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People's perceptions from Jabal el-Hussein to Zarqa camps.
An analysis of access to water and inequalities in two Palestinian
refugee camps of the Hashemite Kingdom of Jordan

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Abstract

With population growth, urbanization and political instability affecting the MENA region, people in Jordan have been facing a number of challenges. From the Israeli-Arab war of 1948 until 2011, with the Syrian crisis, waves of refugees arrived to Jordan fleeing conflicts. Additionally, man-made issues such as mismanagement of resources and a top-down approach in the decision-making have worsened the situation of natural resources such as water. For these reasons, this paper aims to address the issue of access to water from the point of view of Jordanian citizens living in refugee camps established in 1949. To do so, I conduct structured interviews through surveys with open and closed-ended questions in two camps, Jabal el-Husseini camp, inside the capital city, and Zarqa camp, in the outskirts of the homonymous city. In particular, the aim is to investigate how access to water can differ within the two communities, awareness regarding the local water-related issues as well as people's understanding of other areas' realities. Through quantitative approach, this project will deepen our understanding of Jordan and its experience regarding the tight connection existing between environmental issues such as water scarcity, the concept of water as human right and social distribution of resources.

TABLE OF CONTENTS

1. INTRODUCTION.....	5
1.1 RESEARCH QUESTION AND AIM OF THE STUDY.....	7
1.2 HISTORICAL BACKGROUND	7
1.3 WATER IN JORDAN	8
1.4 DISPOSITION.....	11
2. LITERATURE REVIEW.....	12
2.1 INTRODUCTION	12
2.2 LIFE IN PALESTINIAN REFUGEE CAMPS IN JORDAN	12
2.3 PREVIOUS RESEARCH ON ACCESS TO WATER.....	14
2.3.1 <i>Health-related issues and uneven distribution in access to water</i>	15
2.4 CONCLUSION.....	16
3. METHODS	18
3.1 RESEARCH PARADIGM	18
3.2 RESEARCH DESIGN	18
3.1.1 <i>Inductive approach</i>	18
3.1.2 <i>Premises of the research design</i>	18
3.1.3 <i>Research strategy</i>	20
3.2 SAMPLING SELECTION	21
3.3 DATA COLLECTION	21
3.4 METHODS OF ANALYSIS.....	22
3.4.1 <i>Coding</i>	23
3.4.2 <i>Limitations</i>	23
3.5 ETHICAL CONSIDERATIONS.....	25
4. CONCEPTUAL FRAMEWORK.....	27
4.1 INTRODUCTION	27
4.2 WATER AS A HUMAN RIGHT	27
4.2.1 <i>Key aspects of right to water</i>	28
4.2.2 <i>Category at risk: refugees, displaced people and water-stressed populations</i>	29
4.2.3 <i>How this human right approach deals with providing safe drinking water</i>	29
4.3 SOCIAL AND DISTRIBUTIVE JUSTICE	30
4.3.1 <i>Distributive norms</i>	31
4.3.2 <i>Social equity</i>	32
4.4 SOME CONCLUSIONS.....	32
5. FINDINGS	34
5.1 OVERVIEW OF THE SAMPLE	34
5.2 TYPE OF ACCESS TO WATER.....	36
5.3 ISSUES IN THE CAMPS.....	42
6. ANALYSIS	50
6.1 WATER ISSUES	50
6.2 DIFFERENCES	52
6.3 SOLUTIONS, AWARENESS AND IMPROVEMENTS.....	53
7. CONCLUSION.....	56
8. REFERENCES.....	58
8.1 BIBLIOGRAPHY	58
8.2 DIFFERENT SOURCES	60
APPENDICES.....	60

1. Introduction

“A man can survive weeks without food, but only a few days without water”.

