university of groningen / faculty of spatial sciences

Master's Thesis

Islands within an island: exploring the intersection of ecology, culture, and identity of gardeners on the Greek island of Lesvos

Garden landscapes in Lesvos. Source: own.

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MSc Spatial Sciences (Research): Islands and Sustainability track

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Abstract

Gardens and gardening provide a multitude of environmental, sociocultural, and individual benefits. However, home gardens remain the least understood landscapes, especially on islands. With land use change and urbanisation impacting natural and cultural landscapes on small islands, home gardens may hold the potential to mitigate these effects. This study aimed to understand the uses of gardens, and experiences, practices, and motivations of home gardeners using the Greek island of Lesvos as a case study. Drawing on an exploratory approach, twelve qualitative interviews were conducted with urban, suburban, and rural gardeners in and near Mytilene, Lesvos. An ethnobotanical framework guided the interviews, focusing on plant uses and traditions to understand the values and practices of gardeners. Thematic analysis highlighted the multifunctionality of home gardens, reflected by the diversity of cultivated plants. There was also an interconnected role of food production with symbolic, cultural, and place-based values. Gardeners used these spaces for agricultural, ecological, recreational, and spiritual purposes, which mirrored personal and social values. Home gardens resemble islands in their uniqueness, spatiality and sociocultural dynamics. In urban, suburban, and rural areas of Lesvos, home gardeners connect to nature, as well as personal identity through their gardens, which underscores the personal importance of these landscapes.

Keywords: home gardens, islands, gardening, oases, agriculture, islandness, identity

Dedication:
This thesis is dedicated to my late grandmother, Dorothy Evelyn Struthers Williams (1929-2023)*, who instilled in me a deep interest and love for gardening.*

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1 Introduction

"Now, over half of us live in an urban environment ... It reminds me of just how easy it is for us to lose our connection with the natural world. Yet it's on this connection that the future of both humanity and the natural world will depend."

Sir David Attenborough, *Planet Earth II* (2016)

Access to nature is a vital part of human life, contributing towards health and well-being, as well as sense of place and cultural identity (Miles, 2022; Samus et al., 2022). On islands, connection to land and nature can be intricately linked with place-belonging and identity (Craig, 2022; Vannini & Taggart, 2013). However, land use change such as urbanisation can lead to a loss of natural habitats and spaces and reduced access to nature for people living in these areas (Moroney & Jones, 2006). The impacts of urbanisation on islands can be more significant due to their size, geographical isolation, and unique ecological and cultural characteristics (Médail, 2017; Pan et al., 2016). Land use transformation linked to demographic and economic change has affected traditional elements of rural Lesvos (Kizos & Koulouri, 2005). Mytilene, the largest city in Lesvos, is undergoing urbanisation (Mavridou & Kizos, 2008). Gardens are an essential part of urban green space, which makes positive environmental contributions (Ackerman et al., 2014) and contributes to individual well-being and happiness. Gardening can improve access to healthy food, connect people with their natural environment, and provide outlets for personal and cultural self-expression.

1.1 A study of home gardening

The history of gardening, from its origins in Greek myth to modern times, has been shaped by cultural, social, and environmental factors. Traditionally, gardening played an essential role in subsistence and food production, and has now evolved to become an art form, an expression of self, and a sign of social status (Ross, 1998; Schupp & Sharp, 2012). Despite thse changes, gardening for fruit and vegetable cultivation remains key on islands, however, due to their role in providing quality produce to islanders (Mitchell et al., 2020). Gardens have always been regarded as personal spaces, involving intentional plant care and landscape design, and reflecting the interconnectedness of people and nature, and society's affinity to nature. Maintaining a connection to natural landscapes through gardening can help preserve cultural traditions, and natural heritage (Karpodini-Dimitriadi, 2009; Plieninger et al., 2022).

Gardens are landscapes shaped by people and their environment, and thus, ideal places to study socio-ecological systems (Marco et al., 2010; Vogl-Lukasser & Vogl, 2018). Ethnobotany is the study of local plant uses, highlighting place-based relationships between people, culture, and nature (Pardo-de-Santayana et al., 2022; Pochettino et al., 2012). Home gardens are places where people connect with nature in both rural and urban contexts. They

thus provide a setting to study these human-plant relationships and explore more profound meanings and values associated with connection to nature.

1.2 Context of Greece and Lesvos

The island of Lesvos is the third largest in Greece, located in the North Aegean between the European and Asian continents on the eastern part Greece (Figure 1). Lesvos is a geologically diverse island containing unique natural and cultural landscapes (Pavlis, 2017). These landscapes have shaped and been shaped by the island's agricultural economy (Kizos & Koulouri, 2005). Lesvos is highly vegetated, and its Mediterranean climate has contributed to the importance of crop cultivation, notably of olive and other fruit trees, which play an important role in Lesvos' economy and food culture (Douma et al., 2016; Pavlis, 2017). Recently, however, the role of food production on Lesvos is changing due to economic and technological developments linked to agricultural policies, urbanisation, and globalisation, impacting its rural landscapes (Kizos et al., 2011; Kizos & Koulouri, 2006).

Figure 1. Geographical location of the Greek island of Lesvos, at the eastern periphery of Europe.

The population of Lesvos is of approximately 90,000 people, of which a third lives in Mytilene, the capital. Mytilene is undergoing expansion due to internal migration and foreign immigration (Retsilidou & Hatzopoulos, 2013), while smaller villages are experiencing rural exodus (Kizos & Koulouri, 2006). Home gardens may be places of transition where people can connect to natural landscapes despite the change on the island. Islands themselves are interesting places to study human-nature connection, due to their unique natural and cultural landscapes (Pungetti, 2012). Thus, home gardens close to Mytilene, Lesvos are chosen as study sites to explore people's relationship with nature.

The historical significance of gardens and parks for leisure in ancient Greece further underscores the sociocultural value of home gardens (Lubchenko, 2018). Gardens in suburban areas of Lesvos may also have functions and uses that extend beyond their economic use, including ornamental, social, and ecological (Mavridou & Kizos, 2008). Home gardens in Greece can also be essential to people's connections to food production, land, and sense of place (Haniotou & Dalipi, 2018). However, home gardens remain the least studied landscapes, despite them collectively making up the majority of urban green space (Haniotou & Dalipi, 2018; Mathieu et al., 2007). This thesis thus focuses on exploring home gardens and gardening practices using the Greek island of Lesvos as a case study.

1.3 Research problem and question

Gardens have numerous health, social, and recreational benefits, showcased in studies globally (Chalmin-Pui et al., 2021; Miles, 2022; Saldivar-Tanaka & Krasny, 2004). However, the study of gardens in Greece so far has been mostly limited to the role of community gardens for food cultivation (Anthopoulou et al., 2017; Haniotou & Dalipi, 2018) and the functions of public parks (Lubchenko, 2018). Meanwhile, private gardens and gardening still remains largely understudied (Mavridou & Kizos, 2008), especially within the context of islands. Natural and cultural landscapes connected to food production are an important aspect of Greek economy and identity (Helstosky, 2009; Plieninger et al., 2022). The Greek island of Lesvos has a diversity of agricultural, and cultural landscapes (Douma et al., 2016; Pavlis, 2017). Islands are bounded places where natural landscapes are intricately linked to sense of place and belonging (Brinklow, 2015; Vannini & Taggart, 2013). Home gardens, due to their socioecological nature, provide an ideal context for studying this connection to nature and place. This thesis aims to answer the following research question:

What are the uses, functions, and values of home gardens in Lesvos, Greece?

This question was addressed by exploring the uses of gardens and garden plants through semi-structured interviews in urban, suburban, and rural areas of Lesvos. Gardens located across different levels of urbanisation can reflect a diversity of gardening motivations and preferences (Schupp & Sharp, 2012). An ethnobotanical framework was used to understand how the uses of plants relate to garden functions and values (Axiotis et al., 2018; Sujarwo & Caneva, 2015).

A preliminary study of home gardens in Mytilene (Mavridou & Kizos, 2008) suggested suburban gardens have mainly aesthetic, ecological and economic functions. This work highlighted the need for further research on specific uses, functions, and values as embodied and described by home garden users. Qualitative research methods are most appropriate to answer these "how" and "why" questions, as they explore in-depth the individual processes and behaviours from the perspective of participants themselves (Hennink et al., 2020) and are also effective in answering ethnobotanical and socioecological questions (Thomas et al., 2007; Uwajeh & Ezennia, 2018; Vogl et al., 2004). An interview guide (Appendix, Table 2) was used to explore the following themes, interviewing garden users in their gardens:

a) descriptive information about gardens,
b) use/s of plants and plant products,
c) gardening practices
d) use/s of gardens,
e) motivations, gardening preferences, and values

Exploring these themes contributed to understanding the relationships between people and their home gardens and the ethnobotanical importance of home gardens in Lesvos. A methodology of semi-structured qualitative interviews coupled with digital photography captured these themes. A description of each garden and gardener was presented, followed by an overview and discussion of home gardens' uses, functions, and values.

2 Literature Review

This chapter introduces the individual, and sociocultural value of gardens and gardening practices as described by the literature, which sets the context for the study findings. While gardens hold relevance for many reasons, food, cultural identity, and sustainability, are particularly relevant to a Greek island context (Guell et al., 2021; Haniotou & Dalipi, 2018; Tomou et al., 2022). The complexity of gardens and their elements offer a diversity of uses, such as agricultural, ecological, social and cultural (Agbogidi & Adolor, 2013; Ortiz-Sánchez et al., 2015; Park, 2023). For instance, they have the potential of being spaces of cultural food production, and places of expression of personal identity and aesthetic preferences. Gardens also play a regulating role in climate mitigation and the conservation of biological and agricultural diversity, and have significant contributions to wellbeing and happiness (Galluzzi et al., 2010; Pollard et al., 2018; Saldivar-Tanaka & Krasny, 2004; Turner, 2011). Motives to garden include physical and psychological health, learning, access to food, and aesthetic reasons (Home & Vieli, 2020; Lewis et al., 2018).

2.1 Gardens for cultivation of place-based food

Home gardens are often called kitchen extensions due to their value for food production and household cooking (Christie, 2004; Niñez, 1984). This relevance for food and contribution towards diet reflects gardens' social, cultural, and subsistence roles. A home garden can include food, plants, and animals, generally for households or close family/friends, and contribute to food security and nutrition (Galhena et al., 2013; Guell et al., 2022).

In rural areas, agriculture and food production can be both an economic driver and an essential part of collective identity (Karpodini-Dimitriadi, 2009; Teuber et al., 2019). Additionally, rural customs, practices, and traditions passed through generations can be maintained through gardening, which can help preserve cultural identity as well as natural heritage (Christie, 2004; Karpodini-Dimitriadi, 2009; Pardo-de-Santayana et al., 2022). In gardens, people converge with the natural environment, and create spaces shaped by

personal and sociocultural values, which furthers a sense of belonging, connection to place, and identity (Gerodetti & Foster, 2016; Hou, 2017).

With the growth of urban areas, access to fresh and local food is of growing concern, which is of particular concern on islands due to the reliance on imported foods (Ackerman et al., 2014; Guell et al., 2021). Urban gardens can support small-scale agricultural production and improve access to food (Haniotou & Dalipi, 2018). Home-grown food has added value for many reasons, giving people autonomy of choice, control, and trust in their food (Diekmann et al., 2020). This agency over food production not only contributes towards self-sufficiency but can also improve food quality and taste, as harvesting when fruits are ripe maximises their nutritional value, and the need for pesticides is reduced (Agbogidi & Adolor, 2013; Diekmann et al., 2020). Furthermore, urban gardening can reconnect people to their places and cultures of origin (Gerodetti & Foster, 2016; Saldivar-Tanaka & Krasny, 2004).

