Refugees:
The humanitarian logistics of a crisis situation

Sofia Papadaki

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Student Name: Sofia Papadaki
SID: 1105150014
Supervisor: Prof. Georgios Banias

I hereby declare that the work submitted is mine and that where I have made use of another’s work, I have attributed the source(s) according to the Regulations set in the Student’s Handbook.

January 2017
Thessaloniki - Greece
Abstract

This dissertation was written as part of the MSc in Environmental Management and Sustainability at the International Hellenic University.

The growing and thus far uncontrollable stream of refugees from Middle East and North Africa has created considerable preoccupation and anxiety to governments and societies all over Europe. To establish the theoretical framework, the concept of humanitarian logistics will be briefly examined. Historical data from the 19th century onwards will illuminate the fact that this influx is not a novelty in the European continent and the interpretation of statistical data will highlight the characteristics and particularities of the current refugee wave, as well as the possible repercussions these could inflict both to hosting societies and to displaced populations. Finally, a review of European and national legislation and policies will show that measures taken so far are disjointed and that no complete and also humanitarian management strategy exists.

Within this context, the thesis will elaborate on the development of a compact accommodation center made of containers, to function as an initial stage in adaptation before full social integration. This project will aim at maximizing the respect for human rights and values while minimizing the impact on society and on the environment. The overall goal is to develop a project versatile enough for implementation on further social groups in need of support. The thesis' results could serve as a useful tool for governments and organizations to better plan ahead and respond fast and efficiently not only in regard to the actual refugee crisis, but also in any possible similar disaster situation, including the potential consequences of climate change.

I would like to extend my gratitude to my thesis' supervisors, professors Dr. Georgios Banias and Dr. Charisios Achillas, to my indispensable partners and co-workers in the development of the accommodation center project and to my family for all their encouragement, support and assistance.

Keywords: Refugees, humanitarian crisis, shelter, integration

Sofia Papadaki

January 2017
Preface

I suspect the most common question when it comes to an academic thesis regards the choice of the particular subject. In my case, there were several reasons that influenced my decision.

My concerns as a political person and as a mother fuelled my urge to research the degradation of the social tissue and the dangers this entails, both in the conflict zones, as well as in our hosting home countries of the "civilized" world. My background as an architect guided my preference to focus on the problematic of the built environment.

As a citizen of the world, I am perturbed by the probability that similar humanitarian and socio-political crises will not cease happening all over the globe. As a scientist in the environmental field, I have the fear that environmental degradation and climate change will be among the major causes behind those future crises.

My hope is that some benefits in that aspect will derive from my effort. It might challenge some people to contemplate and decide to take action. It might even cause some governments or other political formations and organizations to give some thought to my proposals and decide to utilize them in some way.

I wish to sincerely thank both the people who helped and encouraged me complete my work, as well as my prospective readers.

Sofia Papadaki

Thessaloniki, January 31st, 2017
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1. Introduction

From the dawn of civilization, people all over the world and for an abundance of diverse reasons, have been forced to make one the most difficult decisions and migrate. In every such instance, people uprooted from their homes have to face significant adversities, including long and risky journeys, lack of even the basic every day goods - such as water, food and shelter - discrimination and racism (Amnesty International, 2016). Today, the total number of forcibly displaced persons globally has reached over 65 million, as seen in figure 1. In situations like these, the most important thing in every step of the way is the existence of basic support structures within the frame of humanitarian logistics (Cozzolino, 2012).

Figure 1: Current numbers of forcibly displaced people, refugees and stateless people worldwide (UNHCR, 2016b)

The refugee crisis experienced today in Europe is by no means a novelty. The 19th and 20th century have seen a number of significant migration waves, both from and towards Europe (Robinson, 1995, The Lancet, 2015). The fact that discriminates the 21st century from the past, is the simultaneous existence of several conflict areas. In the European "neighbourhood" alone, there are armed struggles in the Middle East, in North Africa and in some parts of sub-Saharan Africa as well (UNHCR, 2015b). These conflicts have caused the vulnerable populations to flee their countries and seek a better future in the supposedly more stable Europe.

According to the predictions, war and destruction of all infrastructure in those parts of the world will not come to an end anytime soon. Only during 2015, over one million people came to the European Union to find safety, increasing the total number
of refugees in this region to almost 4.4 million. The majority of them is originating from Syria, Afghanistan and Eritrea (Parkes, 2016, UNHCR, 2016c), almost one in five are adult women and at least one in four are children, many of whom unaccompanied (European Union Agency for Fundamental Rights, 2016). They follow travel routes well established by human-trafficking groups and yet anything but safe and secure.

Even after reaching the perceived safety of Europe, refugees still have to face significant integration issues (The Lancet, 2015), while being at the same time the trigger to xenophobia and political extremism. Europe has only recently managed to slow down the inflow of refugees, due to increased border control and mostly sporadic, unilateral actions and unfortunately not because of a comprehensive common strategic framework actually resolving all aspects of this crisis (Vimont, 2016). Yet the problem still very much exists, and with millions of people already within the European borders, as well as millions of people still waiting just outside in precarious situations, it is only a matter of time for the balance to tip.

One of the most significant issues stemming from this crisis is the problem of shelter as an essential human need for the refugees. This paper focuses on the idea of an exemplary accommodation center, equipped with all necessary services to provide refugees with basic coping skills and aiming to act as an intermediary step between first reception until full social integration. It is created as a flexible structure following the existing guidelines and design criteria for such settlements while furthermore incorporating sustainable tactics regarding energy consumption and waste management. The goal is to create a module that can address the current situation and at the same time be adaptable to any further future humanitarian disaster, thus contributing to an essential level of preparedness.

1.1. Theoretical background

Migration is and always has been a fact of life for all living organisms. Whenever the living conditions become intolerable, a mass movement of populations occurs. And if for animals the reasons behind such movements are simple and straightforward - climatic conditions or availability of food and water - this is not the case for humans. From the dawn of civilization, migration causes are varied and complex and include,
among other things, economic or educational opportunities, wars or civil unrest, human rights abuse, as well as environmental reasons (Amnesty International, 2016, Bascom, 2001).

The term 'migration' derives from the Latin verb "migrare", meaning "to change residence". In the social studies it is defined as "the more or less permanent movement of people across space" (Suarez-Orozco, 2001). Although quite often migration is caused simply from the quest for better work, yet in many cases it is a central part of complex humanitarian emergencies. According to Black (2009), the characteristics of CHEs include, besides the mass movements of population, civil conflicts of various etiology, generalized decline of the central authority or the economic system and extensive food insecurity. However, the reasoning behind the recent steep rise in migration cannot be oversimplified. In fact, these current trends can and should be attributed to a much more complex web of factors deriving from the global economical, technological, societal and political conditions as well as from natural or human-made disasters, as seen in figure 2. These drivers are so significant, that they could even support predictions of a continued increasing global growth rate of migration (Attina, 2015).

Figure 2: Global and local migration drivers (Attina, 2015)
Included within the general framework term of migration and migrants, the refugees form their own distinct category. They are distinguished from other migrants and characterized as victims, dependent on others and in need of humanitarian assistance (Black, 2009). These are people who were forced to flee their own country and seek international protection, due to human rights abuses and the inability of their governments to protect them (Amnesty International, 2016). Originating in the 1951 Geneva Convention Relating to the Status of Refugees, the as yet most widely accepted and formal definition describes a refugee as someone who:

.....owing to well founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it. (Article 1A (2) Convention Relating to the Status of Refugees, 28 July 1951)

Within this context, an asylum seeker is defined as a person who has left their country and has requested international protection but has not yet been granted refugee status (Amnesty International, 2016, Black, 2009).

It is apparent that this definition - as well as all others - narrows the refugee status only down to people fulfilling very specific conditions, namely having crossed international borders, having fled due to primarily political reasons and having accessed official channels to achieve refugee status. However, these limitations totally exclude people who have been forced to move within the borders of their own country. To cover this void existing in all formal definitions, the United Nations published in 1998 the "Guiding Principles on Internal Displacement". Still, even though this manual has been extensively implemented, the legal definition of a refugee has not yet been updated to also include internally displaced people in either international or national law (Black, 2009). Furthermore, the term "environmental refugee", either as a legal
entity or as a further categorization of persons in need of public attention and humanitarian assistance, is still being largely debated, even now that environmental degradation and climate change are accepted as very real and significant dangers to humanity and the estimated number of environmental refugees globally could potentially be as high as 200 million (Black, 2009, European Parliament Directorate-General for Internal Policies, 2011). The global situation regarding to all populations of concern to the UNHCR is illustrated in figure 3:

Figure 3: Populations of concern to UNHCR by category at the end of 2015 (UNHCR, 2016c)
To conclude, the definition coined by the International Organization of Migration (2016a), being much wider in scope is considered much more successful in integrating all aspects of migration. According to the IOM, a migrant is:

...any person who is moving or has moved across an international border or within a State away from his/her habitual place of residence, regardless of (1) the person’s legal status; (2) whether the movement is voluntary or involuntary; (3) what the causes for the movement are; or (4) what the length of the stay is.

1.2. The concept of humanitarian logistics

The formation of the Red Cross in 1863 marks the birth of the modern humanitarian movement. It was the shocking experience of watching the wounded soldiers left behind in the aftermath of the battle of Solferino remain helpless and unattended due to a lack of mostly human resources that spurred Henry Dunant into action (Dunant, 1986). The foundation of the United Nations Refugee Relief Administration (UNRRA) - later to become the United Nations High Commission for Refugees - marked a significant increase in the scale of humanitarian relief operations, since it was created to regulate the resettlement of the millions of refugees and forcibly displaced persons generated by World War II (Robinson, 1995). Ultimately, it was during the Indian Ocean tsunami relief operation in 2004 that logistics became for the first time the epicenter of attention as an integral part of any humanitarian relief operation (Cozzolino, 2012, Thomas and Kopczak, 2005).

In fact, humanitarian relief operations are becoming increasingly demanded, since basic every day goods, such as water and food, safety and shelter, health and education are in scarcity in many parts of the world. At the same time, natural and man-made disasters are occurring nowadays with alarming frequency (Parkes, 2016). As presented in figure 4, disasters are divided in four distinct categories according to their cause and speed of occurrence (Cozzolino, 2012):
- Calamities: earthquakes, tornadoes or hurricanes
- Destructive actions: industrial accidents or terrorist attacks
- Plagues: poverty, famine or draught
- Crises: political or refugee crises

**Figure 4: Types of disasters (Cozzolino, 2012)**

Even though the relevance of logistics effort might vary depending on the type of disaster, its importance is by no means debated (Cozzolino, 2012). As a result, it has by now been established that, at the core of an effective and efficient response to any humanitarian crisis lies an intertwined range of activities best known as humanitarian logistics. According to Thomas and Kopczak (2005), it is defined as:

> ...the process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people.

It becomes clear that this concept includes much more than simple material goods and their transport and distribution. Advance preparation, coordination of human resources, collection and processing of data, extensive use of expert knowledge should all form an integral part of this process, in order to achieve - beyond logistic performance - a holistic supply chain management as well (Cozzolino, 2012). In that respect, out of the four phases comprising a disaster management cycle - mitigation,
preparation, response and reconstruction - humanitarian logistics and supply chain management can and should be integrated in three, with mitigation the only exclusion. In fact, and as depicted in figure 5, the actual disaster occurrence is by no means the beginning of the cycle (Cozzolino, 2012).

Figure 5: Disaster management and the humanitarian logistics stream (Cozzolino, 2012)

However, having to act on hostile environments and in order to be successful, humanitarian logistics have to overcome significant challenges. Among them, to mention but a few, are:

- limited human and material resources
- inadequate or corrupt infrastructures
- unstable and exigent circumstances
- numerous and heterogeneous actors - governments, the army, individual volunteers and non-governmental organizations etc. (Cozzolino, 2012, Ergun et al., 2010).

When addressing refugee crises similar to the one Europe is confronted with, humanitarian logistics can prove to be essential, both in the transition stage - providing the displaced people with the means for their safe and uninterrupted transport to safe
areas - as well as in the initial accommodation stage - ensuring that the refugees' basic needs for food, water, sanitation and shelter can be satisfied with adequacy and dignity (Forced Migration Review, 2003, Thomas and Kopczak, 2005).

Unfortunately, the demand for humanitarian disaster relief will continue to grow. According to the predictions, for the next fifty years and due to political, social, economical, environmental and health causes, disaster situations are expected to quintuple (Thomas and Kopczak, 2005), thus making humanitarian logistics an absolute necessity. To cite Antonio Guterres, former UN High Commissioner for Refugees: "We are witnessing a paradigm change, an unchecked slide into an era in which the scale of global forced displacement as well as the response required is now clearly dwarfing anything seen before" (European Commission Directorate-General Human Resources and Security, 2015).

1.3. Methodology

The focus of this MSc's thesis is to examine specifically the situation of refugees in Europe as a model and point of reference for future humanitarian crises. The relevant research will be conducted following two axes based on secondary data collection. A literature review will be conducted to examine the historical trends, the causations, the political and social consequences of this phenomenon, as well as the challenges, problems, and shortcomings of both leaders and society in Europe. Moreover, analysis of existing statistical data regarding origins and destinations, ways of commuting and population demographics - deriving from a variety of official sources, including among others the UNHCR, the International Organization for Migration, the European Commission and the Europol - will serve to define the magnitude of the situation as well as to attempt some future predictions. In addition, existing guidelines regarding design and construction principles and best practices already established from official sources will be used to estimate the spatial and social needs of refugees specifically in regard to shelter.
1.4. **Scope**

Within this context, and by isolating one particular aspect of this crisis, the problem of shelter, this paper will examine the methodology of creating a compact temporary accommodation unit to answer the need for an intermediary stage between initial reception and full social integration within hosting societies. This project will aim at maximizing the respect for human rights and values and also at minimizing the impact on society and on the environment by including medical, educational, religious and social functions within the unit, by integrating renewable energy use and waste management programs and by prolonging the unit's life cycle through transformation, change of use and end-of-life recycling.

The overall goal is to develop a project that is versatile enough to be expanded and adapted for the implementation on further social groups in need of support besides refugees. This can become a valuable tool for governments and organization by forming part of an efficient response to any similar humanitarian disaster situation. After all, it is useful to remember that the current situation is already considered by some as the big rehearsal on climate change and its more extreme repercussions.
2. Refugee crisis: Legislative framework, practices and humanitarian logistics

This chapter will explore significant historical and statistical data in respect to the present refugee crisis, as well as the relevant assimilation and legislation advancements, be it positive or negative, that have occurred in the last few years.

2.1. Historical and political background of the refugee crisis in Europe

In October 2013, over 400 refugees were drowned in two shipwrecks close to the coast of the Italian Island Lampedusa (Amnesty International, 2016). This incident marked a significant turn in the public's perception regarding the problem of refugees. For maybe the first time, it ceased being a matter of social inconvenience and disruption of infrastructure and acquired its true and full dimension of a major humanitarian crisis with human lives critically endangered and lost, that called for immediate and decisive measures (Frontex, 2016). However, this was but only one instant in a long line of migration waves that have occurred in Europe throughout history.

