

**An Empirical Evaluation of Waste Treatment and  
Management in a Tourism-dependent Destination:  
Evidence from North Cyprus**

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Approval of the Institute of Graduate Studies and Research

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## **ABSTRACT**

This study aims to explore the policies and strategies that are in place to manage the waste materials which is a significant aspect of environmental protection and environmental quality. Nowadays, tourism is evolving rapidly as the concept of sustainability and green tourism are becoming the major challenges for tourism related institutions and agents. Waste management and waste processing has remained the most pressing challenge for the communities as well as local governments. The main impetus behind such evolution is the change in the demand and supply side of tourism. Declining biodiversity, global warming, migration and waste production are some of the examples of real challenges that tourism sector cannot ignore. In this context, island states, including TRNC, which are highly dependent on tourism need to pay attention and come up with strategies to sustain their environment against the negative impacts of waste produced by the communities themselves and tourists. Therefore, one of the areas that destinations such as Famagusta can focus is the issue of 'waste management'. The question is that while Famagusta is highly dependent on tourism, and waste production is increasing day-by-day, what types of measures are in place to achieve minimization of waste production? For the purpose of this study, a qualitative/inductive method was administered and data collection approached through in-depth interview with 10 respondents from different public sector institutions who are involved in waste management and environmental issues. About 23 interview questions with semi-structured nature were presented to the respondents. The study explored that waste management in Famagusta entangled with several challenges faced.

**Keywords:** waste management, waste education, environmental and waste challenges, tourism, local government, Famagusta/TRNC.

## ÖZ

Bu araştırma, çevresel korumanın ve çevre kalitesinin en önemli yönü olan atık malzemelerin yönetimi için mevcut politika ve stratejileri araştırmayı amaçlamaktadır. Günümüzde, hızla gelişen ve değişen turizm sektöründe sürdürülebilirlik kavramı ve yeşil turizm turizm sektörde bulunan acenteler ve kurumlar için en büyük zorluklar haline gelmektedir. Atık yönetimi ve atık işleme, yerel yönetimlerin yanı sıra toplumalar için de en acil ve hızlı bir şekilde çözümlenmesi gereken zorluklardandır. Bu durumun arkasındaki en önemli faktörlerden birisi turizm sektöründeki arz ve talep oluşan değişimdir. Turistler yeşil turizm talep etmekte ve tedarikçilerin turistlerin taleplerine cevap verememektedir.

Bu gelişmeler içerisinde yaşanan, çevresel zorluklar, endüstrileri çevreci ve ekolojistler tarafından bütün bu zorlukların üstesinden gelme çağrısına cevap vermeye zorladı. Biyoçeşitliliğin azalması, küresel ısınma, göç ve atık üretimi, turizm sektörünün göz ardı edemeyeceği en büyük sorunlarından bazılarıdır. Bu bağlamda, Kuzey Kıbrıs Türk Cumhuriyeti de dahil olmak üzere, gelir kaynağı turizme bağlı olan ada devletlerinin, toplumların ve turistlerin atık ürünlerinin olumsuz etkilerine karşı çevrelerini sürdürme stratejileri geliştirmeleri gerekmektedir. Bu sebeple, Gazimağusa gibi bölgelerde odaklanabilecek alanlardan biri de 'atık yönetimi' konusudur. En önemli soru, Gazimağusa'nın turizme büyük oranda bağımlı olmasına ve atık üretiminin gün geçtikçe artmasına rağmen, atık üretiminin en aza indirilmesi için ne tür önlemler alındığıdır? Bilmeliyiz ki, turizmin geleceği sağlıklı bir çevreye bağlıdır.

Bu çalışmanın amacına uygun olarak, nitel / endüktif bir yöntem uygulanmış olup, atık yönetimi ve çevresel konularda yer alan farklı kamu kurumlarından 10 katılımcı ile derinlemesine görüşme yoluyla veri toplama çalışmaları yapılmıştır. Katılımcılara yarı yapılandırılmış nitelikte 23 görüşme sorusu sunulmuştur.

Çalışmanın sonuçları, Gazimağusa'daki atık yönetiminin, atık eğitimi ve atık yönetimi konusundaki farkındalık eksikliğini, kamu kurumlarında atık malzemelerle başa çıkacak kaynakların bulunmaması bunun yanısıra, atık ve ihlal ile ilgili kurallar ve düzenlemelerin de dahil olduğu çeşitli zorluklarla karşı karşıya olduğunu ortaya çıkarmıştır.

**Anahtar Kelimeler:** Atık yönetimi, Atık eğitimi, Çevresel ve atık zorlukları, Turizm, Yerel yönetim, Gazimağusa/K.K.T.C.

# **DEDICATION**

I dedicate this thesis to my parents for their support and encouragement

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Special appreciations go to GOD Almighty, for his infinite mercy, for given me wisdom, knowledge and understanding to complete this study.

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## **LIST OF SYMBOLS AND ABBREVIATIONS**

TRNC	Turkish Republic Of North Cyprus
GDP	Gross domestic product
UNWTO	World Tourism Organization
LDCs	Least Developed Countries
NO <sub>x</sub>	Nitrogen oxides
SO <sub>2</sub>	Sulphur dioxide
NH <sub>3</sub>	Ammonia
GPS	Global Positioning System
EU	European Union
NGOs	Non-governmental organizations

# Chapter 1

## INTRODUCTION

Chapter 1 introduces the subject matter. It gives a detailed account of the background of the study, aims and objectives and it introduces the research questions of the study. Additionally the chapter outlines the significance of the study, and provides a brief insight on the proposed methodology of the study as well as the thesis outline.

### 1.1 Background of the Study

The tourism industry has generally been regarded as an important sector in most countries, when forth it has been used to revive dying economies. Precisely, the tourism industry is quite a dominant sector contributing to economies GDP. (Sayed,2017) would not agree any less as he also points out and attests to the fact the tourism industry is a major income-driving sector mostly on developing countries.

From a wider spectrum, the tourism industry is a major growing sector worldwide. According to the UNWTO report of 2019, the year 2018 had 1.4 billion worth of international tourist arrivals which is a +6% increase from the previous year. In fact, the year 2018 emerges as one of the best years recorded to date following the statistics given in 2010. Given this set of statistics, and the trend in the growth of the sector over the past years the UNWTO, secretary general, (Zurab Pololikashvili, 2019), undoubtedly acknowledges the industry as one of the utmost greatest

economic growth and development drivers. He further denotes the need to manage the resources responsibly in the best possible sustainable ways possible, to enable a long-term expansion of benefits in all countries and its local communities through some of its abilities to create jobs and entrepreneurship opportunities.

Ever since the industrial revolution, the tourism industry has effectively been a center of attraction (Ayhan, 2011), thus pulling a wide number of travelers to different destinations worldwide. While tourist numbers have dwindled down in some instances, the general review has been an increase in arrivals worldwide. The potential of the tourism industry has thus been very clear for a quite some time, given that the history on its development and the current reports issued by the UNWTO in its present state and future expectations. While the developed countries in Europe, America continue to flourish because of tourism, the developing countries have also begun tapping into the sector for sustenance and economy revival.

While tourism is good and gives good countenance of a destination, it has come with its pitfalls too. Although it has been associated with positives, it certainly has had its own negatives. Because of the benefits from the tourism industry, mass tourism has been the likely result. Both the developed and developing countries have extensively benefited from mass tourism. However, for long-term sustenance, the art of mass tourism is not sustainable and is not recommended, due to the drastic negatives impacts it harbors. While mass tourism has helped destinations flourish at a fast pace, mostly those with distressed economies, there has been issues of capacity raised in some destinations. For example, the increase in tourist arrivals to a destination on positive note rapid developments (Infra and superstructure) may

occur, although drawback of waste is a concern and the impact of development on the environment. Not only development is a concern, but also as noted earlier capacity, issues are a stress to the environment if not available and then issues of both solid and liquid waste. As such, the issues of sustainable waste management has off late become a relevant concern in tourist destinations (Iuliia Murava1, Yaroslavl Korobeinykova1, 2016).

While waste management may be a global concern, however spiraling down to destination level, it becomes the responsibility of the local municipalities. However, due to ever-growing populations in some countries, particularly the tourist destinations solid waste management has been a challenge in the municipalities. Also coupled with the fact that most developing countries have not mastered and neither are they capacitated enough to handle waste, it has been a further strain on the municipalities. Guerrero et.al., (2013) attest to the notions as they also noted that , municipalities have failed to handle waste due to emerging economies and as a result of the fact that it comes with high costs that they are not able to meet and also that the municipalities lack adequate knowledge over issues affecting the different stages of waste management. Authors, Minghua, Xiumin, Rovetta, Qichang, Vicentini, Bingkai, and Yi, (2009) highlight the issues of increasing population, flourishing economies, rapid urbanization and an increase in standards of living for communities as the major reasons why municipalities have failed to handle waste, mostly in developing countries. Given this analysis by Minghua et al., in 2009 and the observations of Guerrero et al., in 2013, the researcher would not agree any less by their findings. From a general perspective and observation of Northern Cyprus as a tourist destination, the area is characterized by mass tourism, and then because it also thrives on educational tourism, factors such as increasing population are



notable. The municipality does not only have to worry about waste from the international tourist, but also from its permanent residents as well as the temporary residents as a result of the educational tourist. While it may be accorded as a European state, the destination has not yet fully developed to stand alone and pending the historical issues of the island as a whole?, The country has not been able to stand alone but has been administered by the Turkish government in Turkey.

## **1.2 Aims & Objectives**

The aim of the study is a generalized statement on the concerns of the research area. It gives a rough sum indication on what the researcher entails to cover in their study. When further broken down in sub goals, they become the objectives of the study which are the different strategies used to attain the overall goal. Aims and objectives generally help give the researcher and reader direction and a sense of purpose. Setting aims and objectives of the study help researcher keep track on and adequately narrow down the area of study and gather accurate information. They are a guideline of a sort.

Noting that the issues of waste management are a tenacious environmental and social problem to destinations (Gottinger, 2018). More so in developing destinations, poor waste management has been a cause for concern on the environmental and health implications on societies (Marshall & Farahbakhsh 2013) and also because the dispensation of solid waste management generally is a challenging sector (Zaman, 2014). The aim of the study is to evaluate waste treatment and management processes in tourism dependent destinations such as Northern Cyprus, a case of Famagusta City a highly tourist resort in the country.