W. S. S. Ladell (1965).

On this idea I built my interest when I decided to conduct research on access to water in the Middle East and specifically in Jordan. According to the Water Security Index¹, this country is considered the third most water-scarce country in the world. Jordan is already facing great water issues, which seem due to get worse in the upcoming years. Its ‘thirsty’ population is indeed growing, contributing to deplete the already scarce resources of the country. There are multiple reasons for these alarming news, including factors such as climate change, a decrease in renewable water resources and a high population growth.² The effects of which are difficult for the government and the various organizations involved to cope with. Other causes, on the other hand, could be more easily addressed. These being, mismanagement of water resources, pipelines leakage, outdated irrigation systems and poor awareness on water scarcity and related issues.

This paper aims to address the issue of access to water from the point of view of Jordanian citizens living in refugee camps established in 1949. Palestinian refugees, who fled to Jordan in 1948 when Israel was founded and in 1967 when the West Bank was occupied by the Israeli state, are the main inhabitants of these settlements. The literature evaluating access to water in Jordan and, to a certain extent, refugee camps in the Middle East offers some understanding of the issue. However, I argue that the personal point of view of people living in refugee camps in Jordan has not been taken into consideration. Furthermore, what interested me the most was researching what kind of awareness people had regarding their access to water, its scarcity and related issues. As mentioned before, water is a vital element for survival and not abundant in the region. Therefore, here lies the importance of addressing water scarcity as well as differences in quality, supply and affordability in different parts of Jordan.

¹ Source: https://maplecroft.com/about/news/water_security.html, accessed on February, 18th, 2018.

² Wardam, Batir. *More politics than water: water rights in Jordan*. In Global Issue Papers N. 11: *Water as a human right: the understanding of water in the Arab countries of the Middle East – A four country Analysis* (Heinrich Böll Foundation, September 2004)

Two Palestinian refugee camps are the focus of this cross-sectional study where I chose to conduct structured interviews through surveys with open and closed-ended questions. One of the camps, Jabal el-Hussein, is located inside the capital of Jordan, Amman, and has, since its establishment in 1949, become an urban neighborhood of the city. The other settlement, the Zarqa camp, is located outside the metropolitan area, in the outskirts of the homonymous city.

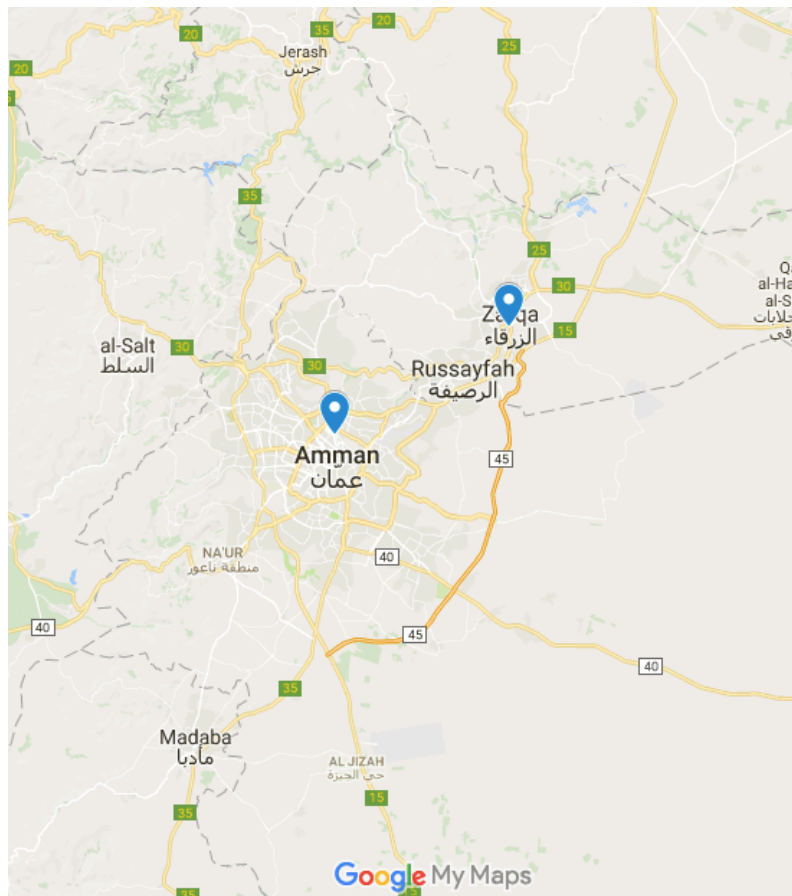


Fig. 1: Map showing the location of the two camps.