2.1.1. Trends in the 19th and 20th century

The images of hundreds of thousands of refugees desperately seeking shelter and being dismissed is not a novelty in recent history. Throughout the 19th and 20th century, Europe has experienced six significant migration waves with diverse characteristics (Robinson, 1995), as elaborated below and as outlined in table 1.

i. Early and mid-19th century

During the first half of the century it was a relatively low number of political exiles who individually or with their families decided to leave their home countries to seek shelter in neighboring ones. Since most of them were financially stable, their relocation didn't prompt governments to take any regulatory measures.
ii. 1880 to 1914

To avoid the pogroms, over 2.5 million Jews fled the Pale of Settlement - a whole region in Imperial Russia exclusively designated for the residence of Jews, who were prohibited to live anywhere else in the country. These refugees were highly distinguishable due to the differences in language, culture and religion; they were also impoverished and arriving in large numbers. However, their preferred ultimate destination was not Europe, but the US, thus relieving Europe once again from the necessity to take some measures; even those remaining were taken care exclusively by Jewish philanthropic organizations.

iii. The First World War and its repercussions

By 1926, Europe was counting almost 9.5 million refugees. The first wave of mass movement, consisting of people escaping the communist revolution in Russia, Jews being evicted from the Pale and also from Austria and ethnic Germans and Hungarians having to relocate within the newly-defined borders of their countries, expanded significantly the affected geographical area. Due to the economic recession, the traditional destinations of refugees ceased to welcome them as before. However, the depletion of the workforce and of the population in general in European countries as a result of the war created new hosting opportunities within the continent. Furthermore, the colonies of European countries became additional receptors of refugees. Again, Europe wasn’t able to take any measures by itself; instead, it turned to the outside world to seek international assistance and form worldwide refugee organizations to manage the problem. The second wave surged during the ’30s as Europe was moving towards World War II, with people leaving Spain because of the Civil War and Jews once again fleeing first Poland and then Germany. Once more, Europe could not offer a safe haven; instead, refugees were forwarded to what is now called Less Developed Countries.

iv. The Second World War and its repercussions

The aftermath of the Second World War left almost 14 million refugees and 11 million displaced persons in need of accommodation and resettlement. It is at this
point in time that The United Nations High Commission for Refugees (UNHCR) - then called U.N. Relief and Rehabilitation Agency - was established; until this day, it remains the main body for refugee issues. Since Europe was at the heart of the refugee crisis at the time when institutions and definitions were being established, they were by necessity almost tailor-made to address the European conditions. International help was once again expected, while Europe took advantage of a freely available, undemanding and easily manageable workforce. This attitude, however, could also be attributed to the fact that the majority of refugees were white, European and skilled workers and that they were predominantly Christian in religion.

v. The '60s and '70s

This phase was marked by the significant change of origins of the refugee stream. Even though refugees were still generated in Europe - mostly fugitives from communist states - the main source now became the Third World countries. This shift was prompted by a combination of reasons; the creation of new nations replacing the old colonies, the rapid population growth, the Third World debt crisis, the first energy crisis of 1973, the land degradation in the LCDs, all contributed to the widening gap between the developed and developing countries. For the first time since the beginning of the 19th century, Europe started taking responsibility and sharing the burden, but still on its own terms and criteria.

vi. The '80s and '90s

The last two decades of the 20th century were characterized by two significant changes. The inflow of refugees no longer was managed and preplanned by the hosting countries; instead, it became spontaneous and unregulated, causing European countries to completely revise their admission policies. Furthermore, the recession in Western economies and the resulting unemployment, as well as the racism and discriminations brought about by the previous influx of Third World migrants resulted in intolerance and actions to prevent migration. This new tactic likewise affected the wave of East-West migration resulting from the end of the Cold War and the ensuing political instability and armed conflicts (e.g., Kosovo, Bosnia & Herzegovina), even though these new refugees were European themselves (Vimont, 2016). The change in
numbers and the stratification of refugees from the mid '80s to the mid '90s is outlined in figure 6.

![Pie charts showing changes in refugee numbers and stratification from 1988 to 1992.](image)

Figure 6: Change in numbers and stratification of refugees from mid '80s to mid '90s (Robinson, 1995)

2.1.2. Push and pull factors in the 21st century

The two main types of push factors observed in the last two decades of the 20th century continue to influence the present migration waves and force people out of their home countries (Attina, 2015):

- Extreme poverty in several countries of North-Central Africa and South-Central Asia.
- The armed conflicts in Eritrea, Iraq, Afghanistan and more recently Syria.

Particularly the case of Syria has the most significant impact because of the extreme violence of the war. It has led to calculated strike and destruction of schools, hospitals and infrastructure in general, the impairment and death of thousands of civi-
lians as well as the deficit on basic goods and services (Achilli, 2016), resulting in a complete desertification of whole regions and generating millions of displaced people. Furthermore, the situation in Jordan and Lebanon, the countries of first asylum, is by no means better. Syrian refugees are confronted with constrains in the freedom of movement, restricted access to services, most significantly health and education, unemployment and therefore lack of means and increasing levels of discrimination (Achilli, 2016, Vimont, 2016). The fear for life is maybe the strongest possible push factor, even more so combined with the legal justification based on the United Nations 1951 Refugee Convention for the protection of individuals from persecution (Vimont, 2016).

On the other hand, the fall of Gaddafi in 2011 voided the treaty between Libya and Italy aiming to impede unauthorized sea crossing, thus opening the floodgates to Europe (Attina, 2015). Moreover, the perceived safety and prosperity of Europe acts as a very strong pull factor; especially countries, like Germany and Sweden, distinguished for their high levels of social services and support. Additionally, in the last few months the actual travel costs per person have decreased significantly - from the initial $8,000 to $2,000/$2,500, thus making the travel affordable for more people (Achilli, 2016).

The reaction of Europe was and still is one of confusion, numbness and inertia, even though, under the conditions of the UN Refugee Convention, the EU member states have the legal - if not the moral - commitment to provide protection to those who qualify for it (Attina, 2015). An examination of the underlying political reasons behind the actions of individual European States is beyond the scope of this work. To conclude, throughout the 19th and 20th century, Europe has persisted on perceiving migration as a problem concerning others and consistently trying to shift responsibility away (Robinson, 1995). This fact, together with the upsurge of ethnic nationalism in recent years, has fostered an atmosphere of near hysteria and denial that continues to be apparent and affect Europe's attitude towards refugees in the present humanitarian crisis.
Table 1: Main phases of migration in Europe in the 19th and 20th century (based on data from Robinson, 1995)

<table>
<thead>
<tr>
<th>Phase</th>
<th>1 19th century</th>
<th>2 1880s on</th>
<th>3 1914 on</th>
<th>4 1945-1950s</th>
<th>5 1960s-1970s</th>
<th>6(a) 1980s</th>
<th>6(b) 1990s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of refugees</td>
<td>Europe</td>
<td>Europe</td>
<td>Europe</td>
<td>Europe</td>
<td>LDCs</td>
<td>Europe</td>
<td>Europe</td>
</tr>
<tr>
<td>Destination of refugees</td>
<td>Europe</td>
<td>outside Europe</td>
<td>outside Europe</td>
<td>Europe</td>
<td>Europe</td>
<td>Europe</td>
<td>Europe</td>
</tr>
<tr>
<td>Numbers average/annum (in thousands)</td>
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<td>71</td>
<td>580</td>
<td>2,300</td>
<td>13</td>
<td>70</td>
<td>500</td>
</tr>
<tr>
<td>Characteristics of refugees</td>
<td>European</td>
<td>European</td>
<td>European</td>
<td>European</td>
<td>non-European</td>
<td>non-European</td>
<td>European</td>
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<td></td>
<td>exiles</td>
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<td>Jews</td>
<td>Jews/Russian</td>
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<td>well-to-do</td>
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<td>cross-section</td>
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<td>skilled</td>
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<td>Cause of flight</td>
<td>political</td>
<td>economic</td>
<td>genocide</td>
<td>aftermath of war</td>
<td>political</td>
<td>war</td>
<td>ethnic</td>
</tr>
<tr>
<td></td>
<td>ethnic</td>
<td>political</td>
<td>political</td>
<td></td>
<td>ethnic</td>
<td>political</td>
<td>ethnic</td>
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<tr>
<td></td>
<td>economic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>economic</td>
</tr>
<tr>
<td>Organizational structure</td>
<td>no</td>
<td>+ community based NGOs</td>
<td>ad hoc Eurocentric</td>
<td>International</td>
<td>ad hoc governmental</td>
<td>UN</td>
<td>Pan-European NGOs</td>
</tr>
<tr>
<td>Government response</td>
<td>no</td>
<td>legislation</td>
<td>intervention restriction</td>
<td>active recruitment</td>
<td>intervention restriction</td>
<td>exclusion</td>
<td>panic</td>
</tr>
</tbody>
</table>

2.1.3. Future predictions

Due to the complexity of this issue, reliable predictions regarding future refugee flows to Europe are extremely difficult to make (Parkes, 2016). In strictly numerical terms, the present rate of refugee arrivals is not unparalleled. However, refugee flows from previous occasions were either large but progressive, or rapid but moderate and therefore in both cases easily controllable. Such an extensive and at the same time sudden and unanticipated tide of war refugees is unprecedented (Heisbourg, 2015). Moreover, there are several other factors that need to be taken into consideration:

- The continuing war in Syria leaves no room for optimism. In fact, the projection for future refugee flows is theoretically ten times larger than the number of already departed persons (Heisbourg, 2015).
- The situation in Afghanistan and Iraq is still anything but stable. In fact, the whole Middle East region has been historically suffering from territorial disputes, that seem unable to be resolved in the near future, thus increasing the risk for new refugee flows (Heisbourg, 2015).
The current refugee trend has the potential to influence further displaced populations so far uninterested to move away from their regions into seeking asylum in Europe, as indicated by the recent flair in asylum claims from Palestinians (Parkes, 2016).

Based on all these issues, in its Risk Analysis 2016, FRONTEX has developed seven scenarios, outlined in figure 7, taking all potential outcomes of the next five to ten years into consideration and describing the possible future situation within the EU as a result of the refugee crisis (Frontex, 2016).

Figure 7: A map of the future (Frontex, 2016)
All these factors illustrate a less than optimistic prospect. As conflict seems to evolve into the norm in world affairs, it is obvious that significant refugee flows should be further anticipated in the future globally (Parkes, 2016). Furthermore, regarding the forecast for the wider European region, its closeness to major conflict zones together with a significant inequality in the economic situation between countries of origin and destination is strongly indicating that the motivation to move towards the EU will remain prevalent and intense (Frontex, 2016). To cite the words of Henry Dunant (1986): "Men have reached the point of killing without hating each other, and the highest glory, the finest of all the arts, is mutual extermination.

### 2.2. Existing numerical and statistical data for Europe and the Middle East & North Africa (MENA) region

According to the UNHCR, as seen in figure 8, in 2015 the number of forcibly displaced people globally climbed over 60 million, a number exceeding the population of the United Kingdom and reaching almost 1% of the global population; a country comprised of all these people would be ranked 21st largest in the world. Compared to the 42.5 million in 2011, this signifies an escalation of over 50% in just five years (UNHCR, 2016c).

![Figure 8: Trend of global displacement and proportion displaced between 1996 and 2015 (end of year) (Frontex, 2016)](image-url)
Just for the year 2015, figure 9 clearly illustrates a significant advancement in total refugee populations worldwide; especially in Europe, over 1.3 million new refugees were recorded, a number translating in a radical increase of 43% (UNHCR, 2016c).

<table>
<thead>
<tr>
<th>UNHCR regions</th>
<th>Start 2015</th>
<th>People in refugee situations</th>
<th>Total refugees</th>
<th>End 2015</th>
<th>People in refugee situations</th>
<th>Total refugees</th>
<th>Change (total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Central Africa and Great Lakes</td>
<td>625,000</td>
<td>37,600</td>
<td>662,600</td>
<td>1,173,400</td>
<td>15,000</td>
<td>1,188,300</td>
<td>526,700</td>
</tr>
<tr>
<td>- East and Horn of Africa</td>
<td>2,568,000</td>
<td>33,400</td>
<td>2,501,400</td>
<td>2,739,400</td>
<td>-</td>
<td>2,739,400</td>
<td>138,000</td>
</tr>
<tr>
<td>- Southern Africa</td>
<td>177,700</td>
<td>-</td>
<td>199,800</td>
<td>-</td>
<td>189,800</td>
<td>-</td>
<td>12,100</td>
</tr>
<tr>
<td>- West Africa</td>
<td>243,300</td>
<td>-</td>
<td>295,000</td>
<td>-</td>
<td>295,000</td>
<td>-</td>
<td>51,700</td>
</tr>
<tr>
<td>Total Africa</td>
<td>3,641,000</td>
<td>71,000</td>
<td>3,685,000</td>
<td>4,397,600</td>
<td>15,900</td>
<td>4,413,500</td>
<td>728,500</td>
</tr>
<tr>
<td>Americas</td>
<td>509,300</td>
<td>259,700</td>
<td>769,000</td>
<td>496,400</td>
<td>250,400</td>
<td>746,800</td>
<td>-22,200</td>
</tr>
<tr>
<td>Asia and Pacific</td>
<td>3,615,200</td>
<td>280,100</td>
<td>3,895,300</td>
<td>3,531,000</td>
<td>279,300</td>
<td>3,810,300</td>
<td>-48,100</td>
</tr>
<tr>
<td>Europe</td>
<td>3,057,000</td>
<td>18,200</td>
<td>3,075,200</td>
<td>4,362,600</td>
<td>26,800</td>
<td>4,391,400</td>
<td>1,316,200</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>2,998,500</td>
<td>65,800</td>
<td>3,063,300</td>
<td>2,675,800</td>
<td>64,100</td>
<td>2,739,900</td>
<td>-224,000</td>
</tr>
<tr>
<td>Total</td>
<td>13,694,000</td>
<td>694,400</td>
<td>14,388,400</td>
<td>15,483,900</td>
<td>637,500</td>
<td>16,121,400</td>
<td>7,329,000</td>
</tr>
</tbody>
</table>

* Excluding North Africa.