Investigating and discovering the authorities' waste management's processes in a destination such as Northern Cyprus is essential to gauge coping skills of handling capacity on the island and if there will be a need to come up with other strategies in handling waste. The objectives of the study are therefore as following:

- To evaluate the current waste treatment and management processes in Famagusta, Northern Cyprus.
- To find out the challenges of waste management and treatment issues in Famagusta, North Cyprus
- To come up with solutions for future sustainable strategies for waste management and treatment.

### **1.3 Research Question**

Bearing in mind the presented arguments in the background and aim of the study, the current thesis tries to answer the following research questions:

1. What are the current waste management and treatment processes, which are in place in Famagusta, North Cyprus?
2. What are the challenges in waste management and treatment in Famagusta, North Cyprus?
3. What are the future prospects of waste management and treatment processes in Famagusta, North Cyprus?

### **1.4 Significance of the Study**

As strongly highlighted in the current study, waste management is a very critical issue in developing countries and it is quite challenging for the local municipalities expected to maintain health hazardous free environments. In fact, Marshall and (Farahbakhsh, 2013), denoted that waste management in developing countries are mounting in urgency. While the need for municipals to engage in solid waste

management in emerging economies becomes imperative (Guerrero et al., 2013). Bearing in mind these observations, a health hazard environment for the benefit of both the tourist and resident communities in a destination are of paramount importance to a destination. While research on waste management has been noted in literature, it is evident that this is an ongoing issue, which needs to constantly be looked into, thus necessitating the current study.

Furthermore, studies on waste management have been noted from the perspective of the travelers and their behaviors towards reducing waste in destination (Han, Yu, & Kim, 2018). Assessments have been made also hosts and tourists' responsibilities as well as their participation toward waste management (Chandran & Shreya, 2018), with however little attention given to the role of the municipality in waste management. Additionally, waste management has been generally noted in literature and it has been concluded and also that it is a challenging issue for the municipalities in developing nations (Guerrero et al., 2013; Ibáñez-Forés, , Coutinho-Nóbrega, Bovea, de Mello-Silva, & Lessa-Feitosa-Virgolino, 2018; Ikhlayelm 2018; Marshall & Farahbakhsh, 2013; Yunana, Kamsouloum, Webster, Wilson, & Cheeseman, 2018). Little attention has been placed on evaluating waste management in tourism destinations, more so on Islands as would be the case with Northern Cyprus. While a study has been conducted in general on the conditions of waste management on the island (ÖZVEREL, 2014), the previous research generalized the findings as study was qualitatively done for the whole island, while the current study narrows down the problem to a single tourist resort's management of waste management. The current study therefore contributes to the body of knowledge by evaluating the treatment of waste and its management processes in a tourism dependent destination, an Island still developing. Qualitative measure are

used in order to gain further understanding on the processes, the challenges and recommendations or suggestion for better treatments on the island.

## **1.5 Proposed Methodology**

The study takes an explorative measure, hence qualitative research method to collecting data are used for the present study. Qualitative research method is mostly used when the researcher desires to seek deeper meanings of a phenomenon or problem at hand. As such, in-depth interviews are used to gather data on waste management issues in Famagusta in Northern Cyprus. Prior to the research, semi-structured interviewer-completed questionnaires will be used to gather information from participants. Furthermore the researcher will use set choice and pre coded questions to analyze the data as well as open ended questions will be asked so as to probe the sample study for further information, which may not be easily accessible from set choice questions. The sample study will include officials in tourism and environment related offices and non-governmental organizations dealing with waste management and or environmental issues within the city of Famagusta in Northern Cyprus.

A non-probable sampling strategy, the purposive also known as judgmental and or subjective sampling will be adopted for the current study. The sample strategy was found better suited for the study in that it is handy and it enables the research to reach quickly their desired target (Crossman, 2017). Because there are a number of purposive sampling strategies, the present study opted for the critical case sampling method, hence study is focused on Famagusta a small but major tourism resort in Northern Cyprus. Respondents of the study were asked on their assessment of the approaches and polices of waste treatment and management issues, challenges and

recommendations of solutions to improve the current state. More information on the methodology, research design and research instruments will be given in Chapter 4.

## **1.5 Thesis Outline**

The current thesis has 6 chapters. The first chapter is the introduction of the study, it provides insight on the background of the study and it discusses the aims and objectives of the study and it also states out the research questions the thesis endeavours to answer. The significance of the study are discussed in the chapter with the final paragraphs highlighting on the proposed methodology strategies and brief indication of how the research summary will be presented given in the thesis outline. Chapter 2 which is the literature review tries to analyse what has been studied on before on the present subject. It starts off with a broad understanding of tourism and its general impacts and then narrows down to the different types of tourism before tackling the issues of waste management in tourism destinations. Following is chapter 3 which is a detailed account of the study setting thus information on Northern Cyprus and the Famagusta the case study is provided in this chapter, along with information on waste management approaches and policies. The research design, sampling strategies, research instruments and data collection strategies are given in the fourth chapter being the methodology of the study. Data analysis and study findings are reported in the 5th chapter while Chapter 6 finalises the thesis with a discussion of the findings, limitations and recommendations for future studies.

## **Chapter 2**

### **LITERATURE REVIEW**

Chapter two is literature review which provides information on previous studies on general overview of tourism and its impact and the different forms of tourism before getting into discussing waste management in tourism, its approach and policies to date on the matter.

#### **2.1 Tourism Overview**

The tourism industry for a while now has been a major economic force influencing significant amounts of development for many host destinations (Brida, Disegna, & Osti, 2014). The sector has undoubtedly shown enormous signs of growth and expansion (UNWTO, 2015) and deemed one of the world's largest economic activity (Romao & Nijkamp, 2017). It has become a vital global activity, stemming out to be one of the fastest growing industries believed to be a highly valuable industry to an economy and other sectors. Therefore, By measure of its growth rate, it is fast becoming one of the most promising industry to significantly contribute towards the global economy (Petrevska,2012). As per the reports given by UNWTO, 2016; 2017, tourism has potential to improve social, economic, cultural, and environmental dimensions of community development.

As previously noted, it is a significant force towards economic development for most host nations. Today several countries look towards tourism to revive and or boost fading economies. Tourism has undoubtedly been used to boost destination

image and improve the general well-being of economies from its noteworthy economic benefits. Innumerable benefits such as generation of employment, improving quality of life, tax receipts, improving natural and cultural attractions and cultural based festivals are among some of the benefits achieved (Brida et al., 2014). For example jobs in the tourism industry are either directly and or indirectly created. People from the local economies can either acquire jobs in tourism related services such as hotels, airports, lodges and tour operators, while business opportunities may also be created via chances of selling local artefacts to visiting tourists and or working in other services indirectly connected to the sector. Though the industry has generally been associated with economic impacts, there are other impacts notable as well such as environmental, sociological, political and cultural impacts. While positive benefits mostly prevail, negative effects of tourism are also inevitable and have been a major concern in destinations.

## **2.2 Tourism Impacts**

Positive nor negative impacts of any development are inevitable. As already in the discussion above, the reason tourism has flourished is mainly because of its positive benefits economically centered, although there are other benefits such as environmental, sociocultural and political tourism effects. Viz a Viz in the same categories negative impacts are also prevalent. Supporting the notions, Andereck and Nyaupane (2011), Nunkoo and Ramkissoon (2011) attest that tourism development causes both positive and negative effects to host communities.

There are several studies in literature on residents' perception of tourism impacts and their support for tourism development (Lee, Kang, Long, & Reisinger, 2010; Long, Perdue, & Allen, 1990; Nunkoo & Ramkissoon, 2011a). Specifically,

the studies looked at economic benefits such as increase in revenues and employment creation in destination (Perdue, Long, & Kang, 1999). Although as previously noted that not only economic benefits are notable but also the non-economic benefits, such as the quality of life of residents, cultural preservation, creation of social bonds, cohesion and community attachment. Clearly tourism projects are not only beneficial towards economic development but also community development (Nunkoo & Ramkissoon, 2011). In other words, tourism to a certain extent aids the communities greatly and this is characterized in some of the aforementioned non-economic benefits associated with it. For example the feeling of belonging experienced in community attachment or the social bonds amongst the locals or even visitors make the environment more pleasant and adaptable to it such that the peace and comfort that is derived from it enhances one's well-being.

### **2.2.1 Positive & Negative Tourism Impacts**

Tourism is entirely dependent on the local people's reception of the visitor, as such the support and participation of the residents in tourism development activities is essential (Gursoy & Rutherford, 2004; Lee, 2013). Tourism influences the local people's lives (Andereck & Nyaupane, 2011) in one way or the other, hence the need for residents' engagement in tourism development as noted earlier. The reason many economies have turned to tourism development projects has been none other than reviving economies and improving the quality of life of its residents. Morgan (2012) argues that successful tourism destinations should be areas with ability to improve host community quality of life and those that promote sustainable ways of living. In other words, the ability to make communities better should be a priority in these tourism destinations. The well-being of the residents is but one of the many



concerns expected among the tourism non-economic outcomes of tourism projects (Andereck & Nyaupane, 2011; Perdue et al., 1999).

There are various ways in which quality of life or the well-being of locals can be enhanced in tourism destinations. For example, it is a common factor that tourism creates employment and business opportunities. According to the 2017 Economic Impact Report by the World Travel & Tourism Council, the tourism industry creates at least one out of ten jobs worldwide. As at 2016 from this report, this has been found to be correct for a period of six years consecutively. Furthermore, the report also noted that at least one over five of the jobs created worldwide are created from the sector. Locals in a community can engage in other extra activities such as selling of local art, which create additional income for the local people. Business opportunities may also be created in destinations as some can venture in small to medium business activities. From a personal level, in light of the above discussions lives can indeed be enhanced through tourism activities. From a community's perspective, the industry's ability to create jobs and business opportunities directly within and outside the industry is one way that the sector enables quality of life in the destination.

Additionally, the tourism industry also benefits the economy from export earnings. As a matter of fact, the industry in the Least Developed Countries (LDCs) the sector is among the top export earnings sectors (MacNiel & Wozniak, 2018). Lastly but not least, a destination may also positively benefit through tourism expenditure and sales and the increase in gross domestic product.