Source: Google Maps, created through Google My Maps (May 2018)

This study employs the framework of “water as human right” to highlight the importance water has in guaranteeing basic human rights and a dignified life, especially for those people who, as Palestinian refugees, experienced already the hardship of displacement many years before. In addition to this concept, parallels are drawn between the concept of distributive justice and water resources in an attempt to argue that water, as other goods or resources, can be evenly or unevenly distributed among citizens by state actors. This can be a helpful framework to understand allocation of water in Jordan and investigate whether there are inequalities in this process.

1.1 Research question and aim of the study

With the premises stated above, this thesis draws from the existing background of research on access to water to evaluate the specific settings of the two Palestinian refugee camps, objects of this study, Jabal el-Hussein and Zarqa. Until now, I am not aware of any updated study, dealing with the specific issue of water and Palestinian refugee camps. Therefore, this thesis aims to add to existing literature on the topic and investigate water issues and people's perceptions on differences and issues water-related. The "water as human right" framework is employed to evaluate access to water in relation to WHO guidelines and the theory of distributive justice helps shedding light on whether there are perceived inequalities regarding water from the perspective of the people living in the two camps.

In order to address the issues mentioned above, I elaborated the following research questions:

- What are the issues related to water access for people living in Palestinian refugee camps in Jordan?
- Specifically, what are the differences regarding access to water between people living in Jabal el-Hussein camp, located inside Amman, and those living in Zarqa camp, outside the metropolitan area?
- How do people living in the two refugee camps perceive the problem of water shortage and how do they see access to water compared to other areas in Jordan?

1.2 Historical background

Refugees all over the world face a number of challenges and although wide research exists, some of these issues are still under-looked. Here lies the importance of carrying out research about them. In the specific, people living in refugee camps established in Jordan in 1949 still encounter many problems related to their conditions, although living and social conditions have improved progressively since the beginning of 2000. Jordan has welcomed different waves of refugees, but the group that impacted the country demographically as well as socio-politically the most is the Palestinian. The first wave of refugees arrived in 1948, fleeing from what is now considered the state of Israel. With the foundation of Israel, which Palestinians recall as *Nakba*, meaning "catastrophe", the Palestinian *diaspora* started and continued through different waves of refugees in the following years. Countries such as Jordan, Lebanon and Syria have been hosting the highest number of refugees and according to

UNRWA³ the number of Palestinian refugees registered in Jordan only is more than two millions. Other sources, instead, claim the number of those who settled in Jordan is approximately three millions.⁴ As result of this high number of people entering Jordan, refugee camps were established and still exist. Ten camps are officially recognized and administered by the UN Agency for Palestinian Refugees (UNRWA)⁵. Three of them fall under the administration of the Jordanian Government, but *de facto* receive UNRWA services as well. Of the thirteen Palestinian camps, five were established in the period 1949-1956 and the remaining eight after the Six Day War of 1967.

