

**RURAL HOME GARDENS IN CYPRUS**

**A THESIS STUDY SUBMITTED TO THE  
GRADUATE SCHOOL OF APPLIED SCIENCES  
OF  
NEAR EAST UNIVERSITY**

**by**

**DERVIŞ ALİ ÖZERSOY**

**In Partial Fulfilment of the  
Requirement for the Degree of  
Master of Science  
in  
Landscape Architecture**

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**Derviş Ali Özersoy: RURAL HOME GARDENS IN CYPRUS**

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**To my village, teachers and friends...**

## ABSTRACT

The analysis of the characteristics of the rural settlements with the concept of nature and biodiversity conservation is essential for sustainable development of rural areas. Rural areas are defined as areas where the population density is low in relatively small and scattered settlements with their unique natural geographical features other than urban areas. In terms of sustainable development, local architectural texture, which is a reflection of regional identity in rural settlements? The analysis of landscape character in villages and towns in rural areas is very important for sustainable rural development and rural landscape planning. This research was carried out in the town of Lapta, in the northern part of the Selvili tepe, which is the highest peak of the Beşparmak Mountains, 8 km to the north of Girne, north of the island of Cyprus. The population of the town of Lapta is around 6000. The majority of the population is composed of people of different nationalities, such as the Turks and the German-Russian Maronite before 1974, the majority of the population of the Turks and Greeks live in the streets of Lapta and the villages are narrow and green surrounded by houses. Mediterranean houses are located in a single-storey or two-storey detached house in the study carried out in the gardens of the town of Lapta in the gardens of the landscape applications are investigated and used in traditional Lapta plants presence in the village houses and widely used plants identified.

**Keywords:** rural area, Lapta, villages, home gardens, vegetation

## ÖZET

Kırsal yerleşimlerin özellikleri doğa ve biyolojik çeşitliliğin korunması kavramı kapsamında incelenmesi kırsal alanların sürdürülebilirliği ve kalkınması için esastır.Kırsal alanlar göreceli olarak küçük ve dağınık yerleşim yerlerinde nüfus yoğunluğunun düşük olduğu kentsel alanlar dışındaki benzersiz doğal coğrafi özelliklerine sahip alanlar olarak tanımlanmaktadır.Sürdürülebilir kalkınma açısından kırsal alanlardaki bölgesel kimliğin bir yansıması olan yerel mimari dokuların Kırsal alanlarda köy ve kasabalardaki peyzaj karakterlerinin analizi sürdürülebilir kırsal kalkınma ve peyzaj planlaması için çok önemlidir.Bu araştırma Kıbrıs adasının kuzeyinde Girne'nin 8 km kuzeyindeki Beşparmak dağlarının en yüksek zirvesi olan Selvili tepenin kuzeyindeki Lapta kasabasında yapılmıştır .Lapta'nın nüfusu 6000 civarındadır.Nüfusun çoğunluğu Türkler ve Alman\_Rus Maronitler gibi farklı milletlerden ve insanlardan oluşur.1974 ten önce Türkler ve Kıbrıslı Rumların çoğunluğu da burada yaşamaktaydı.Lapta ve köylerindeki evlerin tipik özellikleri birbirine benzemektedir.Evlerin genel özellikleri dar sokaklar veyişillikler ile çevrili olmasıdır. Lapta ilçesinin bahçelerinde yapılan çalışmada tek katlı veya iki katlı Akdenizevlerinde yer alan peyzaj uygulamalarının Lapta köy evlerinde geleneksel bitkilerinin varlığı araştırılmıştır

**Anahtar kelimeler:** kırsal alan, Lapta köyler ,Ev bahçeleri, Kıbrıs, Bitki örtüsü



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# CHAPTER 1

## INTRODUCTION

### 1.1 General Consideration

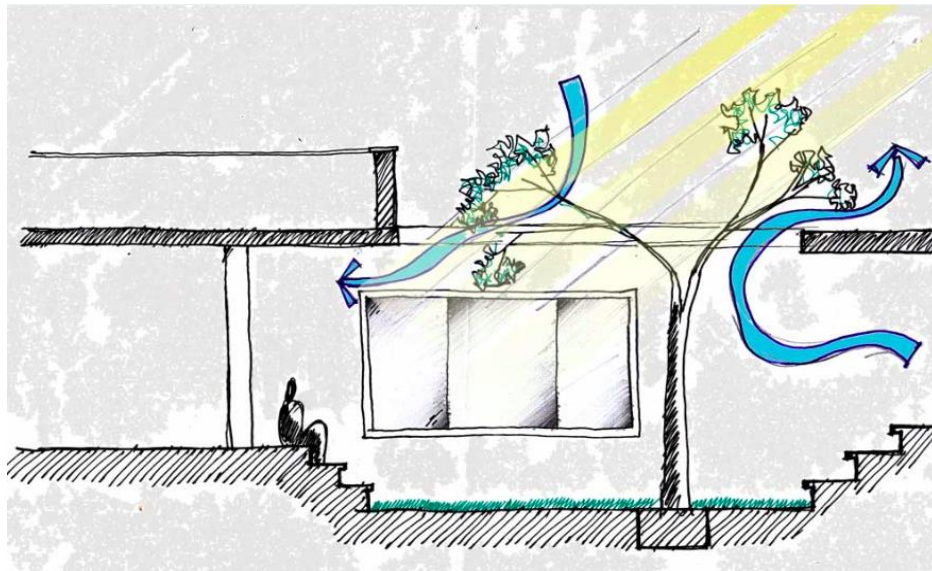
Increase need of a living for human beings; has caused individuals to make new meanings to the outdoor living space. The open communal areas within the rural areas are where societies show their cultural values and social values (Antrop, 2005). The the Mediterranean rural landscape is outcome of a combination of natural and cultural diversity (Makhzoumi, 2000). Within the Mediterranean landscapes, courtyard areas are preferably located in the middle of the buildings. The term `courtyard` defined as a partially, semi-open, enclosed area. It is a space which planned and arranged according to its `services for certain purposes of individuals. These spaces can be examined from the ecological, aesthetic and functional aspects (Soflaei et al., 2017). The courtyard houses have a high significance in terms of vegetation in rural areas. There is an increasing trend to make the documentation of edible plants provided by home gardens worldwide. A home garden as privately managed land use system achieves deliberate management of multipurpose plant alliance with agricultural crops and invariably live-stock within components of individual households. In addition, home gardens in rural and urban areas have the ability to provide interaction with nature for the inhabitants. The important ecological, social and psychological functions of green areas can bestrengthened by this kind of interaction via individual appreciation and understanding (Mosina et al., 2014). Furthermore, home gardens are evaluated to be important locations of food production and transfer of traditional knowledge throughout generations (Corlett et al., 2003).