The impacts of tourism can also be viewed from other perspectives such as the sociocultural and environmental aspects (Kim, Uysal, Sirgy, 2013). From an environmental perspective, tourism may create environmental awareness amongst the residents as well as among the visitors. Issues such as sustainable and ecotourism have come as a result of bringing environmental awareness within the sector, which has basically determined to probe both the visitor and the local people to take extra care of the resource for the long term benefit from it. Given the other benefits associated from a resource, taking extra care of the resource and surroundings become very relevant. From socio-cultural perspectives, tourism enhances social cohesion, community attachment, identity and pride as well as social bonds. Additionally cultural and historical site preservation is among the positive benefits of tourism.

Nevertheless, negative tourism impacts are also prevalent. For example, the quality of life of residents may be vastly interrupted in tourism destination through cultural based issues such as congestion, increase in crime rates, high cost of living, pollution, environmental degradation and insufficient infrastructure (Brida et al., 2014). There are instances in which tourism has sparked unexpected and unforeseeable outcomes such as terrorism and political upheavals.

In conclusion of the discussion, though very beneficial to a community and host destination as a whole. Negative impacts of tourism are also inevitable. However, most of the tourism destinations have done is to curb the negative effects of tourism in the destinations.

## **2.3 Types of Tourism**

The tourism industry is very broad with various other forms of tourism in it. It is basically narrowed down to two main forms of tourism namely the domestic and international tourism. It can further be broken down to include other sub small sectors such as urban or city tourism, seaside, rural tourism, ecotourism, wine & culinary tourism, health tourism, medical tourism, religious and cultural tourism, educational and sports tourism, business tourism (which includes events such as meetings, incentives and conferences) and festivals to mention a few. The following paragraphs will briefly discuss the most common sub types of tourism such as mass tourism, sustainable and alternative forms of tourism.

### **2.3.1 Mass Tourism**

The conception of tourism was characterized with mass tourism, even though today there are some destinations still practicing Mass tourism. It dates back to the industrial revolution era in western countries (Sayeda, 2017). It became quite popular in the early 1980s after notable changes were realized in the economy for example air travel was now available to greater parts of the population enabling mass vacations to faraway places (Ayhan, A, 2011). Mass tourism carries tourism that involves large sums of people traveling together to a destination at the same time. It has been widely popular in that it a cheap way of travelling and is quite affordable to many tourists. While mass tourism is highly beneficial from an economic perspective (e.g. it has wide returns on taxes, revenue, sales and GDP), it has a significantly high negative effect on the environmental. It has been widely critiqued to be a time bomb on the destination in the long run, mainly because of the negative effects surrounding mass tourism. Mamunm, Hasan, Hossain and Mohsinul (2013) could not agree any less as they concur that mass tourism has indeed caused

several consequences on economies. As with tourism in general the negative consequences of mass tourism tally, however the severe impact being mostly on the environment as most destinations have ended up carrying more than what they have capacity for and issues of environmental and land pollution were found quite dominant. Furthermore, one negative effect example of mass tourism noted in literature is that of water disparities (Sayeda, 2017). Studies show that the viability of quality and abundant water in tourism destinations is a necessity (Essex et al., 2004; Kent et al., 2002). However there has been disparities in its consumption between the visitors and the locals (Garcia and Servera, 2003; Gössling, 2001).

As a means to curb the negative effects of Mass tourism, other forms of tourism have been introduced such as alternative, sustainable and ecotourism. Although their names differ, the main aim in each of the aforementioned forms of tourism is to maintain a long-term tourism success. They all probe for sustainable tourism practices, hence the need for the current tourism users to take extreme caution and care of the resource so that future users also benefit from the resource.

### **2.3.2 Alternative Tourism**

Alternative tourism is a form of tourism that promotes nature based and cultural activities. As opposed to mass tourism, it is a more personalized form of travel, which encourages close interaction with the local environment, people and communities. It is more favorable to those visitors that love nature and are keener on preserving it. Preservation of the resource is a main concern for both the traveler and the local community, such that awareness is created in both users of the resource.

Alternative tourism endeavors to accomplish solidarity and equality amongst participants (Holden, 1984). In other words, it aims to create some form of just travel amongst different communities, both users the tourist and the locals have to reach a certain consensus and benefit from the resource.

Alternative tourism became common in the early 1980s and it was considered a more a sustainable way of travel as compared the destructive mass tourism. As already noted in the discussion, mass tourism has drastic effects on the environmental and sociocultural aspects of communities, while alternative tourism responds to the negative impacts of tourism on nature and the society. It tries to minimize negative effects on the tourist and locals' experiences, the reason that awareness is created from both perspectives. Alternative tourism observes the local people of a host destination as an important factor to tourism development, as such they are given opportunity and power to control resources and benefit from it as well.

Briefly and in summary, alternative tourism tries not to destroy the environment. It is a more conservative form of tourism that avoids negative effects of tourism; hence it promotes more personalized travel as compared to mass travel. The local people play a major role in the tourism as they design the packages and offer them to visitors, by so doing it emphasizes on authentic visitor experiences. Furthermore, it advocates that locals be the beneficiaries of tourism proceeds and excess earnings are shared with among other indirect communities from the host destination. To some extent, it has a close link to the principles of sustainable tourism. Alternative tourism has been interchangeably noted to also mean sustainable tourism.

### **2.3.3 Sustainable Tourism (theory and model)**

Sustainable tourism is viewed as a form economic development created to enhance host community's quality of life as well as a way of enhancing visitor experience (McIntyre, 1993). According to Holden, Linnerud, & Banister (2017), there are three major issues that sustainable tourism development tries to accomplish, that is satisfying human need, fulfilling social equity and the desire to respect environment limits. In simpler terms, sustainable tourism development assists host destinations to respect their surroundings, mainly that they may enjoy long benefits from the resource.

From as early as the 19<sup>th</sup> century, sustainability has been spoken about and emphasized on (Redclift, M. 2005). Late 1980s, The World Commission on Environment and Development defined the term sustainable development as a development which tries to meet users present needs without compromising the ability of future generations to meet its own needs (James, M. L. 2015). The concept of sustainable tourism development became more famous after the Brundtland Commission Report in 1987. The major aim of sustainable development mostly common in the varied definitions and description of sustainable tourism development shown in literature all point to one thing; that is environmental preservation for present day and future consumption. For example it demands use of renewable resources and it advocates that non-renewable resources be recycled and if not they should be reduced to extend their viability (Hall, Daneke& Lenox, 2010). On a closer analysis, exercising this ensures preservation of a resource for a longer term and for the benefit of future generations. In other words, sustainable tourism aims to control the consumption and management of renewable resources for the benefit of future generations (WCED, 1987).

As such awareness issues become a vital issue in host destinations(Urry,1995). Sustainable tourism development once again thrives via local people making some of the stakeholders that need to be made aware of conservation benefits. Awareness as such is not only built from the locals but also the visitors.

Clearly sustainable tourism development does not fall far away from other forms of tourism such as eco-tourism and alternative tourism. The common aim in these forms of tourism is preservation of environmental resources, it thrives in local peoples' involvement and they all arise as means and ways of making right negative effects caused by mass tourism.

## **2.4 Waste Management & Treatment**

### **2.4.1 Definition of Waste, Types and Categories**

Waste can be defined as any material that people do not require for use anymore (Özverel, 2014), it could be attributed to physical objects, solids, and liquid, organic. The types of waste vary, while some can be recycled and some cannot. There are about 5 generally known types of waste, including liquid, solid rubbish, organic waste, recycled rubbish, and hazardous waste.

Liquid waste is any dirty or unwanted waste in water form. This type of waste can be produced from within households (e.g. wash water, dishwashing and laundry detergent liquid) and or industries (chemicalised water waste). Generally liquid waste includes organic liquids, , acid and alkaline liquid waste, cyanide liquid waste, heavy metal liquid waste, hexavalent chromium liquid, mercury liquid waste, and others (Ho, & Chen, 2018). Additionally liquid waste can further be classified

non-point source waste. Point source waste are those produced in manufacture while natural liquid waste is known as the non-point source waste.

Solid Rubbish is what most households, commercials and industrial locations produce, for example plastic waste (e.g. containers, jars, and bottles), paper/card waste (e.g. packaging materials, newspapers and cardboard), tins and metals and ceramics and glass waste. The third type of waste is organic waste which includes things such as food waste, garden waste, manure, and rotten food stuff. This type of waste is biodegradable as it can be turned into manure for example, however it has to be appropriately disposed, for when left un-attended and reckless dumped it causes severe health hazards. The fourth noted is recyclable rubbish which includes waste which can be used again to make other products such as paper, metals and organic waste. As the name says recyclable, this type of waste is recycled. The last type is hazardous waste which includes anything flammable, toxic, corrosive and reactive. As the name purports, hazard is what they are, deadly, as such they have to be treated with extreme caution.

This waste does not just arise from nowhere, as noted in the above discussion it is either produced in households and or industries. Tchobanoglous and Kreith, (2002) expound further the different sources of waste, where-by they identify 8 categories of sources of waste dependent on where, how and with whom it is generated by. These include, residential (produced by families e.g. food, paper cardboard, plastic and other hazardous wastes), Commercial (waste produced from restaurants, hotels markets and stores), Industrial (e.g. power and chemical plants waste), Institutional, Construction and Demolition (from road repairs, or construction sites), Municipal



services (that is waste generated from cleaning open spaces such as parks beaches etc), Treatment plant sites and Agricultural wastes.

While waste is regarded as unwanted in the society, when treated well it can be recycled or reused to form other resources such as manure from organic waste, or for electricity generation and or industrial production (Tchobanoglous & Kreith, 2002). As such appropriate measure in handling, managing and treating waste have to be done properly to ensure preservation of the environment and public health.

#### **2.4.2 Waste Management & Treatment**

Noting the severity of ill-treated and or un-attended to waste, waste management and treatment is a requisite given the need to ensure a safe environment and a disease free and healthy society. Waste management are those practices adopted by management and or companies to sustainably act and show ability to do and protect environmental resources (Orhan, 2011). In other terms it is a system developed which involves collecting and disposing waste (Seadon, 2010). Literally and in simpler terms, it is means managing waste, or taking care of waste in a manner that protects the environment and public health. Waste management is essential in order to effectively help eradicate negative effects of environmental impacts of waste, a failure, to which waste can have drastic socio-environmental effects.