Figure 9: Refugee populations by UNHCR regions in 2015 (UNHCR, 2016c)

2.2.1. Geographical origins and destination regions

The Middle East and North Africa (MENA) regions are the two geographical areas mainly accountable for the influx of refugees in Europe during the last years (Angeli and Triandafyllidou, 2016). In Africa, it is primarily countries in the sub Saharan region that are most affected by conflicts or poverty and therefore generating significant refugee flows; among them are Somalia, South Sudan, the Democratic Republic of the Congo, the Central African Republic and Eritrea (UNHCR, 2015b). In the Middle East, the main driver is the war in Syria that has already forced almost 12 million people - 5 million refugees and 6.6 million IDPs - away from their homes. Furthermore, chronic conflicts in Afghanistan, Iraq and Pakistan also contribute their fair share to the exodus (UNHCR, 2016c); the ten top source countries for refugees globally are listed in figure 10. Additionally, according to data from Europol, a third minor stream of people originates from India, Bangladesh, China and Viet Nam (Angeli and Triandafyllidou, 2016). Furthermore, the fighting in Ukraine created its own refugee flow (UNHCR, 2015b). However, the impressive and thought-provoking fact - illustrated in figure 11 - is that more than half of the global refugee flows originate in just three countries of the MENA region (UNHCR, 2016b).
Sub-Saharan Africa is at the moment the leading hosting area for refugees. Data shows that by 2015 4.4 million people were forcibly displaced from their homes but continued to reside in the wider geographical area and didn’t seek refuge elsewhere [36]. With a little less than 4.4 million refugees within its borders, Europe is the second largest host. Favorable hosting countries are Germany, the Russian Federation, France, Sweden, the United Kingdom and Italy. The primary recipient country however, not only in the Mediterranean region but worldwide is Turkey; it is accommodating 2.5 million people, 58% of all refugees in Europe. This can be attributed to the trend of Syrian and Afghan refugees to seek shelter primarily in their neighboring countries. Major host countries for Syrians besides Turkey include Lebanon - with 1.1 million refugees - Jordan, Iraq and Egypt; Afghans on the other hand flee to Pakistan - with 1.6 mil-
lion refugees - and the Islamic Republic of Iran (UNHCR, 2016c). The ten top hosting countries for refugees are listed in figure 12:

![Graph showing major refugee-hosting countries from 2014 to 2015](https://example.com/graph)

Figure 12: Major refugee-hosting countries from 2014 to 2015 (end-year) (UNHCR, 2016c)

In some of these countries, the percentage of refugees within the population is precariously high. As seen in figure 13, in Lebanon the refugee population is over 18% of the total population, whereas in Jordan it is close to 9%; percentages of this magnitude pose serious threats to the sustainability of whole countries (UNHCR, 2016c).

![Graph showing number of refugees per 1,000 inhabitants from 2014 to 2015](https://example.com/graph)

Figure 13: Number of refugees per 1,000 inhabitants from 2014 to 2015 (end-year) (UNHCR, 2016c)

However, the fact remains that, contrary to the public opinion in Europe, the majority of refugees managed to find temporary or permanent asylum in the surrounding regions of their home countries; the exception being only about 1.1 million people - around 11% of the total number - that had to risk a long and perilous journey.
to safety. The movement trends of displaced persons from the top five countries of origin to the major countries of asylum are summarized in figure 14 (UNHCR, 2016c):

![Diagram showing movement of refugees from origin to asylum countries](image)

Figure 14: Dispersion of refugees from top 5 countries of origin to countries of asylum at the end of 2015 (UNHCR, 2016c)

2.2.2. Mode and routes of commuting

The migrant flows from the Middle East and North Africa regions follow eight main passages to enter Europe (Parkes, 2016); routes and numbers are shown in figures 15, 16 and 17:

i. The Eastern Mediterranean route from Turkey to Greece.

This route is divided in two separate branches, due to the fact that Greece has both land and sea borders with Turkey:

a. the land route from Turkey to the region of Evros.

b. the sea route from Turkey to the Aegean islands of Samos, Lesvos and Chios.

This route is primarily used by refugees from the Syrian Arab Republic, Afghanistan, Pakistan and secondarily also from Iraq and Somalia. At this moment, it remains
the preferred entrance route, with the peak number of almost 900,000 entries recorded in 2015.

i. The Central Mediterranean route from Libya to Italy and Malta.

This route is mostly chosen by the sub-Saharan region migrants from Eritrea, Ghana, Nigeria, Senegal and Somalia. This route has been constantly used in the last 15 years. Even though there was a significant drop in numbers in 2009 - 2010 due to the agreement between Italy and Libya on sea border control, records show a radical increase in numbers in subsequent years.

iii. The Western Mediterranean route from Morocco to Spain.

This route has three distinct branches:

a. The route across the Gibraltar straits.

b. The route from the Spanish cities Ceuta and Melilla in Morocco to Spain.

c. The route via the Canary islands.

Originally, these routes were chiefly used by irregular migrants from Morocco and Algeria and subsequently by people from the sub-Saharan region. At this moment, the majority of recorded crossings involve Syrian refugees; still, the numbers are very small and the routes are practically abandoned. However, there is always the possibility that, increased regulatory measures on the other routes will eventually shift the preference once again toward this route (Parkes, 2016).

iv. The Eastern European land route via the Russian Federation to Ukraine.

This was the preferred route for people coming from Georgia, the Russian Federation, Afghanistan and Somalia. It presented a small but steady flow of people, not exceeding 1,500 persons every year - 1% of the total number of arrivals in Europe; by 2015 however, the flow has diminished.

v. The Arctic route via the Russian Federation to Finland and Norway.

This route has absorbed the majority of people previously travelling through Ukraine. This shift of preference is reflected in the as yet small but steadily increasing
numbers; in 2015 there were 5,200 recorded crossings (Angeli and Triandafyllidou, 2016, Frontex, 2016).

**Figure 15:** Detected border crossings in 2015 (Frontex, 2016)

**Figure 16:** Sea routes to Europe 1990 - 2015 (Fargues and Bonfanti, 2014)
As soon as they are within European borders, refugees continue their travel to reach their countries of destination in Western Europe (see figure 17):

- The majority of refugees arriving in Greece leave the country through the northern borders and travel through the Western Balkans - Croatia, Serbia, Slovenia, the former Yugoslav Republic of Macedonia and, in smaller numbers, through Bulgaria, Hungary and Romania. From there on, they continue to Austria and Germany.
- A smaller number leave Greece through the ports of Patra, Igoumenitsa and Corfu to South Italy.
- Once in Italy, refugees travel north through Milan and then to Switzerland, Austria and Germany, which is the preferred country of destination.
- Minor groups will travel even further towards the United Kingdom. A very few of them eventually continue their journey to North America and Canada (Angeli and Triandafyllidou, 2016).

Figure 17: Main routes to and within Europe (Europol, 2016)
Even though there are land pathways as well, the main body of refugees arrive in Europe by sea; it is estimated that in 2015 over 1 million people arrived this way (UNHCR, 2016c). The Mediterranean Sea thus has become one of the most travelled seas of the 21st century. Unfortunately, it has also become one of the most dangerous ones. Thousands of people have drowned or gone missing during the sea travel on anything but seaworthy and overloaded vessels; the numbers and density for 2016 are shown in figures 18 and 19. In fact, current data indicates that the risk of dying while crossing it is close to 2%. In that respect, it is also probably the most dangerous border on earth, considering that it divides countries not at war with each other (Fargues and Bonfanti, 2014).

Figure 18: Dead and missing persons in 2016 (International Organization for Migration, 2016a)

Figure 19: Density of incidents (International Organization for Migration, 2016b)
2.2.3. Demographics regarding age, sex and religion

In humanitarian crisis situations, clear demographic data is the key for decision-making. However, especially in cases of forced displacement, population groups are regularly in motion and their structure and human components are not stable. Furthermore, there is not one singular agency responsible for data collection; and whereas organizations like UNHCR tend to be very thorough and systematic in data collection, governments on the other hand are found lacking in that respect and, therefore, demographics are usually fractured and unreliable (UNHCR, 2015b).

Available data disaggregated by gender for the global population of concern to UNHCR (see figure 23) shows that proportions of men and women are practically equal, with only minor fluctuations in recent years, with women refugees ranging from 47% to 49% (UNHCR, 2016c). In contrast to the global data, asylum seekers in the European region - EU, Norway and Switzerland - are predominantly male (see figure 21), with a proportion rising from 67% in 2013 to 73% in 2015, all age groups included (European Asylum Support Office, 2016, Pew Research Center, 2016b).

Available data disaggregated by age for the global population of concern to UNHCR (see figure 23) shows that the proportion of refugee children has undergone a significant increase, from 46% in 2011 to 51% in 2015 (The Lancet, 2015, UNHCR, 2016c). In the European region, as seen in figure 20, asylum seekers are young. Among all applicants, a proportion of 26% are minors (aged 0-17); the majority of them, 18% in total are between 0 and 13 years old. The main body of asylum seekers - 55% - are young adults between 18 and 34 years of age (see figure 21), whereas the population group of 35 years and older is estimated at only 18% (Hvenmark-Nilsson, 2015, UNHCR, 2016c). Composite data regarding both gender and age in Mediterranean arrivals is outlined in figure 22.

Figure 20: Asylum applicants by age in EU, Norway and Switzerland (Pew Research Center, 2015)
Figure 21: Demographic characteristics of asylum applicants by age, sex and origin in the European region - EU, Norway and Switzerland (Pew Research Center, 2015)

| Age | Females | | Males | | | TOTAL | | |
|-----|---------|---|------|---|---|-----|---|
|     | 0-17    | 18-34 | 35+   | 0-17 | 18-34 | 35+  | 100 |
| All | 10      | 11    | 6     | 19   | 42    | 12   | 100 |
| Non-European origins | | | | | | | |
| Gambia | 1 | 2 | 0 | 12 | 80 | 4 | 100 |
| Bangladesh | 1 | 3 | 1 | 6 | 70 | 12 | 100 |
| Pakistan | 2 | 2 | 1 | 4 | 76 | 15 | 100 |
| Nigeria | 6 | 19 | 3 | 8 | 55 | 8 | 100 |
| Iran | 6 | 13 | 7 | 10 | 50 | 14 | 100 |
| Iraq | 10 | 10 | 5 | 16 | 47 | 13 | 100 |
| Eritrea | 8 | 19 | 2 | 18 | 46 | 6 | 100 |
| Somalia | 10 | 17 | 4 | 22 | 41 | 5 | 100 |
| Syria | 12 | 11 | 6 | 18 | 39 | 14 | 100 |
| Afghanistan | 9 | 7 | 3 | 38 | 38 | 6 | 100 |
| European origins | | | | | | | |
| Kosovo | 15 | 11 | 7 | 18 | 38 | 10 | 100 |
| Albania | 15 | 16 | 8 | 19 | 30 | 12 | 100 |
| Ukraine | 12 | 19 | 15 | 13 | 27 | 14 | 100 |
| Serbia | 24 | 14 | 10 | 25 | 15 | 12 | 100 |
| Russia | 24 | 15 | 12 | 26 | 13 | 10 | 100 |

Figure 22: Composite data regarding sex and age for Mediterranean arrivals in 2015 (UNHCR, 2016c)
As regards religion, even before the recent refugee influx, Europe was experiencing a slow but steady growth in Muslim population (see figure 24). It is estimated that this growth rate will increase more than previously anticipated, due to the large number of people originating from predominately Islamic countries (Pew Research Center, 2011).
However, unlike demographics on age, sex or nationality, projections regarding religious beliefs can only be based on circumstantial data. Since the UN and Eurostat do not include information on religion in their reports, the proportion of Muslims among refugees seeking asylum in Europe could only be calculated as a combination of their nationality (see figure 25) together with the religious composition of their home countries (Pew Research Center, 2011).

![Figure 25: Top ten nationalities of Mediterranean Arrivals in 2015 (UNHCR, 2016c)](image)

According to the CIA World Factbook (USA Central Intelligence Agency, 2016), the religious makeup of the top nationalities in Mediterranean arrivals is predominantly Islamic:

- Syrian Arab Republic 87.00%
- Afghanistan 99.70%
- Iraq 99.00%
- Eritrea (officially Muslim - no numerical data)
- Pakistan 96.40%
- Iran 99.40%
- Nigeria 50.00%
- Somalia (officially Muslim - no numerical data)
- Morocco 99.00%
- Soudan (officially Muslim - no numerical data)
Consequently, it is reasonable to assume that 87% of all refugees arriving to Europe are Muslims. This calculation, however does not consider other factors - such as differentiations within the religious groups (as in the case of Syria, illustrated in figure 26) - that might possibly distort the composition of migrant groups and therefore could leave a significantly large margin for statistical errors (Pew Research Center, 2011).

![Figure 26: Religious composition in Syria (USA Central Intelligence Agency, 2016)](image)

Finally, regarding skills and qualifications and in contrast with populations migrating for economical reasons, populations dislodged by armed conflicts are generally better enabled. In the case in Syria, for example, one third of the people willing to abandon the immediate area and seek refuge in Europe consists of university graduates, qualified professionals and medium- to high-skilled workers from urban areas; they all have adequate knowledge of English - and other languages as well - and the ability to adjust in a different culture. On the other hand, refugees from rural areas - farmers and farm-workers - with no means, practically no knowledge of English and no ability for cultural adaptation mostly prefer to remain in neighboring countries in the hope to relocate back to Syria (Achilli, 2016, Hvenmark-Nilsson, 2015).

### 2.3. Integration issues

Forcibly displaced persons need security and acceptance, not exclusion and discrimination. However, it is very challenging to successfully integrate groups of people with mixed national, religious, cultural and social background in themselves into societies that are so heavily contrasting their own (Frontex, 2016, (UNHCR, 2016c).
2.3.1. Challenges of the various aspects of integration

Since the goal is to achieve their full inclusion in order to avoid xenophobia, radicalization and social fragmentation, so it is not enough to stop at addressing the most immediate and short term humanitarian needs of refugees, such as registration, documentation and temporary shelter, and then abandon them to their own devices. A long-term strategy must be developed, including work opportunities, education and social inclusion; one preferably at European level, so as to not be fragmented and jeopardize its unity (Hvenmark-Nilsson, 2015).

Social integration can be defined as the progressive incorporation of displaced populations into their host country; it is a predominately qualitative concept and cannot be easily defined or measured. However, there are elements that can be identified as essential components of any successful assimilation process (UNHCR, 2015b):

- Legal element: legal residency status, equal access to justice, civil and political rights.
- Economic element: equal economic opportunities, the right to work, access to financial services.
- Social element: the right to social services (welfare, health care and education), absence of discrimination, participation in the social and cultural life and positive interaction with local communities.

At this moment, and depending on the individual hosting countries, there are significant deficits in one or more of these elements. Controversies in legal, social and cultural issues exist in varying degrees in all hosting countries, depending on factors such as the level of relevant legislation, the mindset of local societies (see figure 27) or the pre-existence of similar ethnic groups from previous migrations; these controversies tend to become minor in countries hosting large numbers of refugees while relying on a background of strong social infrastructure, such as Germany or Sweden (Achilli, 2016, The Expert Council of German Foundations on Integration and Migration, 2016); the same cannot be said for countries, where the influx of new arrivals seriously threatens their weak or nonexistent welfare systems.
Public health services - including vaccinations - are largely interrupted in areas of conflict. Additionally, the hardships of the journey could further deteriorate the health of refugees or aggravate preexisting conditions, such as tuberculosis. Furthermore, the adverse conditions in most reception centers can possibly trigger both communicable and non-communicable diseases (Frontex, 2016). However, despite the fact that they can easily affect the general population, health issues are being broadly ignored, especially in regard to children; no comprehensive health plan has been developed thus far, and health institutions have remained for the most part silent (The Lancet, 2015).