It is known that both climate and traditional cultural values play a dominant role on courtyard designs. Courtyards provide physical environment for various social activities; for example, religious or cultural events (Soflaei et al., 2017).

Climate has an obvious and direct effect on the thermal environment. While the combinations of the various daily climatic variables (air temperature, sunshine, humidity, wind speed, etc.) are endless, the design of buildings is concerned principally. The

variation of the daily air temperature depends on the condition of the atmosphere. Even invisible moisture in the air, in the form of humidity, has a pronounced effect on the transparency of the air to radiation (Moore, 1993).

One of the main reasons of using home gardens for more than 5000 years is its environmental effects. In different climates, gardens can be used as a source of day-lighting for adjacent rooms in deep plans. Further advantage of a home garden in winters is protecting the parent building from harsh conditions of weather such as winds (Upadhyay, 2008). Figure 5 below shows wind and light circulation of a courtyard type garden.



**Figure 1:** Wind and light circulation in a courtyard type garden (Mishra, 2014).

The high walls that reduce the temperature will increase the perimeter of the courtyard shaded areas. Thus, the courtyard can be used daytime. For environmental point of view, atrium as a glazed enclosure can usually provide day-lighting and thermal comfort which reduce energy consumption of the parent building. In large buildings, it can be a significant source for natural lighting which replaces artificial lighting (Ahmed, 2013).

Therefore, courtyard type of gardens can be said as climate-responsive particularly in hot countries like Cyprus. Courtyards behave like a chimney. Three thermal phases of courtyard can be expressed as follows:

- At night time, cold air falls into the courtyard and cools the deeper points of even furniture. It can be said that, courtyard traps cool air at night time.
- At noon time, sun rises up and sunlight strikes courtyard. It makes courtyards air hot. Hot air rises up and draws cool air which is trapped at night time from the rooms. Thus, cooling effect is created within the spaces and courtyard.
- During afternoon, on the other hand, air on the outside of building becomes warmer and further cooling movement is activated through small openings of outside walls. This time air movement is from courtyard to the outside of building.

Promoting comfortable indoor environments via providing natural ventilation and daylight into buildings is the commonly purpose of residential courtyard application in buildings. Courtyards are used to achieve the much-needed and valued residence security and privacy while decreasing the infiltration of hot and dusty winds into the rooms with tall walls around the courtyard, in the Middle East (Safarzadeh and Bahadori, 2005). Such that courtyard offers a micro-environment providing very pleasant living spaces with the healing landscape elements such as trees, flowers, shrubs and pool (Almhafdy et al., 2015). Regarding the influence of a courtyard on the thermal condition, there is a high reliance on the envelope opening and a better energy performance exhibition in hot-dry and hot humid climatic regions (Aldawoud, 2008). According to Almhafdy (2015), the development of a courtyard has been linked with the concept of sustainability and green architecture, where the courtyard configurations can be classified into four. There are:

- Cluster courtyard
  - a. Multiple: the design of the building creates four fully-enclosed courtyards.
  - b. Spinal: More than one courtyard is attached to the building's central circulation route.
- Open courtyard: A group of buildings shapes the courtyards.

- Closed courtyard: It is fully enclosed.
- Complex/Interlinked courtyard: Different floors are used as locations for courtyards serving different purposes.

Generally, with regards to the thermal comfort, the U-shape courtyard having a ratio of 1:2, that is defined as a rectangle, has a better performance in comparison with the U-shape courtyard with an aspect ratio of 1:1, which is considered as a square (Almhafdy et al., 2015).

According to these properties; the types of plans mostly rectangular inner courtyard of the building in Northern Cyprus, is covered courtyard type. The most important features of this courtyard type design are not limited to comfortable indoor spaces. The user needs energy efficiency in the performance direction. The natural ventilation performance of the buildings provides efficient energy use.

Mediterranean region landscapes resulted from the multifarious and primeval interaction of ecosystems and societies. In this research, the information of traditional house gardens' local herbs, vegetables and fruits were evaluated and investigated. As a result, according to the evaluations of the garden owners; cultural and heritage values will be assessed.

## **1.2 Thesis Problem**

The dynamic social changes together with positive and negative aspects of physical environment have affected the traditional character of houses within the rural areas of Lapta region. Unfortunately, intensive building construction threatens the rural landscapes and provide multiple economic, social, cultural support and ecological disadvantages for the people of Cyprus. This document encourages reflection and offers guidance on the transformation of rural landscapes. Although there are various ethno-botanical researches has been carried out on the island, research and documentation work on home gardens and their existing local herbs, vegetables and fruits are very limited.

Within the framework of this dissertation, it was determined that the gardens were arranged in parallel to the usage of the building. For this purpose, six different house types (Garden courtyard house, group of L-shaped house, shared courtyard house, patio house, L-shaped house and atrium-type house) examined and compared. The result of the research is examined, and it is aimed to provide information in the light of this study.

### **1.3 Aim of the Study**

The aim of this study is to analyse whether residents use their home gardens in traditional way or not. Simply, the study aim is to investigate of rural home gardens and their usage in tradition and culinary purposes, also user satisfaction of interior courtyard gardens or home gardens within the Lapta region.

### **1.4 Limitations of the Study**

The study is limited with the selected 35 traditional houses within the rural areas of Lapta region.

### **1.5 Thesis Overview**

The thesis consists of 5 sections, which are used in terms of landscaping and taking into consideration the importance of usage patterns. Chapter 1: This chapter includes introduction of research purpose and scope. Chapter 2: This chapter includes literature review of scientific articles and other academic sources related to the research subject. In addition, this paper will study literature review on existing culture of Cypriot houses importance of home gardens in Cyprus courtyard houses around the world. Chapter 3: This chapter includes methodology and data analysis of the study. Chapter 4: This chapter provides the result and interpretation of the study and presents the general vegetation characteristics of rural houses within the Lapta region. Chapter 5: This is the last chapter which includes conclusion and recommendations for future research.



## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Home gardens as places of ecology and family**

“Gardens have special meaning. They are powerful settings for human life, transcending time, place and culture”. In recent years, there has been increased interest in examining the role of gardens, gardening practices, memories of past gardens and the gardening experience itself. Three major themes emerge from the literature. Kaplan and Kaplan’s (1990) path-breaking research focused attention on the restorative experience of gardens, an experience of gardens, an experience that facilitates recovery from everyday stress, anxiety, and fatigue. Further evidence of psychological benefit comes from Winterbottom’s (1998) study of Puerto Rican casitas in New York City. Surrounded by a high stress environment of poverty, unemployment, substandard housing and crime, with minimal contact with nature, the process of planting and observing plants grow to maturity in the casitas provided the residents with significant therapeutic relief from the anxieties and challenges of daily living. The physical setting of the garden was the subject of careful examination. Particular attention was paid to landscape elements such as trees, plants, flowers, fruits, vegetables and herbs, their location and arrangement. People and their activities that took place in the garden were also included in the observations. These were recorded with participants’ permission through field notes, sketches, and photographs. Observation sessions, varied in length from 20 minutes (short tour) to an hour. Included were home gardens in Southern California of sixteen immigrant families who agreed to participate (Mazumdar et al., 2012).

Brownrigg (1985) defines the term ‘home garden’ as ‘a supplementary food production system by and for members of group of people with rights to the land, who eat meals together regularly’ (Rahaman et al .2015). Various food products in the home gardens are endowed with nutritive and energy requirements of the local diet (Chundawat and Gautam, 1993).

Also, Kumar and Nair describe home garden as a traditional form of privately managed land-use system where a clearly bounded piece of land immediately surrounding the

dwelling house is cultivated with diverse mixture of plants. Within the research developed by Rahaman (2015) and others a questionnaire is used to collect primary data from the respondents. It is developed on the basis of preliminary survey and discussion with experts on home garden and tested in pilot survey. The first part of the questionnaire focuses on the home garden components that provide subsistence benefits and / or direct cash income to the household. The second part focuses on the respondents' socioeconomic characteristics. During the survey, the respondents were asked about the local name of each of the species, corresponding uses and numbers present in the home garden. All timber and fruit producing trees and shrubs of the surveyed home gardens are duly identified and recorded to species level by local name. The herbs and climbers in the surveyed home gardens that are cultivated for family support and for medicinal value are also identified and recorded during the survey. However, seasonal variation in plant composition is not assessed due to static nature of the survey and study, which might be considered as a limitation of the study due to time and financial constraints. The survey is administered during June-July 2013 (Rahaman et al., 2015).

## **2.2 Home gardens and culture**

Throughout history, gardens have been a very good space solution in terms of architectural features. The life style of home garden is designed according to daily needs. In traditional dwellings the home cultural life style is directly reflected in the garden. It is also a place where beliefs, traditions, socioeconomic and socio cultural structures are reflected. Nevertheless, cultural exchanges date back to the present day. The gardens started to appear not only in the interior but also seen on the exterior of houses. The most important element in these houses, the high and windowless walls which surrounds the streets. This approach stems from the sense of privacy. The door, which is opened within these walls facing the street, is the only entrance. The doors are quite wide and so high that there is a small roof and a covered porch for protecting the ones standing in front of them from the rain and the sun. The doors into the courtyard consist of two large wooden canapes. The house is entered through the door to the courtyard. At the same time, the courtyard is the area where some daily work is done. During the day, children can play games under control, cruising area, washing and / or drying area for winter food, is an agricultural production area where animals are grown / protected. At the same time, the courts are a

short-lived social interaction with neighbours. As a result, the courtyard is semi-customary of traditional Turkish house because it is open to the outside (Bozkurt and Altınçekiç, 2013).

Natural factors affecting the formation of traditional Turkish house courtyard houses; topographic structure, soil, climate, building material and plant elements. Generally as soil building material; the formation of the enclosure wall, is used in brick and plaster building material. The most used building system in Anatolia is stone carvings between wooden carcasses. In addition, the depth and quality of soil is also an important factor in terms of the efficiency of the plants that grow in the yard. Climate; the increase in climatic diversity has been a decisive factor in the determination of the spatial arrangement, courtyard formation, roofing and façade characteristics in a large region like Anatolia.

In home gardens, which are shaped according to the values of temperature, humidity, wind and precipitation, high walls provide control of temperature and reduce the effect of wind. Humidity excess stone material was used in the regions where it is. In areas with low humidity, use of water surfaces and pools provides moisture balance in the courtyard. Especially in order to absorb excess moisture plant elements used in the yard and then gradually it gives atmosphere by transpiration. In addition, climatic characteristics of a region influence the pattern, frequency and distribution of vegetation cover. This is a decisive factor in the use of building materials in the formation of the courtyard and in the use of the plant elements used in the courtyard.

The materials used in the walls of the gardens are selected according to the local conditions. For instance, due to the dense wood of forested areas in the Black Sea region it is used in large quantities. In East and Central Anatolia stone and adobe materials are used. In addition, heat retaining and spreading properties of the material used are also benefit. Massive masonry and mud-brick walls keep the heat during the day and the temperature drops it gives back the heat at night. Thus, the heat of living places is protected and large temperature differences are prevented.

In the regions where the temperatures are very low at night, in the Eastern Anatolia Region and the South-eastern Anatolia Region, cool air circulates in the night and morning and

takes heat from the mass of the structure. The heat that is built in the daytime is lost in the night and the houses are getting hot in the day and cool in the night. This effect is also valid for courtyards and provides suitable micro-air conditioning or ecological environments.

Plant element; Traditional architecture is a style that is harmonious with nature and is a product of human ecology. This approach is a result of the experience of humanity for centuries. Because of the microclimatic environment they provide, courtyard formation also allows warm climates to grow in cold regions. In addition, plant heat transfer elements in the garden, shadow effect, influencing the microclimate are the most important natural assets with wind protection and insulation capabilities. In general, flowering plants and fruit trees are preferred. According to the climatic conditions, the fruit trees are arranged to create a shadow effect and also fruits are used. Regions were not stuck to a certain criterion in terms of plant arrangement; plants were planted in the spaces left in the courtyard pavilion. The Aegean and Mediterranean regions, where the Mediterranean climate is dominant in terms of plant elements, are the richest regions (Bozkurt and Altınçekiç, 2013). Because of this rich topography in this region, the houses are positioned according to the landscape (Figure 1). The slopes are covered with dense green texture. Houses with organic development are quite congested. Sometimes the ground floor of the residential houses with adjacent, sometimes discrete order is closed to the street. The upper floors are towards the street with its windows and windows.