#### **2.4.3 Socio-Environmental Impacts of Waste**

Unattended to waste has grievous effects on the environment and it is a health hazard to the people in a destination. As such it has to be looked into with sincere care. There are a different kinds of wastes some of which when inappropriately handled they become hazardous. For example, wastes such as used up batteries, electronic gadgets, oil and or any toxic chemical content tend to take time to decompose. In the event that they are not well disposed in safe human unreachable

areas, and or are left open they have a high chance of causing diseases for the local population (I.e. when the remnants mix with oil and soil within reach of the general population) (Reddy, 2011). Chronic diseases and infections outbreaks can be a likely result. For example, most African states have been hard hit with diseases such as cholera because of solid and water waste mismanagement and treatment.

Waste management's effects do not only hold for health problems from a social perspective but also a poor quality of life of the citizens that can be costly to some individuals, as they have to incur medical bills for example. In the event that health hazards become a national disaster issues, authorities of the economy have to intervene to seek solution for national health.

There are also some environmental problems such as air, and soil pollution (e.g. bad odors and un attended dumping sites which create ugly land sights), climate change, water, inorganic resource depletion, and acidification because of acid forming substances like nitrogen oxides (NO<sub>x</sub>), Sulphur dioxide (SO<sub>2</sub>), and ammonia (NH<sub>3</sub>). Furthermore, the collected waste heaps in dumps smells really bad (Reddy, 2011).

#### **2.4.2 Sustainable Waste Management**

Not only extreme caution is required to avoid the negative socio-environmental impacts of waste, but sustainable waste management strategies and practices ought s to be devised. Sustainable waste management strategies can be defined as those systems put in place to sustainably handle waste. And sustainable waste management ways include acts such as collecting, recycling and disposals. Inter alia, Belboom, Digneffe, Renzoni, Germain, and Léonard, (2013) would note

sentiments from the above notion as sustainable development processes, which incorporate reduction of pollution and emissions in the most sustainable ways.

Sustainable management is not only a cause of concern for management and institutions, but also the society at large ought to take sustainable practices into handling waste. As a matter of fact, sustainable societies are expected and encouraged to produce waste that does not exceed their capacity to manage them (Cucchiella, D'Adamo, & Gastaldi, 2014). The sustainable development process advocates for affordable, effective and sustainable waste management (Cherubini, Bargigli, & Ulgiati, 2009).

Sustainable waste management practices are those practices that support minimization of waste, less production of waste and promote recycling and reuse of materials. They are practices that by all means try to not destroy nor damage the environment (Cital, 2009; Reddy, 2011). According to Ozverel (2014), sustainable waste management processes should be socially acceptable, environmentally friendly and economically viable. In other words, whatever procedure put in place should be one that the society can easily adapt to and follow, one that is environmentally friendly and one that an economy can sustain and achieve from. As such, from the given fundamentals of sustainable development practices, one can easily note that waste management is not only a concern for the authorities but also the society at large.

In light of sustainable waste management, there are four principles noted in literature, namely Equity, Effectiveness, Efficiency and Sustainability (Klundert & Anschutz, 2001). Principle number 1, Equity entails better environmental health for

all people, while principle 2, Effectiveness encompasses safe removal of waste in the most effective manner. Principle number 3, Efficiency denotes smart ways of handling waste and this can be achieved in the event that equity and effectiveness are considered in waste control. Efficiency in waste management taking into account sustainable practices that ensure resource optimization through cost minimization while maximizing on benefits. And the last principle is Sustainability which should be practicable from a technical, environmental, social economic political and institutional point of view (Klundert & Anschutz, 2001). In other words, sustainable management policies or frameworks have to be workable with and within reach of the institution and highly beneficial and viable for a society.

### **2.4.3 Sustainable Waste Management Systems**

Sustainable waste management systems are those waste management practices employed to reduce harm on the environment and reduce wastage of resources in the most viable and quality manner. Sustainable practices are those that will ensure a long-term life of the environment and prevent hazards to the environment and general population. As such there are some key factors considered as sustainable waste management systems. These include Prevention-Reduce, Reuse, Recycle, Composting, Incineration, and Landfill options (Özverel, 2014).

The first sustainable system – Prevention, also known as source reduction or minimization demands that wherever possible waste be reduced from the source of production (U.S.EPA, 2013a). In other words, for example households or industrial sites could find means and ways of ensuring less waste is produced. Prevention is a better option as compared to recovery. While there, maybe challenges for example in municipal and or industrial waste the chances of preventing waste are much higher and better advocates (Özverel, 2014). As such sustainability conscious

companies would engage in sustainable practices to producing waste. Organizations, Industries, Households and municipals are therefore encouraged to consider safe environmental effects of their productions there-by production should be environmentally friendly products. Literature attests prevention is more cost effective as compared to control-based technologies (Tchobanoglous, Kreith & Williams, 2002; Ozverel, 2014).

Prevention or minimization strategies include actions such as clean technologies, eco-labels, environmental management systems, information training and increasing awareness practices, voluntary activities, public and corporate agreement or promotion of re-use and repair (Justice & Environment, 2012).

Recycling means reprocessing a waste material for use again as a new product. For example, materials such as paper, plastic and glass can be recycled (Leverenz, Tchobanoglous, & Spencer, 2002a). Instead of throwing away plastic in trash, it can be put aside for recycling. Additionally in Turkey and even Northern Cyprus, sites of used up water bottles lids containers are a constant site in shopping malls and most big offices. These water bottle lids have been used to make other products resourceful in disabled children facilities and also to recycle the water lid for new water.

There are three major steps involved in recycling (U.S. EPA, 2013b), and these include 1. Collection and processing which further include source separation, commingled recyclable materials and mixed municipal solid wastes (Leverenz et al., 2002a). 2. Manufacturing and 3. Purchasing new products.

In conclusion, below do (Leverenz et al., 2002b) give a recycling graphical presentation.

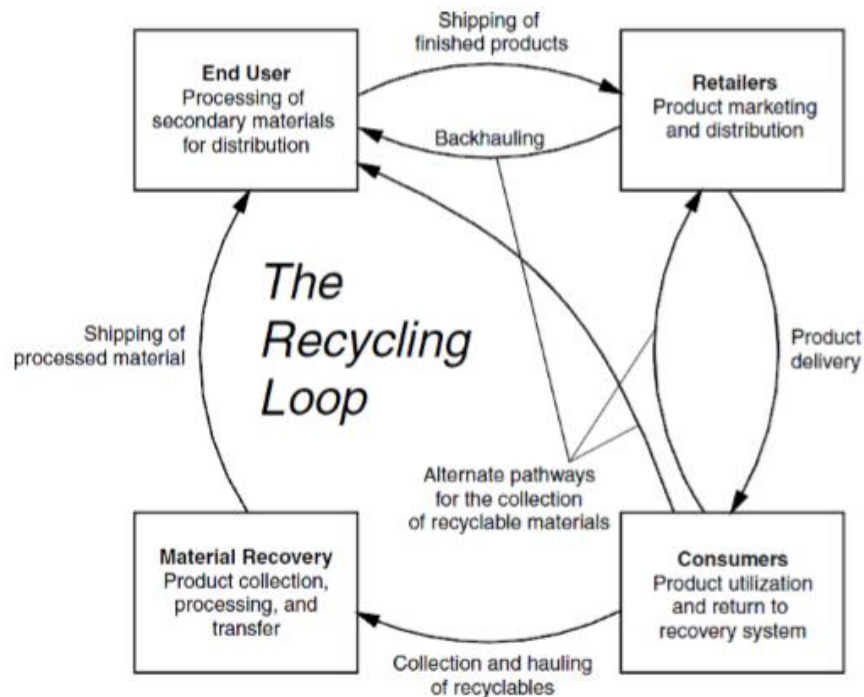


Figure 1: Sustainable Management Recycling Loop  
Source, Leverenz et al., 2002b

The recycling loop basically explains how a product is produced, used, disposed and reproduced again to come back on the market. In a nutshell recycling is a sustainable means of controlling waste management. Where-in garbage would be trashed and municipalities wonder how to treat and dispose far reach from the citizens, materials are reprocessed for re-use again. It is a cost free as production and it can be a viable strategy for the economy and citizens.

## Chapter 3

### THE CASE OF FAMAGUSTA

Chapter 3, which is the case study setting, provides a detailed information on the case study. It begins off with a brief description of the destination at large and then the town of the study.

#### 3.1 Turkish Republic of Northern Cyprus

Cyprus is one the largest islands on the Mediterranean, falling on the third position (Arici, Erturk, & Orcan, 2014; Mallinson, 2006; Quarterly, 2014), after Sicilia and Sardinia. Located on the Eastern Mediterranean on GPS coordinates of 350 N and 33 E0, it is on the crossroads of both continents and civilization all through history (Mallinson, 2006). In terms of total area space and size North Cyprus takes about 9251 km<sup>2</sup> of land and it covers up to 3335 km<sup>2</sup> of the total area space, while 5916 km<sup>2</sup> belongs to the southern part (Özverel, 2014). Its neighboring countries are Turkey, Rhodes, Egypt, Syria, Lebanon, and Greece.

Historically the Island attracted some of the most powerful empires such as the Romans, the Byzantines, Arabs, the Venetians and by the Ottomans during the past centuries (Mallinson, 2006; Quarterly, 2014). It gained its sovereignty in 1960 a few years after the first world war and it comprised of two major nationalities the Greek and the Turkish, who sadly failed to co-exist together due to some unresolved conflict hence the island was later divided into two (North & South). While the whole island is a recognized EU member state as of 2004, due to the

divisions caused by the disputes of the two nationalities once occupying it. The southern side of the island is represented and supported by the Greeks, while the Northern side is supported by the Turkish, hence the title Turkish Republic of Northern Cyprus, whence forth data is collected. As such the Northern side of the island is administered and supported by Turkey only, making it non-recognizable to other nations worldwide and unknown on the international arena (Mahrum & Jones, 2009).