Prejudice and hostility towards Muslim population is not new in Europe; it originates back in the recession of the '70s and has been evolving to an increased xenophobia and alarmism in the light of adverse international events ever since. Research shows that, in the majority of European countries, anti-Muslim bias is significantly more pronounced than anti-immigrant bias (Strabac and Listhaug, 2008). As shown in figure 27, this bias is more negative in southern and eastern Europe (Pew Research Center, 2016a). The perceived connection between religion and criminality or terrorism will be elaborated further down.

Figure 27: Negative views of Muslims in European countries (Pew Research Center, 2016a)
2.3.2. Social impacts and conflicts for the hosting societies

The large scale of this forced migration did evoke significant uneasiness and tension on a variety of topics within European countries (Vimont, 2016). The ideals of openness, free movement and multiculturalism that formed the foundation of the EU had already suffered a major impact during the financial crisis of 2008. When the common economic policies failed to protect the Member States or assist in any way their recovery, the general attitude regressed back to restriction policies (see figure 28), thus consequently influencing the response to the refugee crisis (Attina, 2015).

![Diagram showing the change of attitude and policies in pre- and post-2008 Europe](image)

Figure 28: The change of attitude and policies in pre- and post-2008 Europe (Attina, 2015)

The recent heavy influx of refugees further enhanced hostile feelings against "foreigners", which in turn radically increased the popularity of populist and nationalist extreme-right parties, while at the same time abolishing the public support from government parties. These political reactions have at their core the protection of national identity and social coherence, they are enforcing them nonetheless with acts of discrimination and often even violence against the people regarded as intruders (European Commission, 2016, Vimont, 2016). The issue of violence, however, has also a different aspect. The incidents of sexual harassment of local women from refugees during the 2016 New Year festivities in Germany and Sweden triggered feelings of insecurity.
and vulnerability but also anger and negative feelings. More importantly, the brutal terrorist attacks in France and Belgium in late 2015 and early 2016 convinced governments and public that radical Islamist groups have penetrated Europe using the mass movement of people as a cover-up, thus indiscriminately equating the refugees with terrorists and further stoking suspicion and hatred towards them (Vimont, 2016).

These conflicts have led to increased border control, progressive isolation and a strong trend against collective approach in several European countries and are causing disagreements regarding issues such as refugee quota or the size of financial aid to the various Member States. Most importantly, this escalating tension between EU members is aggravating already existing economic, social and political schisms between countries and is threatening the general stability of Europe itself (Heisbourg, 2015, Klinke, 2013). This discord is clearly reflected in the public opinion pertaining to the EU’s handling of the refugee crisis, as illustrated in figure 29 (Pew Research Center, 2016b).

![Figure 29: Public opinion on the EU’s handling of the refugee crisis (Pew Research Center, 2016b)](image)

Moreover, there is a very pragmatic risk that these problems will ultimately impede balanced refugee integration and will on the contrary create migrants without roots, perpetually circulating from country to country and futilely seeking asylum (Kuusisto-Arponen and Gilmartin, 2015). As an example, depicted in figure 30, there are currently at least 76,000 - 80,000 people stranded in Greece and the Balkans without official status or the possibility to legally continue their travel (International Organization for Migration, 2016b).
Nevertheless, even though the presence of very high numbers of refugees can create significant friction between the newcomers and the receiving societies, positive aspects still exist and should be accentuated (Behm, 2015). Migrants can be carriers of knowledge, expertise and innovation, thus functioning as drivers of economic growth (International Monetary Fund, 2016); more importantly, the exchange of culture and values, when devoid of fanaticism and bigotry on both sides, can be beneficial to all (European Commission Directorate-General Human Resources and Security, 2015, UNHCR, 2015b).

To conclude, as President Juncker said:

"Since the beginning of the year, nearly 500,000 people have made their way to Europe. The vast majority of them are fleeing from war in Syria, the terror of the Islamic State in Libya or dictatorship in Eritrea. The numbers are impressive. For some they are frightening. But now is not the time to take fright. It is time for bold, determined and concerted action by the European Union, by its Institutions and by all its Member States" (European Commission Directorate-General Human Resources and Security, 2015).
2.4. *International, European and national legislation*

Data shows that the current global migration trends will not abate easily; as long as political, economic, demographic or even environmental causes continue to exist or even amplify, an instinctive scheme of population transfer will continue to evolve and in fact intensify (Vimont, 2016). However, the world in general, and Europe in particular, continue to remain unprepared for dealing with every new wave of migration, both in humanitarian as well as legislative terms; and while displaced people can demonstrate adaptability to circumstances, governments, organizations and the public fail to do so (Vimont, 2016). Furthermore, quality of life - expressed as legal, economic, cultural and social integration - does have a positive influence, not only to forcibly displaced persons, but to the hosting societies as well and needs to be clearly defined and articulated in a comprehensive, broadly accepted and binding way (UNHCR, 2015b).

2.4.1. The protection of life in international law

At the center of the refugee crisis lies the protection of all human life; it is a very complex issue that includes aspects such as the protection of freedom and life from persecution due to race, religion, nationality, social or political preference, the protection of children, sea rescue or the combat of human trafficking (Attina, 2015). The existing relevant legislation is subdivided in four sections (UNHCR, 2016a):

- International refugee law
- International human rights law
- International humanitarian law and the law of neutrality
- International criminal law

A detailed listing of all currently active laws included is outlined in figures 31, 32, 33 and 34 (UNHCR, 2016a, pp. 50-52):
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statute of the Office of the United Nations High Commissioner for Refugees</td>
<td>The Statute of the High Commissioner’s office was adopted by General Assembly Resolution 428 (V) of 14 December 1950. It serves as UNHCR’s constitition and sets out UNHCR’s function and responsibility to provide international protection and to seek permanent solutions to the problem of refugees. It also includes a definition of persons who are of concern to UNHCR. The mandate has been elaborated and expanded over time through subsequent General Assembly and ECOSOC resolutions.</td>
</tr>
<tr>
<td>1951 Convention Relating to the Status of Refugees, and its 1967 Protocol Relating to the Status of Refugees</td>
<td>An international treaty which is binding upon the signatory states. It sets out the responsibilities of states which are parties to the Convention vis-à-vis refugees on their territories, and sets out the obligations of the refugees.</td>
</tr>
<tr>
<td>Conclusions on international protection adopted by UNHCR’s Executive Committee (ExCom Conclusions are adopted every year)</td>
<td>Contain important guidance (and standards) to States and UNHCR on international protection.</td>
</tr>
<tr>
<td>i. Cartagena Declaration on Refugees, 1984</td>
<td>Non binding declarations which have greatly influenced regional policies on refugees and asylum seekers, and contain an expanded refugee definition.</td>
</tr>
<tr>
<td>The Asian-African Legal Consultative Organization’s (AALCO’s) 1965 Bangkok Principles on Status and Treatment of Refugees (as adopted on 24 June 2001 at the AALCO’s 40th session, New Delhi)</td>
<td>Another non-binding document that addresses refugee issues at a regional level.</td>
</tr>
<tr>
<td>Convention on the Reduction of Statelessness, 1961</td>
<td>Contains measures to ensure that persons do not become stateless.</td>
</tr>
<tr>
<td>The Guiding Principles on Internal Displacement</td>
<td>Addresses the specific needs of internally displaced persons worldwide. They identify rights and guarantees relevant to the protection of persons from forced displacement and to their protection and assistance during displacement as well as during return or resettlement and reintegration.</td>
</tr>
</tbody>
</table>

Figure 31: Legislation - Refugees and other persons of interest to the UNHCR (UNHCR, 2016a, p50)
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Declaration of Human Rights, 1948 (UDHR)</td>
<td>Universal instrument setting out the basic human rights of all persons, including refugees and other persons of concern to UNHCR.</td>
</tr>
<tr>
<td>International Covenant on Civil and Political Rights of 16 December 1966 (ICCPR)</td>
<td>Obliges states which are parties to the Covenant to respect and ensure the rights set out in the Covenant to all individuals (within the state’s territory and jurisdiction), without distinction such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status. The ICCPR also has two optional protocols as well (one on an individual complaint mechanism and another to abolish the death penalty)</td>
</tr>
<tr>
<td>International Covenant on Economic, Social and Cultural Rights of 16 December 1966 (ICESCR)</td>
<td>Obliges states to respect the human right to work, the right to an adequate standard of living, including food, clothing, and housing, the right to physical and mental health, the right to social security, the right to a healthy environment, and the right to education. It is also applicable to refugees and others of concern to UNHCR.</td>
</tr>
<tr>
<td>Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment of 10 December 1984 (CAT)</td>
<td>Defines ‘torture’ and bans torture under all circumstances. It also states that States cannot return a refugee to his country if there is reason to believe he/she will be tortured (principle of non-refoulement).</td>
</tr>
<tr>
<td>Convention on the Rights of the Child of 20 November 1989 (CRC)</td>
<td>A comprehensive code of rights for all children (defined as 18 years or under) including children of concern to UNHCR. It requires that children have a right to citizenship upon birth and specifically addresses the needs of refugee children (article 22). The CRC also has two optional protocols (one on children in armed conflict and another on the sale of children, child prostitution, and child pornography).</td>
</tr>
<tr>
<td>International Convention on the Elimination of All Forms of Racial Discrimination of 21 December 1965 (CERD)</td>
<td>Prohibits racial discrimination (where a person or a group is treated differently because of their race, colour, descent, national origin or ethnic origin and this treatment impairs, or is intended to impair, their human rights and fundamental freedoms). The Convention permits distinctions between citizens and non-citizens; but not between different groups of non-citizens.</td>
</tr>
<tr>
<td>Convention on the Elimination of All Forms of Discrimination against Women of 18 December 1979 (CEDAW)</td>
<td>Defines what constitutes discrimination against women and sets a framework for national action to end such discrimination and to ensure the full development and advancement of women in all spheres – political, educational, employment, health care, economic, social, legal, and marriage and family relations.</td>
</tr>
<tr>
<td>Convention on the Prevention and Punishment of the Crime of Genocide of 9 December 1948</td>
<td>Defines genocide and declares it as a crime whether committed during peace time or during war.</td>
</tr>
</tbody>
</table>

Figure 32: Legislation - International human rights (UNHCR, 2016a, p51)
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geneva Convention relative to the Protection of Civilian Persons in</td>
<td>Covers the treatment of civilians in time of war, including refugees and other uprooted people. It also prevents states from forcibly displacing civilian populations.</td>
</tr>
<tr>
<td>Time of War of 12 August 1949</td>
<td>(i) Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I) Provides for additional elements that can protect refugees and others of concern in armed conflict.</td>
</tr>
<tr>
<td>(i) Protocol Additional to the Geneva Conventions of 12 August 1949,</td>
<td>Prior to the second protocol the only provision applicable to non-international armed conflicts was Article 3 common to all four Geneva Conventions of 1949. The aim of the present Protocol is to extend the essential rules of the law of armed conflicts to internal wars.</td>
</tr>
<tr>
<td>and relating to the Protection of Victims of Non-International Armed</td>
<td></td>
</tr>
<tr>
<td>Conflicts of 3 June 1977 (Protocol II)</td>
<td></td>
</tr>
<tr>
<td>Hague Convention (V) Respecting the Rights and Duties of Neutral</td>
<td>Jointly with Executive Committee Conclusion 94 (2002) this provides a framework for neutral states to identify, disarm, separate and intern combatants who are mixed with refugee populations.</td>
</tr>
<tr>
<td>Powers and Persons in Case of War on Land of 18 October 1907</td>
<td></td>
</tr>
</tbody>
</table>

Figure 33: International humanitarian law and the law of neutrality (UNHCR, 2016a, p52)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially</td>
<td>These protocols include specific measures to ensure protection of the human rights of victims of trafficking and smuggling although they largely focus on reduction of the power and influence of organized criminal groups that abuse migrants. They define smuggling and trafficking and specify that no action taken by states to combat trafficking or smuggling should contravene the principle of <em>non-refoulement</em>.</td>
</tr>
<tr>
<td>(ii) Protocol against the Smuggling of Migrants by Land, Sea and Air supplementing</td>
<td></td>
</tr>
<tr>
<td>the United Nations Convention against Transnational Organized Crime of 15 November</td>
<td></td>
</tr>
<tr>
<td>2000 (Palermo Protocol on Smuggling)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 34: International criminal law (UNHCR, 2016a, p52)
2.4.2. The European legislation

In regard to the refugee issue, by the late 1990s Europe was moving towards the shared strategy of ending the "exilic bias" (i.e., of stemming the refugee flows through direct intervention in the conflict areas); furthermore, it had undertaken two more formal actions (Robinson, 1995):

- The Dublin Convention, ruling the country of first entrance as the exclusively designated country for asylum application.
- The Schengen Group of countries, aiming at establishing shared border policies (e.g., movement of goods, services and people, visa policy, one common external border).

In the years between 1995 and 2016, in the effort to manage, control and restrain the refugee flows, the European Union has undertaken a number of further initiatives (Attina, 2015, European Union Agency for Fundamental Rights, 2014, Tsourdi and De Bruycker, 2015, UNHCR, 2015a):

2004
- Establishment of FRONTEX; the agency for border control management.

2005
- Global Approach to Migration and Mobility (GAMM); framework for the EU external migration and asylum policy (cooperation with non-EU countries).

2013
- Establishment of EASO; the European Asylum Support Office.
- Establishment of EUROSUR; the EU Border Surveillance System

2014
- Launching of Operation Triton; EU's substitute for Italy's Mare Nostrum in sea search and rescue,
- Launching of a Regional Development and Protection Program; intended for refugees and host communities in Iraq, Jordan and Lebanon.
- The Asylum, Migration and Integration Fund (AMIF); with a total budget of over 3 billion euro for the period 2014-20, aiming to promote management of migration flows and development of a common EU approach.
2015

- European Agenda on Migration; proposals to respond to migration and asylum challenges in the EU.
- EU Naval Force Mediterranean (EUNAVFOR MED), also known as Operation Sophia; maritime operative mission to provide rescue and surveillance on the Mediterranean sea routes.
- 1st and 2nd relocation plan; addressed to refugees that have entered in Greece, Italy and Hungary.

2016

- Process of an extensive management plan; included is the closing of the Western Balkan route, the enhancement of EU external border control and a deal with Turkey.

All of the above are more or less isolated and short-term attempts to achieve a measure of control over the influx of refugees and not a serious effort to develop a multilateral strategy able to incorporate all aspects of the issue - legislative, economic, humanitarian, social, cultural or regarding security and integration. Examples of regulatory measures aiming to compensate for existing grey areas could include (Hvenmark-Nilsson, 2015):

- Harmonization of asylum application standards and process within the EU.
- Issuance of temporary work permits during screening.
- Acceleration of university degrees validation process.
- Provision of language training in particular and education in general; predominantly for minors.
- Harmonization of social benefits within the EU.