**Figure 2:** Street texture from Lapta's Baspinar region.

### **2.3 Home gardens, vegetation, and their importance**

In the last decades, changes in land use and management have led to the degradation of many cultural landscapes in European rural areas. Similarly, Mediterranean land systems are currently undergoing intense changes. These systems are particularly threatened by the increasing adoption of lifestyles disconnected from local ecosystem dynamics (Folke et al. 2011), which have led to a polarization of land-use: the abandonment of land-management practices in some areas and intense use in others (Rescia et al. 2010). Both processes are reducing habitat heterogeneity, landscape multi-functionality and agro-biodiversity (Bugalho et al. 2011; García-Llorente et al. 2012).

For instance; the high and windowless walls which surrounds the streets of Nicosia. This approach stems from the sense of privacy. The door, which is opened within these walls facing the street, is the only entrance. The doors are quite wide and so high that there is a small roof and a covered porch for protecting the ones standing in front of them from the rain and the sun. The house is entered through the door to the courtyard. At the same time, the courtyard is the area where some daily work is done. During the day, children can play games under control, cruising area, washing and / or drying area for winter food, is an agricultural production area where animals are grown / protected. At the same time, the courts are a short-lived social interaction with neighbours (Bozkurt and Altınçekiç, 2013). As an example, Cypriot Swallow hotel is typical rectangle courtyard houses for the type of converted residence which has been modified as a hotel use. Traditional Cypriot houses are planned very simple and functional. This ground floor plan includes living room, office, bedroom, kitchen and WC was shown in Figure 3.



**Figure 3:** Courtyard garden in Lapta.

Courtyard works as an extension of the kitchen during the morning and as living room during the evening to entertain the guests. A space for interaction for all family members, and encourage the family to act as a group. During the night, when the climate is conducive for outdoor activity, courtyards are also preferred as sleeping areas (Gangwar and Kaur, 2016). In the courtyard, green area plant groups were formed around the living areas. Courtyards of the dwellings provide a variety of vegetation such as ornamental plants; *Pelargonium hybrida*, *Cactus* sp, *Vinca* sp.

During Ottoman period, most of the cathedrals and churches were well preserved through their conversion into mosques or usage for other public functions. Therefore, a rapid destruction of the characteristic features of the town including the housing structure started (Oktay and Önal, 1998).

Such degradation has had relevant consequences for local populations, mainly landscape functionality, and the maintenance of ecosystem services. We suggest that effective management of cultural landscapes, understood as social – ecological systems, should integrate both, the social and ecological components (Rescia et al. 2010). Several scholars have studied the connection between people and land (Guiliani, 1993; Hidalgo and Hernandez, 2001; Lewicka, 2010; Proshansky et al. 1983; Relph, 1976; Tuan, 1974) leading to the formulation of such concepts as sense of place, place identity, place meaning and place attachment. The literature teaches that places are “profound centres of human

existence” (Relph, 1976).

There is room for developing studies in this area by using analyses that shift the object of study towards social-ecological systems. Therefore, firstly it is important to note that social-ecological systems are complex adaptive systems, which possess emergent properties, and resilience, or the system's ability to continue to function when intrinsic or extrinsic disturbances occur (Folke et al., 2016). It is an anthropocentric concept, which appeared in the Anthropocene context of global change. Nowadays, this term is widely used in environmental sciences and is not rigid at all and there are different approaches and perspectives relating to the understanding of it (Scholz, 2011), although it can also be used as a commonplace term because it is trending. However, several authors do not believe that there is a need for this new concept to be coined, as ecosystems already include social systems, since humans are part of nature (Raymond et al., 2013). Secondly, although this study focuses on a specific area, the research objectives and methods that is followed can be extrapolated to other areas, since it will search for the quantitative results (Schmitz et al., 2003; De Aranzabal et al., 2008; Schmitz et al., 2012). Traditional field data are limited and are difficult to apply at a regional scale (Gillespie et al., 2008). However, the main scope of this study is not limited to the information that represent available habitat characteristics. The paper will also monitor environmental change in a quite large area by focusing on the effects of human activity on the landscapes under study.

#### **2.4 Home Garden Herbs and Medicinal Plants of Cyprus**

The history of the countries influenced the architecture, whether in the design stage or construction process. Architecture is one of the main sources for investigation on culture, tradition and lifestyle of the people belong to the particular geographical region. Many world powers in different periods of time effected the Cyprus history because of the specific position of the island. For instance, Assyrians, Persians, Romans, Byzantines, Venetians, Ottomans and British used to rule the Cyprus through the history of the island. At the current time, the north part of the island is under the rule of Turkish Republic of Northern Cyprus (TRNC) with 37 percent of the island, and the south part is ruled by the Republic of Cyprus with the 61 percent territory. In fact, until 1977 north and south parts of the Cyprus experienced the same history (Dastjerdi, 2014).

In fact, Mediterranean region landscapes as a whole, resulted from the multifarious and primeval interaction of ecosystems and societies. It is an area known as one of the richest regions in the World for wild and cultivated plant species (Domina et al., 2012). Land uses in this area vary in size and arrangement (Zaizhi, 1999). Although there has been relatively little research on the courtyard gardens in traditional villages of Cyprus, it is known that, especially in rural areas, Cypriot home gardens may occupy different positions, such as the backyards, front-yards, site-yards and courtyards which have variable shapes, sizes and composition of plant species. They are mainly harbouring supplementary fruits, vegetables and herbs for households. For instance, in a study carried out in 2016 in Karmi village on the slopes of the Kyrenia Mountains facing towards the North, characteristics of the traditional courtyard houses were visited and edible plant species were determined within their courtyard gardens. A total of 16 different herb species and 20 different fruit trees were recorded during the surveys at Karmi village. Most widely used herb species in courtyard gardens which are also used in local cuisine as well were Rosemary (*Rosmarinus officinalis* L.), Sage (*Salvia officinalis* L.) and Thyme (*Thymus* spp.). With this research the information of local herbs that have been used in traditional courtyard gardens was investigated, in addition the importance of protection of the natural and semi-natural landscapes in rural areas in terms of “Rural Landscape Protection” has been underlined (Özersoy, Fuller, 2016).