Below is a Political map of Cyprus given in Figure 1. The map shows the two main divisions on the Island, whence the darker green end of the map is the Northern side of the island administered by the Turkish republic, while the lighter green shade is the Greek end. The map further shows the intervention of the United Nations as a means of maintaining order on the island given its history and cause of the divisions.



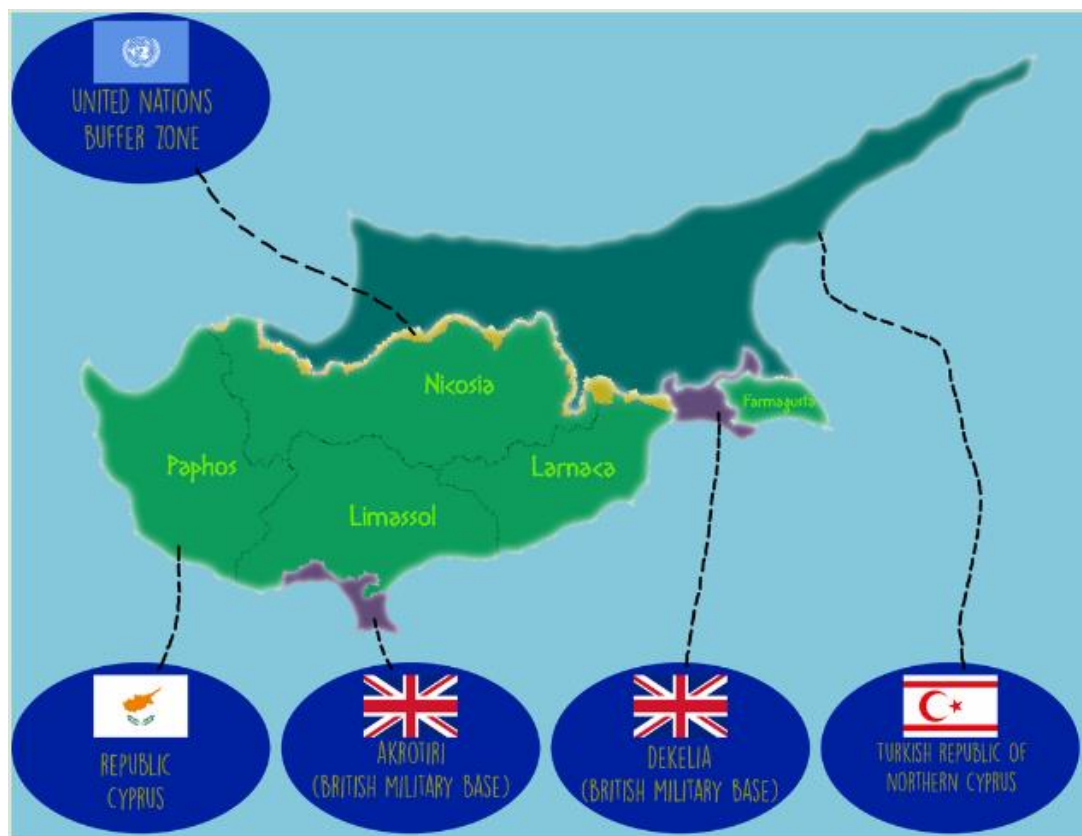


Figure 2: Political Map of Cyprus

Source: <https://www.deviantart.com/iasonkeltenkreuzler/art/Political-DeFacto-Map-of-Cyprus-664526652>

TRNC's economy is mainly composed of the services sector comprising of the public sector, trade tourism education and tourism. The country generally operates on a free market basis, although Turkey finances the greater part of its administration.

The island has a Mediterranean climate, where-by days are mostly sunny and rains are received during the short winter period. Hot summer months are noted from about middle of May unto mid-September and winter is noted from November to March. Summer and Winter are the two major seasons in the country although a short autumn and spring seasons are experienced in-between.

Because it is mostly surrounded by water, being on an Island it enjoys the three S – sun, sea and sand, making it a beautiful and most desirable tourist resort for those seeking Sun Sea and sand. The population of TRNC is about 300 0000, despite the political barriers it faces as a result of its history and that it is isolated from the international community, the Island thrives on agricultural export trade, education and tourism for revenue generation.

Educational tourists visiting because of study as well as mass tourism have characterized tourism on the island. While issues of sustainability have been and looked on, there are a few areas that are beginning to adopt ecotourism and sustainable tourism concepts, mass tourism are still the focus of tourism on the island. Due to this, the destination becomes better suited to conduct research on given the negative impacts of mass tourism, among which one of the problem has been over population leading to pollution and waste management issues. The study will be limited to a small but major tourism region Famagusta.

### **3.2 Famagusta**

Famagusta is one of the cities in TRNC. Embedded with rich history, beautiful architecture and crystal clear sea waters, golden sands and social cultural life, it is an attractive destination("Cyprus," 2018). The town found on the east cost of Cyprus gradually has been transforming from agricultural activities to educational tourism even though because of its natural attraction Sun Sea and Sand it has also been a perfect destination for international tourist. It has a population of about 70 000 people making it one of the largest populated places on the island after the capital city Nicosia (Planning, 2011).

### **3.3 Waste Management in Northern Cyprus**

While Northern Cyprus is somewhat located in East Europe, unlike most of the European countries, it is still developing. As with most developing countries that engage in tourism, travel into these nations has been characterized by mass travel. Northern Cyprus, as a developing country has not been any different to the problems of mass of tourism. Although sustainable policies are in place for alternative forms of tourism, there is still a vast number of people visiting the island at a given period. Furthermore, the fact that the island also thrives on educational tourism, issues of waste have been a major concern. While the international travelers only stay for a certain period, the educational tourist has somewhat become a temporary resident adding on to capacity issues and waste management problems on the island.

Mass tourism has negative effects on both the environment. More so in the event of poor waste management systems, which are very probable, negative outcomes in developing nation's severe health outbreaks maybe a major concern. In fact, waste management and treatment in developing communities is a major problem needing serious attention, and so is North Cyprus. Policies on waste management and treatment from a general point of view do exist in North Cyprus. Waste management is a sole responsibility of the local municipality offices within the country. There are about 28 municipality offices in Northern Cyprus. Each city, town and or village has at least a local municipality office taking care of waste in the region. Though not tourism related, the main concern of these offices is to keep a clean city, as such they take care of garbage collection in their respective cities or regions. Via use of garbage trucks was is collected from the residential suburbs,

cities and hotels' dumping area. As at 2006, there was about 72 dumping sites located in Northern Cyprus with a limited capacity and very primitive disposal methods (Roben & Paralikh 2006). The authors further noted some uncontrolled waste storage areas that failed to meet the landfill standards, undoubtedly a major concern on the environment and health of the people. They attributed the increase in unnamed and uncontrolled dumping sites because of increased population. Dumping sites were no longer in designated places allocated and within reach of the Municipality, but dirt and waste was noted in open fields.

In relation to tourism, there are several other bodies involved in its welfare as well as that of waste management control for example the environmental assessment bodies, non- governmental organizations and even the tourism operators.

### **3.3.1 Northern Cyprus Waste Management Policies**

From a state managerial point of view, waste management and treatment in North Cyprus is administered by the Department of Environment in the Ministry of Agriculture, Rural Development and Environment. It is guided by the principles of precaution and sustainability applied via a waste hierarchy that utilizes an optimal mix of management methods (Department of Environment, 2019).

As a waste management strategy whose aim is to take sustainable precautionary measures, the waste hierarchy's key role is to improve environmental features of solid waste. It encourages support of resource recovery and waste reduction and it entails that a variety of waste methods be applied for treatment (Gertsakis & Lewis, 2003). Analyzing the hierarchy further, it clearly shows that disposing waste is the least preferred solution of all other methods. Represented below in figure 3, the

waste hierarchy comprise of prevention strategies reuse, recycling, recovery, and disposal.

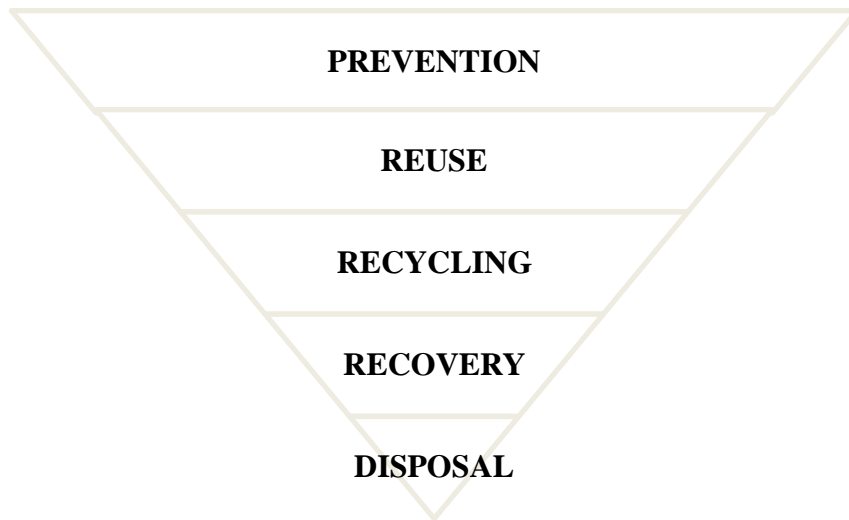


Figure 3: Hierarchy of Waste (European Commission, 2008)

As would be noted in the above chart presentation given in figure 3. Waste management objectives are shown from the most desired goal to the least preferred. In other word, if waste can be prevented, that would be the best solution, while it is inevitable not to have waste, reuse and recycling of materials would be the most preferred solutions to management and treatment of solid waste. The waste hierarchy is generally adopted from the European Union and it advocates handling waste without putting the environment and human health to danger through things effects of air pollution, solid and water and or undesired outdoors odors (EC, 2008).

Narrowing it down further, North Cyprus has two key legislations on solid waste management, the Environmental Protection Law (21/97) as well as the Solid Waste Control Regulation passed in 1997. This legislation is responsible for waste disposal management. The second legislation is that of the Municipalities Law (51/95)

actioned in 1995, whose role defines the duties and responsibilities of municipalities with reference to waste collection and waste dispositions.

