been identified. We are in the scope of this thesis analyzing what the board members have experienced and their reflections upon the on-going processes in relation to the garden. According to the answers received their general wellbeing has improved by being in this place, through feeling a belonging and responsibility to the place and the work being done. This acknowledges growth in environmental stewardship among the contributors which can mean that they gain a deeper understanding of the interconnectedness of natural systems, which is, according to the feedback loop, indicating a decrease in EOE. To look at this from another point of view, dedicating spaces to practice unifying activities such as cultivating and recovering has been found to create a better basis for civic engagement and social cohesion (Cariñanos et al. 2022; Borelli et al. 2021). This is based on research, proving that such activities constitute a decisive role for collective action, and enable platforms for education, research and outdoor relaxation (Bukowski & Munsell 2018). Furthermore, these bigger benefits of building edible landscapes - and additional benefits like building a local production-consumption cycle where import expenses and pollution are reduced

3. Results 2

- show when applied on larger-scale urban areas rather than small scale backyards (Beck et.al. 2001; Lovell 2010).

Dean et al. (2019) lift many behavioral science studies showing that only spreading information is not sufficient to promote new behaviors. More specific tools that deliver actual services such as **play**, **nature literacy**, **intimacy** need to be identified in order to gain a toolset in working against the EOE (Pyle 2002). In the case of Ultuna Permakultur perhaps the interactive services that raise the attention of human minds can be, additionally to the words of Pyle, described as **food** and **recreation**.

The same inadequacy of traditional playgrounds and formal parks to e.g. strengthen childrens' potential for self-teaching, have been lifted by Nabhan and Trimble (1994). Kaplan (2000) presents the positive impacts and benefits of visual and physical contact with nature in enhancing and promoting skills for observation, identifying connections, reasoning and high cognitive functioning. Pyle (2002), as well as the author of the book "Skogsträdgårdsboken", Philipp Weiss²⁰⁶ (2023), speak of such in-nature interactions as key to connecting to our evolutionary legacy of hunter-gatherers. In our interview with Weiss²⁰⁷ he further expands his reflections upon this, saying that this connection between humans and their hunting-gathering past functions as yet another dimension to come in contact with ecology and not only in the form of human-nature relationships but also in terms of human ecology, meaning humans' relationship with their total surrounding with e.g. climate, livelihoods, material flows, society and culture.

Take into account that this specific reflection is not

²⁰⁶ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02- 21

²⁰⁷ Philipp Weiss, Agroforestry Cultivator, in collaboration with Lund, Örebro, Västerås municipalities, interview 2023-02- 21

²⁰⁸ Nareh (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

²⁰⁹ ibid.

²¹⁰ Nareh (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

scientifically measured, rather his deep reflection of his journey and experience of working with food forests, as the reflections of the Ultuna Permakultur board members regarding the food park. Thus, a combination of attitudinal, emotional and health and wellbeing changes can be deduced, but in opposite direction to Soga and Gaston's diagram (2016), meaning that they potentially contribute to reversing the EOE by increasing the opportunity for a proactive interaction with and orientation toward natural environments.

The remaining two ways of involvement that the board of Ultuna Permakultur utilize is through their selling, which is explained by Nareh²⁰⁸. The garden is opened for sales at least twice in a week during vegetable season meaning July-October, where the produce is often harvested together with each customer, she explains. According to Nareh²⁰⁹, this gives the board a chance for one-on-one interaction with interested visitors, to discuss and exchange experiences and thoughts around the ideas and values that the food park constitutes. She explains that as an end to the vegetable season, annually, a fair in the form of a fall market is held one weekend in October, where music, games, cooking, garden tours and quiz walks through collaborations with other organizations - and the selling of the final produce - fills the garden with the sound of chat and laughter. Nareh²¹⁰ also exemplifies other events which can be the exchange of seeds and bonfire evenings where the community and locals come together to share and spend time together. These occasions are explained according to Nareh (2023) to be:

*.../mini celebrations and opportunities to share appreciation for the rich produce and abundance that we are able to obtain in this little space. Celebrating together is essential to keep the momentum alive, keeping our circles engaged and not forgetting the importance of what is being done here.*²¹¹

One aspect of this, Nareh²¹² explains, is that the food park and the traditions around it show and enhance local food systems and food security, in an attempt to promote connections between people and the land through providing an understanding for where the food comes from, what processes are shaping those landscapes and the food they consume. Sara²¹³ explains that the participation in the project is shaped according to the ambitions of those engaging and the need for maintenance. In order to broaden the engagement of the food park, those interested are being recruited as 'ambassadors', a group of volunteers who are willing to contribute in accordance with their energy and time and do not carry a fixed responsibility managing the food park.

In addition to this, she explains, webinars, seminars and panel discussion are other types of activities to involve people in conversations and give more approach-areas.²¹⁴

This together with other playful activities in relation to sales and fairs can help to create values that go beyond food production, other ways of relating that was discussed to bind people to the place, strengthen the tie between communities and their food and shorten the distance between consumer and producer (ibid.). This can be related back to the tools of **play** and **nature literacy** that Pyle (2002) mentioned. Opportunities provided

through invitation to diverse activities reverse the feedback loop of Soga and Gaston (2016) in a positive manner by converging people with the natural world and building collective enthusiasm - counteracting feelings of disconnection and isolation that detach people from place and can cause further EOE.