Cyprus lies at the eastern end of the Mediterranean Basin. It consists of three geomorphological zones, the Troodos Mountains, the Five Fingers Mountain and Mesoria plain which separates the first two area from each other. Accordingly, it is not surprising that Cyprus has a very diverse flora within the region. However, home gardens in Cyprus are currently facing different threats mainly loss of interest on traditional gardening, loss of traditional knowledge on medicinal use of herbs and fruits. Houses are surrounded by agro ecosystems and different variety of fruits trees (Gökçebağ and Özden, 2017).

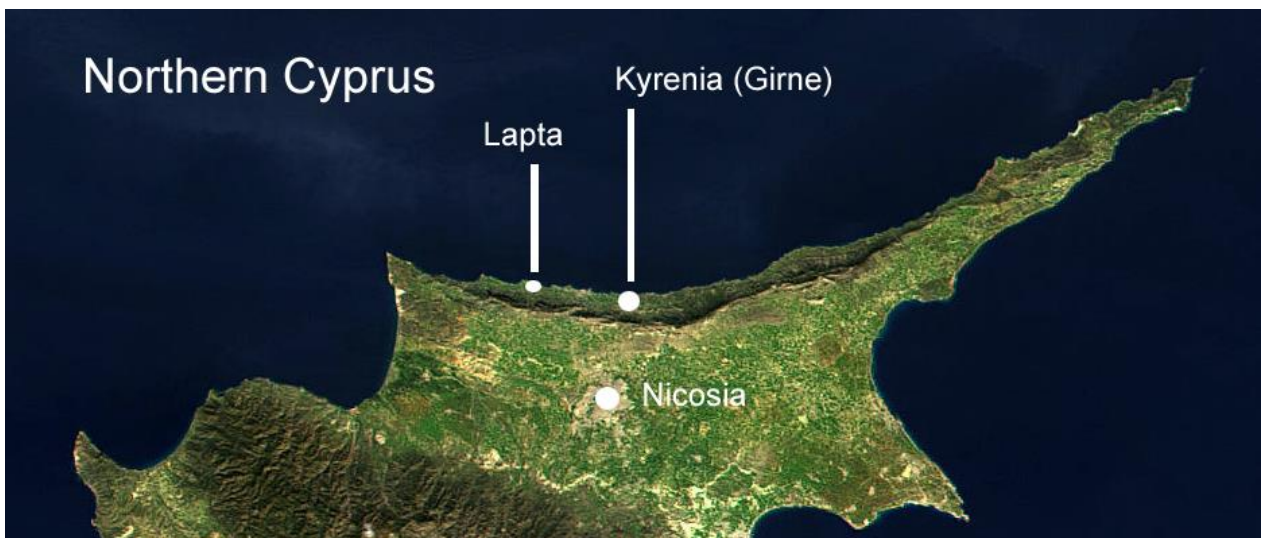


## CHAPTER 3

### MATERIAL AND METHODS

#### 3.1 Study Area

Cyprus with the 9.251 square kilometers is third largest island after the Sicily (25,460 km<sup>2</sup>), and Sardinia (24,090 km<sup>2</sup>) at the Mediterranean Sea. This island has the 773 square kilometers coastline at the east side of Mediterranean basin. Nevertheless, the special point that distinguished this island from other Mediterranean islands is the strategic location and subsequently the rich history of Cyprus. Cyprus is located between three continents which are Europe, Asia and Africa. Three nearest neighboring countries of Cyprus are Turkey with 75 km distance at the north, Syria with 105 km distance at the east and Egypt with 420 km distance at the south of the island. The capital city in the Northern Cyprus is Nicosia (Lefkoşa). Famagusta, Lefke, İskele, Güzelyurt and Kyrenia are the three other major cities which are located at the seaside (Dastjerdi, 2014).



**Figure 3.1** -Map showing Lapta region - Map of North Cyprus (Wikipedia)

#### 3.2 Brief Information of Villages

##### 3.2.1 Lapta

The study was conducted in seven villages of Lapta, Kyrenia (Figure 4.) between October 2017 to October 2018. As it can be seen from the figure, Lapta region is located in the northern part of the Selvili Tepe, which is the highest peak of the Beşparmak mountains, 8 km to the north of Girne, north of the island of Cyprus. The population of the town of Lapta is around 6000. The village was mix Turkish Cypriot Greek-Cypriot inhabitants

during 1974. Lapta, which has one of the most popular beaches of Northern Cyprus, is a tourism region. Approximately 22,000 tourists come to the area annually. In order to protect the Medos Lalesi, a kind of tulip that grows only in Cyprus, the Medos Tulip Festival is held every year in March. Brief information about other six villages can be found under the next sub-chapters.

### **3.2.2 Karşıyaka**

Until the beginning of the 2000s, the most important source of livelihood was the lemon trees. The construction dramatically inclined in the whole town of Girne, which started in 2003-2004, took place in Karsiyaka village and many luxury villas and hotels were built in the region. Today, some of the people living in the village work as workers, officers or tradesmen. Nevertheless, south of the village is still covered with pine forests. Empty lands on the coastal plain are used as agricultural land and vegetables are grown in irrigable areas. Olive trees continue to be a good income for the villagers.

After 2004, the population of Karsiyaka has increased significantly too. Many foreigners bought a house and settled in the village. After the decision of the Council of Ministers regarding the connection of the villages to the municipalities, Karşıyaka was connected to the Municipality of Lapta, like all other villages studied under this thesis. The original names of the village were translated into Turkish and Vasilya was called Karşıyaka in 1959.

### **3.2.3 Çamlıbel**

The village, which is located on the level of a hill with a height of 270 m from the sea level, is adjacent to the villages of Geçitköy (Panagra) in the north, Tepebaşı (Yorgoz) in the west, Karpaz (Karpasia) in the south, Hisarköy (Kambilli) in the east and Özhan (Asomatos) in the southeast. There are various myths about the source of the original name of the village. According to the most common of them, the name of the village came from the plant “MYRTOS or MYRTIA”. The western part of the village is completely covered with myrtle trees.