In Greece and Lesvos, there is a history of agricultural activity and traditional local uses of plants (Douma et al., 2016; Haniotou & Dalipi, 2018), which may also be present in home gardens. An ethnobotanical study of plant uses in rural Agiassos in Lesvos found that some plants can have up to 30 different uses (Strenchok et al., 2018). Therefore, home gardens on Lesvos may contain plants with multiple functions and uses besides agriculture, such as aesthetic, medicinal, aromatic, structural, and technological.

During Greece's economic crises and austerity measures following the 2010 sovereign debt, urban gardens were vital, providing agricultural self-sufficiency and improving access to food and green spaces (Haniotou & Dalipi, 2018). Additionally, home gardening can enhance food security and sovereignty on small islands (Campbell, 2020), and provide connection to cultural food production in urbanising areas. In Lesvos, the role of home gardens in fulfilling this need in light of urban and land use change remains unknown.

2.2 Gardens as spaces of self-expression

As well as the agricultural function of gardens mentioned above, and building on their cultural relevance, gardens can be important spaces for people's identity, sense of ownership and escapism (Gross & Lane, 2007). A study of gardening motivations among thousands of gardeners in the UK found the main reasons for gardening being for pleasure and enjoyment (Chalmin-Pui et al., 2021). Gardening motivations also included sensory reasons, health benefits, expression, self-identity, and love for the activity (ibid.). The authors found that people do not garden because they should (for health purposes) or need to (for food production) but because of the direct pleasure and happiness that it brings them (ibid.).

Cultural landscapes, such as home gardens, result from a "*mutual adaptation of abiotic, biotic, and cultural factors*" (Rescia et al., 2012, p. 126). Landscapes are thus composed of physical characteristics such as rocks, climate, and water sources and living elements such as flowers, trees, and animals, which interplay with how gardeners use and interact with this landscape. Landscapes contain physical environmental components, stories,

symbols, myths, and images, which reflect different ways of representing or symbolising one's surroundings (Farahani et al., 2016; Pavlis, 2017).

Gardening is of symbolic and practical importance, often linked to an individual's traditional and cultural practices (Farahani et al., 2016; Gerodetti & Foster, 2016; Guell et al., 2021). Non-representational theories can help understand gardens as constructed cultural landscapes (Gerodetti & Foster, 2016), connecting place with practice (Vannini & Taggart, 2013). These theories highlight the role of practice, materiality, process and embodiment in forming everyday spaces (Gerodetti & Foster, 2016; Simpson, 2021), and suggest the formation of a unique garden identity shaped to the gardeners' needs and preferences. For instance, an ethnographic study of home gardens in Mexico links these landscapes with the preservation of cultural identity through the use of local plants and traditional practices, creating spaces of "*individual expression"* (Greenberg, 1996, p. 355). Gardens can thus reflect cultural preferences, which link to social and relational values and needs, as well as aesthetics, related to perceptions of beauty and art (Hale et al., 2011; Lubchenko, 2018; Ross, 1998). Gardens can also give people a sense of creative agency, as they are spaces of relational values such as inspiration, creativity, and self-expression (Hosseini & Caneva, 2022; Pollard et al., 2018). Meanwhile, Ott (2023) refers to eudemonic values provided by gardens, such as biophilia and placemaking, which can play a key role on islands.

Overall, natural and human external forces can shape home gardens, which result in the creation of unique landscapes. Their design can reflect the aesthetic preferences of their users, linked to values, perceptions of beauty, and identity.

2.3 Environmental value of gardens

This study contributes towards the discussion of home gardens and their role in natural and cultural preservation, as well as sustainable development on islands. Gardens contribute to several dimensions of sustainability. Firstly, they contribute to the natural environment by providing ecological corridors for wildlife, preserving biodiversity, sequestering carbon, and mitigating climate effects (Santos et al., 2022). Secondly, on a cultural preservation level, they are an essential part of many traditional land use practices, systems, and ecological knowledge (Caballero-Serrano et al., 2019; Vogl-Lukasser & Vogl, 2018). Thirdly, on an individual level, they contribute to physical and mental health and well-being (Chalmin-Pui et al., 2021).

Another way of framing the socioecological contributions of gardens is considering gardens as providers of Ecosystem Services (ESS). The ESS framework classifies services provided by nature as provisioning (which includes food, water, fodder), regulating (pollination, air purification, climate mitigation), and cultural ESS such as recreation, education, and symbolism (Millenium Ecosystem Assessment, 2005). Gardens can have the potential to provide these services, and using such a framework can further showcase their benefits to human well-being and environmental systems (Mohri et al., 2013). For instance, cultural landscape elements such as agricultural terraces can help preserve water and prevent soil erosion in mountainous regions, playing a role in sustainable development (Varotto et al., 2019; Varras et al., 2006).

Gardens are repositories of biological and agricultural diversity, contributing towards green space in urban areas and cultural landscapes in rural areas. Despite the relevance of urban and rural home gardens in preserving agricultural, botanical, and cultural diversity, these spaces are often overlooked (Galluzzi et al., 2010). However, home gardens can cement a sense of ecological citizenship, connecting people with food systems and promoting environmentally conscious behaviours within urban areas (Turner, 2011). Both biodiversity and culture on islands are facing threats, and gardens may provide a bridge towards preserving both aspects. On Lesvos, natural and cultural landscapes are of great value, and recognising this value may help with the island's sustainable development (Pavlis, 2017).

Conclusion

Gardens can have cultural, personal, ecological, social, and economic functions. The interplay between people and their gardens creates complex sociocultural and environmental spaces. This research is thus a vital contribution to the knowledge of how private green spaces are used and valued in cities and their surrounding areas. This thesis hence focuses on understanding use of home gardens, and their importance for urban, suburban, and rural gardeners in Lesvos.

3 Methodology

Qualitative interviews were carried out in home gardens to explore the uses, functions, and values of home gardens and gardening practices and to understand the natural and cultural context of gardening—sampling for urban, suburban, and rural gardens aimed for a variation of preferences and motivations. Additionally, digital photography, alongside qualitative interviews, captured visual information. An ethnobotanical framework placed the uses and purposes of plants in the centre to reflect the functions and values of home gardens.

3.1 Data collection

The data collection process consisted of semi-structured interviews with gardeners as well as photography to collect data on gardens, plants, and their contextual uses and functions.

3.1.1 Qualitative interviews with gardeners

Data collection began in February 2024 and was finalised at the end of March 2024. In total, twelve interviews were conducted in private home gardens located on the Greek island of Lesvos, stratified across urban (n=3), suburban (n=6), and rural (n=3) areas close to Mytilene. A map of the approximate locations of gardens (to preserve anonymity) is

presented in Figure 2. Additionally, two informal conversations were carried out with key informants: a plant nursery owner in Mytilene and a local agronomist. The participants were people involved in these home gardens and were either living there or close relatives of the main dwellers, which will all be referred to using the term "gardener" or "garden user". This primary criterion in sample selection aimed for a diversity of gardeners and garden practices, sizes, types, and uses (Mavridou & Kizos, 2008). For three of the interviews an interpreter was required, and in all these cases the interpreter had a close personal connection to the participant and interpreted to the best of their ability. All participants were made aware of the objectives of this research project and the use of their data, and prior informed consent was requested verbally as in other qualitative home garden studies (Sujarwo & Caneva, 2015).

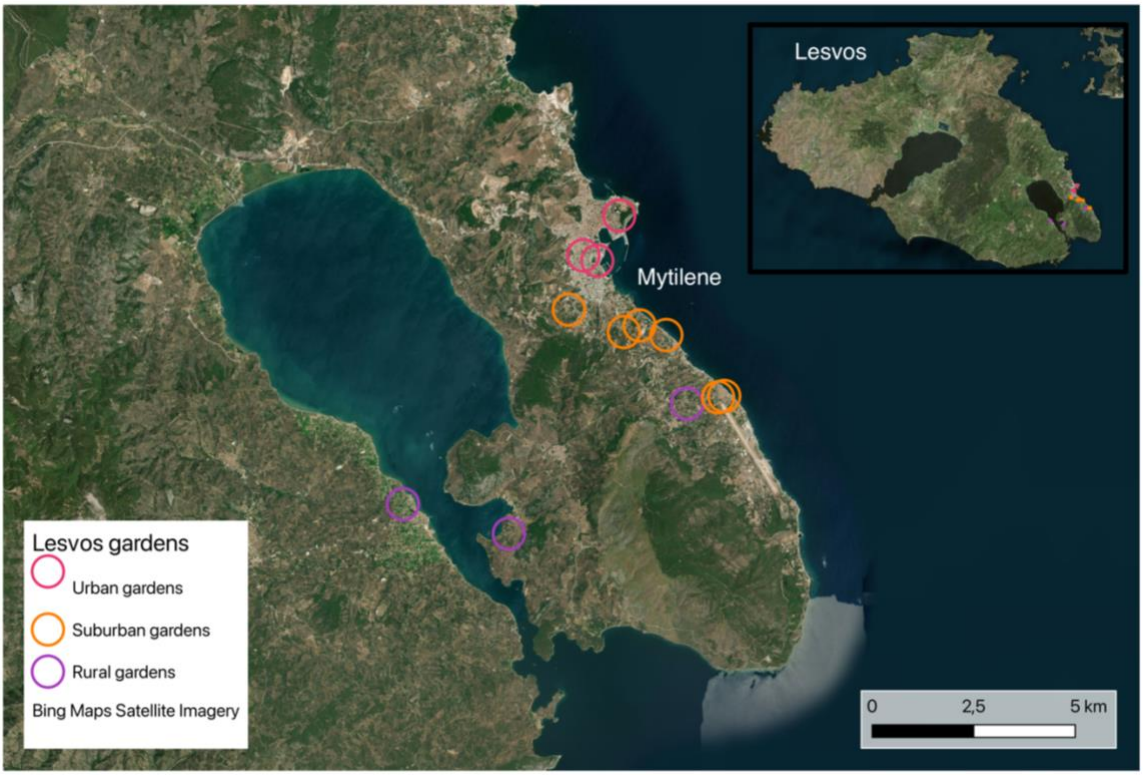

Figure 2. Map of approximate location of the urban, suburban, and rural gardens where interviews took place, close to Mytilene (Lesvos).

Participant recruitment was conducted through referral and snowball sampling, which eases access to the study population. The aim was to sample equally for participants with gardens in urban, suburban, and rural areas, however, it is recognised that these sampling strategies may not pool a diverse or statistically representative sample of participants (Hennink et al., 2020; Mujere, 2016). Recruiting urban gardeners also proved difficult, as potential participants claimed that urbanites tend not to have gardens, and others did not feel comfortable due to the "small" size of their gardens, or the type (potted plants rather than plants in soil on the ground). Due to the timeframe of the project, the selection of gardens/gardeners was cross-sectional (Vogl-Lukasser & Vogl, 2018) to ensure as many participants as possible within the project timeframe, but perhaps not covering such a diverse sample size.

Interviews were carried out in the gardens themselves, following an *in-situ* approach of walking and visiting different garden areas. This methodology is an effective way of researching ethnobotanical practices, uses of gardens, and gardening practices (Power, 2005; Thomas et al., 2007). Interviewing in the garden enhanced the interview, especially walking around the garden, as its physical elements, plants, and spatial features all provided extra stimuli for questions and answers. Additionally, they were also places where respondents felt comfortable. However, three interviews were conducted near the gardens due to mobility issues (two participants), and personal choice (one participant). Semi-structured interviews were carried out with open-ended questions, which allowed participants to guide the conversation and ideas to emerge from their point of view, while staying in line with the research objectives (Clifford et al., 2016; Hennink et al., 2020). An interview guide was prepared using probing questions as prompts (Appendix, Table 2), which explored the following aforementioned aspects of home gardens and gardening:

- descriptive information about gardens
- use/s of plants and plant products (ethnobotany)
- gardening practices
- use/s of gardens
- motivations, gardening preferences, and values.