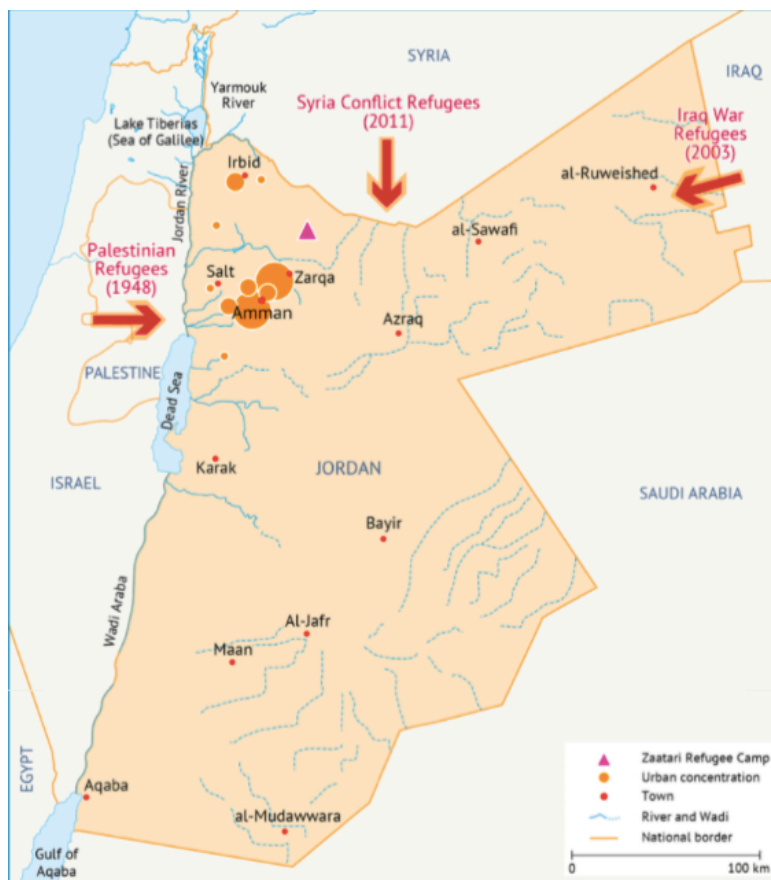


Fig. 2: Map of Jordan and refugee waves.
Source: Fanack.com, Creative Commons License

1.3 Water in Jordan

³ UNRWA (United Nation Relief and Work Agency for Palestinian Refugees): <https://www.unrwa.org/where-we-work/jordan> accessed on February 9th, 2017

⁴ Grover, Velma I, Darwish, Abdel, R., Deutsch, Eliza. *Integrated water resources management in Jordan. Working Paper 577*. The Economic Research Forum (ERF) (December 2010) p. 5

⁵ United Nation Relief and Work Agency for Palestinian Refugees

Jordan annual water resources are estimated to be 892 million cubic meters.⁶ As shown by fig. 1, renewable freshwater sources are composed of 28 percent coming from surface water and 51 percent, which is groundwater. However, as mentioned in the introduction, climate change will lead to a reduction in annual rainfall of 4 percent as well as a raise in temperatures causing higher evaporation and risks of droughts. Global warming will also impact rain-fed agriculture in Jordan and bring to a decrease in the flow of Jordan River by up to 80 percent.⁷ Additionally, an increasing population will affect both demand and availability of these renewable resources.

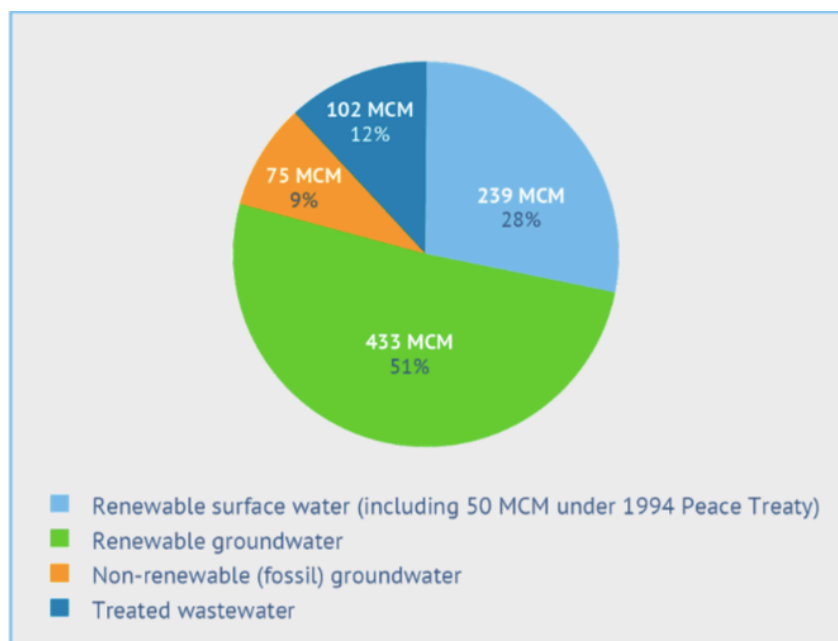


Fig. 3: Available water resources in Jordan, assessment of the Minister of Water and Irrigation (2013). Source: Fanack.com, Creative Commons License