However, in order to achieve that, Europe has first to overcome an increasing distrust and apprehension towards a central European administration and the ensuing member states' strong tendency to act unilaterally in their own national interests (Attina, 2015, Vimont, 2016).
2.4.3. National management strategies - Implementation and current measures

Up until 1995, even though every European country followed its own guidelines and legislation, these however were in general restrictive and were focused on four actions (Robinson, 1995):

- Prevention of access (e.g., increased border security).
- Discouragement of asylum seekers (e.g., deficient accommodation conditions, limited rights and benefits).
- Efforts to accelerate the refugee determination procedures.
- Repatriation of failed applicants.

Unfortunately, the current inability of the EU to inspire unity and accord between member states regarding a plethora of issues has further deteriorated the situation to the point that countries presently implement conflicting measures to address the refugee crisis. Actions to restrict access range from increased controls to barbed-wire fences on external borders (e.g., Hungary, Slovenia or Bulgaria); some countries have imposed temporary border controls even within the Schengen area. Some countries reject the predetermined quota of refugees, impose restrictions on access to asylum processes and family reunification (e.g., Austria, Denmark, Finland, Germany or Sweden) or even refuse to receive non-Christian groups in their territories. Whereas some countries (e.g., Norway or Sweden) issue temporary work permits for highly skilled refugees together with the possibility of education for minors, other countries refuse them these opportunities, while at the same time unduly prolonging the asylum processes (European Union Agency for Fundamental Rights, 2016, Hvenmark-Nilsson, 2015, UNHCR, 2016c).

To conclude, actions taken so far both at the EU level and at the national level are short-term, fragmented, antagonistic, incomplete, unclear and ineffective. In order to avoid unpredictable consequences in the future, essential is the development and implementation of a long-term strategy focusing on social and economic integration for the refugees, by providing equal opportunities in work, education, health care and housing, without at the same time compromising the coherence as well as the safety and security of the hosting societies (Hvenmark-Nilsson, 2015, Robinson, 1995).
3. Refugee crisis: Long-term policies and framework

The dissimilar political background and divergent asylum and integration policies, combined with the increased flows towards and through Europe have so far imposed significant stress on the willingness of the affected countries in the European region to act in accord with their legal, but most significantly moral obligations (UNHCR, 2015a); this, nevertheless, is a dead-end attitude that needs redefinition imperatively.

3.1. Critical assessment of the current situation and the available solutions

To recapitulate, the need for permanent and stable resolution regarding all forcibly displaced persons - refugees, IDP's and stateless persons - is clear and irrefutable for everyone involved. Beyond full legal recognition, there are three established permanent solution alternatives, pursued mostly by the UNHCR (UNHCR, 2015b, UNHCR, 2016c, Vimont, 2016).

- Voluntary repatriation: The return to their homes is obviously the most popular among refugees, assuming that order has returned; continuing conflicts and instability in the countries of origin, however, make it almost impossible to achieve.

- Resettlement: Relocation to a third country is an option whenever refugee needs cannot be met in the country of first asylum; resettlement countries, if they are existent and willing to assume that responsibility, provide full legal and civil rights and protection.

- Local integration: Full integration entails legal, economic, cultural and social inclusion and it encompasses a permanent home, the ability to sustain a livelihood, the economical contribution to the host country and the lack of intolerance or unfairness; this solution is obviously the most challenging to achieve.

Yet, the achievement of a reliable solution remains an unresolved challenge. As mentioned above, the incessant warfare, not only in Syria but in the whole MENA region in general suggests that repatriation cannot be considered as an option yet; only about 200,000 refugees decided to repatriate voluntarily in 2015, a very small
percentage of the overall 7.5 million displaced people in the area (UNHCR, 2016c). Furthermore, there is no abundance of willing relocation countries, since most of them have already exhausted their available resources. Thus, the only feasible and reasonable solution for the foreseeable future is local integration (UNHCR, 2015a).

It is obvious that a responsible and successful assimilation should form part of the middle ground between the undisciplined and uncontrolled entry into a host country with its inherent risk to safety and the total debarment due to an irrational and unjustifiable xenophobia. And since integration commences with first reception, it is essential that hosting countries develop extended reception capacities, improve the efficiency of national asylum systems and increase refugee recognition rates (Clayton, 2015, UNHCR, 2015a). Nonetheless, this process requires resources in a magnitude that is still lacking. Developing, low-income countries of the MENA region continue to absorb the majority of refugees; by the end of 2015 they were hosting almost 86% of all forcibly expatriated persons, with all the strains this would entail for the local societies (UNHCR, 2016c). Even in Europe conditions are not always ideal, since the load is carried predominantly by those countries with the weaker economies and a significantly large number of refugees are still enclosed in emergency facilities suffering progressively adverse conditions; EU institutions and member states have yet to provide their promised and essential support (European Commission, 2015, Vimont, 2016).

It seems that this constant systemic failure to adjust to increased numbers of incoming forcibly displaced people signifies a serious default in the EU structure itself. Moreover, the controversial agreement between the EU and Turkey has further undermined the attempts for a reasonable solution, as it has in essence lifted whatever pressure was applied on member states to improve their indeed existing yet grossly inadequate infrastructure in regard to the reception and integration of refugees (Asylum Information Database, 2016).

3.2. The problem of shelter

It has become clear that, irrelevant of the action plan chosen - be it repatriation, relocation or integration - and considering the fact that refugees must by definition be
addressed as a vulnerable social group, a critical and central aspect of all first reception, temporary accommodation and full inclusion is shelter in the broader sense of sanctuary from adversities and dangers. The concept of "adequate standard of living" is already included in the EU Reception Conditions Directive (2013/33/EU, article 18); although it is mentioned only in connection to the actual waiting period of the asylum application process, this concept should, also in accordance with international human and refugee rights, be expanded to the full duration of a person's stay within a country's jurisdiction. Adequate and decent housing must be ensured in order to protect the life and health of people, prevent sexual & gender-based violence and also address the specific needs of children (European Union Agency for Fundamental Rights, 2016).

Naturally, the very first step towards this objective is the establishment of emergency admission, registration and assistance centers, in numbers and locations that are sufficient to receive and manage in dignity the entirety of incoming persons; sadly, the very popular nowadays solution of "hot spots" by no means satisfies the above description (Clayton, 2015). Beyond that essential initial stage, the more important need for a long-term accommodation arises urgently. This need has created the arena for an ongoing controversy between the two currently predominant alternatives: planned camps vs. housing in private apartments rented by the governments. As presented in table 2, each one of the two alternatives favors both significant advantages as well as serious disadvantages, thus making the choice between the two a difficult one (Medecins Sans Frontiers, 2010, UNHCR, 2016a).

To conclude, the suitability and choice between the two alternatives cannot be absolutely determined, as it depends heavily on individual circumstances, namely the number of refugees in relation to the absorbing capacity of local communities, the demographic constitution of each refugee group, as well as the ethnic, cultural and religious compatibility and tolerance level between refugees and local residents, not to mention the specific political situation and equilibrium within the receiving nations. However, one general conclusion that can be drawn with relative certainty is that planned camps should be predominantly short-term oriented, whereas individual housing within the boundaries of the local societies is more suitable as a long-term
solution on the path to full social integration (Medecins Sans Frontiers, 2010, UNHCR, 2016a).

Table 2: Advantages and disadvantages of enclosed settlements and open housing

<table>
<thead>
<tr>
<th>ENCLOSED SETTLEMENTS</th>
<th>OPEN HOUSING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>• Enhanced safety and protection.</td>
<td>• Increased risk of disease outbreaks due to overcrowding.</td>
</tr>
<tr>
<td>• Better identification and estimation of population numbers.</td>
<td>• Strong dependence on external support.</td>
</tr>
<tr>
<td>• Improved monitoring of health status.</td>
<td>• Diminished autonomy.</td>
</tr>
<tr>
<td>• Easier organization of basic services (e.g., distribution of goods, vaccinations etc.).</td>
<td>• Social isolation.</td>
</tr>
<tr>
<td>• Easier planning of future options (e.g., repatriation).</td>
<td>• Possible degradation of the surrounding environment.</td>
</tr>
<tr>
<td>• Improved communication possibilities.</td>
<td>• Possibility of security problems within the camp.</td>
</tr>
<tr>
<td>• Better skills coaching (e.g., language teaching).</td>
<td>•</td>
</tr>
</tbody>
</table>

ii. OPEN HOUSING

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Higher persons mobility.</td>
<td>• Increased effort to access en masse the total refugee population.</td>
</tr>
<tr>
<td>• Better access to external jobs.</td>
<td>• Difficulty in monitoring health needs or emergencies.</td>
</tr>
<tr>
<td>• Use of existing infrastructure (e.g., public health system).</td>
<td>• Diminished access to relief programs (e.g., food aid)</td>
</tr>
<tr>
<td>• Faster reconstruction of economic substance.</td>
<td>• Risk of destabilization in the local community and frictions between local residents and refugees.</td>
</tr>
<tr>
<td></td>
<td>• Possible decline of whole urban districts into ghettos.</td>
</tr>
</tbody>
</table>
3.3. Refugee settlements: Existing guidelines and design criteria

Research into the specific guidelines that should govern the choice of adequate individual housing within the hosting communities is beyond the scope of this thesis and will not form a part of it; the focus will remain solely on settlements exclusively planned and constructed for the accommodation of refugees. For any such emergency response settlement to even be considered as an alternative, it needs to fulfill a number of predetermined and broadly accepted criteria in regard to design and construction, site planning and land utilization, layout, included facilities and specific space allocation.

Natural and man-made disasters are anything but a rare occurrence and as a result, the various agencies involved in the management of such extreme situations (e.g., UNHCR, US Army, The Red Cross, Doctors without Borders etc.) have all developed sets of practical standards to optimize the relief operations. Most significant among them is the "Humanitarian Charter and Minimum Standards in Disaster Response"; it is the result of the Sphere Project, initiated in 1997 as a teamwork between international non-governmental organizations and continuing to evolve ever since (Black, 2009).

3.3.1. General design and construction principles

An inadequately designed refugee settlement can become an ailing environment, both literally and figuratively, therefore optimal planning and organization are essential, in order to minimize corrective actions, make management easier and more cost effective and achieve the most efficient allocation of land and resources (Medecins Sans Frontiers, 2010, UNHCR, 2016a):

- The basic needs that have to be addressed absolutely include shelter, essential healthcare, nutrition, water and sanitation. Other issues to concentrate on involve resource logistics, camp coordination and camp management (CCCM), non-food items (NFI, e.g., clothing, bedding etc.), telecommunications and security (Haddow et al., 2014).
- The initial design should focus on optimal camp size and density to avoid overcrowding - both for health and security reasons, flexibility to adapt to changing requirements and advance planning for all seasons and weather conditions - for health and environmental reasons, but also to achieve maximum cost-effectiveness (Medecins Sans Frontiers, 2010, USA Department of Air Force, 2000).

- Health is always one of the major concerns in any area where large groups of people congregate for longer time periods. Some of the most common health hazards include pollution of surface and groundwater, contamination of the environment, development of breeding areas for disease carrying vectors, presence and spread of insects and rodents. They can be attributed to poor sanitation and waste water management, insufficient or inadequate garbage reception points, dust in the air or smoke and they need to be addressed during the design phase (UNHCR, 2016a).

- In emergency situations, changes in the traditional demographic structure of groups are to be expected; they could include absence of men as traditional family care-takers and transition of this role to female family members with the subsequent increased risks for their safety, significant numbers of unaccompanied children and also increased numbers of older, sick, injured or disabled people. These changes create additional special circumstances and gender considerations and need to be taken into account (UNHCR, 2016a).

- Beyond the actual design principles, the first step prior to the planning of a refugee settlement should be an environmental baseline study to (a) determine the status of the current environmental situation, (b) detect any possible sensitive issues, such as environmentally protected sites that the camp should distance itself from, (c) calculate the use of local resources and (d) appraise the actual impact of the settlement to the environment, all with the scope to mitigate or minimize as much as possible the temporary and permanent adverse effects (USA Department of Air Force, 2000).

- Finally, an integral part of the initial planning should be a comprehensive exit strategy, not necessarily in regard to the duration of stay for the consecutive cycles of refugee groups, but more importantly in terms of an end-of-life ap-
proach, i.e., the fate of the facilities after they have concluded their avail. In that respect, a simple decommissioning cannot be considered the most efficient solution; rather, a more creative approach should be incorporated within the original concept (UNHCR, 2016a).

3.3.2. Site selection and planning

Optimal site selection is the foundation of any successful settlement. Even though it might seem difficult, or at times outright impossible, every effort should be made so that the chosen plot will satisfy the majority of characteristics listed in table 3 (Medecins Sans Frontiers, 2010, USA Department of Air Force, 2000). As a general rule, however, overestimation of potential needs or adversities is preferred to underestimation (UNHCR, 2016a).

3.3.3. Site organization, infrastructure and services

In designing the spatial organization of the settlement, the factors to be taken into account include minimum space allocation per person, individual space requirements for each installation, minimum distances required between the various uses and easy accessibility of all services. Moreover, equally important are qualitative aspects such as security factors, social structure, cultural traditions, relationships and vulnerable groups within the population (Medecins Sans Frontiers, 2010).

The objective of these emergency settlements should extend beyond creating a simple housing space to protect from the elements and safeguard life and health; ideally, they should recreate and enhance a sense of privacy and security for those displaced and rootless people. To achieve that, previous experience has shown that the most favorable method is to organize shelters into smaller community units equipped with all the basic facilities and infrastructure, e.g., washing areas, latrines and water points as described in table 4. These "villages" should not exceed a population of 1,000 people. For the accommodation of larger numbers of people, these villages will then be loosely connected to form whole sectors including extended community services (Medecins Sans Frontiers, 2010, USA Department of Air Force, 2000).
In regard to the administrative and community services available within the settlement, the possible requirements can vary depending on a number of factors; among others, the number of people housed in the settlement, the particular needs or specific nature of the population or the planned duration of stay. A range of possible services is included in table 5. Moreover, there are variations as to their placement within the grounds. According to the total size and population of the settlement, some functions - usually administrative - should be centrally located, so as to be easily accessible for all; others - usually regarding personal hygiene - are best to be decentralized to accommodate smaller groups of people (UNHCR, 2016a, USA Department of Air Force, 2000).