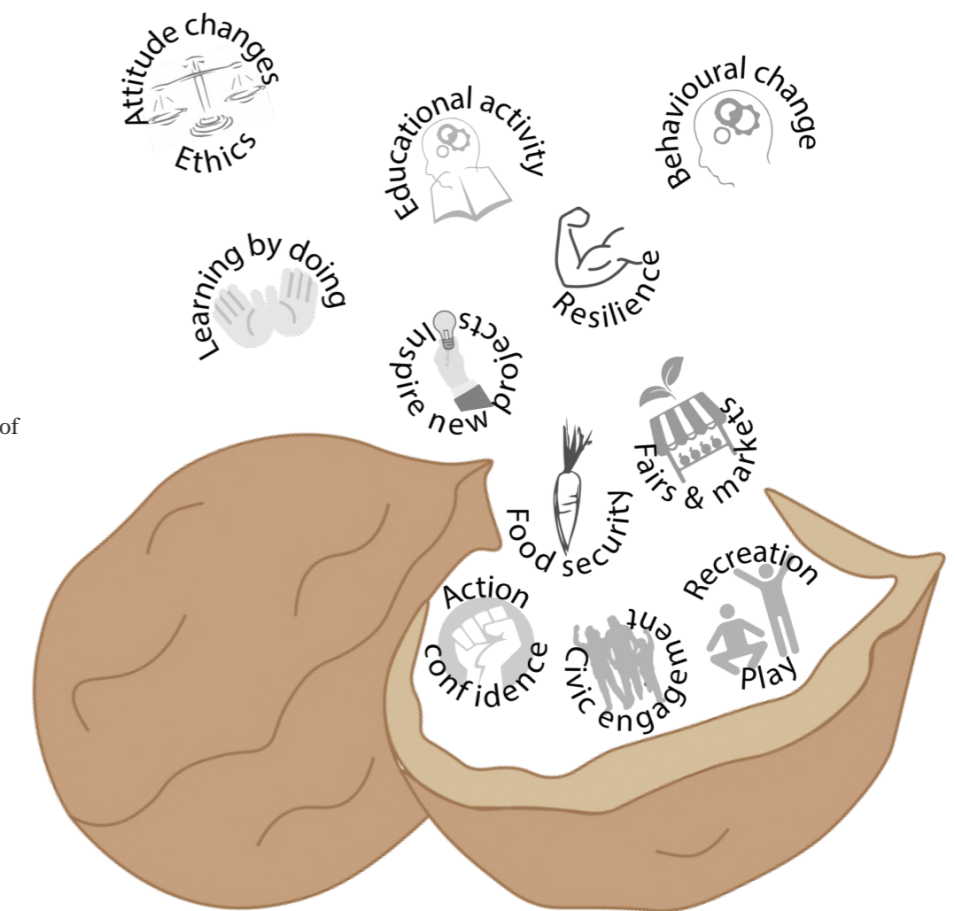


Figure 31: The identified values from "activities, participation and education", obtained through interviews with the board members of Ultuna Permakultur - in a nutshell.

²¹¹ ibid.

²¹² ibid.

²¹³ Sara (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

²¹⁴ ibid.

3. Results 2

3.4.1.3 Food/yield provision & distribution

As Ultuna Permakultur is a non profit organization, Nareh²¹⁵ explains, there are no member fees or external economic income except for the fee of educational programs and tours, the way in which the yield is managed has been crucial to the circularity of the organization’s economy. Further, she describes how the harvest is collected and sold to locals in various ways. The first way is the on-spot sales which occur at least twice in a week during harvest season. These sale-opportunities make the yield accessible to the locals, enhancing healthy eating habits by introducing them to fresh and locally produced vegetables which they are allowed to harvest on their own directly from the plant beds - with the ambition to inspire them to grow their own food. Nareh describes:

*Since I started to engage here with the food park, my eating habits have kind of automatically evolved to a local diet where I am more aware of what I choose to support and put into my body and eat mainly from the garden here, at least in season. And during other seasons, I try to find local produce through food cooperatives and if not accessible, I try to be very careful with what I am purchasing from the shops. And since I try to make the best of what is accessible I am also learning how to preserve food from the harvest season so it can last me.*²¹⁶

Another member, Sara, expressed her thoughts on the same topic:

The reason I eat more locally and try to learn what to eat and when, and where the food comes from, and how it is produced, is that by getting involved in the project, I began to understand what effort must be put into producing the food I consume daily. And not just humans’ work and effort, but also how the food we eat can have major effects on nature and the ecosystem as a whole. Add to that, when food is imported great distances and all the chemicals that are used to mass

*produce and to keep the produce fresh during transportation, it is very unhealthy.*²¹⁷

Another aspect that was lifted by Nareh²¹⁸ was how children interact with this food park. Children who follow their parents to buy vegetables, reportedly, often ask their families to stay a bit longer and play around in the garden. She explains that children are busy tasting from the berries while playing hide and seek in the food forest, adventuring around various insects, collecting worms, pulling out more carrots than their families intended to buy, running around mimicking the behavior and sounds of birds and asking questions about everything they see and hear. Kevin²¹⁹ reasons that these activities have been enabled in the food park thanks to the diversity and abundance of vegetation which offer a great variety for childrens’ play, creativity and imagination.

*That is more than enough reason to argue that food parks can be explored as an alternative to grass-covered parks, where in today’s parks the childrens’ perspective translates to running around on the empty lawn, where their opportunity to explore, adventure and tinker with natural materials is neglected. Children play and run regardless of the place, but what is important is what the place can offer for their cognitive abilities and relationship development with nature.*²²⁰

The above mentioned aspects indicate that the food park gives opportunities for locals to engage with their food and strengthen their understanding of local resources, coming into closer contact with the natural environment where the sustainability and relationship to the surrounding nature, and the functionality of such spaces in the place of lawns is actively discussed through the on-spot sales. From the lens of EOE (Soga & Gaston 2016), this can

be described as growth of affinity towards nature, through emotional and behavioral changes.

Kevin²²¹ explains that in addition to the on-spot sales at least twice in a week, community supported agriculture (CSA) is implemented, where 20 people annually subscribe to weekly “veggie bags” during season (Kevin 2023). The organization also sells through local food cooperatives and “rekoringar” which are additional platforms for farmers and local producers to sell directly to their customers. The final fall market has reportedly generated at least one third of the yearly income, with an array of activities and a wide range of food, drinks and refined products.²²² Kevin excitedly speaks about the refined products such as pickles, concentrates, teas and jams which they have made as a way to experiment on how to extend the lifetime of the produce. Another way of prolonging the season, he explains, has been through storing harvested root crops in a ground cellar during winter, to keep them fresh and fit for continued selling through a local food cooperation (“Ultimat”). Kevin describes:

*We mostly sell potatoes in the winter through Ultimat, and we eat the rest of the vegetables ourselves, like the fractured ones, or the surplus of beets and carrots and turnips that we did not completely sell off in the fall market.*²²³

To this, we can add the perspective of social resiliency and sociocultural values linked to urban food production where the provided qualities such as foraging has been highlighted in multiple research publications (see Chan et al. 2015; Shimpo et al. 2019; McLain et.al. 2012).

Clark and Nicholas also highlight the importance of the edible landscape’s close proximity to important social nodes within the urban context, such as schools, markets and hospitals. This is described to catalyze social-ecological initiatives:

These transdisciplinary trends include community supported agriculture (CSAs), farmers markets, you-pick orchards, Slow Food restaurants, alternative food stores, and consumer cooperatives. Leveraging these models could provide novel for profit and charity opportunities for increasing the availability, access, and utilization of nutrient-dense foods at little to no cost to the end-user and aiding with the production, management, transport, storage, and redistribution of produce. (Clark & Nicholas 2013:16)

Drawing on this quote, the distribution aspect of Ultuna Permakultur can be linked to increased opportunity and access to both nature and the produce that it offers, which might combat the starting points of EOE (loss of opportunity and orientation respectively), in the EOE feedback loop (Soga and Gaston 2016).