Garden size, measured in m^2, was either obtained by participants, or in cases where it was unknown, estimated using Google Earth services.

3.1.2 Garden and plant photography

Digital photography has been used in geography research to help interpret physical environments and capture the visual interplay of nature and culture in landscapes (Basil, 2011; Clifford et al., 2016). Photography has been used as a visual data collection method in ethnobotanical studies and is a convenient way of showcasing plant species, their uses and functions in gardens (Thomas et al., 2007). Photographs were only taken following consent from participants, and photos were taken and stored carefully to protect participants' anonymity and that of their homes. However, one participant offered to appear in pictures with his garden, which resulted in a visual image of a gardener interacting with the garden landscape itself (**Error! Reference source not found.**). A combination of a smartphone (iPhone 14) and a digital camera (Olympus TG-7) was used. The digital camera was better for macro photography and the smartphone for landscape photography, but both were used interchangeably depending on the circumstances. Photographs also aid the data collection process as they account for visual aspects of gardens, and they can be referred back to during the analytical cycle.

3.2 Data analysis

A thematic approach was used to analyse the interviews (Clifford et al., 2016; Hennink et al., 2020). For this, interviews were transcribed, and empirical data were analysed manually for patterns and organised into themes. Following this, narratives were created for each garden and gardener following inductive and deductive analysis guidelines. Inductive

analysis involved active and reflective listening (audios) and reading (transcripts) to identify emerging themes, connecting concepts within and across interviews, and making note of repetition. After this, deductive coding was used to determine the main topics developed in the interview guide: garden information, participant information, gardening practices, uses of plants and gardens (ethnobotanical practices), importance of gardening. Functional quotes were also used to mark key passages of text for participant quotes.

Photographs were taken before, during, and/or after the interview, when deemed appropriate, and captured plant varieties, garden landscapes, and uses of these spaces. Following the interview, the images were used alongside the interview data to describe the gardens and their functions. They were also used to identify plant varieties where participants did not mention or know their English or scientific names. Plant names are stated with their local name (if stated) or English common name, as well as their scientific name in italics (when a plant is mentioned for the first time), at least to Genus's level. All citrus fruits are collectively referred to as "*Citrus spp.*" as their specific varieties were unknown.

Narrative ethnography, which combines storytelling with academic descriptions, was used as an approach to present the interview data with personal reflections. Garden descriptions were thus written in the form of vignettes which contextualise the interviews (Clifford et al., 2016). Vignettes contextualise the interviews by combining personal (first-person) narrative, descriptive characteristics, and interview quotations to illustrate a sense of the individual context, moment, time, and place (Clifford et al., 2016), which can enrich the presentation of qualitative findings (Reay et al., 2019). These descriptions also introduce the reader to the gardens and gardeners that are later referred to throughout the thesis.

3.3 Ethics, reflexivity, and positionality

Ethics

Informed consent was a key part of the recruitment and data collection process. Consent for use of interview and photographic data was obtained verbally (as in (Sujarwo & Caneva, 2015)) multiple times throughout the data collection process. Participants were informed of the nature of the project, my connection to the University, and the use of their data prior to the interviews. Careful handling of data, including password protection, ensured participant information was stored confidentially. As some participants wished to remain anonymous, all names were pseudonymised to protect participants' identity, and personal data was removed.

Permission was always asked regarding holding the interview in people's gardens, which sometimes led to being invited into their homes and even being offered food and beverages. In these cases, it was important to be respectful and polite, accepting gifts out of courtesy to continue rapport building. Prior to recording the interview audio and/or taking photographs, consent was always obtained. In one case, a participant offered to be in the picture, and in another, a participant refused to have their voice recorded. In both cases, decisions were respected, and it was ensured they were not treated any differently.

Adaptive methodology and research limitations

My scientific background in biological sciences sparked an initial interest in gardens in relation to their biodiversity and environmental value. A review of literature and academic discussions revealed an array of sociocultural aspects relevant to my area of study. This review led me to settle with an ethnobotanical approach to understand home gardens' uses, functions, and values. Qualitative research was new to me, and navigating data collection in a foreign country was a learning process. Over the interviews, my techniques improved, including my framing of questions, listening skills, and ability to bridge any language and cultural differences. Qualitative inquiries require a reflexive process, and it is often recommended to begin with fieldwork and data collection before arriving at the research question itself (Agee, 2009). Due the project's timeframe, it was impossible to start field work earlier, but this reflection was a learning process itself for future qualitative work.

One of the limitations was the small and uneven sample size, as most interviews were conducted in suburban gardens. This limitation was primarily due to the small timeframe, which allowed six weeks for study site familiarisation and data collection. It also reflected the reality that most gardens were located in the suburbs, mentioned by several key informants. The visual, walking interviews helped accommodate for potential language barriers and the presence of interpreters, but these limitations are still acknowledged. Additionally, due to the period in which data collection took place, most gardens were visited during the end of the winter period and the beginning of spring. Participants mentioned this as a hindrance as most plants had not flowered yet, and many gardeners had not started cultivating food yet. This may have impacted the types of plants talked about, as the appearance of gardens was different. However, it also sparked conversations around climate, flowering periods, and gardening plans for Spring and other seasons.

Challenging assumptions and acknowledging positionality

My aim with this study was to place the gardeners at the forefront, as these define a garden as such. Being a biologist, I had to find a balance between using my strengths in environmental science research and being too positivist. I wanted challenge my frame of reference through a qualitative research project, exposing myself to a diversity of cultural practices and behaviours. Additionally, due to my own experiences in home gardens, I ensured to be careful of any presumptions of what a “good” garden should look like. As a biologist, I automatically think of gardens in relation to their environmental contributions, an inclination I had to contest. Furthermore, my position as a researcher may have also influenced the types of responses given by gardeners based on what they might have thought I wanted to hear, despite my efforts of appearing neutral. For instance, since one of my questions was about whether they spray their plants, they may have assumed that I wanted to learn about organic gardening practices and responded accordingly. However, to reduce this potential bias, other indicators of practices were observed talked with participants (seeing insects on leaves, inquiring about alternative practices) which provided further testimony of their statements.

As a young researcher and native English speaker, I was conscious of the potential influence in power relations due to differences in language abilities. Being aware of this from the start

allowed me to adapt my framing of questions and vocabulary. Interviewing participants in a language that is foreign to their own, or having an interpreter present, may influence researcher-participant rapport and participants' answers. At times, the interpreters would talk of their own experiences; this information was still reflected upon separate to the garden interviews, and I would gently refocus the attention back to the participants. Being a foreigner, however, can also give an "outsider" advantage in observing situations in an objective and neutral way, which can help with information taken for granted locally and may make respondents more comfortable to discuss island matters (Baldacchino, 2008; Naaeke et al., 2011).

4 Results

The results are reported by firstly describing the gardens, gardeners, and plants, using narrations and photographs to set the context of the studied home gardens, and secondly, elaborating on the themes which were an outcome of the interview analysis.

4.1 Gardens, gardeners, plants

An overview of the garden interviews is presented below, including a description of each garden and its gardener (pseudonymised using a false name), alongside photos that showcase the gardens and their elements. A complete list of garden plants and their uses within each garden is provided in the Appendix (Table 2). Of the twelve garden interviews, three were carried out in the urban centre of Mytilene, six in suburban areas, and three were in rural villages close to Mytilene (the furthest was 23km from the city). Descriptive characteristics of gardeners and their gardens are described in Table 1. Gardens are described using ethnographic and narrative reporting, and introduce interview themes, discussed separately.

Table 1. Overview of participants with main descriptive characteristics (area, age group, gender, garden size, primary uses of gardens, and number of reported plants).

Participant pseudonym	*Area*	*Age group*	*Gender*	*Garden size (m^2)*	*Main garden uses*	*Number of plants*
Fotini	Urban	60-85	Female	200	Ornamental, structural	15
Violeta	Urban	60-85	Female	150	Ornamental, food	7
Andreas	Urban	45-60	Male	70	Ornamental, structural	6
Maria	Suburban	30-45	Female	6500	Ornamental, food	35
Apostolos	Suburban	60-85	Male	400	Food, medicinal, ornamental, structural	21
Dinos	Suburban	45-60	Male	3980	Recreation, food, structural, wellbeing	16
Tobias	Suburban	45-60	Male	1100	Food, structural, ornamental, recreation	28
Anastasia	Suburban	45-60	Female	-	Medicinal, ornamental	16

Spyros	Suburban	45-60	Male	300	Ornamental, recreation, structural	19
Panagiotis	Rural	30-45	Male	1800	Food, structural	17
Manolis	Rural	30-45	Male	200	Food, ornamental	13
Lucien	Rural	-	Male	2000	Ecological, medicinal, food	19

4.1.1 Urban gardens

Urban gardens were characterised by the presence of ornamental and functional plants, and plants that had both functions (Figure 13). Their size was also smaller than suburban and rural gardens, but their users maximised this space, complementing it with potted plants on balconies. These urban gardens also served as connections to heritage and individual personal history, containing or connecting to elements from gardeners' past.

Fotini's garden

I am invited to enter the house, and as I go up the stairs towards the apartment, Fotini's son interprets to me how much damage the dog has done to the plants in the courtyard. The courtyard contains a row of "Pyxari" (*Buxus sp.*) shrubs, as well as two conifers and orange trees, which offer shade and protect the courtyard from external view. In the front of the house, "Angeliki" (*Pittosporum sp.)*, an ornamental shrub, decorates the entrance. Fotini complains that the remains of a *Yucca* root persist, taking up space in the ground (Figure 3).

Fotini has lived in this house since 1982, where she enjoys gardening for mental health and aesthetic purposes. She used to be a tailor but being the eldest of 3 siblings she stayed at home and helped in the house and with the garden. Her small urban garden connects her to her childhood village, where their large garden which provided everything that was needed for the kitchen, as well as flowers. Although the plants she grows in the city are different to what they would grow in her village, she has learnt over the years which plants are resilient within an urban context, learning from other gardeners and the local agronomist.

Figure 3. Elements from Fotini's urban garden had structural and ornamental purposes. The image on the left shows conifers and oranges offering shade and protection to the courtyard, and on the right, there is a *Yucca* root taking up soil space.

Violeta's garden

The front of the apartment is characterised by a large *Monstera* plant, potted plants and a *Cycas* palm (Figure 4A and B). There are two rectangles of soil on each side of the front gate decorated with ornamental plants in soil, a geranium overflowing its terracotta pot. Violeta is 84 years old and has lived in this house since 1963. All around her apartment are different-sized aromatic and ornamental plants in pots and soil, maximising the outdoor space (Figure 4C). There are also fruit trees – orange and lemon (*Citrus* spp.) – which grew tall and spilled over the second-floor balcony, right next to the kitchen. The total area of green space around the apartment is approximately 150 m^2. While she said they do not produce much fruit, she kindly squeezed me a glass of juice from her garden's oranges using some of her neighbour's mandarins, served with homemade dessert with lemons from her son's garden.

Figure 4. Ornamental, structural, and food plants in Violeta's inner-city garden. On the left, a large *Monstera* plant at the entrance of the house, and on the right, potted decorative plants and planted fruit trees beside the apartment, maximising use of outdoor space.