According to the Ministry of Water and Irrigation (MWI) of the Hashemite Kingdom of Jordan, 94 percent of Jordanians are supplied with safe drinking water.⁸ Nonetheless, the water supplied to households is not available 24/7, especially in the summer, when water scarcity is greater and there are parts of Jordan, which receive water once every other week or every two weeks. In Jordan, each house has water tanks on their roofs in order to store there the water during the days of supply and then use it during the remaining days.⁹ The cost of water services (as well as sanitation) is subsidized, according to the MWI.¹⁰ Additionally, the

⁶ Source: <https://water.fanack.com/jordan/water-resources/>, accessed on March, 15th, 2018

⁷ Grover, Velma I, Darwish, Abdel, R., Deutsch, Eliza *Integrated water resources management in Jordan. Working Paper 577.* p. 7

⁸ National Water Strategy of Jordan, 2016-2025, p. 8

⁹ Ibidem

¹⁰ Ibidem, p. 9

quality of drinking water complies with the guidelines provided by World Health Organization (WHO) with a fulfillment rate for those standards of 99.7 percent (2014).¹¹ Although a new pipeline connecting the recently discovered Disi Aquifer connects this new water resource to a few areas in Jordan, such as Aqaba and some parts of Amman, there are still areas that are not reached. Additionally, the aforementioned Aquifer is a fossil water aquifer, which means that the water extracted is not renewable and thus it does not stand as a viable and sustainable solution to resolve the lack of groundwater resources.¹² There are projects aiming to increase the water supply in the country and to find alternative water resources to cope with an on-growing demand, such as the desalination “Red Sea-Dead Sea” project and treatment of wastewater. However, with a population of 9.5 million (2015), expected to double by 2025, the amount of water needed for domestic use only is estimated to rise by 50-60 percent.

There is another side to this picture regarding water resources. In fact, beside population growth and water scarcity, another issue relevant to address access to water in Jordan revolves around governance. There are three offices managing water: the MWI mentioned before, the Water Authority of Jordan (WAJ) and the Jordan Valley Authority (JVA).¹³ It is claimed that these overlapping institutions have problems in communication and in working harmoniously together. This leads to a lack of efficiency and efforts in addressing water issues and improve its management.¹⁴ This affects the way water demand is managed and it also leads to absence of sufficient information regarding water resources, for instance, on water quality and quantity. When governmental authorities claim they subsidize water with lower tariffs, this mainly concerns farmers and *de facto* there are substantial differences between the price paid by the agricultural sectors and private households. Another relevant point concerns water losses through leakage. When water is transported to urban areas from the primary source, there is a physical loss due to old and inefficient infrastructure and administrative loss because of illegal extraction and unpaid bills. For both these factors, the amount lost is 56 percent of water assigned for municipal uses.

This brief introduction on the situation of water resources and related issues in Jordan now and in the upcoming future enhances even more the necessity to explore this issue and how it

¹¹ Ibidem

¹² Jaseem, Alsharifa Hind, Shammout, Maisa’a, AlRousan, Dheaya, AlRaggad, Marwan. *The Fate of Disi Aquifer as Strategic Groundwater Reserve for Shared Countries (Jordan and Saudi Arabia)*. *Journal of Water Resource and Protection*. Vol. 3 (2011) p. 711

¹³ Grover, Velma I, Darwish, Abdel, R., Deutsch, Eliza. *Integrated water resources management in Jordan*. *Working Paper 577*. p. 5

¹⁴ Ibidem

impacts on people's everyday life. Furthermore, I believe it is important to see what people think and have to say about the topic and whether they are aware of the undergoing and future challenges.