215 Nareh (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

216 ibid.

217 Sara (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

218 Nareh (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-19

219 Kevin (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

220 ibid.

221 Kevin (anonymous, replacement name), Ultuna Permakultur board, interview 2023-02-11

222 ibid.

223 ibid.

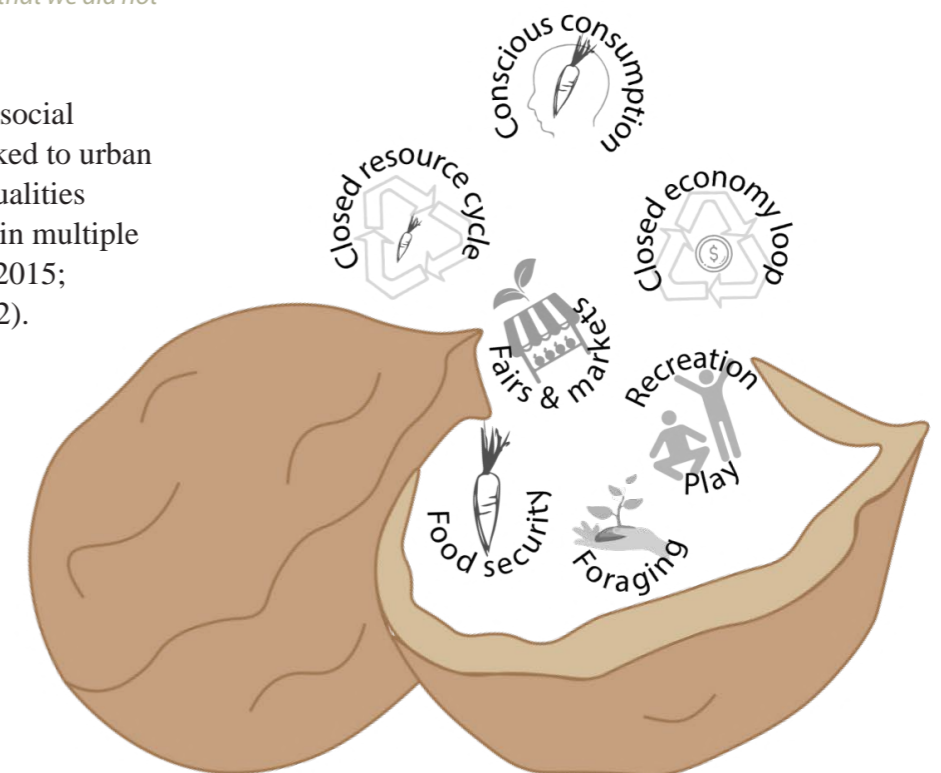


Figure 32: The identified values from “food/yield provision and distribution”, obtained through interviews with the board members of Ultuna Permakultur - in a nutshell.

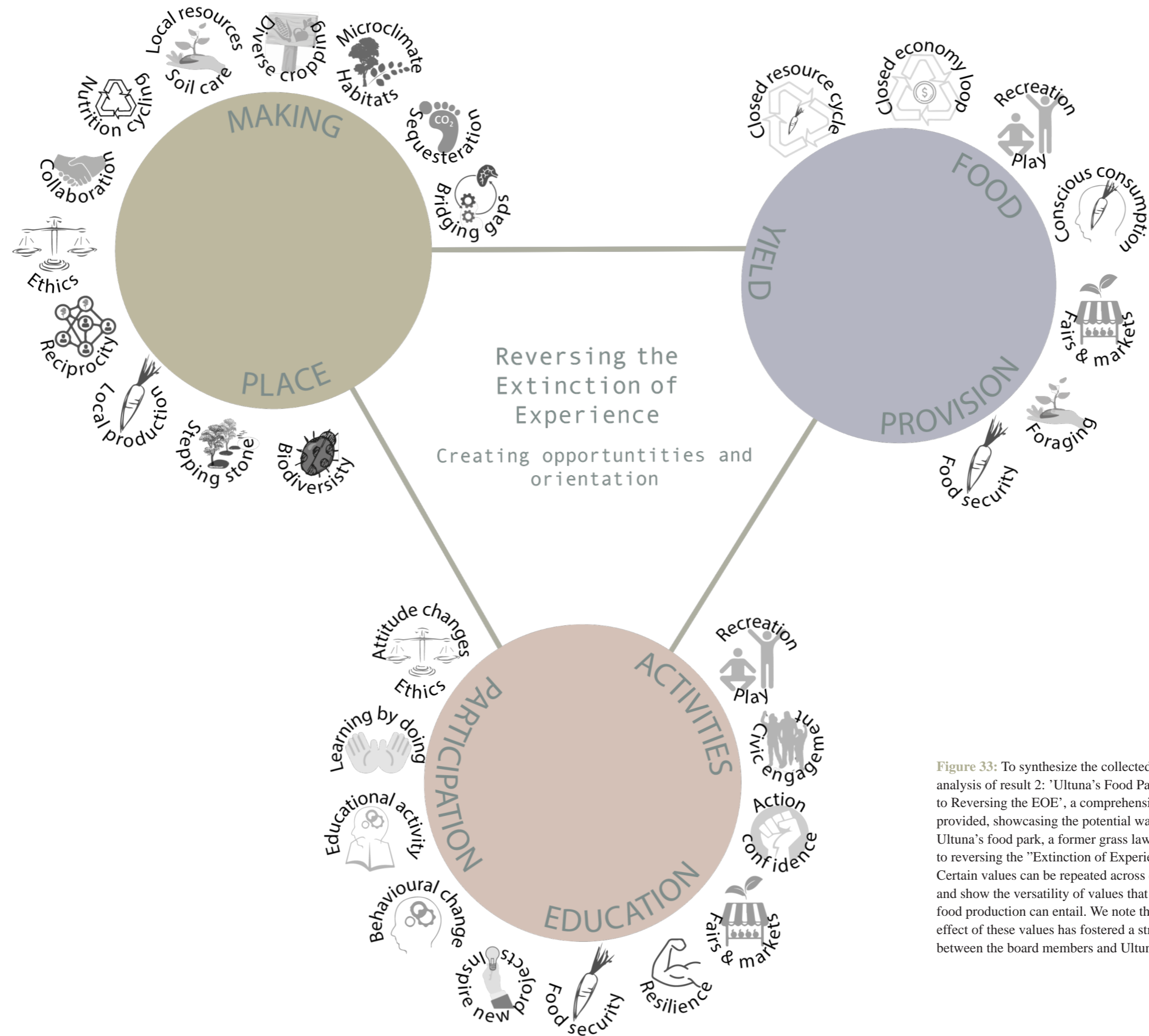


Figure 33: To synthesize the collected data from the analysis of result 2: 'Ultuna's Food Park in Relation to Reversing the EOE', a comprehensive diagram is provided, showcasing the potential ways in which Ultuna's food park, a former grass lawn, can contribute to reversing the "Extinction of Experience" (EOE). Certain values can be repeated across different segments and show the versatility of values that activities around food production can entail. We note that the cumulative effect of these values has fostered a stronger connection between the board members and Ultuna's food park.