Andreas' garden

Andreas and his family used to have a garden of 3000 m^2, but property taxes and urban laws led them to convert most of the land to a housing complex (Figure 5C), deemed more profitable, reducing the size of the garden to 70 m^2. Historically, the area contained a small forest in back, two stone fountains, fruit trees (mandarin, orange, and lemon), an area to cultivate food (300 m^2 that produced seasonal vegetables all year round), farm animals (such as chickens), a patio, and a greenhouse. Andreas says the property was built at a time when there were "*different aspects and different standards*," explaining how gardens were a necessity rather than a hobby, and entire families were involved. The current garden area encompasses a small front lawn with ornamentals, and a larger garden in front of the old mansion where the family used to live (Figure 5A and B). The front garden contains two empty barrel-sized terracotta pots, part of a future project, and several geraniums. The old mansion's garden has a stone fountain that adds to the stately appearance of the garden. He says he will soon "*clean up the garden*" (Andreas) to cut the grass and plant new flowers.

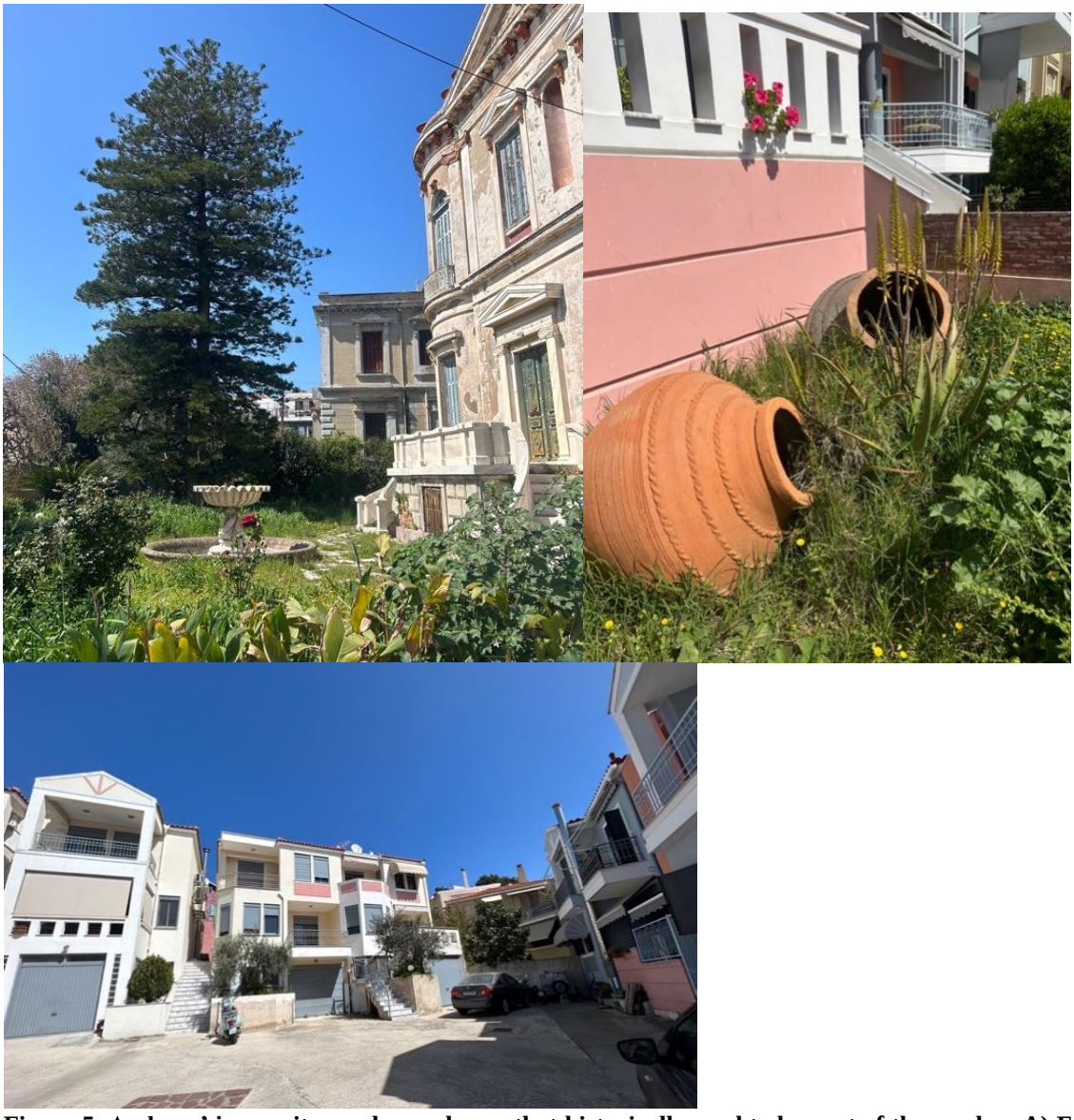

Figure 5. Andreas' inner-city garden and area that historically used to be part of the garden. A) Front garden by mansion with ornamental plants and stone fountain; B) large terracotta plants in garden in front of current house; C) area that used to be part of the garden but has been converted to housing.

4.1.2 Suburban gardens

Suburban gardens are multifunctional spaces, integrating ornamental, structural, and agricultural elements. They are built adapted to their local conditions, and gardening practices include both traditional and modern technology. As with urban gardens, they are spaces of emotional value, providing connection to origins.

Maria's garden

As soon as I arrived at the property, Maria provided me with a complete list of all the fruit and vegetable producing plants, as well as the ornamentals planted in their garden. Maria, 37, lives in the house with her parents and brother and explains how much work her father put into creating the garden as it is now – *"to do the garden, cost more than doing the house"* (Maria). The land was purchased in the 1960s where there used to be a church. Maria describes how her father built into the hill, cutting into the rock to construct the terraced landscape on which the garden lies. At 6,5 *stremmas* (equivalent to 6500 m^2), it was the most extensive garden I saw. At the top there were olive groves (*Olea europaea*), and each level had a row of fruit trees, flowering ornamental trees, and glossy bushes such as "Angeliki" (Figure 6A and B). Close to the house there are flower beds and terracotta pots, and an area of land where, in the summer, a vegetable patch will provide produce for the family. Maria tells me that when they purchased the land, their property was the only one in the area.

Figure 6. Elements from Maria's terraced suburban garden built on a slope. A) "Angeliki", a glossy ornamental hedge, popular in gardens; B) terraces forming Maria's large garden landscape, containing trees and shrubs.

Apostolos' garden

Apostolos took his time to sit with me and explain the dozens of varieties of fruits and vegetables he plants in the garden, for summer and for autumn, and how they are cultivated. His garden is close to the sea and measures approximately 400m^2. It is composed of an

overgrown lawn with herbs where vegetable patch will be created, Apostolos explains. He also tells me about a folkloric song that indicates how broad beans must be cultivated alongside artichokes.

There are several fruit trees (lemon, orange) close to the family houses, and ornamental trees such as "Angeliki" planted close to the fence separating his garden from his neighbour's. Closer to his house, next to an eating area there are a few ornamentals, aromatics, and a succulent from Africa which he dislikes "*because it's not local*". He explains the uses and properties of the wild herbs that appear in the lawn. A water pump was built in the garden when his family moved in, and he explains how they used a dowsing method to water sources at ground level before building the pump.

Dinos' garden

The 3980m^2 family garden surrounds the house in levels of decreasing heights, and is composed of fruit trees, a small olive grove, an area for growing vegetables, a children's playground, and colourful flowerbeds around the house (Figure 7). Fringing the driveway that leads to the house, a row of varieties of lemon and orange trees, protect the property from the road. The playground area is fringed with flower beds, and aromatics used by the household, such as lavender (*Lavandula* sp.), rosemary (*Salvia rosmarinus)*, and mint (*Mentha* sp.). The vegetable patch in the lower-level back garden is located in a sunny area between olive trees. Different varieties of shrubs form hedges, providing protective barriers between two levels. Dinos says it protects his children from falling off this ledge, and he chooses shrub varieties carefully. His father-in-law taught him how to create and love a garden, which led him to build this multifunctional space: "t*his plot when we bought it was like that, like the one next to it… grass and olives, nothing else*" (Dinos). The compost bin, water pump, traditional gardening tools, and automated sprinklers are functional aspects of the garden that combine old and new practices to manage a garden of this size efficiently.

Figure 7. Dinos' garden, located in the suburban area of Mytilene, holds multiple uses and functions: aesthetic, including ornamental, consumption and structural. The image on the left shows decorative, potted plants; and on the right, a row of olive and lemon trees of several varieties provides fruit for the household, as well as decorative and protective functions.

Tobias' garden

This 1100m^2 suburban garden on the fringe of the urban centre is tucked away at the end of a paved trail, sheltering it from a main road, and lending it a less-urban feel. Tobias and his family moved to this house 6 years ago because they liked the land, its greenery, and wanted to move out of the city. The garden underwent a process of transformation. He described the garden as overgrown, "*a complete ruin*" when they moved in – "*a jungle, but not in a nice sense*" (Tobias), that was transformed into a diverse, multipurpose garden. Orange, tangerine, lemon, apricot (*Prunus armeniaca*), and loquat (*Eriobotrya japonica*) trees were inherited from previous owners.

At the entrance of the garden there are geese, turkeys, chickens, and rabbits. In the citrus tree grove, there is a bird hatch on the ground that is moved around to keep grass short and also to feed the birds. An adjacent vegetable plot currently houses a large variety of crucifers (Figure 8), and the back of the house contains several plants of ornamental and cultural significance, that connect Tobias with his country of origin, as well as bees and more food plants. The garden had old water basin for watering animals, which their family turned into a jacuzzi. Additionally, an Ottoman well which pumps water from 18m deep, is used for watering the plants.

Figure 8. Tobias' suburban garden contains food plants and animals. The image on the left shows Tobias with his crucifer vegetable plot, containing cabbages, kale, and broccoli, among others. On the right is an image of Tobias feeding his farm animals.

Anastasia's garden

Anastasia's front garden contains colourful ornamentals (roses, exotic bushes, and potted plants) and a lawn with many wild herbs (Figure 9A). She says she likes letting the grass grow as different plants and animals appear. Her friend helps her manage and identify these herbaceous plants, which have diverse culinary and medicinal uses.

Along the side of the house there are aromatics lavender, and rosemary. The back of the house has a lawn featuring a stone pathway, a laurel plant (*Laurus nobilis*), a designated barbecue area and several newly planted orange and lemon trees (Figure 9B). The trees were

the only purchases for the garden; every other plant was a gift from friends or inherited from the previous owners.

Figure 9. Anastasia's suburban garden contained a biodiverse lawn in the front, and a back garden for recreational and decorative use. The image on the left shows a wild fennel plant growing in the front lawn, and on the right is part of back garden with a barbecue area and citrus saplings.

Spyros' garden

Their family garden is 300 m^2, composed of a decorative and ornamental front garden with a manicured lawn and stonework design (Figure 10A). Spyros is creating more open space in the front for seating and ensures any wild plants growing on the lawn are removed. In the front, a swing and climbing rope installed on a big tree offers a play area for his children (Figure 10B). Surrounding the garden, hedges delimit and protect the garden from the driveway. The side of the house contains a barbecue area beneath a grape vine (*Vitis vinifera*), and an old water pump used for watering the grass. The back garden, managed by his father-in-law, contains citrus trees and vegetables. Spyros explains the rear garden's historic and agricultural significance, where grapes and olives were grown for wine and oil.

Figure 10. Spyros' suburban garden, which has recreational and ornamental use, and is an important place for socialisation with family and friends. A) Ornamental front garden; B) tree with swings.

4.1.3 Rural gardens

Rural gardens have a diversity of plant life and are spaces where food production, personal values, and aesthetics are integrated. The gardens reflect a use of natural and local resources and methods, and gardeners are reflexive over seasonal and ecological considerations.