1.4 Disposition

Following the introduction to this study, which clarifies the aim and research questions as well as provides a historical and contextual background on Palestinian refugee camps and the current situation of water resource in Jordan, Chapter 2 deals with reviewing existing literature. The first part analyzes and evaluates research on Palestinian refugee camps, while the second part reviews previous studies on access to water, especially related to health and uneven distribution. In Chapter 3, the research design and strategy are explained as well as the methodological tools used, surveys through structured interviews. This is followed by limitations and ethical considerations of the research. In the following chapter, I suggest the conceptual framework, which can result helpful to approach this research. This combines the approach of "water as human right" and the theory of distributive justice applied to water resource allocation. Chapter 5 provides the findings of the data analyzed, organized on three main key themes. The following chapter regards the discussion of the findings, which aims to put together elements for previous chapter to make sense of the data analyzed. The discussion is completed in the conclusive chapter where there is an attempt of answering the research questions as well as point out elements for further investigation on the topic.

2. Literature Review

2.1 Introduction

This chapter explores the topic of the living situation in refugee camps in Jordan. It also explores the idea of what access to water is and has been defined as. This also links to which examples of research have been carried out on the issue of access to drinking water in refugee camps as well as poor areas. This literature review is important since it reveals the perspective Palestinian refugee camps have been studied from. It also provides a relevant background on the research carried out in contexts other than the Jordanian one regarding access to water and inequalities. The aim is to show the gap existing in research on comparing access to water and inequalities in Palestinian refugee camps in Jordan.

I aim to review the relevant literature by addressing the main themes in two separate sections. The first section includes articles on Palestinian refugee camps in Jordan and gives a background on living and socio-economic conditions of the aforementioned camps. The second section provides literature on access to water as defined by the World Health Organization (WHO). I will also connect this term to relevant research, showing how most of the existing literature is health-related and focuses on the medical and public health field more than on the one of social science.

Since Palestinian camps in Jordan are the main focus of this study and although the recent Syrian crisis reveals the rightfulness of researching on the recently established Syrian refugee camps, articles on Syrian refugee camps' conditions are not included in the literature review.

2.2 Life in Palestinian refugee camps in Jordan

Research on refugee camps in Jordan can be considered quite extensive, since the country has been experiencing different waves of refugees. In particular, Palestinian refugee camps such as Zarqa and Jabal el-Hussein represent, as a research area, an interesting micro-reality compared to the other areas of Jordan, since they have been established after the 1948 Israeli-Arab war, but still face many socio-economic challenges. These issues exist despite the fact that as Jabal el-Hussein in Amman, other camps were integrated into and became part of the urban structures of the surroundings cities. In fact, life conditions in these camps are still harsher and poorer than in non-camp areas. This is in spite of the fact that more than 70 years have passed since these camps were established. Housing conditions, education, employment and healthcare are some of the factors, which show substantial differences between life in and

outside camps. For example, Alduraidi¹⁵ who compared refugees' quality of life in and outside camps found strong evidence that "camp refugees were significantly less likely to be educated, live above the poverty level, and have good social relations and environment HRQOL¹⁶ compared with non-camp refugees".¹⁷