Discussion - Who takes the lead?

The two consequences of urbanization that we have mainly addressed from the literature, throughout the thesis, are (1) the lost relationship between human and nature and (2) unsustainable food production. As a tool to address these interrelated problems, the potential of urban food production on underutilized lawns has been investigated based on its contribution to human-nature connectedness. Opportunities and challenges for increased urban food production have therefore been studied based on municipal actors which together with the above mentioned investigation constitute the points of departure for this discussion.

4. Discussion

4.1 Who Takes the Lead?

There are numerous challenges for applying urban food production in Uppsala from the municipal perspective, primarily revolving around planning - particularly in relation to public land usage and anchoring of new methods and figures of thought. There are two challenges that we expected to take a larger space in the interviews: Contamination and seasonal change. We interpret that the reason is that Uppsala municipality has not worked with the concept of urban food production to the extent that such issues have been constraining the process. We have also identified possibilities such as food production on alternative land use and the establishment of new political tasks and objectives. We have also identified value-based opportunities. Based on the interviews and relevant literature, urban food parks have the potential to promote sustainable behavior and foster a reconnection between humans and nature. This stands in contrast to conventional lawns.

4.1.1 The Municipality's Role

Our findings revealed that there are diverse interpretations of what constitutes urban food production, with examples such as forest gardens, urban agriculture, allotments, and community gardens emerging from our interviews. However, in a subsequent stage of the semi-structured interview process with the municipal actors, we presented visual material to stay in line with the subject of alternatives to urban grass lawns to be more specific and concrete about the transition that we intended to analyze from the EOE lens. This material included images and videos of the Ultuna Permakultur food park. The results of the interviews revealed early on that the opportunities and challenges associated with commercial versus non-commercial urban food production, differ significantly. In discussing the form of food production, the type of land emerged as the most critical factor (see figure 22 and 26). According to many of the interviewees, the location and classification of the land in the urban planning process and its positioning within the city can play a significant role in shaping opportunities and challenges for urban food production. The identified types of land with higher potential for urban food production discussed in the interviews included public land, residential land, vacant land, and unplanned land (see figure 22 and 26).

The interviewees noted that access to green spaces

is limited in central areas of the city, both in terms of area and land use. In accordance with the Swedish Planning and Building Act (PBL), public places must be accessible to all, and therefore cannot be used for commercial purposes that may restrict or favor private or select groups of individuals. A presented exception to this rule that has been discussed is during times of crisis, where the use of green areas such as parks for extensive food production may be justifiable from a broader societal perspective. The idea of needing a crisis to drive significant change is a common statement that we have come across in multiple municipal contexts at other occasions prior to writing this thesis as well. However, we believe this alternative should not be the case. Proactive and intentional action can also be discussed to lead to significant change, if research is initiated, measuring the possibilities of Uppsala's potential to be self-sufficient, for instance, if the will for deriving the change and bridging the gap between research and the practice exists. This will has been expressed by all municipal actors in Uppsala, showing that there is a great opportunity and potential for acting proactively and building preparedness. We argue that acknowledging potential challenges and addressing them proactively might allow for the development of strategies, policies, and infrastructure necessary for enhancing urban food production. This approach might reduce

administrative and time-related costs compared to implementing changes to physical planning at a later stage. By increasing urban food production before crises escalate, we argue that more comprehensive plans can be formulated through meticulous risk and potential analyses, as well as the mobilization of essential resources and expertise. Nevertheless, we emphasize the importance of remaining adaptable and recognizing that not all solutions can be predetermined. As landscape architecture students working with urban food production in three years we have come to learn that methods such as experiential learning and adopting good examples could also greatly contribute to gaining expertise and advancing the systems. This is also an established way of working within the field of landscape architecture, as explained by Brink (2016).

This practice helps them learn from past successes and failures, encourages innovation, and pushes the boundaries of their own work (ibid.). We contend that studying the relationship between urban planning and food production can provide valuable insights. Over time, several models and plans have emerged that integrate food production into the built environment. Prominent figures like Le Corbusier, Frank Lloyd Wright, Ian McHarg, Paul and Percival Goodman, and Louis Mumford and Ebenezer Howard have made notable contributions in this regard, and in the Swedish context, the aforementioned Egnahem-movement carries great examples.

Another valuable insight is that collaboration with other design disciplines, such as architects, urban (strategic) planners, niche competencies with urban food production can bring fresh perspectives and enrich the design process. Looking beyond professional boundaries allows the discovery of innovative approaches and solutions to complex challenges. This interdisciplinary approach might help to foster a holistic understanding of the landscape and encourage the creation

of aesthetically pleasing and environmentally responsible projects that enhance the interaction between human and nature. Consequently, this underscores the advantages of initiating early-stage efforts in implementing new solutions, which we deem beneficial for our profession as future landscape architects.

For non-commercial use, municipal actors have expressed a need for additional argumentation and research-based evidence regarding the benefits to public health and welfare. To expedite progress, it has been suggested that pilot projects be implemented to gather knowledge and experience, and to elevate the issue to higher authorities, such as the Swedish National Board of Housing, Building, and Planning (Boverket), to facilitate food production implementation on public land. Today, the design of urban food production on public land such as parks and squares, primarily consists of small, edible plantations, berry bushes, fruit-bearing trees, and vegetables in pallet collars, as integrated elements into various sustainability projects - it is not a subject of its own, a case which might change with task 17 (see figure 26).

Another important point of discussion concerned the angle of approach from which the municipality can allocate greater resources towards expanding urban food production. The study reveals that, currently, Uppsala municipality does not have a strong emphasis on food production in terms of self-sufficiency. However, opportunities for expansion increase when the purpose of food production is geared towards social sustainability, such as integration, education, community, and recreation. We find it noteworthy that, with the commission of task 17 (uppdrag 17), the municipality will place a greater emphasis on the issue of self-sufficiency. Through the additional perspectives of the other municipalities we note that the land and context challenges can be turned into possibilities and vice versa. For instance the possibilities and challenges were at many instances

4. Discussion

the same (see figure 26) and the factor which determined if it was a possibility or challenge was the land use. We also find it to be insightful to consider the multifaceted approaches to increased food production, which can generate interest in society and ultimately increase demand for locally-produced food. This may potentially highlight the importance of self-sufficiency and yield positive outcomes, even without an initial goal of directly increasing self-sufficiency.