Table 3: General prerequisites for the eligibility of settlement building sites

<table>
<thead>
<tr>
<th>i. Topography &amp; size</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The plot should be almost flat and located above flood levels. Extreme variations of the earth's surface (e.g., slopes, valleys or ravines) should be avoided.</td>
</tr>
<tr>
<td>• The ideal slope should be 2% - 4% for easy drainage, and it should not exceed 10% to avoid soil erosion and demanding construction work.</td>
</tr>
<tr>
<td>• Soil should absorb surface water easily to avoid flooding when it rains and to facilitate the effectiveness of pit latrines.</td>
</tr>
<tr>
<td>• Rocky subsoil should be avoided, as it obstructs construction.</td>
</tr>
<tr>
<td>• The groundwater table should be located at least 3,00 meters below the surface, as to not allow infiltration from wastewater.</td>
</tr>
<tr>
<td>• The plot should be large enough to amply satisfy all the space allocation criteria (e.g., enclosed and open spaces, internal access roads etc.); free area reserves should also be allocated in consideration of future expansion or design alterations.</td>
</tr>
<tr>
<td>• The plot should allow for a low-density design, as this significantly decreases health problems, fire hazard and security risks.</td>
</tr>
<tr>
<td>• Underestimation of the area required for social and communal functions within the settlement and among the refugees should be avoided.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ii. Water resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The location should be close to a source of good, potable water.</td>
</tr>
<tr>
<td>• Drill-well construction should be undertaken only after a detailed hydrological survey has confirmed the presence of underground water, and only when no other option is available, since it is time-consuming, costly and uncertain as to the results.</td>
</tr>
</tbody>
</table>
- Transportation of water by tank trucks should be avoided when possible.
- The quantities of water must be sufficient to cover the settlement's demands. The calculations should allow for the probable excess use of water from the refugees, the needs of any auxiliary personnel, the potential firefighting needs etc.

### iii. Public utilities

- The lot should be located within or very close to the public utilities grid (i.e., water, sewage and electricity).

### iv. Accessibility

- The location should have an adequate road infrastructure, to allow for the easy commute of construction vehicles, supply trucks, fire trucks, private cars etc.
- The site should be located in proximity to towns, markets, hospitals and other national public services.
- Access to public transportation is an advantage, as it facilitates interaction with the local communities.

### v. Security

- The site should be located away from international borders (over a 50 km radius), conflict areas or other sensitive areas.
- Areas with extreme climatic conditions (e.g., high winds, severe cold or heat, heavy rainfall etc.) should be avoided.

### vi. Environment & vegetation

- The site should dispose sufficient vegetation (e.g., trees or bushes) to provide shade, protect from wind, decrease soil erosion and dust generation and generally to improve the micro-climate.
- The existence of trees, however, should not be an impediment to construction.
- The soil should ideally allow for small-scale gardening and production of vegetables.

### vii. Land rights

- The inhabitants of the settlement should have exclusive rights to use the building plot.
- Public land made freely available by national governments or local authorities is a good choice.
- Legal and traditional land rights or uses (e.g., grazing) must be taken into consideration and not be violated.
### Table 4: Infrastructure requirements for emergency settlements

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirements</th>
</tr>
</thead>
</table>
| **i. Electrical supply & distribution**      | - First priority is security lighting, access lighting and equipment operation (e.g., water pumps).  
- Ideally, individual living quarters must also be provided with electricity; light and one power outlet should be the minimum requirements.  
- If possible, electrical power should also be provided for heating and cooling of the individual units.                                                |
| **ii. Water supply & distribution**          | - Potable water must be provided for drinking and cooking.  
- Preferably, potable water should also be used for all other settlement operations; however, if the quantities are not adequate, non-potable water can be used for cleaning and bathing.  
- Connection to the local public water system is the preferred option.  
- A gravity-fed distribution system within the settlement is the most recommended.  
- The absolute minimum capacity of the system must be 20 liters per day per person for the whole population.  
- Further than that, water requirements for possible firefighting must also be taken into consideration; for that purpose, grey-water or rainwater are also recommended.  
- For maximum resource efficiency, the settlement could have a water treatment facility.  
- An additional rainwater collection system is also desirable. |
| **iii. Fire prevention**                     | - Adequate firebreaks (i.e., distance between structures) should be incorporated in the planning, to avoid the spread of fire.  
- The design should also take the location of potential fire hazards (e.g., fuel storage areas) into consideration.  
- Fireplugs should be located in appropriate spots everywhere within the camp.                                                          |
| **iv. Access roads & parking**               | - Access roads within the settlement should be designed to address every possible daily activity or emergency situation (e.g., supply delivery, firefighting, garbage disposal, ambulance access etc.).  
- All road surfaces should be all-weather and appropriate for heavy-duty vehicles.  
- Specific design requirements regarding minimum dimensions or turning radius should be applied.                                          |
Table 5: Typical administrative and community services requirements for emergency settlements

| i. Administration          | ✓ Administrative office  
|                           | ✓ Registration office    
|                           | ✓ Social services office  
|                           | ✓ Archive room           
|                           | ✓ Reception & waiting area |
| ii. Health                | ✓ Medical center         
|                           | ✓ Pharmacy               
|                           | ✓ Infirmary              |
| iii. Food                 | ✓ Kitchen - Food preparation area 
|                           | ✓ Food storage (cold, frozen & dry goods) 
|                           | ✓ Dining area            |
| iv. Sanitation            | ✓ Latrines               
|                           | ✓ Washing & bathing areas 
|                           | ✓ Laundry area           
|                           | ✓ Laundry supply storage 
|                           | ✓ Garbage disposal areas |
| v. Community              | ✓ Teaching area          
|                           | ✓ Community area - Congregation area 
|                           | ✓ Religious areas - Prayer rooms |
| vi. Warehousing           | ✓ Non-food items storage 
|                           | ✓ Distribution center    |

3.3.4. Quantitative standards for spatial allocation and services

Specific quantitative standards regarding space allocation, as well as services and infrastructure are detailed in table 6 (UNHCR, 2016a):
Table 6: Quantitative standards for emergency settlements

<table>
<thead>
<tr>
<th>Space allocation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>30 - 45 m² per person</td>
</tr>
<tr>
<td>Sheltered space</td>
<td>3,50 m² per person</td>
</tr>
<tr>
<td></td>
<td>min. ceiling height: 2 m</td>
</tr>
<tr>
<td>Fire break space</td>
<td>50 m wide area between shelters for every 300 m built area</td>
</tr>
<tr>
<td>Roads &amp; walkways</td>
<td>20% - 25% of entire site</td>
</tr>
<tr>
<td>Open space</td>
<td>15% - 20% of entire site</td>
</tr>
<tr>
<td>Site gradient</td>
<td>1% to 5% (ideally: 2% - 4%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water supply</td>
<td>min. 20 liters per person per day</td>
</tr>
<tr>
<td>Water tap stand</td>
<td>1 per 80 persons</td>
</tr>
<tr>
<td>Water distance</td>
<td>max. 200 m from household unit (optional: 100 m)</td>
</tr>
<tr>
<td></td>
<td>no further than a few minutes' walk</td>
</tr>
<tr>
<td>Water pipes</td>
<td>depth 40 - 60 cm to avoid damage from surface activities</td>
</tr>
<tr>
<td></td>
<td>in areas with very low temperatures: depth 60 - 90 cm to avoid frost</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sanitation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Latrines</td>
<td>1 per 20 persons</td>
</tr>
<tr>
<td></td>
<td>optional: 1 per family</td>
</tr>
<tr>
<td></td>
<td>separate latrines for men and women</td>
</tr>
<tr>
<td>Latrine distance</td>
<td>max. 50 m - min. 6 m from household unit</td>
</tr>
<tr>
<td></td>
<td>close enough to facilitate use, but far enough to prevent smells and pest issues</td>
</tr>
<tr>
<td>Shower</td>
<td>1 per 50 persons</td>
</tr>
<tr>
<td></td>
<td>separate shower areas for men and women</td>
</tr>
<tr>
<td>Refuse container</td>
<td>1 X 100 liters per 50 persons</td>
</tr>
<tr>
<td>Communal refuse pit</td>
<td>size 2m X 5 m X 2m</td>
</tr>
<tr>
<td></td>
<td>1 per 500 persons</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
| Health center | • 1 per 20,000 persons  
• optional: 1 per settlement  |
| Referral hospital | • 1 per 200,000 persons |

<table>
<thead>
<tr>
<th><strong>Food</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutritional value</td>
<td>• 2,100 kcal per person per day</td>
</tr>
<tr>
<td>Food quantity</td>
<td>• 36 tonnes per 10,000 people per week</td>
</tr>
</tbody>
</table>
| Feeding center | • 1 per 20,000 persons  
• optional: 1 per settlement |

<table>
<thead>
<tr>
<th><strong>Warehousing</strong></th>
<th></th>
</tr>
</thead>
</table>
| Storage area | • 15 - 20 m² per 100 persons  
• optimal: individual refugee storage  |
| Commodity distribution area | • 1 per 5,000 persons |

<table>
<thead>
<tr>
<th><strong>Communal services</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>• 1 per 5,000 persons</td>
</tr>
</tbody>
</table>
| Market place | • 1 per 20,000 persons  
• optional: 1 per settlement |

<table>
<thead>
<tr>
<th><strong>Administration</strong></th>
<th></th>
</tr>
</thead>
</table>
| Administration offices | • as appropriate  
• includes all administrative functions  |

<table>
<thead>
<tr>
<th><strong>Security</strong></th>
<th></th>
</tr>
</thead>
</table>
| Lighting | • as appropriate  
• emphasis on priority areas (e.g. latrines, public areas etc.) and security  |
| Security post | • as appropriate  |
| Security fencing | • as appropriate  
• depending on individual circumstances and security issues |
All the standards quoted above are evidently not legally binding; rather, they are the result and combination of both theoretical analysis as well as practical experience gained on the field. These guidelines are designed to establish a baseline level of protection, comfort and dignity for those forcibly displaced persons, while at the same time maximizing time and resource efficiency and minimizing possible adverse effects. For those reasons, it is strongly advisable that a serious effort be made for their application, if not improvement, as a whole.

**3.4. The accommodation center project**

At this point and in light of the incessant current refugee situation in the wider Europe and MENA regions, it must be once more stressed that EU and its immediate neighbors has done and is doing nothing to comply with the aforementioned international standards. EU specifically is continuously attempting to shift the problem away from itself to other nations outside its jurisdiction - evidence thereof the treaty with Turkey - or, worse still, keep it contained in its peripheral countries such as Greece or Italy and prevent it from reaching and burdening its all-important central member states. The radical example of the Tripoli Zoo in Libya, used as a temporary detainee center since 2011 showcases the often inhumane housing conditions imposed on people that have lost everything and in the majority of cases through no fault of their own. These grossly violating basic human rights conditions are not solely occurring in so-called third world countries, but in member states of the EU as well. There, accommodation facilities range from a minority of large, conforming to guidelines and professionally managed centers all the way to the majority of small, improvised, inadequately equipped and badly controlled "hotspots", usually housed in abandoned buildings or warehouses and often lacking even the most basic goods like shelter or sanitation (Vaughan-Williams, 2015).

At this point, half measures are no longer enough to address the significant numbers of forcibly displaced people drifting around and within Europe and the EU should not attempt to rid itself from responsibility, as the UN along with other NGOs accuses it of doing; on the contrary, it should start taking definitive and synchronized actions extending further than simple humanitarian assistance, both for the refugees,
as well as the host countries. For the refugees, and in view of their anticipated extent of stay in the area, these actions should - as mentioned before - include the provision of decent housing, medical services and opportunities in education or training and work. On the other hand, hosting countries should be assisted in relieving the strain on their own basic infrastructure regarding health and education, as well as on the connectivity of their social fabric (Pierini and Hackenbroich, 2015, Sarkis, 2012).

3.4.1. The accommodation center concept

Everything that has been elaborated on insofar, is in its majority a theoretical approach to a very complex and multifaceted issue. It is in light of the above extensive theoretical review and in search for feasible and applicable alternatives well within the realm of realization that this accommodation center concept has been developed. It concerns the creation of a prefabricated multifunctional model settlement to act as an intermediary hospitality center for the refugee population in any host country. This project obviously does not have the ambition to address and resolve the whole problem of social integration in its entirety; merely, it is intended as what is perceived a necessary intermediary step between first reception and full integration or eventual relocation and even repatriation.

All relevant data points to the fact that homogenization of populations with significant pre-existing barriers regarding the language, religion, culture and ethics, if it is not well-prepared, cannot be achieved without considerable turbulences for both sides. And if for the local residents this groundwork is mostly limited in a general understanding of the existing differences, the neutralization of illogical fears and the development of tolerance and acceptance, for the refugee "newcomers" it entails issues much more practical and urgent in nature, considering that they directly influence their ability to survive in dignity in their new surroundings. The transitional accommodation center aims to create a secure, unthreatening environment where the feeling of safety can be restored, the integration obstacles can be in part or in whole removed or at least smoothed out and the acclimatization to the new circumstances can be achieved in relatively controlled conditions.
The main characteristic of the proposed settlement is its compact design, considering that it demands a comparatively small land plot of only 4,000 - 5,000 m² to accommodate 500 people; the reasonable size of the plot and the moderate number of residents help to create a more user-friendly, village-like atmosphere - without however compromising the existing guidelines regarding space allocation or excluding any of the desirable functions (UNHCR, 2016a). These functions of the settlement have been specifically selected to form part of the general strategy of facilitating the prospective inclusion in the hosting society as well as providing the stepping stones for a decent future standard of living. In addition to the provision of safe, equipped with all essential amenities and reasonably comfortable living quarters, which is the most basic function of the accommodation center, the supplementary five services that have been deemed essential for the success of the project include:

i. Administration

Administrative services are organized to provide assistance, handle complications and perform all relevant duties in regard to four distinct sets of issues; more specifically, the objective is (a) to coordinate and regulate the short- and long-term management of the center, (b) to execute the recording, filing and archiving of all relevant refugee data, (c) to disentangle and resolve legislative and bureaucratic issues regarding asylum procedures and immigration laws, residency permits or even repatriation and (d) to resolve problems and facilitate in every way the interaction between the refugee population and the local society. These tasks may seem overly ambitious; however, given the relatively small number of people residing within the center at any given time, they can be accomplished competently and with a significant probability of success.

ii. Health

The accommodation center is equipped with a small medical center with the purpose to (a) perform initial medical screenings and general health checks, (b) provide the necessary medications, vaccinations and consistent treatment protocols of possible pre-existing diseases, (c) attend to problems such as undernourishment or exhaustion and (d) deal with small, every-day medical emergencies. The scope is to
address moderate health issues in a consistent and organized way, without the risk of interrupted or inappropriate treatments while at the same time without unduly burdening the regular public health infrastructure if not absolutely imperative.

iii. Food

To ensure the correct nourishment of the refugees is deemed a most important aspect of their stay within the center, especially in regard to the more vulnerable groups among them and until their good health is fully restored. Moreover, individual kitchen facilities increase construction cost while at the same time presenting an increased risk for accidents; further than that, many of the residents may not be in a position to prepare food to themselves (e.g., unaccompanied children, elderly or disabled people etc.). Therefore, the provision of food in (a) adequate quantities, (b) decent quality and (c) nutritional value as prescribed by the guidelines is an essential amenity of the accommodation center.

iv. Education

The educational services pivot around two main axes. One is the learning of the local language, since this will remove one of the most significant barriers of inclusion; at the same time, the refugees can get acquainted with the ethics and customs of their new home country. The other axis is training in basic working skills for those who lack any, or, most importantly, assistance in the official recognition of existing skills and knowledge according to the host country laws; this might include university degree validation processes or licensing examinations. Part of this educational mechanism is also the sharing of knowledge among people, given that local instructors will cooperate with accordingly qualified members of the refugee population in order to facilitate the learning process and additionally remove possible traces of distrust.

v. Work opportunities

The final step before integration in the hosting society is preparation for job placement, considering that decent work according to individual qualifications is the essential means for unaided and dignified sustenance and, given time, evolution and prosperity within the society. The theoretical components of this process involve
support in recognizing competencies, workshops on interviewing skills and assistance in creating an effective CV. The practical components include part time jobs, at first within the settlement and then in the immediate area, in cooperation with the local authorities and residents.