The main aim of the department of the environment is maintaining a health hazardous free environment for the locals and the general protection of the environment (Alkan, 2015; EC, 2008). As such, the department works towards eliminating and reducing negative effects of the generation and management of waste. They also promote reusing and recycling of some materials (e.g. plastic and glass).

The general need and concern to control waste in North Cyprus is quite observed and adhered to, although due to political problems associated in the country, there is no comprehensive plans and understanding of waste management and treatment. Firstly, there is too many administrative institutions in charge without a clear jurisdiction and allocation of duties specified, resulting in ineffective use and coordination of resource and a failure of these offices to fulfill their objectives (Department of Environment, 2019; EU Master Plan, 2007). For example, while there are environmental (18/2012) and municipality (51/95) laws set towards standardizing waste control and disposal. In addition, in the case of North Cyprus the municipality, law is responsible for the duties and responsibilities of the municipality, there are some disparities with enactment laws (18/12 Environmental act) with those designed by the EU (Department of Environment, 2019). Specifically, the environmental act (18/2012).

## Chapter 4

### METHODOLOGY

The chapter provides a detailed account of the research instruments used to gather data. Precisely the chapter discusses the research design sampling strategies and research instruments.

#### 4.1 Research Design

The study uses qualitative research methods to gather data on the subject matter. Qualitative research methods help define a problem or develop an approach towards the problem (Kirshenblatt-Gimblett, 2006). It is normally used when researchers do not know what to expect and when they need thorough understanding of the problem or matter. Trochin & Williams (2006) would not agree any less to the above notion as they cited that, qualitative research approaches are used to get a deep understanding into issues of interest and it used to explore nuances related to the problem at hand. This type of research method entails use of qualitative data such as interviews, documents and observation of the sample study in order to understand and help explain a phenomenon. Additionally other data collection methods such as focus groups, triads, dyads, in depth interviews, observation, bulletin boards, and ethnographic participation are included in qualitative research methods (Bryman& Bell, 2007).

As compared to the alternate research methods – quantitative research approach which is a bit more static and rigid because it quantifies the problem via generation

of numerical data that is converted to usable statistics. A qualitative research method explores the problem further as it seeks to gain more understanding of the main reason to a problem. For example through probing a researcher can gain deeper insight into the problem that is how people do certain things and why they do them for example. While quantitative research methods are more structured in nature, the qualitative research method is more flexible, as the researcher can explore into a matter dependent on the information that target sample gives.

Given the above presented comparisons along with their weakness and strengths, the current study adopted a qualitative approach because of its flexibility in attaining data and in that, it allows the researcher to be present and take part in the process as compared to the quantitative research methods that do not involve with their subjects. For example, in some quantitative research instances, researchers use postal questionnaires or make use of hired interviews (Bryman and Bell, 2007). In this form of research, the researcher does not have any contact with the sample and they lack a relationship with the subject as would be highly noted in a qualitative way of collecting data. Using qualitative research methods allows further investigations of the problem; it gives room for the researcher to probe for more details during interviews for example. In addition, in the event that the subject does not understand a question, this type of research allows samples to ask and seek further understanding of what is required.

Furthermore, the researcher opted for a qualitative approach because it is unstructured, wherein a quantitative is highly structured (Bryman& Bell, 2007, Trochim, William, 2006 & Kirshenblatt-Gimblett, 2006). Additionally, while the researcher in a quantitative research takes the lead and is the most important tool in



the research, in a qualitative research the study sample is more important (Bryman& Bell, 2007). The qualitative research approach was found better suited for the study in that respondents are investigated in their natural environment and small sample studies are looked in order to produce a quality data. Generally, qualitative research design tend to collect a rich data in comparison to quantitative data which is often described as ‘hard’ data in that it is robust and ambiguous, because of the precision offered by measurements (Bryman& Bell, 2007 and Trochim& William,2006).

In summary, the research took an exploratory research as the researchers determined to get ideas and insights into a phenomenon (Barret & Kirwan, 2009). Moreover, as literature denotes, exploratory research methods give deeper meanings of a situation and they help give answers towards a problem and they create hypotheses on what is going on in a situation (Bryman& Bell, 2007; Hall, 2008; Barret & Kirwan, 2009)

## **4.2 The Case Study Technique and the Study Setting**

The Turkish Republic of Northern Cyprus (TRNC) is used as a case study to make an evaluation of waste treatment and management issues in tourism dependent destinations. A case study is a qualitative research method type that entails gathering data from a single region to gain insight into underlying principles of a phenomenon. It is a form of an in-depth study of particular research into one or few easily researchable examples (Pearson & Bacon, 2007), associated with theory generation and testing (Bryman& Bell, 2007), hence it is better suited for the current study. It involves getting a detailed and intensive analysis of a single case (Bryman& Bell, 2007). Case studies are useful for testing whether theories and models apply to a phenomenon in real life situations and it is a suitable design when little or nothing much is known about a subject (Pearson & Bacon, 2007). TRNC,

though still quite a small niche product, is a tourism dependent destination mostly reliant on educational and mass tourism.

### **4.3 Sampling Strategy**

The target population of the study comprise of officials from the local municipality, environmental organizations, non-governmental organization (NGOs), and tourism institutes of TRNC. A target population is the total number of elements or units that will be drawn from a sample, while a sample is a group of the units that will participate in the survey. Defining a target population is important in that it determines if a sample is adequate or not for analysis. In brief, the target population describes the elements in which the research is supposed to generalize (Cox, 2008). A population on the other hand is sum unit from whence-forth a sample is extracted (Bryman& Bell, 2007).

As already highlighted above, a sample is part of the population chosen for evaluation. Sampling methods can either be probable or non- probable (Bryman& Bell, 2007). The sample study of the current study includes 10 officials from different environment related organization with in the TRNC. Demographics were not a necessity in the current study hence they are not included in the data collection.

The study adopts a purposive sample strategy to collect data from the aforementioned officials in the different environmental sectors. Also known as, Judgmental sampling and it is a non-probable sampling strategy used when there is few elements with the ability and interest in giving out information (Lavrakas, 2008). Purposive sampling methods entail focusing on specific features of the

population of interest and those that are capable of answering the research question. For example, in the case of the current study intending to evaluate the waste management, the suitable people to answer the research question are those involved in environmental programs such as the tourism organizations and the municipality. In simpler terms, it entails the researcher going to those people that can give adequate information on the subject matter. Purposive sampling also known as selective or subjective sampling was opted in the current thesis to identify, categorize and interview 10 officials from different organizations in TRNC either in tourism or are closely related to environmental work (e.g. NGOs and the Municipality).

#### **4.4 Data Collection Instruments**

Research instruments comprised of in depth face-to-face interviews. This technique permits the researcher the chance to discuss feedback with the respondents. For example, when the researcher requires further information from an opinion given by a participant, this form of data collection allows the interviewer to probe. Vice versa, the respondents when not clear about anything they can seek clarification and further understanding from the interviewer. This form of data collection was found suitable for the study in that it allowed the researcher to probe in areas they were interested in. In support of the notions above, (Edwards and Holland ,2013) posit that in-depth interviews form complex power shifts between the interviewer and interviewee.

#### **4.5 Data Collection Procedure**

Over a period of two weeks in the month of June 2019, data for the current thesis was collected from ten officials from different organizations working in tourism or responsible for waste management and treatment in TRNC. Precisely respondents

were selected from the TRNC local municipality, non-governmental organization, tourism offices and environmental operations. The respondents were interviewed in their workplaces and each interview took about 30 minutes to an hour. There was 23 open ended questions that served as an interview guide, although secondary questions were also asked stemming from the discussions used to seek further understanding of the subject matter.

Although English was used in some interviews, most of them were conducted in Turkish. Before interviews were done, the researcher sought permission from the participants and made them understand on the purpose of the study. Research studies are not always received well by participants; as such, confidentiality of information was assured to the respondents. All responses were voice recorded at the participants' knowledge. The response audio files were later transcribed in Microsoft word and then coded.

## **Chapter 5**

### **DATA ANALYSIS & FINDINGS**

Chapter five presents the data analysis and findings of the study.

#### **5.1 Data Collection**

As previously highlighted in the chapter above, data was collected from officials within the municipality, environmental, tourism and NGOs offices from the city of Famagusta, North Cyprus. While no demographic details were taken note of, data was gathered through face-to-face and telephone interviews, with a few interviewees who opted to revert via e-mail with feedback. As such, ten interviews were done, and later the information was transcribed during analysis. According to Baily in 2008, transcribing data is used to interpret data that creates room for closer analysis thereof and helps notice unanticipated phenomena.

While there were challenges in gathering data for this research, the aim was to interview at least 10 interviewees and this was achieved, hence a response rate of 100%.

#### **5.2 Research Findings**

About 23 questions were asked to gather data on the research, as such the following paragraphs reports the findings from the response.

##### **5.2.1 Understanding of the Term Waste & Concept of Waste Management**

To gauge the respondents' understanding of the subject matter, they were generally asked on their knowledge of the term waste and if they had any idea on the concept

of waste management. While all the respondents generally could define the term waste and identify the different types of waste, there was a mixed feeling towards the concept of waste management. Although the majority of the respondents claimed to have knowledge on the concept of waste management, their answers to the understanding of the term were quite oblique. The seemingly knowledgeable respondents gave very oblique feedback and in the opinion of the researcher, the concept is still very unclear to all. One respondent, for example had the following to say:

“Waste management has to do with planning from production until when the waste can be used for recycle and re-use.”

While another seemingly knowledgeable respondent is quoted to have said the following:

“I believe that waste management can reduce the amount of waste, however the penalizing by the government are more effective”.

On the contrary, some respondents claimed to have learned of the term waste management for the very first time, while some claimed to have no knowledge of it at all and another few participants who just gave a straight up response:

“Yes, I have”

And while the interview tried probing for more information on the subject matter, on such responses, the interviewees stammered quite a lot, hence the conclusion that waste management is still unclear or rather unknown to many of the officials involved.

### **5.2.2 Feedback on Waste Management in North Cyprus & Problems associated with Waste**

Prior to looking at Famagusta city as a case of the study, the participants were asked if there waste was a problem in the country. In response, all participants acknowledged waste as a very big problem in the country as a whole. Two respondents reported that”

“Yes, waste in North Cyprus is a problem and recycling in Cyprus is pretty primitive in comparison to EU and procedure recycling in Cyprus is categorizing waste and send abroad”.