Panagiotis' garden

The house, albeit nestled between other properties, has a private driveway leading their 1800 m^2 garden which extends all around the house. At the front there is an extensive vegetable plot with winter greens where his father is working, and behind the house is a separate area for summer vegetables, currently not in use (Figure 11). On the house terrace, elevated above the garden, there are ornamental cacti and other potted plants such as *Schefflera*, cared for by his mother (Figure 11D). Adjacent to the house there is an orchard with citrus and other fruit trees, which produce fruit but are also decorative, provide wood, and protect the property from wind and sun. A couple of conifers delimit the end of the property, and small stream makes a barrier between their land and olive groves.

Figure 11. Panagiotis' garden in a rural village close to Mytilene. Image A) plot which will be used in the summer for planting vegetables; B) orange and almond trees, planted for food, beauty, and structural purposes; C) ornamental plants on the balcony.

Manolis' garden

His family garden is 200 m^2, and contains a lawn, a large area for growing produce, grape vines, and an olive grove. His wife talks about the ornamental plants that they brought from their place of origin, some of which are exotic plants which have structural as well as decorative purposes. For instance, a hammock was placed between palm trees. Manolis says that right now, there is not much to see, but in the high season, they grow hundreds of fruits and vegetables, which they share with friends and family. They also use aromatic plants with medicinal properties and culinary value that grow wild in their garden.

Lucien's garden

Lucien and his partner live on a property of about 2000 m^2. Their house and garden are intertwined, with an outdoor toilet, washing, and dining area made with live trees and wood (Figure 12A). The area used to be an olive field but since moving in Lucien has added many more plants to create a naturalistic garden, aiming to increase the number of plants and animals. The garden contains the greatest number of varieties of plants observed across all gardens, including fruit trees, flowering shrubs and bushes, ornamentals, and a small plant nursery, wildflowers (including some rare orchids), herbaceous wild plants of culinary and medicinal use, and a vegetable plot with cultivated and wild vegetables (Figure 12B; C; D).

Figure 12. Lucien's naturalistic rural garden, which had ecological, recreational, and medicinal purposes. A) A natural outdoor toilet, created with natural elements; B) flowering shrub planted alongside others to create a biodiversity-friendly fence; C) plant nursery where Lucien is propagating cuttings for the garden and to gift to friends; D) vegetables and aromatics planted for personal use.

Informal conversations with key informants

Stavros was one of the interpreters and he also revealed useful information about sociology, urbanisation, and culture of Lesvos. Thanos was a key plant nursery owner in Mytilene who offered insights on popular varieties of plants cultivated in urban areas, as well as their uses, symbology and meaning, and their resistance to climate, pests, and diseases. The findings from both conversations will be discussed alongside the main themes in the next section.

4.2 Multifunctionality of plants and uses

"for the fruits, for the beauty, for the protection [from] weather conditions…"
(Panagiotis)

This quote from Panagiotis, rural gardener, reflects this multifunctionality of gardens through the diversity of ethnobotanical practices and cultivation of plants for different purposes – consumption, aesthetic, and structural. Panagiotis talked about their almond trees, which offer a modest number of nuts, and are mostly appreciated for their flowers. The same was said about fruit trees by other participants; they produce fruits for consumption but also protect against wind and sun, act as fences, and add beauty to the landscape. Orange and lemon trees, present in nearly all gardens, represent cultural metaphors of this multifunctionality. As the plant nursery owner pointed out "*everyone has lemon and orange, even if they are not eating"* (Thanos), and participants explain their reasons for planting these trees being for food, as much as for cultural, aesthetic, and structural reasons.

Below is a Venn Diagram of cultivated plants that gardeners talked about during the interviews to showcase their multifunctionality. They organised by their main uses (consumption, structural, and ornamental). The number in brackets indicates the total number of plants with that use across all gardens, in total 96 (Figure 13). A full list of plants and their uses across all surveyed gardens is provided in the Appendix (Table 3).

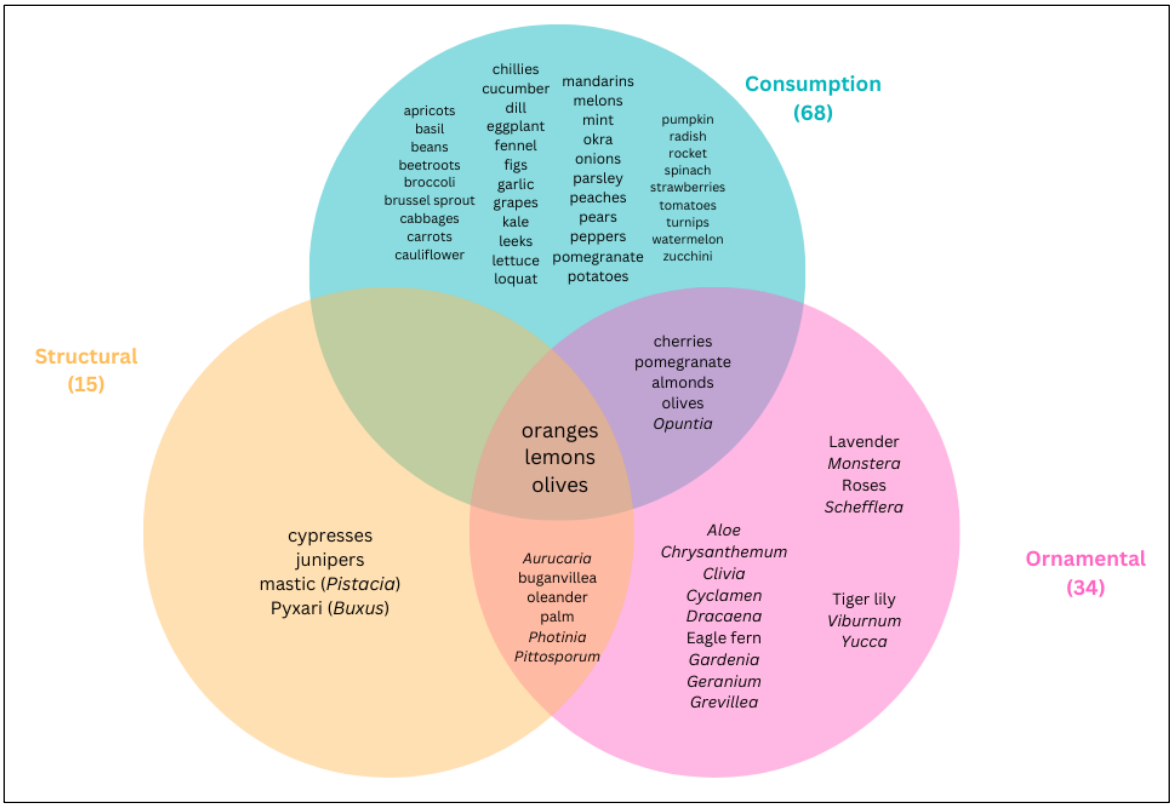

Figure 13. Venn Diagram representing uses of plants across gardens, showcasing their overlapping functions: structural, consumption, and ornamental.

A large proportion of plants are used for consumption, including fruit trees, vegetables, aromatic plants, and herbs, which reflects the importance of these gardens for food

production. The levels of overlap between uses, particularly consumption-ornamental, and ornamental-structural, reflect the multiple purposes of garden elements as well as value of certain trees and shrubs, highlighting the role of beauty in plant selection. Oranges, lemons, and olives are important trees as they can provide all three functions (structural, consumption and ornamental), likely due to their socioeconomic importance in Lesvos and Greece.

This multifunctionality also reveals an array of Ecosystem Services, which showcase their potential human and ecological benefits. For example, gardens provided products for consumption and had positive impacts on health and wellbeing. Some gardens also provided ecological services such as pollination and soil erosion control or had recreational and spiritual value. A full list of the provisioning, regulating, and cultural and aesthetic services among home gardens is in the Appendix (Figure 16).

4.3 Connection between food and personal values

Food production was a central point among gardens in Lesvos, as exemplified by the described ethnobotanical uses of gardens focused on agricultural plants. Rural and suburban gardens all had a dedicated space for growing fruits and vegetables (such as tomatoes, potatoes, onions) as well as fruit trees (particularly lemon, orange, and olive). Urban gardens were on average smaller, yet still contained some key plants for food production, such as orange and lemon trees, and aromatic plants. In one interview, the interpreter mentioned, "*In the city [gardens] have two functions. One is the ornamental function. The other is for the table*" (Stavros). This showcased that, while ornamental plants were prevalent among the urban gardens, agricultural plants still played an important role.

The main gardening preferences and values regarding food production were, 1) the avoidance of pesticides or plant products, choosing to grow fruits and vegetables organically; 2) the local and cultural importance of certain food plants, such as citrus fruits; and 3) the act of sharing home-grown produce with the community.

4.3.1 Organic gardening

When talking about food production in their garden many participants refer to organic gardening methods, and express distrust towards imported produce found in supermarkets. A quote from Manolis reflected this motivation to garden:

> *"[…] to have a better quality of vegetables instead of buying from a supermarket that you don't know what pesticides they use"* (Manolis)

Maria talked about her love of organic food, also emphasising the difference in quality of home-grown vegetables compared to the same produce bought from supermarkets: *"I'm telling you, it's a very different taste…"* (Maria). She complained about the quality of fruits and vegetables such as tomatoes and basil, from supermarkets and even restaurants, their lower quality reflected by their colour, and thus prefers the produce from her garden. She even recalls how while she was at university in mainland Greece, her mother would send her boxes of fruits and vegetables from her garden to ensure she was eating food of quality.

Most gardeners expressed a sense of mistrust or reticence towards spraying their plants. Rather than using commercial herbicides or pesticides, gardeners used nylon nets to control weeds, made homemade ethanol and soap sprays, or planted aromatics near food plants to avoid pests. Dinos expresses his reasoning for not using products on his orange trees:

> *"I was afraid of using, uh, fertilisers … [of] spraying in order to protect them, because then I'm going to eat them, so I don't want to intervene at all, zero intervention* (Dinos)

Many gardeners use manure in place of buying soil fertiliser, and Dinos and Panagiotis let fallen fruit serve this purpose too. Panagiotis feels strongly about how using commercial chemicals can affect the quality of fruit. He talks about his personal choice of not using fertilisers and sets this in relation to the practices of other gardeners who want to increase their yield. Taking a philosophical stance of minimal intervention, he accepts the outcome of the tree's crop production, preferring quality over quantity:

> "*some gardeners that I know, they put too many fertilisers. And some others, like us, they do not. […] If [someone] wants to have too many fruits, [they] will put more fertilisers and this. If [they] want to have good fruits, with no fertilisers or other chemicals, [they] will let it like this and take what the tree gives him*" (Panagiotis)

4.3.2 Cultural importance of fruit trees

Oranges and lemons were ubiquitous in all gardens – sometimes they weren't even mentioned because they were considered such an obvious part of a garden. As mentioned above, lemons and oranges were planted in nearly all gardens, and in all urban gardens, and their uses extend beyond the fruit they produce. As expressed by the nursery owner *"everyone has lemon and orange, even if they are not eating them"* (Thanos), due to their cultural role in Greek cuisine and cultural relevance, as well their multifunctionality (Figure 14). Tobias shares this sentiment, expressing the important role oranges play in his diet:

> *"Oranges are very important to me, so when I eat the last one in June, I can hardly wait until October when the new ones come"* (Tobias)

Figure 14. Citrus fruits were ubiquitous across home gardens and served different purposes.

Olive trees are also respected trees and considered important and sacred. As one participant points out, olive "*has a positive goal […] it gives you balance,"*, which reflects the key role olive trees play in the landscape, evoking a sense of peace and natural harmony. He also states that *"it's the present of god… no matter who god is*" (Andreas), which reflects the sacred role that this tree has to gardeners. Olives were usually mentioned across interviews, whether they were present in their garden or not. Thanos emphasises this in relation to the symbolism of olive trees in Greek mythology, associated to wisdom, with crown of olive branches (olive wreath) also symbolising victory. Despite having dozens of varieties of plants in his plant nursery, sociocultural traditions lead people to gravitate towards purchasing these trees.