In summary, it can be discussed that there are limited green spaces in the form of lawns in the central areas of Uppsala compared to the periphery (see figure 22 and 26). However, there seemed to be a consensus that the existing lawns are well-utilized for recreational purposes other than food production, and are not suitable for food production. In the central parts, green areas are typically designed as public places where the establishment of urban food production with commercial purposes is currently restricted due to municipal laws. Nevertheless, it is discussed that food production in the form of community gardening with educational and demonstration purposes, of a temporary nature, can be planned on public land to enhance the park's character and benefit the public health. According to the interviewees, it can also be argued that food production can be planned more extensively towards the periphery of the city, where there are larger contiguous green spaces and greater opportunities for commercial purposes and self-sufficiency, also considering access to land awaiting new construction at the edge of the city. However, going back to the discussion about changing the status quo of urban environments, and demonstrating a change of objectives in the urban context, we can argue that it is crucial to also invest in the transformation of more central lawns. The peripheral discussion is in fact outside of the delimitations of this thesis. The reason we lift it anyway is that it is a solution proposed for initiating pilot projects which can be tested and later applied to more central urban areas.

It was also found that urban food production of **temporary character, such as thematic periods or events** is preferred in central locations (public land), as a strengthening element of the existing park or place, and as a conductor of collective activities. This can be discussed in the context of Extinction of Experience. As the interviews with the board members of Ultuna Permakultur have shown, EOE could be counteracted and potentially reversed by enabling relationship-building between the place and its users through food, this is according to what we have interpreted from their description of their interactions and experiences. A critique towards the EOE theory described in literature is that it is more difficult to quantify as tangibly as other ecological issues such as loss of biodiversity, urban heat island effect, food security and pollution (Ives et al. 2018). Another critique that we add to this is that even if temporary urban food production can be discussed to have significant positive consequences, it is important to explore the continuity aspect of how this can affect human-nature connectedness. Therefore, we argue that temporary food production entails extensive resource investment and while it can to some extent create relationships, according to our interpretation of Soga and Gaston's diagram (see figure 27), we also argue that the loss of opportunity and orientation need to be actively and continuously counteracted for a significant behavioral change. Thus, it may be more advantageous to have longer-lasting projects that can reach and initiate a process with more people. We would thereby not argue against temporary solutions, but it is also necessary to invest in long-term solutions. To see how time plays a role in this, it is important to establish more and different types of urban food production, on which more research can be conducted - partly to deepen knowledge about which types of food-producing urban environments can affect human-nature connectedness, and partly to take the time and the extent-of-interaction-into account in further development of the theory.

The significant insights that are valuable to consider and convey to Uppsala municipality are as follows: Currently, according to our observations and study, there is a paradoxical dilemma, creating challenges in determining the path to promote urban food production.

The dilemma arises when our immediate needs collide with the strong desire to drive the issue forward, as well as the slow municipal processes. Among the processes highlighted by the municipal participants in the study are the redefinition of land use, planning, and the need for research-based work, which require an extensive coordination process. An important aspect is that research typically involves a research object. Thus, it would be valuable to initiate pilot projects and conduct research simultaneously or sequentially. Moreover, there is already national and international research exploring new projects for urban food production. This research has yielded insights that can pave the way for the development of new strategies. For Uppsala municipality, this could be helpful in not starting without a research foundation.

Another significant insight is the absence of opportunities concerning "communication with actors," clearly indicating the need for Uppsala municipality to establish a robust infrastructure to facilitate extensive dialogue and coordination with various parties. In addition to these observations, below is a compilation of solutions and ideas that have emerged or been suggested during the interviews with municipal actors and niche expertise.

The following are potential solutions or approaches that have emerged in the interviews regarding municipal planning and can contribute to streamlining the process of promoting Uppsala municipality's expansion of urban food production areas:

Planning:

- *Ensure the addition of more explicit and clear political assignments.*
- *Gather knowledge from previous examples and monitor external developments.*
- *Facilitate internal dialogues within the municipality and external dialogues with citizens and other municipalities to collect experiences and perspectives.*
- *Create new positions within the municipality, such as cultivation coordinators, cultivation strategists, and/or coordinators, who would bear continuous responsibility for the matter.*
- *Collaborate with associations to harness specialized expertise through partnerships.*
- *Calculate the square meters of cultivation per capita.*
- *Create a map highlighting existing activities and potential environments for expanding urban food production which may also raise the attractiveness of the city*
- *Foster collaboration, coordination, and dialogues among landscape architects, planners, caretakers, administrators, researchers, and the community.*
- *Collaborate with organizations such as Boverket to enable cultivation activities that promote increased local food production through community gardening without requiring significant changes to detailed plans.*
- *Enter into management agreements with associations to benefit the public and the municipality by providing food, activities, and efficient management.*
- *Build a toolbox for addressing feedback.*
- *Announce that the municipality is open to hearing suggestions, ideas, demands, and needs from the population regarding urban food production, to further guide the development of the work and address community interests.*
- *Increase consumption of locally produced food and produce more of what is consumed.*

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- *Initiate pilot projects to identify advantages and shortcomings.*
- *Involve researchers for more reliable analyses, increased longevity, and development.*
- *Calculate ecological and economic benefits to demonstrate advantages, such as carbon sequestration, resource generation, and capital.*
- *Encourage collaboration among landscape architects, planners, caretakers, and administrators.*
- *Strengthen community engagement through the employment of field workers for education and guided tours.*
- *Implement internal coordination to build strategies.*

When it comes to establishment and management, the potential solutions intertwine as they are closely related to each other.

Establishment and Management:

- *Obtain some flexibility in the development of new projects and ideas, where time-consuming and costly work on detailed plans for every aspect is not prioritized initially.*
- *Prioritize hands-on collaboration in the field to bridge the gap between planning and establishment, and obtain feedback more quickly for further planning.*
- *Measures are needed to support and sustain associations and their activities.*
- *Initiate communication and citizen dialogues in the early stages of planning.*
- *Early integration of aesthetic and social values.*

4.1.2 Extinction of Experience Reversed Through Urban Food Production?

Based on spoken feedback in the case of Ultuna Permakultur and contextualisation of the theory “Extinction of Experience”, we can gather that, if communicated properly, this place holds the potential to constitute an easy to reach and accessible place for fostering environmental stewardship and shared care among citizens. This can be argued to increase their engagement and place attachment, promoting conscious behaviors regarding the environment and stimulating a sense of exploration and observation (see figure 33).