In addition to all of the above, the center’s operation principles include the provision that the inhabitants will assist in the management and day to day operations (e.g., cleaning, teaching and sharing knowledge, assisting in food distribution, partaking in maintenance work etc.), each one according to his or her specific qualifications, talents or capabilities, but with no exceptions whatsoever besides impairing health problems. This allocation of work among the inhabitants, already recommended by existing guidelines, will assist in creating and preserving a sense of ownership and responsibility for the refugees, but also achieve a reduction in operation cost and human resources required (UNHCR, 2016a).

3.4.2. Design and construction

As it is outlined in the general layout plan of the settlement (figure 35, courtesy of Icon Architecture), the main body of the building is located at the front part of the plot, facing the access road and entrance to the settlement; it houses all the centralized functions:

- The administration offices.
- The medical ward.
- The reception and waiting area, serving both administrative and medical needs.
- The food preparation area.
- The food storage area.
- The multi-functional rooms, equipped with movable partitions and mostly assigned educational or religious use.
- The indoors central gathering area, designed as a common area for sitting, dining, communicating and socializing.

It must be noted that the areas designated for the use of the refugees are deliberately characterized by increased versatility, in order to accommodate a wider varie-
ty of functions, both as dictated by the general every-day needs of the inhabitants but also according to the specific demands arising from whatever demographic structure they might have in every separate occasion.

Towards the back of the plot and away from the road and the main entrance unfold the two wings of housing quarters; this spatial organization ensures an increased level of privacy combined with a lower level of general disturbances (e.g., from traffic, noise etc.). These quarters incorporate:

- The individual living modules.
- The latrines and washing areas.
- The laundry areas.
- The cleaning supplies storage rooms.

The living modules are the place where the refugees can retreat in, not only to sleep, but also to rest or enjoy some private moments; it is obvious that they cannot be very generous in dimensions - due to the general size restrictions - they are however within the minimum space allocation guidelines and they do provide enough room for the basic equipment (i.e., beds, closets, a table and chairs).

Between the two wings and also freely accessed from the indoors gathering area, lies an open-air inner courtyard, protected from the elements with light fabric tents and dedicated to communal outdoor activities. Sleeping modules facing the inner courtyard are reserved for the most vulnerable and in need of protection residents, such as unaccompanied children, single women, youths, elderly or disabled people and households with predominantly female or underage members. Accordingly, sleeping modules facing the outside are assigned to the more capable and self-reliant members of the community.

In regard to utilities, the electrical lines, water pipes and sewer pipes serving the complex run along a walkway created by the back sides of the two rows of opposite facing sleeping modules in each wing. These lines are open and exposed for easy installation, control and repairs; the walkway however is fully enclosed and accessible only to the maintenance crew. Concerning accessibility, an internal service road sur-
rounds the complex and provides easy approach to every part of it, both for every-day needs (e.g., garbage collection), as well as for any other exigent circumstances (e.g., medical emergencies, fires etc.).

The building is assembled from simple shipping containers, that can be either new or used and refurbished; these must be stripped down to the load-bearing structure, sanitized, primed and painted before being reconstructed again. The external walls and roofs are constructed from insulated aluminum panels, 6 to 10 millimeter thick, according to the use and to the climatic conditions of every individual location. The heating of the areas is achieved with infrared heating panels, whereas the cooling is realized with individual air conditioning units, since they are more easily installed and do not demand the construction of air duct networks.

The whole settlement is constructed in the factory as prefabricated units and then transported and assembled on site according to the plans. It is important that the building site should be selected according to the existing guidelines, since this ascertains strong reductions in construction time and cost. Due to the light construction, the site work needed includes minor earthworks for ground leveling, a light foundation with no high demands for the containers, the construction of the essential infrastructure, i.e., the main lines for electricity, water and sewer, as well as the roadwork. The described mode of construction offers a significant number of advantages:

- Very short on-site construction time.
- Uncomplicated installation.
- Easy repairs.
- More than average insulation.
- Seismic safety.
- Optimal relationship between quality and cost.

Moreover, and besides taking into consideration such criteria as conformity with guidelines, dignified standard of living, time, cost and quality of construction, the project design is also incorporating - inasmuch as feasible - environmentally friendly technologies to promote sustainability, especially in the energy and waste management sector.
3.4.3. Renewable energy sources

One of the significant issues related with the daily operation and services of an emergency settlement, but also one of the most easily overlooked, is energy consumption in every form. As a result, an investment on energy infrastructure is most often not a central concern in emergency humanitarian relief. However, studies show that in only one year, 2014, energy use from forcibly displaced people globally amounted to the equivalent of almost 4 million tonnes of oil being burned. According to this data, the cost of energy for cooking and lighting per year per family of five was calculated at $200 at minimum (see figure 35); this amount adds up to an unwarranted global total cost of over 2 billion dollars in the same year (Lehne et al., 2016). Moreover, the consumption of this amount of fossil fuel equivalents results in significant CO2 emissions, with all negative consequences to the environment.

![Figure 35: Per capita annual spending on energy by forcibly displaced people in different settings (Lehne et al., 2016)](image)

In order to address these issues, at least in part, the accommodation center electrical installation planning includes the provision for the positioning of a photovoltaic panel system on the roof of the building. Solar energy is maybe the least demanding of the renewable energy sources in terms of installation, service and operation, combined with a relatively low construction cost. Furthermore, if the construction budget is adequate and the location is suitable, there is the option of additionally installing one or more small wind turbines as a further contribution to the energy demands of the settlement. In view of the fact that this particular accommodation center
project is designed to be by default situated on the outskirts of urban areas, the produced electrical energy can be fed directly on the grid and used according to the operational needs. However, the technological progress in respect to energy storage devices (i.e., batteries) will, in the very near future, make the construction of similar hosting facilities feasible even in off-grid areas by ensuring their energy autonomy.

3.4.4. Waste management

Even though it tends to be disregarded as well, waste management is a challenging issue, especially in cases where considerable numbers of people live and circulate in a relatively dense space for longer periods of time; in such cases the volume and weight of garbage can easily reach significant amounts (UNHCR, 2016a). The general categories of waste produced in any such case are (a) grey water, i.e., water from bathing and laundry, (b) toilet waste and (c) solid waste, e.g., organic remains from food, packaging materials, papers etc. The present accommodation center is designed to interconnect with its neighboring communities, consequently waste disposal can effect through their public infrastructure; and yet, waste management should include more than simple garbage collection and removal.

Concerning gray water, treatment systems are available on the market, their installation however entails considerable cost and complicity, as it necessitates separate drainage lines and as a result they cannot be regarded as an option for the purposes of the specific project. Together with toilet waste, grey water is to be disposed in the public sewer network; in the rare cases where no such network exists, septic tanks will be constructed at the periphery of the site and at its lowest level to collect the waste and to be emptied at regular intervals. Nevertheless, as a partial compensation and even though rain water cannot be characterized as waste per se, an independent system of rainwater collection, comprising of roof gutters and rainwater tanks will be installed. This system will both resolve the issue of surface drainage, that can potentially create problems regarding soil erosion or possible flooding and also make the center more resource efficient by utilizing the collected water for auxiliary purposes such as plant irrigation, cleaning of solar panels or outdoor areas and firefighting, thus reducing the consumption of potable water significantly.
Nonetheless, the main by-product of human activity, both in volume and in treatment issues is solid waste. As regards the sub-category of organic waste, the usual method of management is transport to the local landfills; yet, as a preferred alternative, it can be utilized for composting within the settlement; this is an optimal way for the disposal of food remains, with the additional advantage of potentially becoming an income generating initiative. Even though this process requires some technical knowledge, there are small systems easily available, that can be operated without difficulties and with little skill; to facilitate the process, and besides the appropriate garbage bins dispersed throughout the settlement, a separate collection area for kitchen waste will be constructed in close proximity to the food preparation area. Included therein will also be vats specifically assigned for the collection of cooking oils and fat.

Figure 36: Indicative layout of a neighborhood "island" green spot with 8,00 m2 area size (Operational Programme Environment and Sustainable Development, 2015)

In relation to all other forms of refuse, and based on the concept of waste separation to facilitate and promote the objective of reuse or recycling rather than simple discard, the proposed method is installation of several green, i.e. recycling spots (Operational Program Environment and Sustainable Development, 2015). Specially appointed and enclosed areas, similar to the plan in figure 36 and located on the periphery of the site will accept the appropriate individual trash receptacles, each desig-
nated for a different material category and demarcated accordingly with a different color (figure 37), including, as a minimum, the following:

- paper and cardboard (e.g., packaging materials)
- plastic
- glass
- metal
- electrical and electronic equipment

If the available space so permits, further categories can also be included:

- mixed packaging (e.g., tetra pack)
- hazardous household waste (e.g., cleaning products packaging, solvents etc.)
- wood and timber
- batteries
- garden waste
- fabrics and clothing items (e.g., clothes, shoes etc.)

![Figure 37: Examples of color coded recycling bins (Operational Programme Environment and Sustainable Development, 2015)](image)

Finally, special provisions are made for medical waste (e.g. used syringes, needles, bandages, expired medicines etc.), that can be potentially hazardous. For that purpose, a securely enclosed collection area equipped with biohazard containers will be constructed as an attachment to the medical center and the waste will be disposed separately by the medical personnel only.
To conclude, instigated by the awareness that waste generation deriving from the center's operation is the sector with the most impact to the surrounding environment, the aim is to manage the substantial amount of waste in the most efficient and environmentally friendly way (European Union Joint Research Centre, 2012); not solely by providing the necessary methods and infrastructure, but, most importantly, by also educating the inhabitants of the center on long established sustainability principles and their application.

3.4.5. Techno-economic study

Duration of construction and cost of construction are integral parts of any project. Consequently, an initial assessment for the determination of these two factors is also included in the accommodation center project; meantime, an effort has been made to ascertain that this preliminary approach is valid, even if subject to unforeseeable factors.

Concerning the duration of construction, there are two distinct phases, (a) construction of the units in the factory and (b) assembly time on site. Factory construction time is estimated between 14 and 18 weeks, depending on timely orders, size of the factory and punctuality of payments. Within this timeframe, the site work and utilities infrastructure can also be completed. Finally, on-site assembly time is estimated between 12 and 14 weeks, mostly depending on weather conditions and work crews' coordination. Moreover, a reasonable amount of time for the transportation of the prefabricated units must be allowed in addition to these timeframes.

As regards the total construction cost, it is tentatively calculated at 1.7 to 2 million Euros, as outlined in table 7 and under the provision that the accommodation center will be interconnected with the local infrastructures. However, it must be stressed that this is only a very rough estimate of cost. A number of factors - most important among them the country of installation - are affecting all areas, building, site work, utilities and peripherals, they are responsible for critical outlay variations and as a consequence they can and will influence the total construction expenditure significantly. Some of these variable costs and their causes and impacts are included in table 8.
Table 7: Estimated construction cost range

<table>
<thead>
<tr>
<th>1. Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Reception area</td>
</tr>
<tr>
<td>- Administration offices</td>
</tr>
<tr>
<td>- Medical ward</td>
</tr>
<tr>
<td>- Food preparation &amp; storage area</td>
</tr>
<tr>
<td>- Multi-functional rooms</td>
</tr>
<tr>
<td>- Central gathering area</td>
</tr>
<tr>
<td>- Individual living modules for ~500 people</td>
</tr>
<tr>
<td>- Latrines &amp; washing areas</td>
</tr>
<tr>
<td>- Laundry rooms</td>
</tr>
<tr>
<td>- Storage rooms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Site work</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Site clearing &amp; fill</td>
</tr>
<tr>
<td>- Foundations</td>
</tr>
<tr>
<td>- Roadwork</td>
</tr>
<tr>
<td>- Landscaping</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Water installation</td>
</tr>
<tr>
<td>- Sewer installation</td>
</tr>
<tr>
<td>- Electrical installation</td>
</tr>
<tr>
<td>- Photovoltaic installation</td>
</tr>
<tr>
<td>- Green spot installation</td>
</tr>
<tr>
<td>- Rain water collection installation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Peripherals</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Building permit</td>
</tr>
<tr>
<td>- Transport</td>
</tr>
<tr>
<td>- Assembly</td>
</tr>
<tr>
<td>- Furniture and equipment</td>
</tr>
<tr>
<td>- Miscellaneous</td>
</tr>
</tbody>
</table>

| ESTIMATED TOTAL COST RANGE (VAT not included) $1,700,000 - 2,000,000 |

Cost breakdown:
- as per built space: $600 - $700/m²
- as per capacity: $3,400 - $4,000/inhabitant
Table 8: Construction cost fluctuation factors

<table>
<thead>
<tr>
<th>Variable costs</th>
<th>Causes and impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Construction site characteristics</td>
<td>• Soil quality (e.g., sandy or rocky soil)</td>
</tr>
<tr>
<td></td>
<td>• Gradient</td>
</tr>
<tr>
<td></td>
<td>• Distance from existing infrastructures</td>
</tr>
<tr>
<td>ii. Materials cost</td>
<td>• Global fluctuations of raw materials cost</td>
</tr>
<tr>
<td></td>
<td>• Local material prices</td>
</tr>
<tr>
<td></td>
<td>• Impact on:</td>
</tr>
<tr>
<td></td>
<td>✓ factory construction cost</td>
</tr>
<tr>
<td></td>
<td>✓ utilities installation cost</td>
</tr>
<tr>
<td>iii. Labour cost</td>
<td>• Local cost of labour:</td>
</tr>
<tr>
<td></td>
<td>✓ in country of factory</td>
</tr>
<tr>
<td></td>
<td>✓ in country of assembly</td>
</tr>
<tr>
<td></td>
<td>• Impact on:</td>
</tr>
<tr>
<td></td>
<td>✓ factory construction cost</td>
</tr>
<tr>
<td></td>
<td>✓ assembly cost</td>
</tr>
<tr>
<td></td>
<td>✓ utilities installation cost</td>
</tr>
<tr>
<td>iv. Transportation cost</td>
<td>• Distance from factory to building site</td>
</tr>
<tr>
<td></td>
<td>• Accessibility of building site</td>
</tr>
<tr>
<td>v. Additional features</td>
<td>e.g.,</td>
</tr>
<tr>
<td></td>
<td>• Septic sewer</td>
</tr>
<tr>
<td></td>
<td>• Wind turbines</td>
</tr>
<tr>
<td></td>
<td>• High security fencing etc.</td>
</tr>
<tr>
<td>vi. Contractor fees</td>
<td>• Building contractor fees range: 10% - 20%</td>
</tr>
<tr>
<td></td>
<td>✓ the project however might be assigned to local, national or army technical services</td>
</tr>
<tr>
<td>vii. Taxes etc.</td>
<td>• Local taxes related to the construction</td>
</tr>
<tr>
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3.4.6. Differentiated second phase utilization and end-of-life approach

In every project with the ambition to be sustainable, a crucial and integral, even if easily ignored aspect that must be taken into consideration from the initial steps in planning onwards is the end-of-life approach, i.e., the attempt to establish the optimal way to conclude its circle of existence.