Gardens reflect the importance of agriculture in Greece, as many participants talk about them as extensions or reflections of their (larger) rural estates. They are thus important spaces of knowledge transmission, where food traditions can remain even in urban areas. Many gardeners reported learning by observing their parents or grandparents. These are also spaces where traditional ethnobotanical gardening practices (especially fruits, vegetables, and aromatics) linked to Greek traditions, are taught, and learnt. For example, the folkloric song mentioned by Apostolis, indicates that broad beans must be planted next to artichokes. Suburban gardener Dinos grew up in a big city but learnt about gardening from his father-in-law, who taught him about seasonal vegetable production, sustainable gardening methods, and traditional practices.

4.3.3 Sharing among gardeners

The quote "*it's a good thing also to have something to give to the other*" (Manolis) reflects the importance of generosity and sharing with the community, the social value of having something to gift to your neighbour or friend, which can help strengthen bonds.

Maria links offering food with Greek culture in her quote, which reflects the sense of community from sharing gardening produce:

> *"we [phone] call... do you want potatoes? Yes, bring me potatoes - That's what we do in Greece […] and they also bring us things"* (Maria)

All garden owners that produced food stated that any extra produce is shared with neighbours and friends. Panagiotis says any extra fruit they share with the community, and give it to friends as a gift, especially to those who do not have a garden [note: a bag full of oranges was given to me by his father, following the interview]. Apostolos, Dinos, and Tobias, suburban gardeners, also share extra produce with family and friends. Even in urban gardens, where the space is smaller and food production lower, Violeta talks about giving away extra lemons and oranges to friends. This shows that, regardless of the size or number of cultivated plants, food sharing was still important. In addition to fruits and vegetables, gardeners also shared gardening knowledge, plants and seedlings, and gardening tools.

4.4 Mirrors of personal preferences and values

"*you can make what you want in your garden… a Buddha garden, a fairy garden […] it's a magical space*" (Lucien)

The above quote reflects how gardens are canvases for creativity, joy, and individual expression. Every home garden was unique in its way, and while food production was a central function across gardens, the personal, social, and cultural values of its gardener emerged through the interviews and were observed visually through its uses. Tobias talks about how when they lived in the city in a block of flats, they shared a courtyard with neighbours, but it did not feel private which caused them not to use this space. This reflects the personal nature of garden spaces and the importance of agency over the use and access to these spaces.

Individual and sociocultural gardening practices and motivations are also reflected in the types of plants present in their gardens, and their uses. For instance, choice of planting olive, lemon, and orange trees is intricately linked with sociocultural and place-based values, which is restated by Tobias' choice to plant vegetables common in his country of origin. Spyros prefers keeping the grass in the front lawn short and aims to create a large open space for sitting. This reflects a preference towards tidiness, as well as a recreational and aesthetic use of his garden. Lucien replants cuttings taken from the wild and propagates seedlings in his garden (see Figure 12C) and aims to increase the number of plants growing naturally and expresses a preference towards a more biodiverse and naturalistic garden. Gardeners thus design their gardens according to their personal preferences and values.

4.4.1 Ecological and naturalistic

Personal environmentally conscious values also shaped the creation of ecological and naturalistic garden landscapes. For one rural gardener, the objective of his garden is to create an area that was "*biospheric*" and would "*rescue biodiversity*" (Lucien). He is making a fence out of sturdy shrubs such as *Viburnum sp*., and Mastic (*Pistacia lentiscus*) to create a haven for pollinators and birds, and also built mounds of dried plant material to provide wildlife habitats and increase the biodiversity in the area where he lives. Creating the live fence was the most important gardening project to him and has been a success so far: "*when I arrived, I only saw one bird; now I hear hundreds*" (Lucien) (see Figure 12). This garden has therefore had a positive contribution towards biological diversity in the area.

In terms of motivations behind pesticide-free gardening practices, some gardeners also do this for environmental reasons. Several rural and suburban gardeners let their lawn and vegetable patch grow wild intentionally, to attract pollinators. Anastasia enjoys seeing the wildflowers that appear on the lawn and the butterflies that visit the garden, and Tobias lets vegetable plants flower on purpose to attract pollinators, particularly crucifers which are "*quite loved by bees*" (Tobias).

4.4.2 Social and recreational

"*In a few weeks the weather will be better, everybody will be out in the garden… the kids will play out, we will stay out, we'll have coffee down there, we'll have barbeque there […] Most of the life in the house, let's put it this way, is going to be out in the garden*."
(Spyros)

In this quote, Spyros describes the importance of the garden space for holding social events and spending time with family, particularly when the weather gets warmer at the start of spring. He describes how household activities such as eating and spending time with his children will be held in the garden (see Figure 10A) and is creating an open garden area by pruning hedges, removing weeds, and tidying the lawn.

Home gardens, albeit private spaces, can also be spaces of socialisation, due to the sharing of food and knowledge which can create a sense of community. As well as being spaces where social events physically take place, gardens can foster the creation of new social networks. Most participants described the social relevance of plant nurseries and networks of gardeners. For example, urban gardener Fotini recalls going to the agronomist to buy plants and talk to other gardeners: "*it's like going to the church*" (Fotini). A love for gardening can also foster cohesion among suburban gardeners: Maria's father exchanges local varieties of seeds with friends in the village, and Anastasia received most of her garden plants as gifts from friends. A rural gardener also shares the sentiment of giving seedlings (see Figure 12C) to friends: *"plant babies make great gifts*" (Lucien).

4.4.3 Connection to nature and land

"*our grandfathers used to […] have a garden in order to eat and now you just do that in order just to pass your time and have a better quality of vegetables*" (Manolis)

Manolis discusses the shifts in uses of gardens, but also describes them being spaces to connect to traditional land-use based livelihoods. Among most participants there is a deep care for the environment, and gardens are spaces where they find they can (re)connect to land. As well as being spaces for recreation and wellbeing, they are also places of connection to nature on a spiritual and philosophical level. The following statements further reflect the use of gardens as spaces to connect to the earth, and to be alone with nature:

"I like being near the earth" (Anastasia) "*it's me and nature, nobody else* (Andreas)

Furthermore, gardens can help learn about the environment, creating a deeper connection to biological and natural processes. Dinos, a suburban gardener, learnt about nature and seasonal food production through gardening, talks about gardening as a way to cultivate responsibility among his children, where they can learn to take care of a living being:

"*They feel the existence and the non-existence […]*
this will make them more responsible." (Dinos)

This quote from Dinos reflects a spiritual and existential reason for nurturing plant life in the backyard, as well as the importance of cultivating values of responsibility of care.

4.4.4 Canvases of self-expression

The multifunctionality of garden landscapes reflect their role in being places of expression of personal values. From naturalistic and ecological, to recreational and social spaces, but with a common role in food production, home gardens can be created and shaped based on their gardener's needs and preferences. Uses of plants, gardening preferences, and practices, are intricately linked to the personal background of the gardener. In both a physical and metaphorical way, these home gardens provide oases, and resemble islands. They are bounded places yet connected to their environmental context and shaped by its inhabitants (gardeners). The theory and concept of gardens as islands will be reflected and expanded upon in the Discussion section.

Altogether, the studied home gardens were important for food provisioning, and also had structural, aesthetic, cultural, symbolic, and ornamental value. The gardens also had environmental contributions, highlighted by gardeners with ecological and naturalistic preferences. They are spaces that are shaped by people through functions and uses, but also, in turn, influence people by providing a connection to nature and personal values.

5 Discussion

Home gardens are private spaces where people can connect to the natural world in their own way. Gardeners on Lesvos shape and define their gardens, and the way they use these spaces is intricately linked to their individual preferences and backgrounds. They are expressions of identity, shaped both by the local environment and context, and the functions and uses the gardeners give them, resulting in unique landscapes. This garden-gardener duality also mirrors the distinctiveness of islands and islanders. Home gardens also reflect broader changes on the island, impacted by urbanisation, globalisation and land use change. However, home gardens can act as oases for preserving of agricultural diversity and cultural values, providing spaces where people can connect to their identity and sense of place.

5.1 Gardens as reflections of identity

"you can make what you want in your garden […] it's a magical space" (Lucien)

The above quote reflects how gardens can be canvases for creativity, joy, and individual expression. The multifunctionality of gardens and flexibility in how the landscape can be shaped adds to its personal importance, reflecting gardeners' personal needs, values and backgrounds (Swanwick, 2009). Gardens are thus significant places for expression of personal and cultural identity.

Home gardens are landscapes shaped by physical, biological, social, and cultural elements (Rescia et al., 2012), shaped by people and their local environment. The relationship is highlighted by the way trees and bushes are planted according to the landscape. For example, Maria's garden is located on a sloped environment, which required her to cultivate plants in a terraced farming (a typical Mediterranean agricultural practice) to plant fruit trees. This human-environment relationship showcases the way home gardens are cultural landscapes (Gerodetti & Foster, 2016; Greenberg, 1996; Rescia et al., 2012). They are everyday spaces that are embodied with all senses, constructed and shaped by individual preferences (Gerodetti & Foster, 2016). For example, the presence of hedge-forming shrubs may have decorative purposes in some gardens, while in Dinos' garden, they also form a protective barrier to his children's play area. Relational values focus on the meaningful relationships that people develop with their gardens. These can reflect a gardener's personal needs and values through individual design and management choices (Hale et al., 2011).

Garden design is also shaped by personal aesthetic and social values (Power, 2005). For instance, Spyros' aims to create more open space, removing weeds and managing the lawn, while Anastasia prefers to let the grass grow to have a diversity of wild edible plants. These garden style preferences can reflect neighbourhood styles and social norms (Lewis et al., 2018), or relate to aesthetic preferences for structure (van den Berg & van Winsum-Westra, 2010). They may also mirror personal values and environmentally positive practices (Uren et al., 2015). Gardening can nurture individual agency by reflecting gardeners' personal and sociocultural preferences (Gross & Lane, 2007; Power, 2005).

In gardens, sociocultural values can be reflected in structural elements, which combine symbolism and meaning, with use and functionality (Farahani et al., 2016) [Figure 15]. This is exemplified by the fruit trees planted across urban, suburban, and rural gardens which had multiple functions: "*everyone has lemon and orange, even if they are not eating"* (Thanos). Oranges, lemons, and olive trees are trees of agricultural, economic, cultural and symbolic importance in Greece and the Mediterranean (Duarte et al., 2016; Haniotou & Dalipi, 2018; Helstosky, 2009). Gardens can contain elements of symbolism in religion, philosophy, literature and poetry (Farahani et al., 2016; Hosseini & Caneva, 2022). This reflects how sociocultural and contextual values that shape landscapes can form an important part of cultural identity (Haniotou & Dalipi, 2018), which is in turn reflected in private gardens.

Figure 15. Image of olive grove in Dinos' garden, a part of his garden that resembles what that area used to look like. Olive trees have economic, cultural, symbolic, and ecological functions.

5.2 Gardens as islands

Gardens are unique and self-contained environments, microcosms of nature, and places where cultural traditions and practices can be preserved (Kono, 2018). They can resemble islands on a physical and sociocultural level (Poulsen et al., 2014), due to their spatial boundedness and uniqueness (Baldacchino, 2004) and could thus inform on theories of islandness.

As **physical** landscapes, home gardens are spaces that are both bounded and connected, resembling islands (Baldacchino, 2004; Foley et al., 2023). They are shaped by internal processes, such as gardening practices; and external elements (climate and species dispersal). Home gardens are markedly different to their surroundings, forming microenvironments (Guarino & Hoogendijk, 2004). Ecologically, they may contain different species assemblages than their surroundings, shaped by their isolation and individual gardener behaviours. For instance, Lucien's naturalistic and biodiverse garden surrounded by olive groves resembles an island containing unique plants in that area.