&

“Of course it is a problem. Both garbage, which are solid and water (liquid) wastes are a big problem for our country”

Having noted that waste is a big problem in the country, the respondents were further asked to elaborate on the problems associated with waste. The most commonly noted were issues of pollution in the country as a whole, thus respondents citing that environmental pollution causes problems to the living organisms and its ecosystem. There was also a serious indication sewage systems being highly faulty in the country as a while, thus becoming a major source of environmental pollution. Furthermore the inability to trash away garbage in the country was a cause for concern as well and a harmful factor towards the environment and the human beings at large. A respondent was noted to have said the following in response to waste management problems in the country:-

“Waste causes pollution problems which affect our living, harms the animals, the environment and harms also the future of the Earth. Especially, solid wastes and wastes in the sewage systems that are not disposed well are a big problem which needs to be solved”.

Furthermore, there issues of waste treatment raised by the respondents, as they noted that there was inadequate waste treatment in place. While some precautions are being taken into account, they are not as excellent as they should be and resources in treating the waste seem to be highly limited, hence a major concern on the city and country at large. In fact, one respondent suggested that the waste treatment systems be widespread in order to reduce the rate of pollution in the country.

In addition, because Turkey administers Northern Cyprus, it is not fully independent to operate entirely on its own set of rules and regulations. As such, Turkey administers most rules and regulations. While recycling is part of waste management and waste treatment, and even though the municipality is aware of this, there however is no recycling of waste taking place in Northern Cyprus as was noted on the feedback. Some participants noted that recycling of waste was done in Turkey, as such, waste was shipped abroad, striking yet another major problem of the country. As much as the country may want to recycle the waste and re-use it in the country, one respondent noted that the systems to doing so were not in place, as such they are forced to select certain waste goods and send them abroad for recycling and re-use there. As such, North Cyprus as a country benefits nothing from recycling, besides accruing expenses in sending waste abroad. Even though Turkey is geographically located in Europe, it has a customs union agreement with



EU, but not a member of the EU; as such, EU policies are not quite adhered to and taken into account in the country of Northern Cyprus. One Response had the following to say:

“Recycling in North Cyprus is not as good as in EU and the problem is that we have to categorize waste to recycle but they cannot, I mention just we have basic category that they send abroad and instead of the country (North Cyprus) to benefit, it is sent abroad”.

Clearly from the above given feedback, there are no set systems on how to manage waste in the country, the reason that waste management and treatment is a major problem in the country. The researcher, during the years of educational tenure ship, has indeed witness streams of burst sewer systems on the highways of the city of Famagusta, as well as witness the problems of air pollution caused by poor sewage systems.

### **5.2.3 Responses on the Rules & Regulations of Waste Management & Its Enforcement**

The consensus upon being asked whether there was any known rules and regulations guiding waste management and their extent of enforcement was very weak. Most respondents noted that there was no guiding regulations or rather they did not know any and if there were any than they were weak. Precisely, a respondent noted, while they knew quite a bit about waste management and treatment, they had no knowledge of any regulations guiding the process, particularly in the city and even the country at large. At least one of the participants seemed sure of some guiding regulations, hence they said of the following; -

“Regulation in North Cyprus is poor, certain places in Pazalick nature those places is forbidden to throw trash, and also there are separate regulations about disposing nature in big amount and one out of ten minimum wage. He further noted that “there is no regulation for example to separate waste from home”

As such all garbage is mixed and trashed away in one lot from homes, which makes it even difficult to separate as a lot for disposal by the municipalities.

In terms of enforcement, should there be any guiding regulations, given the above observations and feedback, it was quite clear again from the participants that these regulations were not effective thus all agreed they were weak and in effective should they be existent.

The participants were further asked if there were aware of any institutions in place to deal with waste, they generally noted the environmental offices as responsible for waste. Some respondents acknowledged the involvement of the government in waste management and treatment although their efforts were noted as ineffective. One respondent in fact literally noted that the government did not concern much with issues of waste treatment. Moreover, another noted that the private operators such as Pepsi and Coca-Cola rather took care of their waste and took responsibility over its recycling and re-use. While they took the initiative to action, they however also sent their waste to Turkey for recycling, noting that North Cyprus has in adequate resources to recycle its own waste.

Additionally, the majority of the interviewees identified the environmental department is highly responsible for waste management and treatment, although once again their services were proven to be ineffective. A respondent highlighted on the following, in response to the question “is there an institution in place to deal with waste?”

“Unfortunately, there is not any institution that deals with waste professionally but the department of environmental does in here. However, they are not really doing a good job with dealing with the waste in order to solve it”.

As was previously highlighted in the earlier chapters, there was an indication that the EU had set some guidelines for waste management and treatment applicable in the municipalities of Northern Cyprus to follow. The researcher therefore asked the interviewees if they got any guidelines from the EU concerning waste management. In response, at least 50% of the participants were aware of the EU guidelines. A couple of them highlighted that the EU guidelines had been effective for the past 10 years to date now, although other participants maintained the fact that operational waste management guidelines came from Turkey, seeing that the country is governed by Turkey. Out of the 10 respondents, only one said they knew nothing about EU guidelines and or its involvement.

#### **5.2.4 Effects of Tourism on Waste Treatment & Management**

Tourism is a major contributor to waste management problems. One of the challenges tourism brings upon nations, particularly mass tourism is environmental pollution amongst many other issues. The country, Northern Cyprus while it builds up more on agricultural activities it also strives on educational tourism and

international tourism at large. Every year during summer periods, the country is dotted by a variety of tourists from different countries across the world in search for Sun Sea and sand, whilst other travelers mainly come for historical and religious artefacts. Coupled up with its own thriving and growing nation, more people have visited and temporarily stayed in the country posing a further distress on waste management issues. Even though garbage is collected from hotels and local people's residence timeously, the problem has generally been its disposal. Due to inadequate facilities, the respondents noted that garbage is generally buried underground, further posing issues with the water system; In addition, there are fears that, via contaminated water the humans and other living things will be affected in the country. Some of the waste has been burnt which has generally caused air pollution.

### **5.2.5 Feedback on Awareness Programs towards Waste Treatment and Management**

Noting that waste treatment and management is a major issue in North Cyprus; respondents were asked if they had any awareness programs running for both tourists and locals to help eradicate waste challenges. There was a mixed feelings feedback in response to this question. Some participants felt that there were no programs known, although from an individual level some respondents made sure that they encouraged proper waste disposals. For example, a respondent said

“I am sensitive to environment, I warn family, friends and other people when I see them throw rubbish to environment and not the garbage can and I encourage people to be environmentally friendly”. Moreover, another similarly highlighted that:-

“I warn people who do not rubbish to garbage can. A few times I have warned even the municipality about it”.

Another sizeable number felt they did their level best to bring awareness to the public. A respondent reported that, they carried out seminars occasionally to educate people on waste problems. In addition, the areas of target from a local background was educating the schoolchildren. Furthermore, the respondent noted that the municipality supported some environmental related organization that took part in creating awareness programs towards waste management.

While some effort is being put in place to bring awareness from a personal and organization perspective as noted from the above discussions, there however was a general feeling from all participants that, a need to bring awareness to the general public and tourists at large was paramount. There were high feelings that the government and all officials primarily active in waste management ought to come up with waste treatment and management campaigns, to ensure a safe and healthy environment. In the meantime, a few activities were taking place via use of social media to update the locals and or inform them on any necessary information.

#### **5.2.6 Future Waste Treatment and Waste Management Strategies**

The researcher determined to find out from the respondents if they had any plans or strategies on curbing the waste management issues in the country. Some respondents suggested that more awareness be built towards waste management and that a rewarding and punishing system to members of the community be started. By so doing, that is rewarding the well behaved citizens and punishing those not following regulations, in a period of ten years, there are anticipations that the communities will be more responsible. Furthermore, some respondents suggest that

families and friends be involved in some clean up campaigns that may help keep the cities and neighborhoods clean. Two respondents however showed no concern whatsoever in making suggestions towards the subject matter. They were blatantly noted to have said as follows:-

“Nothing, because I am a clerk and that is not related to me”. Another also said

“I don’t have, but maybe the municipalities and department of environment should agree on a common goal in order to avoid this pollution problem”.

Finally, seemingly a little independent to their strategies and actions, one participant reported that their company was the first to have started the environmental services in the country, reporting to 1994, when they collected garbage from the villages and some other sites in Famagusta. They further highlighted that in 2002, they introduced the first skip services, which entails serving to all major towns in TRNC, as such to date, they have imported a recycling machine operating in the city and their future endeavors are to have recycling operations all over TRNC.

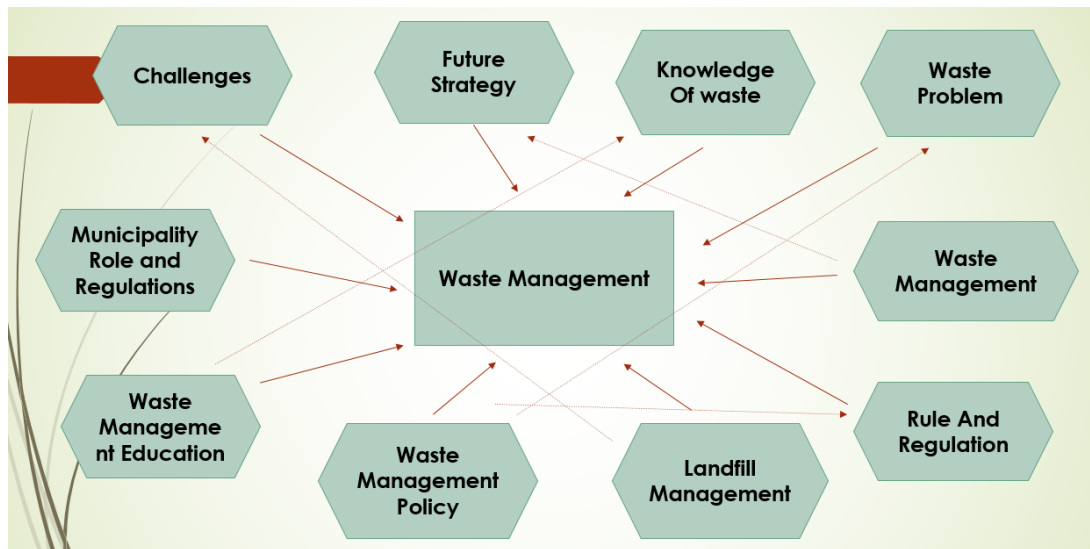


Figure 4: Framework of challenges facing Waste management in Famagusta/TRNC

Table 1: Data Analysis Matrix

Theme	Code	Sub- Theme	Frequency
Knowledge Of waste	KW	Most people have less information about waste. People are not aware on how to treat waste. Media does little to promote awareness to the members of the public People do not pay attention to this issue.	7
Waste Problem	WP	There are no different trash cans labeled for categorizing waste. Few bins are available and are not enough for waste disposal.	8
Waste Management	WM	Funding is needed to make the process easier. More knowledge is required. Consideration of the future should be implemented.	10
Rule And Regulation	RR	So poor. Precise rules and regulations should be put and strictly adhered to.	4
Landfill Management	LM	Additional pollution for local.	6
Waste Management Policy	WMP	Lack of encouragement. Lack of awareness, Lack of fine	5
Waste Management Education	WME	No seminar, congress, campaign. Billboards.	8
Municipality Role and Regulations	MRR	There is not written regulation. Actions are passive.	6
Challenges	CH	Financial resources, careless, make excuse,	8
Future Strategy	FS	No considering	10