Looking at the case Ultuna Permakultur, an urban food production initiative transforming a previous lawn to a food park, we can discuss how this project served as a link between its contributors and nature based on board members’ claimed experiences. From the results in section three of this thesis (see figure 33) we discuss that this urban food park has unraveled deeper connections and meaningful ties to nature for its contributors

by providing opportunities and orientation. By facilitating educational platforms to bridge the gap between knowledge and practice in urban food production, distributing and selling the yield to locals, place attachment for those who engage in the co-creation and management of the place, the food park can be discussed to enable, according to the interviewees, meaningful activities and interactions that successively provided them with a new mindset and a concrete tool for practicing care and reciprocal exchange with nature. However, it is imperative to contextualize and comprehend **the level of interaction required** for building and strengthening relationships. **The frequency and nature of interaction** necessary for fostering connections could be subject to scrutiny. For instance, one may question whether studying the experiences and observations of the board members of Ultuna Permakultur would be sufficient to determine the potential of urban food production to reverse the EOE. If not, it becomes crucial to

explore ways to ensure that local communities and users of this space engage with it in meaningful ways that promote a deeper connection with the natural world. The impact of urban food production activities on individuals is presumably influenced by a multitude of factors such as prior knowledge, preconceptions, childhood experiences, and personality traits. Given this variability, we discuss that it is imperative to offer a diverse range of activities to engage a wide demographic. To this end, we suggest that incorporating communication staffing or elements, such as signs and sounds, or social media as in Ultuna Permakultur, can be an effective approach to introduce and engage visitors with nature in various ways. Such an approach can be discussed to ensure that the urban food production activities are accessible and inclusive for a larger audience, which can be tied to the discussion about applying urban food production to central public places as opposed to peripheral (see 2.2.1.2). As figure 26 shows the complexity of planning, establishment and management of urban food production, it can be discussed that not all the values presented in figure 33, provided by Ultuna Permakultur, will necessarily be applicable in all types of land use. Furthermore, a potential constraint on the effectiveness of urban food production can be the underlying objectives guiding its implementation. If the primary aim for instance is children’s pedagogy as we have seen in Örebro municipality, it may diminish the aspect of community involvement or the self-sufficiency aspect. From our point of view, this is the contemporary understanding of the complexity (see figure 26 and section 2.2.1.3) - but we argue that divergent objectives do not inherently oppose each other; instead, they can complement and reinforce one another when strategically planned and encompassed within the overarching framework of self-sufficiency within nature’s boundaries - as seen in our study of Ultuna Permakultur.

We would also argue that a crucial part of engaging people cognitively and emotionally with nature is the process of transforming a previously grass lawn into a food-producing environment in itself, as seen in Ultuna Permakultur case (figure 33).

Transforming urban grass lawns provides a before-and-after image that helps build insights into surface transformation and functions, and helps to recognize the difference in diversity.

In Swedish cities, we often have an abundance of green spaces, ranging from privately-owned gardens and semi-public courtyards (a great example is the previous Egnahem areas) in residential areas to expansive parks, preserved natural areas and other types of land available between buildings. We therefore argue that these valuable resources possess the potential to not only strengthen ecosystems and offer various ecosystem services, but also to generate visually pleasing surroundings, facilitate food production, and activate urban spaces. As highlighted in the introduction, extensively managed open grass lawns of underutilized and functionally deficient character currently cover significant portions of our cities. However, these areas could potentially be transformed into pilot projects that actively integrate urban food production into the Swedish urban landscape. From our point of view and experience, locating urban food production within city boundaries, e.g., a residential area or public green spaces, can challenge the mindset of the local residents by bringing nature and food production to the doorstep of urban life. We also discuss that the consequences of EOE may not be felt to the same extent in Sweden as in other countries at the moment because of Sweden’s vast amount of green spaces. However, cities are growing, and densification (see 1) is actively used as a tool to accommodate more people in cities, which eventually results in even more loss of green spaces and biological diversity in cities, which must be addressed early on to avoid becoming an overarching problem. Thus, we argue that planners and landscape architects working with issues regarding the greenery of cities should actively test new ideas and methods to shape our urban environments with the aim of increasing interaction between humans and nature, local food production as both social and ecological constructs, and challenge the status quo of urban environments and the objectives of our cities.

4. Discussion

4.1.3 The Cooperation Between Top-down and Bottom-up

As studying landscape architects we came to understand that the field, as many others, is dominated by certain and specific discourses as the profession tends to operate in a top-down manner and is influenced by inherent values and judgements, and bound to follow power structures, rules and regulations defined by higher decision-making positions. Transition takes time. To discover alternative working methods for addressing urgent matters, in 2020, we commenced our activity in a grassroots movement, where we operate as landscape architects and co-designers of an urban food park, together with other members. We have gained deeper insights on the role that grassroot movements play in addressing environmental issues and how similar projects could carry potential to build relationships and interactions between human and nature, through different angles of approach. The initiative, Ultuna Permakultur, that we are active in, works with queries regarding urban food production and its outcome on societal level. Soon, it became evident that in order to achieve goals and influence coherent changes in the production and consumption of local food and relation to nature and landscapes, on a bigger scale, the top-down needed to be on the same trajectory. We refer to thinkers like Whitehead or Deleuze (see Keller 2009; Deleuze 1968) in stating the perspective that humans' interactions form the trail of their next accomplishments. We thus reason that the occupation of planning and designing landscapes can be discussed to hold power to decide what interactions will happen in society and to impact the prevailing dominating values within society. This was also apparent in the density of results under the heading "Planning" (see 2.2.1), showing that solving issues in the area of planning creates a key point for success in increasing and facilitating urban food production from the aspect of establishment and management as well.

When it comes to municipalities taking charge of local and urban food production and creating top-down conditions for the establishment of food-producing landscapes, several risks need to be considered. Among the risks that we, as landscape architecture students, have discussed with other interested parties, professionals, and actors from various organizations through active participation in voluntary associations and our studies, is that there is a lack of efficiency and innovation. As decisions made centrally can be less adaptable and more large-scale, creativity in solving local and urban food production may be constrained by bureaucracy and overregulation. This can result in unnecessary obstacles and administrative burdens for food producers who are attempting to establish or develop their operations. There is also a risk when urban food production is tied to political mandates, such as in Uppsala municipality, where decisions may be influenced by political interests rather than scientific or economic, ecological or social considerations. This can impact long-term sustainable strategies and decision-making within food production. Top-down approaches may also struggle to maintain economic viability in food production projects, as municipalities may have limited resources and budgets that are not always sufficient to support and develop a thriving local food production system. These subjects warrant further and more comprehensive exploration and should not be construed as definitive conclusions or statements. Instead, they pertain to top-down regulated processes from a broader perspective, demanding careful consideration.