The **sociocultural** values that arise in gardens and gardening, such as kinship and generosity, are also akin to those among islanders (Foley et al., 2023). This is exemplified by the culture of food sharing among gardeners, which contributes to a sense of community. While some participants refer to this a Greek characteristic, it may also reflect a cultural reproduction of values present among island communities (Foley et al., 2023; Pungetti, 2012). Gardens may mirror the way informal networks and social capital play a role in maintaining communal

bonds and improving sense of belonging. For many islands, sense of place derives from a cultural identity that is tied to local networks and social structures (Groome Wynne, 2007).

At the same time, gardens are also **personal** and private places, which provide autonomy over its value and design. Home gardens can provide people with a choice over food cultivation methods (Diekmann et al., 2020), and are places of solitude and reflection; thus, providing a diversity of ways to spend time in nature. Places shape people at the same time that people shape the places in which they live (Ingold, 2021), contributing to a sense of place. Gardens contribute to a sense of place and belonging, with each garden reflecting the unique context of its environment and the identity of its gardener. This sense of place and garden identity is not dissimilar to island identities. Islands and islanders, as are gardeners and gardeners, are inseparable dualities, each one defined by the other (Pungetti, 2012).

Garden, like islands, are microcosms containing complex **socioecological** systems and can be lenses to study the intersection of nature and society (Craig, 2022). Islands are often studied in relation to mainland contexts with regard to a static condition of islandness (Baldacchino, 2020). However, islands, as gardens, are dynamic and everchanging landscapes. This contrasts with the concept of gardens as "havens" for nature and culture amid change, but points towards the notion of gardens as live oases, as dynamic spaces that support an ever-evolving connection to nature and identity.

Based on their importance to the interviewed home gardeners, gardens can be oases amid global change, providing personal wellbeing, better quality produce, sanctuaries of peace, as well as connection to nature and culture. Garden studies can thus contribute to and inform island theory, unravelling the complexity of islandness (Foley et al., 2023).

5.3 Changing trends in gardening

> "*our grandfathers used to farm… to have a garden in order to eat and now you just do that […] just to pass your time and have a better quality of vegetables*" (Manolis)

The above quote reflects the generational changes in uses of gardens and farming systems, shared by a rural Lesvos gardener. Gardens have transitioned from being necessary for subsistence, to becoming places of leisure and choice in food production. This transformation may also be indicative of broader shifts in agricultural practices on the island influenced by demographic and economic changes (Kizos & Koulouri, 2005). Such changes are common on islands due to the increased availability and access to imported foods (Guell et al., 2021), showcasing how global economic policies can impact local land use practices (Kizos et al., 2010; Kizos & Koulouri, 2006). Despite these shifts, home gardens remain vital for preserving traditional methods and tools, particularly among older gardeners in urban and suburban areas who value maintaining these traditions. Thus, gardens serve as important links between urban and suburban landscapes and the preservation of traditional land use knowledge and practices (Karpodini-Dimitriadi, 2009).

Urbanisation is another significant driver of change affecting natural landscapes, including those on Lesvos (Miles, 2022; Plieninger et al., 2015). This is evident in the expansion of

housing in urban and suburban areas, such as in Mytilene, where land use changes have led to the clearing of surrounding farming area for housing (Kizos et al., 2010). Political, economic, cultural, technological, and environmental factors, along with EU policy and spatial planning, contribute to these transformations (Pavlis, 2017). For instance, Andreas' garden was reduced to just 2% of its historic size due to maintenance costs and urban policy demands for housing space. Urban gardeners utilise potted plants, and plant nurseries offer dwarf olive trees suitable for apartment balconies. This reflects both a shift in gardening practices to adapt to urban constraints, and also a defiance of the built environment, which highlights the affinity people have towards plants (Snyder, 2024). In urbanising areas nurturing a connection to land through gardening can be important for sense of place and collective identity (Hou, 2017; WinklerPrins, 2002), particularly important in island communities (Foley et al., 2023).

The urban proximity gradient also explains similarities and differences in garden landscapes and uses. Urban gardens can be constrained by space due to housing and population density (Loram et al., 2008). Urban gardeners on Lesvos preferred functional and decorative plants, while suburban gardeners, having more space, used their gardens for multiple purposes including food production, recreation and aesthetic. These inclinations may also reflect the socioeconomic backgrounds of their owners, with suburban gardeners more often engaging in gardening as a leisure activity (Schupp & Sharp, 2012). In contrast, rural gardeners, with ample space, focus more on food production and maintain a closer resemblance to traditional agricultural landscapes. Thus, the urban gradient influences garden size and the socioeconomic context of gardening practices, reflecting broader societal change.

5.4 Future directions

The ecological and human wellbeing benefits of home gardens near Mytilene, Lesvos were highlighted by the ecosystem services (Figure 16) they contribute towards environmental and human wellbeing. With agriculture becoming more intensified, home gardens with their associated varieties of plants could act as islands of agrobiodiversity conservation (Santos et al., 2022) and overcome the homogenisation of nature and cultural practices (Kono, 2018). These spaces may thus contribute towards sustainable development on islands such as Lesvos, fostering food production traditions and connection to nature.

This study contributes towards a baseline of knowledge on the practices and preferences among gardeners in urban, suburban and nearby rural areas in the Greek island of Lesvos. It is acknowledged that this study only encompasses a fraction of garden landscapes on Lesvos and is not an exhaustive study. However, these findings highlight the importance of analysing the local context and individual motivations to understand place-based gardening. Further research could build upon this thesis by recruiting a greater sample size and more diverse range of participants. A mixed methods approach, including ecological surveys or quantitative mapping of socioeconomic backgrounds could complement and deepen the knowledge of gardening practices in relation to the environment. This research has also been a starting point for the study of gardens as islands, which opens exciting avenues for further

research in the field of islandness, such as comparative island garden studies, and further research into the connection between gardeners and islanders.

5.4.1 Policy recommendations

The ecosystems services that gardens provided underscored the contribution of urban gardening activities like composting, tree planting, and organic gardening which can further support ecological services. Encouraging urban and rural gardening can also bridge the gap between people and nature, providing settings for environmental education (Plaka & Skanavis, 2016) and opportunities to connect to nature in different ways. Since gardens can enhance health and wellbeing, it would be beneficial to integrate more natural elements into the urban landscapes. Community allotments are co-managed and therefore easier to maintain, which may provide an alternative to private garden in urban areas (Haniotou & Dalipi, 2018). To bridge the gap between urban allotments and community members who are less familiar with gardening, schools and workplaces could allocate time, and resources for people to have places where they can keep and cultivate plants.

All gardens are different, which highlights the importance of urban planning policies in supporting a diversity of practices to enhance community wellbeing. This is especially important in light of the new and diverse communities living in Lesvos (Petropoulou et al., 2019). This can and should be applied to community gardens and allotments, which should be designed in a way to support a diversity of practices and traditions. Understanding gardening preferences is crucial to creating programs that connect people to nature in urban green areas while representing the community's interests (Teuber et al., 2019).

Participants mention constraints such as time and money, which highlights the need in improving access to these spaces, by providing funding, and creating more opportunities for gardening. Green planning policies should aim to support a variety of practices and encourage gardening workshops for knowledge-sharing. To promote gardening, policies should aim for educational opportunities as well as improving access to gardening (Plaka & Skanavis, 2016), and could help inform on local and sustainable gardening practices such as composting and local plant uses. Government subsidies for gardening materials, funding community garden allotment projects, and providing municipal aid in vegetation waste management could further help reduce barriers.

6 Conclusion

This thesis highlights the multifaceted role of home gardens on Lesvos. The studied home gardens were **multifunctional** spaces that not only served practical purposes such as food production but also embodied the cultural, ecological, and social values of their gardeners. Gardeners thus express their personal and sociocultural identities in these spaces, which illustrates the intricate relationship between people and their environment. This **mirroring**

between gardeners and their gardeners can help with the construction of sense of place and belonging, as well as cultural continuity.

Gardens can also resemble **islands** in their unique identity, spatiality, and socioecological processes, as they are bounded yet connected spaces that foster social cohesion. Similarly, gardeners resemble islanders, reflecting similar social values such as kinship, care and generosity towards the gardening community. Furthermore, maintaining connection can be important for small island communities, especially those undergoing processes of demographic, economic, and urban change.

The ecological and societal **value** of gardens is highlighted by their contribution to health and access to food, as well as wellbeing, connection to nature, and sense of place. Thus, **policy** recommendations emphasise the importance of supporting diverse gardening practices by providing funding and access to gardening space. Furthering our knowledge of these spaces can help understand how these human-nature connections can be sustained amid global change.

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Appendix

Table 2. Interview guide with probing questions used to carry out qualitative semi-structured interviews with gardeners.

1. Inform and consent

2. Introduction and background
- Can you tell me a bit about yourself? And your garden?
- How long have you lived here / been gardening here?
- When did you start your garden? And how?
- How big is your garden, do you know? (in m^2, stremmas or acres)

3. Plants and uses

- Can you tell me a bit about the [trees/flowers/fruits/vegetables] you have in your garden? (refer to plants observed in garden)
- How do you use them? (cooking, medicinal…)
- And if you have any extra, what do you do with them?

4. Gardening practices:
- How often do you garden?
- Do you let any parts of the garden grow wild intentionally? If so, why?
- Do you spray, or use any fertilisers/pesticides?
- Where do you get your seeds/seedlings/plants from?

5. Values, connection and preferences:
- Why is gardening important to you?
- Can you share any stories, or traditions, or memories from the garden?
- Have you shown/taught anyone to garden?

Table 3. List of plants and their uses, mentioned by gardeners in urban, suburban, and urban gardens in Lesvos. The plant names in italics are scientific names (Genus level), and those underlined are local/Greek names, mentioned by participants. For the rest, common names are used they mainly refer to cultivated fruits and vegetables and thus the scientific and local names can vary.