Table 2: Category of Interviewees

Interviewee	Municipality	Environmental Office	Non- governmental office
1	✓		
2	✓		
3		✓	
4	✓		
5		✓	
6			✓
7		✓	
8	✓		
9			✓
10	✓		



## Chapter 6

### DISCUSSION AND CONCLUSION

The study aimed to evaluate the current waste treatment and management process in the city of Famagusta in Northern Cyprus. The chapters before showed insights and presented some facts pertaining waste treatment and management in the country as a whole and then Famagusta as a city being the case of the study. Given the data presented and analysed, it is quite evident that respondents were quite averse with the term waste, although not too clear about the concept of waste management. The current chapter therefore discusses the findings of the study in comparison to information already noted in literature review. Also to be presented in the chapter are limitations of the study and recommendations for future studies.

#### 6.1 Discussion

Though a seasonal destination in terms of International tourist arrivals, the country is a tourism resort, thereby experiencing mass tourism presently. While efforts are being made to ensure that Eco Tourism prevails, the country still has a large number of buses arriving in the country with a large number of tourists at a given time, particularly the summer period. Furthermore, the country is host to many international students who are temporarily residing in the country during their educational tenure, coupled with the local population of the country, waste has certainly been a big problem. While the responses given by the participants showed a little activity by the local offices to eradicate the problem of waste, the study does show that waste is a major problem worldwide in accordance with other studies.

Furthermore, as it has been noted in literature, waste management issues have mainly been problematic in developing countries as such with TRNC. TRNC does take care of garbage, however due to inadequate resources by the municipalities and environmental offices, there are difficulties in taking full charge and control of the garbage.

Additionally as was noted and diagrammatically presented objectives of waste management in chapter 3, figure 3 (EC,2008). The main objectives of waste management are to prevent, reuse, recycle, recover and dispose (EC,2008), in that precise order. Given the analysis of data presented in the current study, not all of the objectives of waste management are observed in TRNC. While prevention is somewhat encouraged in the few awareness programs that have been created in Famagusta, as would be noted in the reports given in findings, there is still need for more awareness programs to be put in place and for more strategies to help curb the problem of waste. Furthermore, only one participant highlighted that they recycle garbage as they have acquired a single machine to process waste from only Famagusta. Generally, the study reported that recycling in Famagusta and TRNC as a whole was a problem and that those that do most especially private companies such as Coca-Cola and Pepsi take part in the activity on a private basis and instead of doing it here in Cyprus to ensure re-use, they sent the garbage abroad. Clearly from the objectives of waste management at a general level, Famagusta, TRNC only observes the very last and least of the objectives which is disposal.

While it is essential that disposal must be done, the way in which waste has been disposed in Famagusta is yet another major problem. Responses clearly noted that there were open landfills in the city which are a major concern towards open

land pollution without mentioning environmental health likely problems. Also some grabage was buried under ground, yet another majour issue of water pollution from under ground and ,this causes water pollution and pose jeopardy on the health of the local residents.

These findings on waste management (disposal) in the current case study of Famagusta are contrary to what literature denotes. Gertsakis & Lewis in 2003 agreed that the waste hierarchy was key force to be reckoned on in order to improve environmental features of waste. As such the hierachy had to be fully followed on and ahdered to in order to be effective. However in the case of famagusta, TRNC this is not the case as only one stage of the objectives is followed through with minimum focus on the other seemingly and highly important strategies

## **6.2 Conclusion**

To a certain extent, the study finidngs presented in the current research confirms part of the literature review. To begin with, it is quite evident that Mass tourism, while it has some positive effects particularly on the econimc front, it also has some negative effects environmentally and it has been a major issue towards waste management. Secondly, as a developing nation, the country and the problems it faces towards waste treatment and management has not been different from what other countries alike face. It was quite evident in the research findings that adminstration offices had challenges with resources to fully manage waste not mentioning in adequate resources, qhich are quite the norm in developing nations. While waste management is a collective effort where in all should be actively participative, responses given seem to show a little concern by some officials over the subject matter. This is highly evident in one response who noted that, the issue

of waste management was not much of their concern as their job did not entail it. Also some operators chose to privately work towards waste control, which according to the researcher is a problem at hand and it will get the officers no where in eradicating waste management issues in the country.

### **6.3 Implications**

The study provides theoretical and managerial implications which can be more viable, sustainable towards the encouragement of a healthy environment. From a practical point of view, officials are encouraged to actively promote awareness of waste management among the local population, educational tourists as well as international tourists. Perhaps the environmental office who are generally responsible for waste treatment and management can come up with programs to educate its local populace as well as look into visiting the hotels dotted in the city and country at large, the tour operators and travel agencies to encourage the tourists to take precautionary measures towards garbage and waste.

There is also need for the officials themselves to be well educated in order to be knowledgeable on the concept of waste treatment and management. The government who was noted to be lowly active in waste management issues is highly encouraged to actively participate in the programs and promote effective waste management in the country. The government is responsible for law and order, as such laws binding waste management and treatment can be reinforced and followed through so as to ensure a good health environment. For example the rewarding and punishing system suggested earlier in the study, these are some of the laws that the government can actively adopt, partake and enforce for a brighter and responsible future.

## **6.4 Limitations**

Some limitations were encountered in the course of the study. For example some of the respondents did not understand English as such the research had to convert interview questions and interviewees responses to Turkish, which may be a cause for bias in interpretation of data. It is very possible that in the process meanings are lost. The study was also limited in that, to those respondents who instead answered the interview via questionnaire means, the interviewer could not probe further for more information, as such some responses were rather static.

It was also quite a timeous process gathering the data, as by end of June the researcher intended to have finished collection, yet data collection ran into the month of July, thus surpassing the stipulated period of two weeks intended in the study plan. Also while other methods of collecting data may be resourceful, the current solely opted for qualitative means. Future studies could adopt other research methods such as the mixed.

## **6.5 Recommendation**

The current study focused on data collection from one city, Famagusta, future studies could look into other resort cities in the country such as Girne and Di Karpaz. Alternatively, future studies could look into waste treatment and management into the country as a whole inclusive of methods used in the villages, which are outskirts of the cities. Additionally new studies could look into collecting data not only from city or country officials, but both the local citizens and the international tourists. It would also be worthwhile engaging even the business operators such as Hotel and Tour operators. First hand, observation of waste management should be done through moving around with council workers.

International students should also be actively involved and engaged too on this subject matter. Other parties that should also be involved include executives and those in the medical fraternity. Therefore, it could be clear at which locations would be more advantageous for installing enhanced recycling amenities or a market to trade the generated waste to abroad. In order to avoid or even reduction the adverse development of the environment, public awareness can be encouraged. Education on environmental issues is very pivotal. Classes or educational seminars and Campaign needs to be arranged in a regular frame by both public and private sectors for citizens and students at school. Beginning from the source of waste to removal process comprehensive studies should be presented. Composting of household waste methods can be displayed. By this means, they are able to use of waste in different ways. For instance, using wastes as fertilizer in their own gardens and homes. Instead of disposing solid waste with uncontrolled and primitive methods, municipalities should rise their expense budgets on either installing a transfer station to transport the generated waste to safe landfill, or installing inventive recycle and reuse technologies in this Island.

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## **APPENDIX**

**An empirical evaluation of waste treatment and management in a tourism dependent destination: evidence from north Cyprus.**

**Interview Questions**

1. What is your definition of waste? And/or, what does come to your mind when you hear the term 'WASTE'?
2. Is 'waste' a problem in north Cyprus?
3. Can you elaborate on those problems that are associated with 'waste'?
4. Do you have any idea about the concept of 'waste management'?
5. Is there an institution in place to deal with waste?
6. What are the rules and regulations guiding waste management?
7. To what extent these rules and regulations are enforced.
8. What are the common methods of waste disposal?
9. What is a sanitary landfill?
10. Do you get any guideline from EU regarding the waste management?
11. What percent of the waste is recycled?
12. Most of the visitors to north Cyprus are complaining about waste and rubbish; have you considered doing something about it.
13. Have you ever considered checking with the health providers/hospitals/clinics to find out the waste materials impact on health?
14. Are municipalities equipped to deal with waste?
15. Have you ever thought of having a campaign about educating people regarding this issue?
16. What is the situation with the sewer system?
17. Do you have any plan to deal with beach and coastal pollution?
18. Why you do not apply some harsh measures to reduce the waste? For example, giving fine to polluters.
19. What is your future strategy to deal with this issue?
20. The issue of waste requires everyone's commitment. Have you done anything to invite and motivate people to collaborate on this issue?
21. How you create awareness and inculcate best practice of waste separation at source among the campus communities?
- 22. What are the main challenges that you face regarding this issue?**
- 23. Nowadays, waste material can be the source of energy and other usable products. Have you done anything in this regard?**