In discussing the prominence of collaboration between top-down and bottom-up, the challenges need to be addressed. There is a gray zone with several factors in the contemporary collaboration between top-down and bottom-up, some of which will be addressed in the following. Limited scalability at the current state of bottom up

practices is one of the main challenges which has also been addressed by the municipal actors meaning that, if these practices are driven by small-scale producers and communities (bottom-up) it can't meet the needs of the whole municipality. It is therefore of great importance to study and find ways of scaling up the practices in terms of legislation, to facilitate the frequency of food producing landscapes' occurrence and ensure to cater to the needs of local production and consumption. In discussing legislation, it is also worth discussing what is being regulated. For instance, it might not be sufficient to increase urban food production for increased sustainability without specifying the bases and methods on which this can be done - to regulate the sustainability of the production and working methods. Another challenge, where the convergence of top-down and bottom-up can be considered necessary, is access to adequate infrastructure. In order to optimize urban food production, the requirements for adequate infrastructure such as storage facilities, processing units and transportation as well as water need to be met and facilitated by top-down operation. The top-down involvement can thus decrease the vulnerability of bottom-up grassroots work, while increasing the cohesion of different units' work and facilitating a broader yet niched anchorage thus reaching out to a wider market. Although it is important to take risks into consideration: that this might diffuse the small-scaleness of the bottom-up approaches and objectives. Concretely, and as shown in the results (section 2), the top-down involvement through policies, regulations, fundings and incentives with the aim to facilitate increased urban food production, the municipality could encourage establishment of more community gardens, food cooperations and allocate land for food production practices. Further, the municipality can provide technical support and expertise, as well as networking, in the form of soil testing, irrigation systems and participatory processes, involving actors and stakeholders, as well as civil society in the process. Therefore we argue for the necessity of collaboration between top-down and bottom-up

to ensure that the processes regarding urban food production are inclusive, equitable and tailored to the specific needs and preferences of the specific community. This would also help in balancing the scale that bottom-up and top-down work in. These measures are not solely aimed at enhancing self-sufficiency, reducing climate effects and carbon sequestration, but also intended to address the underlying issues by fostering an enhanced affinity and interest towards nature and biodiversity, and potentially reversing the Extinction of Experience.

4. Discussion

4.2 Method Critique

In this section, we will critically review our selected literature, methods, and theories, building upon our previous awareness and application of a critical viewpoint throughout the essay. Our aim is to provide a comprehensive understanding of the factors that may have influenced the results and led to different outcomes. By critically examining these elements, we will shed light on the potential influences that could have shaped the results in alternative ways.

4.2.1 Methods

We have chosen to conduct semi-structured and non-structured interview methods respectively to answer the research questions. It is therefore important to consider the shortcomings of these methods. Even though the semi-structured interviews provided us with deep insights, not having a definite framework could be discussed to have both positive and negative effects. One example is that even though our questions regarded lawns in urban environments the interviewees in the municipality needed to discuss the lawns from a land-use perspective which in turn gave a deeper insight of the possibilities and challenges but also widened the scope in which this thesis was carried out.

While the non-structure interview methods provided us with a conversational and detailed approach, it was challenging to ensure consistency and comparability across interviews. Additionally, we were also aware that the lack of structure can result in the interviewer unintentionally influencing the direction of the conversation, potentially biasing the responses. However, we managed to gear the interviews toward the main subject by reminding the interviewees that we are speaking about personal insights regarding the food park. A general issue of both non-structured and semi-structured interviews can be that the interview results can turn out biased, which we in this thesis

used to our advantage, as we targeted personal reflections and explanations.

4.2.2 Results

As for the results from the semi-structured interviews with municipal actors, we contacted more than fifteen people and seven municipal actors chose to participate six of which worked directly with planning, even though some had interdisciplinary roles. This means that our reflections upon the diagram (see figure 26) might be, to some extent, influenced - hence planning as the major area affecting urban food production. However, since planning is a first step in working with the query top-down, our two non-municipal actors also spoke mainly about the significant role of planning to facilitate urban food production.

The result from non-structured interviews concerning the reversal of the EOE is limited to the board members of Ultuna Permakultur whom we interviewed, who possess extensive experience and continuous engagement in the project. Including visitors and ambassadors in our thesis would be interesting and add more depth to the investigation. This will also raise a question regarding the degree of interaction required to establish a profound connection with the environment and the extent to which individuals must participate in comparison with board members to achieve this level. Alternatively, is it possible to initiate a transformation in one's relationship with nature merely by engaging with the environment as a visitor or other user? Including other users of the place would supplement the findings of this thesis since, at present, we cannot assert that this urban food park can wholly counteract the EOE or affect every individual interacting with it.

The reason we did not interview anyone other than board members is due to a turning point in our essay - the initial purpose of studying the case of Ultuna Permakultur was to deepen our understanding of how the principles of

permaculture and urban food forestry are implemented in practice, anchored in the planning, establishment, and management of the site, and the effects on local social and ecological capacity and interactions. Through observation and interviews, we aimed to examine how project staff have addressed social and ecological challenges, worked to strengthen local conditions, and identified potentials and opportunities with a former lawn. The interview results would later be analyzed based on the theory of the "Extinction of Experience" to understand how alternative nature-based design methods can affect the behavior patterns of users with respect to local resources and nature. However, this goal has since been narrowed down and limited to mainly studying the case based on the theory of the EOE (excluding an analysis of social and ecological improvements), where board member's interactions and relationships with the site and the project can be more clearly linked to EOE. At that point, the interviews had already been conducted. While this did not affect the content of the EOE results, it did affect the scope of the interviews, thus narrowing the aims and research questions of the thesis.

A further shortcoming of this thesis was the lack of a definitive definition for the "periphery of the city," as well as ambiguity surrounding the boundaries of the "urban" area. Additionally, the notion of "central in urban context" was not explored in sufficient depth to clarify the exact parameters of any associated constraints. The results suggest that central lawns, as the city is getting more densified towards the central parts, are usually classified as and included in public parks and are well used which restricts its usage for food production purposes. This shortcoming may be attributed to the application of a semi-structured approach to the interviews, which, although useful for acquiring deep and nuanced data, may result in some loose ends and difficulties in following up on certain points.