As it was before 1974, today, the livelihoods of the people of the village are still mostly related to agriculture (vegetables and fruits). Especially, similarly with Karşıyaka, olive trees in the village bring sufficient income to the peasantry. Indeed, Olive trees dominate

the landscape of Cyprus. The northern part of the island, however, is especially endowed. The total number of olive and carob trees was estimated at 800,595 in 1999 (302,958 carob and 497,637 olive) (Makhzoumi and Gunduz, 2002). Rural landscapes of olive trees and, to a lesser extent, carob trees, spread across coastal centuries, they include trees several hundred years old. They have come to embody a historical and cultural dimension that is absent from commercial olive plantations elsewhere in Mediterranean. However, also it should be noted that traditional olive and carob tree landscapes in North Cyprus are increasingly under threat. As an example, the total number of olive trees declined from 668,685 in 1975 to 521,848 in 1995, an average loss of 7,342 trees / year for that period (Makhzoumi and Gunduz, 2002). The decline is generally the result of the fragmentation and replacement of traditional rural landscapes by intensive agriculture and commercial development. Political isolation and a slow rate of economic development, which in past decades preserved these landscapes, is more recently contributing to their decline. Difficulties in marketing the produce (olive and carob seeds), competition from imported produce (table olives and olive oil) are other contributing factors. The piecemeal carving of orchards to locate detached housing is common practice in the suburbs of Girne and along the island's northern coastline.

### **3.2.4 Tepebaşı**

Tepebaşı was included in the municipality of Lapta in 2008. According to the Greek sources the old name of the village is Diorios, but it is known as Yorgoz among the Turkish Cypriots. After 1974, the new name was given since village is on a high hill. The village is about 300 m above sea level.

There is widespread Cypriot culture in this village. The village is surrounded by pines and tulips, which grow naturally in this region. In addition, many wild orchids and daffodils are located in the natural vegetation. The population of the village is approximately 1000 and the economy of the village is largely based on agriculture.

### **3.2.5 Hisarköy**

The village is located 29 km southwest of Kyrenia, with a population of 194. The village is a very old settlement. According to number of sources, the Maronites lived in the village during the Ottoman period.

Today the village is still surrounded by natural orchids and the beautiful valley between the village and the Beşparmak Mountains are among the tourist attractions of the village. Nature walks and orchid observations around the village show great interest both for locals and for foreigners.

### **3.2.6 Koruçam**

It is one of the Maronit villages in Cyprus. It is located 34 km west of Kyrenia and 5 km to the west of Güzelyurt (Omorfo). According to the 2011 data, the population of the village is 309. There are three different rumours about the source of the village's name. According to the most popular one, the name of the village is derived from the word a Koura. Koura is the name of a village in Lebanon.

The most important feature of the village, the region is the most rainfall village. There are many olive trees in village's lands. Therefore, many agriculture activities are carried out in the village. In fact, it can be said that agriculture is more developed compared to other villages in the region.

### **3.2.7 Akdeniz**

The name of the village, Ayirini (Aya Irini); in 1260, he was said to live here. After 1974, when the village names were translated into Turkish, the village was named Mediterranean due to the Mediterranean forests near it. Surrounded by forests, the village has fertile soil. Therefore, agriculture is made and all kinds of vegetables and fruits are grown. The village is famous especially for its berries. Olive trees in the village lands are the other sources of income.

Before 1974, the village had a mixed population with a majority of Turks. Following 1974, the Greeks in the village had left the village. In the census in 1996, the population of Akdeniz village was found to be 478, in 2006 it was 597 and in 2011 it was 522.

European Union (EU) Nature Conservation Project, covers a large area on the west coast of the district. It is seen as a very important and pristine natural area for plants and animals. The most important plant species in this area of protection are tulips and orchid species. The sandy beaches in the region are areas of turtles. It is also an important accommodation center for more than 200 migratory bird species from Europe, Siberia and the Caucasus

### **3.3 Climate**

Cyprus is characterised by a Mediterranean climate. In the countries of Mediterranean area the sun is desirable in the winter while in the summertime sun should be blocked and the cooling and ventilation are necessary. The Trodos Massif and Kyrenia mountain ranges have important roles in defining the weather on the island. In winter snow falls for several weeks at a considerable depth on the high northern slopes. The Kyrenia range and lowlands rarely experience snowfall. Meteorological data indicates a general increase in overall temperature. There has been a slight decrease in precipitation with a corresponding increase in drought (Griggs et.al. 2013)

In this region summer months are hot and rather dry, rainfall mainly occurring between November and March. The average annual temperature varies from a winter minimum of 9 0C in December to a summer maximum of 35 0C in August in this region (Seffer et al., 2011). Therefore, climatic characteristics of this area allow staying outdoors during all year; affect the organization of the gardens as essential elements of residential units. Traditional house in the region may have a summer and winter portions the upper level used in the summer and ground floor in winter with fireplace. Kitchen is widely used in the winter, whereas the terraces and patio or outdoor spaces prepared to stay during the day in shady areas or to sleep at night (Al-Din, 2017). The climate character of any region is determined by the variation of several elements and their interaction with each other. The

considered climatic elements, for human comfort and building design, are solar radiation, long wave radiation to the sky, air temperature, humidity, wind direction and speed, as well as precipitation such as rain, snow etc.

### **3.4. Methods**

Observation of home gardens and interviews of home garden owners are the primary sources of data for this study. A questionnaire is used to collect data from the home owners. Participants consisting of 35 people provided permission to photograph and to collect plant samples for identification and laboratory analysis carried out for unidentified plant species. Informational data is developed on the basis of preliminary survey and discussion with experts. The questionnaire was mainly focused on home garden components. During the surveys that were carried out between January 2017- October 2018, home owners were asked about the common name of each plant species, corresponding uses and numbers present in their home garden. All fruit producing trees and shrubs were identified. Also, the herbs, vegetables of fruit usage reasons were identified.

### **3.5. Data Collection**

According to the data collection, the general situation of traditional home gardens has been examined. The proposed questionnaire is categorized into four main divisions, the demographic layout of users, and physical layout of courtyard and functional use of courtyards or gardens. The demographical information section was used for statistical analysis by categorizing gender, age and accommodation years.

### **3.6. Data Analysis**

The data analysis, firstly percentage analysis method has been carried out to evaluate

respondent's data which includes demographic details (age, gender and total accommodation years), their years of experience in the field of construction.