The differences between refugee camps and the rest of neighborhoods regard also the quality of housing. For instance, Alnsour¹⁸ gives important insights of the housing situation in Baqa'a camp, the largest Palestinian refugee camp in Jordan. Lack of maintenance, poor quality of the material used for the infrastructures and overcrowded spaces are recurring features of the findings of the research. This situation is likely to be found in other Palestinian refugee camps in Jordan. Additionally, some of the camps find themselves facing a significantly worse situation than others as shown by Hejoj¹⁹ who investigates poverty in Zarqa and Sukhneh camps. The former was established to accommodate refugees of 1948 and officially recognized by UNRWA while the latter was settled in 1969 and although not considered an official camp, is provided with some UNRWA services. The focus of Hejoj's research is on Palestinian refugee camps, because although these camps have been established more than 70 years ago and "Palestinian refugees have been incorporated [...] in Jordanian society there exists a social cleavage between refugees and native Jordanians".²⁰ Hejoj underlines the exceptional status of refugee camp as a temporary place where refugees live in diaspora while waiting for the "right to return" and holding on to strong nationalist feelings. A similar notion of refugee camp is explained by Turner²¹ who affirms that the refugee camp is a space symbolizing "extraterritoriality, exception and exclusion".²² In these terms, Palestinian camps in Jordan can be considered an extra-territory since they are managed and under the control of UNRWA; in the same way, they are exceptional since they fall under special conditions, decided by UNRWA and Jordanian government. Lastly, although most of them are in urban areas and thus incorporated with the surroundings neighborhoods, the refugees are somehow excluded by the host community. This means that

¹⁵ Alduraidi, H. *Health-related quality of life of Palestinian refugees inside and outside camps in Jordan*. ELSEVIER. Nursing Outlook. Vol. 65. (2017)

¹⁶ This acronym stands for *health-related quality of life*, a concept that focuses on the impact health has on the quality of life, taking into consideration physical, social, emotional and mental aspects.

¹⁷ Alduraidi, H. *Health-related quality of life of Palestinian refugees inside and outside camps in Jordan*. p 441

¹⁸ Alnsour, J., Meaton, J. *Housing conditions in Palestinian refugee camps, Jordan*. ELSEVIER. Cities. Vol. 36 (2014)

¹⁹ Hejoj, I. *A Profile of Poverty for Palestinian Refugees in Jordan: the Case of Zarqa and Sukhneh Camps*. Oxford University Press. Journal of Refugee Studies Vol. 20, No. 1. (2007)

²⁰ Ibidem, p. 122

²¹ Turner, Simon. *What is a Refugee Camp? Explorations of the Limits and Effects of the Camp*. Journal of Refugee Studies. Vol. 29. N. 2 (2015)

²² Ibidem, p. 141

differences between refugees and the native population are not just regarding the housing conditions, as mentioned before by Alnsour in the case of Baqa'a camp, but also of social and economical nature. These factors became barriers between the two communities as well. The idea that camp refugees have worse conditions than non-camp refugees is also supported by Khawaja²³ and previously mentioned by Hejoj: distribution of household income differs between camp refugees on one side and non-camp refugees and host community on the other side; this resolves into refugee camps being a clustering of poverty and of unemployment.²⁴

2.3 Previous research on access to water

The existing literature evaluating safe access to drinking water take the concept that was incorporated in the Millennium Development Goals (MDG) 7c of 2015, which further on has become part of the new 2030 Sustainable Development Goals (SDG). In the targets 6.1 and 6.2 of the SDG, the aim of achieving “universal and equitable access to safe and affordable drinking water for all” is stated.²⁵ This concept has gone through changes and was redefined in such way to mean that in every household, school, health centers, work and public places, an adequate amount of water to meet domestic use should be available. This has to be located in the proximity, with no discrimination. It also implies that firstly the water is safe in a way that pathogens and toxic substances are not present, and secondly affordable thus the cost does not prevent people from accessing it for their basic needs. Lastly, drinking water means water for cooking, for drinking as well as for personal hygiene. Therefore, it must be suitable for every category of people.

This new definition tries to address the issue existing with the previous one. In fact, it did not use to take into consideration concepts such as “improved” and “safely managed” as essential terms to evaluate access to water, its quality, supply period, cost and actual number of people accessing it. This similar issues are brought up in the research by O' Hara, et al.²⁶, which evaluates access to water in Kazakhstan. In the article, criticisms of previous methods to collect information were highlighted and household surveys were used as a more effective way to monitor the situation of access to water and sanitation.²⁷ This methodology has been widely adopted in other research projects as well as for the study addressed in this paper.