In the present case, after it has fulfilled its original purpose, and instead of being demolished or fall into disuse, the accommodation center can conveniently be modified and further utilized in different capacities; in that respect, the prefabricated metal construction is an important feature that contributes to the versatility of the project. By adding or removing modules the building can be easily enlarged or reduced in size, according to the future needs; likewise, partition walls can be removed or erected to modify the footprint of rooms and utility lines, being open and accessible, can be easily moved or extended. Even the elevations can undergo a transformation, by being painted, stuccoed or even clad with different materials to support and enhance the new function. Taking the layout of the center into consideration and with the condition that only minor alterations should be required, the potential alternative uses can include:

- Educational facilities (e.g., school, training center)
- Civil service offices for local or national authorities
- Shopping center
- Office complex for professionals and practitioners (e.g., lawyers, doctors, engineers etc.)
- Primary health center
- Homeless shelter and welfare services
- Small motel
- Assisted living center for elderly or disabled people
- Accommodation for students (i.e., dormitories)

Even in the case that, for some reason the occupation of the original lot is no longer feasible or desired (e.g., the location is not fit for the prospective use, the landowners want the property returned to them etc.), the settlement can be further uti-
lized still. Entailing a cost much lower than traditional demolition, and again due to its construction, the building can be dismantled and transported to a different location to be reassembled and used anew; moderate reparations will of course be required, but yet again they are not comparable to the construction cost and complexity of a new facility of this size. The settlement can retain its original role as a refugee accommodation center, or assume any other alternative use as mentioned above.

At this point it must be mentioned that, since the concept of the project could be applied to any major catastrophe, there is the additional option of creating an inventory of such settlements, warehoused and ready to be assembled at any time and in any place needed. Even if it seems far-fetched, this suggestion is feasible and should be taken into consideration from any country where the statistical probability of crisis situations entailing destruction of properties and requiring emergency shelter (e.g., hurricanes, floods, wildfires, earthquakes etc.) is higher than regular.

When it has ultimately reached its end of life, the building can then be permanently dismantled and the majority of construction materials (e.g., steel, aluminum, drywall) can be easily recycled, thus contributing to both environmental and economic efficiency. Even the cost of building site reinstatement is small; given that little initial work regarding foundations was demanded, no major earthwork is required to restore the site in its original condition. To conclude, and irrelevant of the chosen end-of-life alternative, be it reuse, relocation or dismantlement and recycling, the refugee accommodation center remains a project both efficient and compensatory all the way through from its commencement to its termination.
Figure 38: Accommodation center general layout (© 2015 Icon Architecture, All rights Reserved)
4. Conclusions

Mass movements of populations, either planned and deliberate or urgent and impulsive are not new to societies. They have happened before and they will continue happening for as long as the underlying causes, be it economic insecurity, food scarcity, conflicts or natural disasters - those induced by climate change included - do not cease to exist. Among them, the refugees, fleeing their homes out of fear for life and safety are the ones mostly in need of support and assistance; however, they are also grossly neglected in terms of official recognition and legal status. Induced from those mass movements, the ever increasing demand for humanitarian assistance in emergency situations initially led to the formation the Red Cross in 1863 and was further addressed with the foundation of the United Nations High Commission for Refugees; even today, UNHCR remains the predominant actor and retains the highest authority on refugee issues (Mason, 2000). As every day goods become scarce in increasingly large parts of the world and both natural and man-made disasters occur with disturbing frequency, the distinct scientific branch of humanitarian logistics has evolved in order to satisfy the need for efficient management of goods, materials, information and human resources, also combined with advance preparation, data processing and use of expert knowledge, thus ensuring the success of any humanitarian relief operation. Unfortunately, however, problems affecting societies globally do not seem to be abating and humanitarian relief, however successful, will continue to be in high demand. As a result, the focus of this thesis was to examine the current refugee crisis affecting the European and MENA region, both in regard to historical trends, causes and repercussions, as well as in terms of the inadequate political and social response to the phenomenon; furthermore, to analyze current official statistical data and also existing criteria for the design and construction of emergency shelter. The scope was to develop a compact yet also versatile refugee accommodation center, based on the principles of sustainability and suitable to address a section of the needs arising from the current or any other similar disaster situation (United Nations, 2016).

The retrospect analysis of historical data from the 19th century onwards, has illuminated the fact that this seemingly unprecedented tide of forcibly displaced people
is not a novelty in the European continent. In fact, within the last 200 years, Europe has experienced no less than six different, bigger or smaller waves of forced migration within its boundaries, each with its own distinct characteristics and ensuing problems; from the political exiles of the early 19th century to the pogroms in Russia between 1880 and 1914, from the impact of the two world wars and the establishment of the communist regimes to the forced migration driven by the instability after the end of the Cold War and finally to the influx of economic migrants from Third World countries in the late 20th century. The final, current refugee wave was instigated in part by the incessant poverty in North-Central Africa and South-Central Asia, but more importantly, by the violent armed conflicts in Eritrea, Iraq, Afghanistan and, most recently Syria (figure 39). The deliberate annihilation of infrastructures in the areas of conflict, the dire conditions in the countries of first asylum in the Middle East, as well as the fall of the Gaddafi regime in Libya and the ensuing opening of sea routes in the Central Mediterranean, all contributed to the rapid inflation of the refugee movement towards the European region.

Figure 39: Number of asylum seekers in Europe from 1985 until 2015 (Pew Research Center, 2016b)

However, even though Europe has always been the theater of internal displacements, only in recent years has it become such a highly desirable hosting region, thus unwillingly assuming the role of a strong actor, compelled to provide assistance rather than receiving it from others, but also reluctant to act; therein lies the signifi-
cant distinguishing factor between the current and all former forced migration situations, and not in the size of the refugee populations. Despite the negative climate within Europe and taking into consideration the continuing war in Syria, the instability in Afghanistan and Iraq - and in Middle East in general - and the so far dormant displaced populations (e.g., Palestinians) potentially influenced into seeking asylum in Europe, the prognosis for the future is anything but optimistic; and with conflict generally becoming the pattern in world affairs, forced displacement will not seize to exist globally.

According to the UNHCR, in 2015 the number of forcibly displaced people globally escalated to over 60 million, reaching almost 1% of the global population; of those, almost 4.5 million were located in Europe, with the majority of them originating from the Middle East and North Africa (MENA) regions. In the first place is Syria, with 5 million refugees and 6.6 million IDPs (figure 40), followed by Afghanistan in the Middle East and Somalia in Africa; these three countries account for 53% of the global refugee population.

![Asylum seekers in Europe](image_url)

**Figure 40:** Number of Syrians displaced from their homes (Pew Research Center, 2016b)

It is important to note that, regardless of the public opinion, Europe is not the primary hosting region. Most forcibly displaced persons prefer to remain close to their home countries, in the hope of returning there in the near future; leading host country for 2015 was Turkey with 2.5 million refugees. Most alarming, however is the percent-
age of refugees in certain countries: in Lebanon, for example, the refugees equal more than 18% of the total population and in Jordan close to 9%, a fact that is threatening the viability of whole countries. Out of all forcibly displaced persons in the region, only about one in ten decides to embark on a long and perilous journey to reach Europe (figure 40); to do that, refugees follow eight main routes: (a) the Eastern Mediterranean route from Turkey to Greece with its two branches, the land route through the region of Evros and the sea route across the Aegean Sea, (b) the Central Mediterranean route from Libya to Italy and Malta, (c) the Western Mediterranean route from Morocco to Spain with its three branches, the route across the Gibraltar Straits, the route from Morocco to Spain and the route via the Canary Islands, (d) the Eastern European land route via the Russian Federation to Ukraine and (e) the Arctic route via the Russian Federation to Finland and Norway. The majority of refugees arrive in Europe by sea, thus making the Mediterranean one of the most travelled seas with 1 million crossings in 2015. Unfortunately, it is also one of the most dangerous, with a current risk of dying while crossing close to 2% (figure 41). After finally crossing the European border, the goal is to travel through Europe, mainly using the Western Balkans route, in order to reach Western Europe and the preferred countries of ultimate destination - Germany and the Scandinavian nations.

![Diagram showing deaths in the eastern Mediterranean Sea by age group, 2015](image)

*Figure 41: Deaths in the eastern Mediterranean Sea by age group, 2015 (European Union Agency for Fundamental Rights, 2016)*
Even though it is not always clear or complete, the analysis of available statistical data has helped to highlight distinct features and particularities of the current refugee wave. One such particularity is the deviation of the refugees' demographic profile in Europe from the global averages. Almost one in four among them are minors, more than half are between the ages of 18 and 34 and the rest is between the ages of 35 and 65, with only a minimum of older people. Asylum seekers are also predominately male in a percentage of 73%, all age groups included. Composite data regarding both gender and age show a stratification of 58% men, 17% women and 25% children. One third of the adults consists of university graduates, qualified professionals and medium- to high-skilled workers from urban areas, with an adequate knowledge of English and other languages and the ability to adjust in a different culture (European Asylum Support Office, 2016). Concerning religion, one of the main causes of anxiety in Europe, the available data is only circumstantial, since no agency includes relevant information in their reports. It is true that most refugees originate from Islamic countries, the actual number of Muslims among them however has been only calculated as a combination of their nationality together with the religious composition of their home countries. Still, the estimated percentage is around 87%, significant enough to influence the existing growth in Muslim population in Europe more than anticipated, but without conclusive evidence to support this prediction. Having said all that, it is indisputable that a long-term presence of large refugee groups with all their various characteristics and dissimilarities is inevitable in Europe. This commands the development of a long-term strategy with an aim towards full social integration. To achieve this predominately qualitative goal, this strategy must incorporate and address a variety of issues of legal, economic and social nature. Nonetheless, at present there are significant deficiencies and discrepancies in all these areas among hosting countries, depending on the pre-existing state of their relevant infrastructure, their political and economical standing and the mindset of their citizens. The up to a point normal and expected tension ensuing by the large scale of forced migration, however, has amplified beyond measure on the fertile ground of post-2008 Europe. After the financial crisis of 2008, European nations regressed to a state of introversion; distrust for a European central governing authority, increased border control as well as xenophobia and ethnicism flourished, overturning the ideal of an open Europe. These feelings, further
supported by the recent brutal terrorist attacks, found a voice to express themselves in increased hostility and discrimination against refugees, thus ignoring all positive aspects their arrival might entail; additionally, they resulted in a strong trend against collective actions among countries. This issue has been well reflected in the review of European and national legislation and policies. Besides adhering to currently active international laws for the protection of life - including international refugee law, human rights law, criminal law, humanitarian law and the law of neutrality - and beyond the provisions of the pre-existing Dublin Convention and the Shengen Group measures taken so far are disjointed or sporadic, prioritizing border control, maritime surveillance, search and rescue operations and the establishment of bureaucratic rather than humanitarian supporting structures. As a result, no reasonable and complete, but also fair and humanitarian crisis management strategy yet exists (European Parliament Directorate-General for External Policies, 2013). Nevertheless, and regardless of divergent political backgrounds and refugee policies, the demand for a durable and solid solution is undeniable. Out of the three alternatives currently suggested by the UNHCR, i.e., voluntary repatriation, resettlement and local integration, only the third is at the present time deemed feasible and reasonable. As a result, hosting countries, whether they realize it or not, are facing the dilemma of either showing indifference and thus allowing a forced penetration, probably in the outskirts of society with all the entailing risks, or developing strategies for controlled and managed social and economical integration.

One of the major issues refugees and hosting countries are still facing and also an integral part of a successful social inclusion process, is the problem of shelter. Adequate housing is essential for the protection of life and health, elimination of sexual & gender-based violence and regard for the specific needs of children, not only during initial emergency admission but all the way into full assimilation. In respect to that, the current discussion between the two existing alternatives, planned camps or open housing, has been analyzed and the advantages and the disadvantages of both options presented. It has become clear that the choice is not influenced only by the specific characteristics of each proposal, but it is also further dependent on individual circumstances, e.g., the absorbing capacity of communities, the demographic profile of refu-
gee groups, the social tolerance and compatibility levels and not least of all, the stage of integration. Furthermore, the suitability of any emergency response settlement strongly relies on a set of criteria regarding design and construction, site selection and planning, site organization, infrastructure and services, as well as spatial needs. To that aim, various agencies such as UNHCR, the US Army, the Red Cross, Doctors without Borders etc. have developed relevant guidelines that are extensively accepted and implemented in similar situations. Unfortunately, this does not apply to the majority of the reception centers established in countries throughout Europe, where living conditions are most often unacceptable and in some cases violate even the not basic human rights. Within this context, and as part of a focused uniform plan of action, the thesis has elaborated on the development of a compact accommodation and hospitality center made of shipping containers, to function as an intermediary stage in adaptation between initial reception of the forcibly displaced and full social integration. This project aims at maximizing the respect for human rights and values and also at minimizing the impact on society and on the environment. The main objective is to create a secure, unthreatening environment capable to restore the sense of safety and dignity of the forcibly displaced people, while at the same time removing the barriers of language, religion, culture and ethics and, in parallel, relieving the strains on local infrastructures, mostly on health and education. This goal has led to the integration of administrative, medical, educational, job related, religious and social functions within the settlement, together with the full inclusion and participation of the inhabitants in the operations and proceedings of the accommodation center. Regarding the environmental sustainability, the main issues addressed are optimal land utilization, renewable energy use and waste management programs. Creating added value for the "raw" material (shipping containers) and prolonging the unit’s life span by enabling transformation and change of use, transportation and reuse and finally end-of-life dismantlement and recycling also lie within this scope. Furthermore, this project is versatile enough to be expanded and adapted for the implementation on further social groups in need of support.

To conclude, It can be maintained that, in order to facilitate the whole assimilation process between forcibly displaced and local populations, and taking advantage of
the existing policy void, this concept is attempting to create a novel intermediary integration phase not previously considered. Moreover, the thesis' results could serve as a useful tool for governments and organizations to better plan ahead and respond fast and efficiently not only in regard to the actual refugee crisis, but also in any possible similar disaster situation. The current situation is already considered by some as the big rehearsal on the climate issue. If all good intentions and efforts delay or fail, this project could be utilized as a necessary alternative plan to address some of the consequences of climate change.

Figure 42: Refugees crowded in a fishing boat just before being rescued by the Italian Navy under its former "Mare Nostrum Operation" in 2014 (UNHCR, 2015b)
Bibliography


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