### **3.7. Research Questions**

The survey study is a scientific tool for the climatic of physical structure usage and user satisfaction of courtyard buildings and led to answer the following questions:

- 1 Plan of the house
- 2 Existence of section of the courtyard or gardens
- 3 Size and area of the courtyard/garden
- 4 Rooms that are looking towards the courtyard/garden
- 5 User satisfaction in winter months
- 6 User satisfaction in summer months
- 7 Water resources within the courtyard or garden
- 8 Use of courtyard and garden
- 9 Vegetation type
- 10 Vegetation cover
- 11 Vegetation details
- 12 Types of plants used in the garden
- 13 Plants that are used for health and religious purposes

### **3.8. Questionnaire Layout**

The questionnaire contained two sections. The initial segment of the survey was identified house area have been information about homeowners (Nationality, Age, Profession, Total accommodation years). The second part was intended to assess respondents how often they use their gardens and usage purpose of the gardens. This second part of the questionnaire

was also about the vegetation cover and vegetation type of the gardens. In line with the prepared questionnaires;

- Examination of the dimensions of the gardens; garden courtyard house, group of L-shaped house, shared courtyard house, patio house, L-shaped house II, atrium-type house
- Existence section of the courtyard or garden; courtyard, garden, both
- Total m<sup>2</sup> of the gardens
- Examination of rooms looking towards garden; salon, living room, hall, kitchen, other
- The use patterns in inner courts are related with the demographic structure,
- It has been investigated that the courtyard buildings are also affected by the climatic temperature effect of the user. Data provided according to the winter and summer months.
- Examination of the garden usages; vegetation, sitting, utility, storage, eating, playing area, resting, reading, cooking, knitting, handcrafts, sporting, other
- Details of vegetables, fruit trees, herbs and ornamentals has been investigated
- Types of trees, shrubs and groundcovers that are used in gardens has been examined
- The use of herbs and vegetables for health and religious purposes has been investigated



## **CHAPTER 4**

### **RESULTS AND DISCUSSION**

Generally, home gardens are the most preferred type of residence and comfort in traditional residential settlements. The gardens in the development of ecological values and sustainable socio-cultural factors have been effective. The characteristics of traditional Cypriot gardens are found only in some villages that have been investigated under this study. According to the results of the survey conducted in Lapta villages, in the direction of the answers given by the house owner to the questions was analysed under this section. The data showing the demographic layout of garden users (nationality, age, profession, and usage years), physical layout of gardens, usage of the gardens, vegetation that are used were examined.

During the surveys conducted in Lapta region a total number of 35 rural home gardens were visited (between the sizes of 20 m<sup>2</sup> to max 1000 m<sup>2</sup>). According to survey results, there are total number of 14 different vegetable species, 11 different herb species and 16 different species fruit tree.

**Table 1:** Participants demographic data in total

Characteristics	Frequency	Percentage
<b>Age:</b>		
16 – 25	1	3%
26 – 35	0	0%
36 – 45	1	3%
46 – 55	4	11%
56 – 65	6	17%
65 +	23	66%
<b>Accommodation years:</b>		
0 – 20	2	6%
20 – 40	3	9%
40 – 60	21	60%
60 – 80	8	22%
Unknown	1	3%

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Characteristics	Herb (Yes/All)	Percentage
<b>Age:</b>		
16 – 25	1/1	100%
26 – 35	0/0	NULL%
36 – 45	1/1	100%
46 – 55	4/4	100%
56 – 65	6/6	100%
65 +	17/23	74%

According to analysis of age range, the age of 65+ is 66%. The population living in the house for 40-60 years makes up 60% of this study, as it was shown in Table 1.

The garden types were examined in Lapta area and it was found out that the most type of home gardens are mixture of garden and a courtyard. Second majority was garden owners and there was only one courtyard user examined under this survey. The temperature values that users feel in the courtyards during summer and winter were investigated also and it was discovered that; in the summer month 16 gardens users find their gardens' temperature cool and 4 of the users find it 'very cool'. 9 of the participants said their gardens are hot and the 4 participants feel the temperature as marrow during the summer months. However, during the winter month's user satisfaction sharply decreases. Majority of the users, with 19 people, said their gardens are cold during the winter. Only 7 people said that the temperature is marrow in their gardens during the winter months and only one person considered his garden as hot. This house was located in Akdeniz village, it has a garden and a courtyard. The user told that he uses his garden as a space for sitting, utility, storage, eating, playing, resting and cooking. Courtyard of use vegetation can be seen from the Table.2 below. It was seen that 100% of the gardens with vegetation have ornamental plants too.

**Table 2:** List of recorded vegetables during the survey

<b>Number of Species</b>	<b>Species Name</b>	<b>English Name</b>	<b>Family Name</b>
1	<i>Portulaca oleracea</i> L <i>Solonum</i>	Purslane	Portulacaceae
2	<i>hycopersium</i>	Tomato	Solanaceae
3	<i>Beta vulgaris</i>	Chard	Ameranthaceae
4	<i>Latuca sativa</i>	Lettuce	Asteraceae
5	<i>Cucurbita</i> L.	Pumpkin	Cucurbitaceae
6	<i>Allium cepa</i>	Onion	Alliaceae
7	<i>Solanum melongena</i>	Eggplant	Solanaceae

8	<i>Apium graveolens</i>	Celery	Apiaceae
9	<i>Capsica</i> L.	Pepper	Solanaceae
10	<i>Vica faba</i>	Faba bean	Fabaceae
11	<i>Allium sativum</i>	Garlic	Alliaceae
12	<i>Cucumis sativus</i>	Cucumber	Cucurbitaceae
		Kindney	
13	<i>Phaseolus vulgaris</i>	bean	Fabaceae

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**Table 3:** List of recorded fruits during the survey

Number of Species	Species Name	English Name	Family Name
1	<i>Vitis vinifera</i>	Grape vine	Vitacea
2	<i>Citrus sinensis</i>	Orange	Rutaceae
3	<i>Ficus carica</i>	Fig	Moraceae
	<i>Prunus</i>		
4	<i>domestica</i>	Plum	Rosaceae
5	<i>Prunus dilcus</i>	Almond	Rosaceae
	<i>Punicia</i>		
6	<i>granatumun</i>	Pomogranate	lythraceae
	<i>Phonix</i>		
7	<i>dactylifera</i>	Date palm	Arecaceae
8	<i>Prunus persicia</i>	Peach	Rosaceae
	<i>Eriobotrya</i>		
9	<i>japonica</i>	Loguat	Rosaceae
10	<i>Citrus maxima</i>	Shaddock	Rutaceae
11	<i>Olea europeae</i>	Olive	Oleceae
12	<i>Juglang regia</i>	Walnut	Juglandaceae
13	<i>Morcus alba</i>	Mulbery	Moraceae
14	<i>Citrus limon</i>	Lemon	Rutaceae
15	<i>Citrus reticulata</i>	Tangerina	Rutaceae