As the authors of this thesis, we are both founding members and active participants in the organization

Ultuna Permakultur. It could be argued that our involvement in the organization may introduce bias into the thesis and risks influencing the results of the thesis. However, it is important to recognize that all research begins with personal interests and hypotheses, and objectivity is maintained through critical analysis. Our affiliation with the organization has instead provided us with a deeper understanding of the context in which it operates, allowing us to identify opportunities for pursuing this thesis subject. Our background (explained in "about us" in the beginning of this thesis) has set the tone for the thesis in terms of the choice of examining Ultuna's food park through the lens of EOE. However, the results in chapter three are analyzed through the lens of the prevailing literature within the field of EOE, distancing ourselves from the outcome. We acknowledge that it is essential to address any potential biases through rigorous analysis and critical evaluation to ensure the validity and reliability of our findings.

4. Discussion

4.3 Conclusions

We believe that urban food production within Uppsala's urban and peri-urban boundaries can hold immense potential for addressing the conflict between urbanization, growing population, and the increasing demand for food. By integrating food production into urban spaces like public lawns, we can create multifunctional environments to meet both social and environmental needs such as enhancing self-sufficiency, fostering a deeper connection with nature and hopefully reversing the "Extinction of Experience".

Collaboration between top-down and bottom-up approaches is crucial in addressing urgent environmental issues, especially in the realm of urban food production. We believe that municipalities can play a vital role by taking intentional steps towards supporting local initiatives, providing needed infrastructure and adopting proactive measures towards sustainability. While local self-sufficiency may be deemed necessary, it must be strengthened with social and educational activities that address broader societal issues, and this is what renders it meaningful. We deduce that Urban food production landscapes

can hold the potential to be multifaceted spaces that offer more than just food production and biodiversity; if well-planned and anchored, they can serve as catalysts for community-building, education, and sustainable transformation. Through initiatives like the studied case, we can showcase the transformation from traditional grass lawns into food-producing landscapes that promote environmental stewardship, enhance engagement and place attachment, and encourage conscious behaviors towards the environment.

As landscape architects, we bear a crucial responsibility to promote sustainable planning and design, serving as the driving force behind the necessary social and environmental transformations. By taking proactive action instead of waiting for more crises to strike, we can pave the path towards a more resilient and sustainable future. We would thereby like to end with one of our favourite citations by Robin Wall Kimmerer, Professor of Environmental and Forest Biology - from her book "Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants."

"People often ask me what one thing I would recommend to restore relationship between land and people. My answer is almost always, "Plant a garden." It's good for the health of the earth and it's good for the health of people. A garden is a nursery for nurturing connection, the soil for cultivation of practical reverence. And its power goes far beyond the garden gate—once you develop a relationship with a little patch of earth, it becomes a seed itself. Something essential happens in a vegetable garden. It's a place where if you can't say "I love you" out loud, you can say it in seeds. And the land will reciprocate, in beans."

(Kimmerer 2013:126-127)

4.4 Further Research

In the context of urban food production within municipal sectors, there is a need for further research to explore various projects within the Nordic region and across different municipalities in Sweden to provide insights into how planning and management solutions can be adapted to the specific context of Uppsala. Furthermore, it is crucial to include and consult urban residents, assessing the level of interest, knowledge, and expertise among the local community to examine the opportunities for them to engage and collaborate in urban food production initiatives. We focus primarily on the social outcomes of food-producing landscapes here, with future work needed to examine how these food parks can be designed to provide the social and ecological qualities necessary for reversing the EOE in a broader sense. An additional aspect worthy of

examination with respect to Ultuna Permakultur's food park pertains to its potential contribution to biodiversity e.g. species richness, evenness, distribution, and specialist and generalist dominance, as well as its relationship to the surrounding ecosystem. Furthermore, this is significant in order to comprehend how one might advocate for increasing urban food production as a replacement for monocultural lawns, given that food-producing urban landscapes, if implemented through sustainable and nature-based practices, and by promoting perennial systems, can offer a variety of biotopes. Future research may also investigate a broader group of users of urban food producing landscapes in other urban contexts in order to reach more applicable results concerning the potentials for reversing the EOE.





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Appendix

6. Appendix

Appendix 1

Guidelines for unstructured interview method with Ultuna Permakultur

Ask for consent to record the interview

1. Begin by asking who they are, what types of tasks are performed in the organization, how long they have been involved and how often they participate.
2. Ask about the organisation's ambitions and goals, how the work to reach out goes, and in what way this is done.
3. Ask about the design and components of the garden.
4. Ask about in what ways they are considered to contribute social and ecological benefits.
5. Ask about in what way they interact with the place and have perceived that others do so.
6. Follow-up questions based on the conversation.

When the conversation gets out of hand, step back by asking questions about their relationship with the garden and their understanding of how the garden can contribute to users and visitors having a deeper relationship with the place and the values advocated in the organization.

Ask to sign consent form to use the material.

Appendix 2

Guidelines for semi-structured interview method with municipal actors and actors within urban food production

Name & Surname:

Position:

Operating since:

Starting questions for interviews with actors:

1. What is your position and what does it entail? How long have you been active? Tell us about the tasks you carry out in your position?
2. How do you work with the theme of urban food production?
3. What opportunities do you see in urban environments covered by lawns, for the establishment of urban food production?
4. What concerns and thresholds stand in the way of expanded urban food production?
5. How can we overcome these?
6. Which parties do you think must be included and have consensus to expand/improve urban society's understanding of food and the resources they use in cities with the aim to increase urban food production?

Show picture and video material of Ultuna Permakultur, explain the transformation of grass lawn, the design layout and structure and that it is a food park with integrated systems of perennial and annual cultivation with commercial purposes which is investigated in the thesis. Everyone is allowed to visit and spend time there but the harvest is sold through on-site sales and generates financial resources for the management of the park.

7. What challenges do you think there would be for such projects in other urban contexts?

Example question: what to do if you want to sell crops when food production takes place on public land? Are there laws that can prevent this? Who should or can take care of surfaces as such?

8. Where do you think is suitable for increased food production?

9. (To those who have been involved in realizing transformations from lawns to edible landscapes in urban environments like Philipp Weiss) What are the first steps for such transformations? How has it been for you? Who contacted you, who did you contact? What kind of meetings did you have for planning the establishment, who was involved, based on what conditions did you choose the location and the land? Who takes care of the surface? How did you think based on accessibility and adaptation to functional variations? How did you prepare the land for the establishment of a forest garden? What kind of feedback/response/reactions have the transformations received? Where do you see the role of municipalities and politicians in this?

10. Do you have anything else you want to highlight?