Interview	***Plants***	***Uses***	***Area***
Andreas	*Araucaria*	structural/ornamental	urban
Andreas	fennel	consumption	urban
Andreas	geranium	ornamental	urban
Andreas	Leyland cypress	ornamental/structural	urban
Andreas	olives	consumption/ornamental/structural	urban

Andreas	roses	ornamental	urban
Fotini	angeliki/*Pittosporum*	ornamental	urban
Fotini	Apricots	consumption	urban
Fotini	*Araucaria*	ornamental	urban
Fotini	*Bougainvillea*	ornamental/structural	urban
Fotini	*Cyclamen*	ornamental	urban
Fotini	Eagle fern	ornamental	urban
Fotini	Juniper	structural	urban
Fotini	Lemons	consumption/ornamental/structural	urban
Fotini	Oleander	ornamental/structural	urban
Fotini	olives	ornamental/consumption	urban
Fotini	oranges	consumption/ornamental/structural	urban
Fotini	*Photinia*	ornamental/structural	urban
Fotini	Pyxari/*Buxus*	ornamental/structural	urban
Fotini	Tiger lily	ornamental	urban
Fotini	*Yucca*	ornamental	urban
Violeta	*Clivia*	ornamental	urban
Violeta	*Cycas* palm	ornamental	urban
Violeta	*Dracaena*	ornamental	urban
Violeta	lemons	consumption/ornamental/structural	urban
Violeta	*Monstera*	ornamental	urban
Violeta	Oranges	consumption/ornamental/structural	urban
Violeta	Roses	ornamental	urban
Anastasia	Australian bottle tree	ornamental	suburban
Anastasia	conifers	ornamental/structural	suburban
Anastasia	dandelion	consumption/medicinal	suburban
Anastasia	dill	consumption	suburban
Anastasia	dock/*Rumex*	consumption/medicinal	suburban
Anastasia	fennel	consumption	suburban
Anastasia	*Grevillea*	ornamental	suburban
Anastasia	kafkalithra/hartwort	consumption	suburban
Anastasia	lavender	medicinal/ornamental	suburban
Anastasia	lemons	consumption/ornamental/structural	suburban
Anastasia	*Monstera*	ornamental	suburban
Anastasia	Oranges	consumption/ornamental/structural	suburban
Anastasia	*Plantago*	consumption/medicinal	suburban
Anastasia	rosemary	consumption/medicinal	suburban
Anastasia	roses	ornamental	suburban
Anastasia	thistle	consumption/medicinal	suburban
Apostolos	*Aloe*	ornamental/medicinal	suburban
Apostolos	borage	consumption	suburban
Apostolos	cauliflowers	consumption	suburban

Apostolos	dyosmos/spearmint	consumption/medicinal	suburban
Apostolos	eggplants	consumption	suburban
Apostolos	flower bulbs	ornamental	suburban
Apostolos	fresh garlic	consumption	suburban
Apostolos	fresh onions	consumption	suburban
Apostolos	geranium	ornamental	suburban
Apostolos	grapes	consumption	suburban
Apostolos	green beans	consumption	suburban
Apostolos	lettuces	consumption	suburban
Apostolos	melons	consumption	suburban
Apostolos	okra	consumption	suburban
Apostolos	onions	consumption	suburban
Apostolos	peppers	consumption	suburban
Apostolos	pumpkins	consumption	suburban
Apostolos	rocket	consumption	suburban
Apostolos	tomatoes	consumption	suburban
Apostolos	turnips	consumption	suburban
Apostolos	watermelons	consumption	suburban
Dinos	*Aloe*	ornamental/medicinal	suburban
Dinos	flower bulbs	ornamental	suburban
Dinos	*Gardenia*	ornamental	suburban
Dinos	hedges	structural	suburban
Dinos	lavender	medicinal/ornamental	suburban
Dinos	lemons	consumption/ornamental/structural	suburban
Dinos	Leyland cypress	ornamental/structural	suburban
Dinos	loquats	consumption	suburban
Dinos	mandarins	consumption	suburban
Dinos	mint	consumption	suburban
Dinos	oranges	consumption/ornamental/structural	suburban
Dinos	red orange	consumption/structural	suburban
Dinos	rosemary	consumption/medicinal	suburban
Dinos	roses	ornamental	suburban
Dinos	tomatoes	consumption	suburban
Maria	almonds	ornamental/consumption	suburban
Maria	aloe	ornamental/medicinal	suburban
Maria	angeliki/*Pittosporum*	ornamental	suburban
Maria	apples	consumption	suburban
Maria	apricots	consumption	suburban
Maria	basil	consumption	suburban
Maria	basil	consumption/medicinal	suburban
Maria	broccoli	consumption	suburban
Maria	cabbages	consumption	suburban

Maria	chamomile	consumption/medicinal	suburban
Maria	cucumbers	consumption	suburban
Maria	cumin	consumption	suburban
Maria	easter plants	ornamental	suburban
Maria	eggplants	consumption	suburban
Maria	grapes	consumption	suburban
Maria	lemons	consumption/ornamental/structural	suburban
Maria	lettuces	consumption	suburban
Maria	loquats	consumption	suburban
Maria	melons	consumption	suburban
Maria	olives	consumption/ornamental/structural	suburban
Maria	onions	consumption	suburban
Maria	oranges	consumption/ornamental/structural	suburban
Maria	oregano	consumption/medicinal	suburban
Maria	parsley	consumption	suburban
Maria	pears	consumption	suburban
Maria	peppers	consumption	suburban
Maria	pomegranates	consumption	suburban
Maria	potatoes	consumption	suburban
Maria	roses	ornamental	suburban
Maria	sage	consumption/medicinal	suburban
Maria	tangerines	consumption	suburban
Maria	tomatoes	consumption	suburban
Maria	*Viburnum*	ornamental	suburban
Maria	zucchini	consumption	suburban
Spyros	cabbages	consumption	suburban
Spyros	carrots	consumption	suburban
Spyros	cucumbers	consumption	suburban
Spyros	dill	consumption	suburban
Spyros	fresh onions	consumption	suburban
Spyros	grapes	consumption	suburban
Spyros	lemons	consumption/ornamental/structural	suburban
Spyros	olives	consumption/ornamental/structural	suburban
Spyros	oranges	consumption/ornamental/structural	suburban
Spyros	peaches	consumption	suburban
Spyros	peppers	consumption	suburban
Spyros	*Photinia*	ornamental/structural	suburban
Spyros	potatoes	consumption	suburban
Spyros	pumpkins	consumption	suburban
Spyros	Pyxari/*Buxus*	ornamental/structural	suburban
Spyros	spinach	consumption	suburban
Spyros	strawberries	consumption	suburban

Spyros	tomatoes	consumption	suburban
Spyros	zucchini	consumption	suburban
Tobias	apricots	consumption	suburban
Tobias	bottle tree	ornamental	suburban
Tobias	beetroots	consumption	suburban
Tobias	broccoli	consumption	suburban
Tobias	brussels sprouts	consumption	suburban
Tobias	cabbages	consumption	suburban
Tobias	cauliflowers	consumption	suburban
Tobias	chamomile	consumption/medicinal	suburban
Tobias	cherries	consumption/ornamental	suburban
Tobias	chillies	consumption	suburban
Tobias	cucumbers	consumption	suburban
Tobias	figs	consumption	suburban
Tobias	kale	consumption	suburban
Tobias	lemon verbena	consumption/medicinal	suburban
Tobias	lemons	consumption/ornamental/structural	suburban
Tobias	lettuces	consumption	suburban
Tobias	loquats	consumption	suburban
Tobias	mandarins	consumption	suburban
Tobias	melons	consumption	suburban
Tobias	*Opuntia*	ornamental/consumption	suburban
Tobias	oranges	consumption/ornamental/structural	suburban
Tobias	oregano	consumption/medicinal	suburban
Tobias	pears	consumption	suburban
Tobias	pomegranates	consumption/ornamental	suburban
Tobias	potatoes	consumption	suburban
Tobias	tangerines	consumption	suburban
Tobias	tomatoes	consumption	suburban
Tobias	watermelons	consumption	suburban
Lucien	angelica	consumption/medicinal	rural
Lucien	artichokes	consumption	rural
Lucien	celery	consumption	rural
Lucien	*Chrysanthemum*	ornamental	rural
Lucien	*Cyclamen*	ornamental	rural
Lucien	fennel	consumption	rural
Lucien	lavender	medicinal/ornamental	rural
Lucien	leeks	consumption	rural
Lucien	lemons	consumption/ornamental/structural	rural
Lucien	loquats	consumption	rural
Lucien	mastic	structural/ecological	rural
Lucien	onions	consumption	rural

Lucien	oranges	consumption/ornamental/structural	rural
Lucien	parsley	consumption	rural
Lucien	persimmon	consumption	rural
Lucien	Pyxari/*Buxus*	structural/ecological	rural
Lucien	thistle	consumption/medicinal	rural
Lucien	*Viburnum*	ornamental	rural
Lucien	wild calendula	medicinal	rural
Manolis	banana	consumption/ornamental	rural
Manolis	beans	consumption	rural
Manolis	broccoli	consumption	rural
Manolis	cabbages	consumption	rural
Manolis	cucumbers	consumption	rural
Manolis	grapes	consumption	rural
Manolis	lettuces	consumption	rural
Manolis	melons	consumption	rural
Manolis	palm trees	ornamental/structural	rural
Manolis	potatoes	consumption	rural
Manolis	radishes	consumption	rural
Manolis	spinach	consumption	rural
Manolis	tomatoes	consumption	rural
Panagiotis	almonds	ornamental/consumption	rural
Panagiotis	cabbages	consumption	rural
Panagiotis	cacti	ornamental	rural
Panagiotis	cucumbers	consumption	rural
Panagiotis	cypresses	ornamental/structural	rural
Panagiotis	eggplants	consumption	rural
Panagiotis	figs	consumption	rural
Panagiotis	green beans	consumption	rural
Panagiotis	lemons	consumption/ornamental/structural	rural
Panagiotis	lettuces	consumption	rural
Panagiotis	olives	consumption/ornamental/structural	rural
Panagiotis	oranges	consumption/ornamental/structural	rural
Panagiotis	pomegranates	consumption	rural
Panagiotis	pumpkins	consumption	rural
Panagiotis	*Schefflera*	ornamental	rural
Panagiotis	tangerines	consumption	rural
Panagiotis	tomatoes	consumption	rural

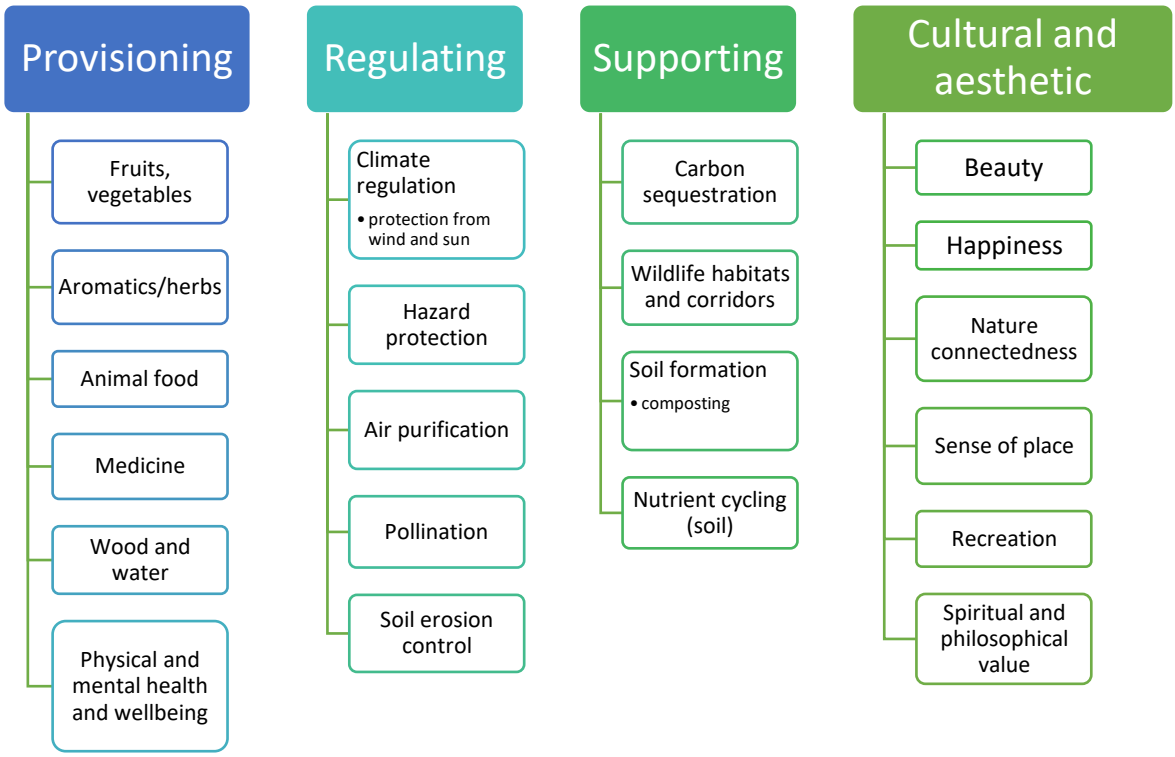

Figure 16. The Ecosystem Services framework showcases the diversity of provisioning, regulating, supporting and cultural services provided by the studied home gardens. These are diverse and vary across gardens depending on their uses and functions, and their gardening practices.