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**Table 4:** List of recorded herbs during the survey

Number of Species	Species Name	English Name	Family Name	Use
1	<i>Coriandrum sativum</i>	Coriander	Apiaceae	Food
2	<i>Petroselinum crispum</i>	Parsley	Apiaceae	Food
3	<i>Mentha spicata</i>	Mint	Lamiaceae	Medicinal/Food/Ormental
4	<i>Ocium basilicum</i>	Basil	Lamiaceae	Medicinal/Food/Ormental
5	<i>Origanum majorona</i> L. <i>Lavandula</i>	Marjoram	Lamiaceae	Medicinal/Food/Ormental
6	<i>angustifolia</i> <i>Rosemarinus</i>	Lavender	Lamiaceae	Medicinal/Food/Ormental
7	<i>officinalis</i>	Rosmary	Lamiaceae	Medicinal/Food
8	<i>Salvia officinalis</i>	Sage	Lamiaceae	Medicinal/Food
9	<i>Laurus nobilis</i>	Bay Tree	Lauraceaa	Medicinal

**Table 5:** Survey evaluation analysis use of housing type and green garden usage.

**Table 6:** Sizes of gardens surveyed in Lapta region

NO	Locations	Total Land Area
1	Korucam	50m <sup>2</sup>
2	Korucam	40m <sup>2</sup>
3	Korucam	50 m <sup>2</sup>
4	Korucam	80 m <sup>2</sup>
5	Korucam	200 m <sup>2</sup>
6	Hisarkoy	150 m <sup>2</sup>
7	Hisarkoy	775 m <sup>2</sup>
8	Hisarkoy	775 m <sup>2</sup>
9	Hisarkoy	500 m <sup>2</sup>
10	Hisarkoy	750 m <sup>2</sup>
11	Akdeniz	40 m <sup>2</sup>
12	Akdeniz	30 m <sup>2</sup>
13	Akdeniz	300 m <sup>2</sup>
14	Akdeniz	100 m <sup>2</sup>
15	Akdeniz	80 m <sup>2</sup>
16	Tepebasi	150 m <sup>2</sup>
17	Tepebasi	775 m <sup>2</sup>
18	Tepebasi	1550 m <sup>2</sup>
19	Tepebasi	300 m <sup>2</sup>
20	Tepebasi	80 m <sup>2</sup>
21	Camlibel	775 m <sup>2</sup>
22	Camlibel	80 m <sup>2</sup>
23	Camlibel	1550 m <sup>2</sup>
24	Camlibel	3000 m <sup>2</sup>
25	Camlibel	1550 m <sup>2</sup>
26	Karsiyaka	1550 m <sup>2</sup>
27	Karsiyaka	750 m <sup>2</sup>
28	Karsiyaka	600 m <sup>2</sup>
29	Karsiyaka	1550 m <sup>2</sup>
30	Karsiyaka	750 m <sup>2</sup>
31	Lapta	1000 m <sup>2</sup>

32	Lapta	800 m <sup>2</sup>
33	Lapta	750 m <sup>2</sup>
34	Lapta	800 m <sup>2</sup>
35	Lapta	600 m <sup>2</sup>

Home gardens play an important role in shaping the physical, psychological and climatic environment in the houses (Sthapak and Bandyopadhyay, 2014). Also, gardens are important for cultural heritage and local life style. According to Rapaport (1969), gardens have been used in different cultures which are both crowded and hierarchical. In this research we have found that the use of gardens in Lapta region has consists only one type. It was found that the home gardens in this region only used by the families and not as cafes, restaurants, hotels etc. Some of the gardens which are used by families were neglected. Nevertheless, in general, it was observed that residents are using garden spaces for vegetation, resting, reading, cooking and even sporting. As a result of this research, it was found that traditional way of using gardens still continues, this may be because of there is a majority of Cypriot community living within this area of Cyprus.



## **CHAPTER 5**

### **CONCLUSION**

In the light of the information obtained, we see that houses with the courtyard increases as the age increases, but the active use decreases in the sense of agriculture. Besides, we can say that all of the gardens have an active life. There are trees and water supply almost in all gardens, therefore it was found out that there is sufficient amount of vegetable, fruits and herbs growing in the gardens. When we look at plants grown in gardens, we can say that almost all garden owners are growing mint. It is observed that plant growing in the garden decreases as the age increases. Nevertheless, we need more data to fully confirm the accuracy of this. Another situation we observe and ask in gardens is ground covers and bushes. It was discovered that most gardens have a specially designed cover for the floor and there are shrubs in the garden area.

There are mixed types of plants in all gardens. The majority of the purpose of the gardens is to have a natural environment and to have a vegetation. Apart from these, the courtyard is also used actively for a dining environment, playground, open space enjoyment, recreation area, cooking area, reading room and storage.

The sections opening to the garden of the house are often seen as kitchen and living room. In addition, for some properties the size of the garden is small, while for some properties the size of the garden is larger than the living space of the house. In terms of seasonal use of gardens, we can say that it is more difficult and colder weather especially in winter months. We have received feedback that the courtyards are too cold for winter use but there is not much of a problem in the summer compared to winter. Nevertheless, there are people who expressed that they are uncomfortable because they are very hot in summer.

Apart from these, we can say that people spend their retirement life by taking care of the garden. The high age of many of the residents confirm this. However, we must say that the accuracy of this inference cannot be achieved merely by this data. Also, the question of what is going to happen to this gardens in future years will remain as a question mark due to the old age of the existing properties.

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**BİLİMSEL ARAŞTIRMALAR ETİK KURULU**

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Sayın Derviş Ali Özersoy

Bilimsel Araştırmalar Etik Kurulu'na yapmış olduğunuz YDÜ/FB/2017/9 proje numaralı ve **“Ethnobotanical Knowledge of Rural Lifestyle in Cyprus”** başlıklı proje önerisi kurulumuzca değerlendirilmiş olup, etik olarak uygun bulunmuştur. Bu yazı ile birlikte, başvuru formunuzda belirttiğiniz bilgilerin dışına çıkmamak suretiyle araştırmaya başlayabilirsiniz.

Yardımcı Doçent Doktor Direnç Kanol

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