²³ Khawaja, Marwan. *Migration and the Reproduction of Poverty: the Refugee Camps in Jordan*. Blackwell Publishing Ltd. International Migration. Vol. 41. N. 2 (2003)

²⁴ Ibidem, p. 31

²⁵ *Safely managed drinking water - thematic report on drinking water 2017*. Geneva, Switzerland: World Health Organization. (2017) p. 6

²⁶ O'Hara et al. *Assessing access to safe water and monitoring progress on MDG7 target 10 (access to safe water and basic sanitation): Lessons from Kazakhstan*. Water Policy. Vol. 10. (2008)

²⁷ Ibidem

2.3.1 Health-related issues and uneven distribution in access to water

Somehow extensive research has been carried out on safe access to water in refugee camps, especially in those located in developing countries. In the several cases research was conducted on access to water, the final goal was to highlight health issues and waterborne diseases. An example of this type of analysis has been implemented in Shatila Refugee Camp in Beirut, Lebanon. There, bacteria contamination was found in some analyzed water samples, mainly due to poor water and sanitation infrastructure²⁸. The camp's drinking and domestically used water was extracted from four wells drilled inside the camp. These wells were managed by a group of people who also sell the extracted water. The issue lays in the fact that in spite of these vendors claiming they had carried out proper treatments, contamination by various bacteria was proven by the analyzed water. When interviewed, some of the vendors stated to have stopped treating water with chlorine due to consumers' complaints. This can be one of the reasons contamination was found, while another can be the resilience of certain parasites to common water treatment methods.

The research by Alagidede & Alagidede²⁹ addresses the effect of public health on water and sanitation in six Western African countries (Sierra Leone, Togo, Niger, Chad and Mauritania). It also reports on the consequences of poor sanitation and water by showing cholera, malaria and diarrhea cases in the aforementioned countries. The article highlights how the target of 75% access to improved water is still far from being met. In addition, it explores how in many other developing countries, there are still significant differences in access to improved water between rural and urban areas. Part of the responsibility for this lack of access to improved water seems falling on state actors, which did not manage efficiently the water production and distribution. The problem of mismanagement is a recurring issue when talking about water scarcity and it does not involve just developing countries, but also Jordan, as highlighted in the introduction.

As shown by a research from Daley, et al., uneven access to water is a key issue also for high-income countries such as Canada.³⁰ This study regards Inuit communities living in the Canadian Arctic. As they live in a remote area, this Aboriginal community is considered vulnerable to water-related health risks due to the substandard state of the services provided

²⁸ Khoury, S., Graczyk, T., Burnha, G., Jurdi, M., Goldman, L. *Drinking water system treatment and contamination in Shatila Refugee Camp in Beirut, Lebanon*. Eastern Mediterranean Health Journal. Vol. 22. N. 8. (2016) p. 569

²⁹ Alagidede, P., Alagidede, A.N. *The public health effects of water and sanitation in selected West African countries*. Public Health. ELSEVIER. Vol. 130 (2016)

³⁰ Daley, et al. *Water systems, sanitation, and public health risks in remote communities: Inuit resident perspectives from the Canadian Arctic*. Social Science & Medicine. ELSEVIER. Vol. 135 (2015)

by the Canadian government in the region.³¹ Not only housing conditions, but also managing safe drinking water supplies and wastewater treatment are issues these Inuit communities struggle with. The aim of this article is to investigate residents' perception of their current water supply and sanitation systems. Furthermore, this research also brings light to the importance of social awareness and participation regarding water-related issues. Espec This being especially when it is the case of a vulnerable ethnic group such as the Aboriginal community or, in other examples, refugees.

On the discussion regarding people's awareness in relation to access to water, a study on household in Bhutan is a relevant example, which aims to analyze choices of drinking water source and water treatments on the base of socio-economic conditions. In fact, Rahut, et al.³² argue that income, levels of education and people's awareness on water issues "play an important role in gaining access to effectively-treated water".³³ While the Bhutan case study reveals the perspective on a community level, research on urban livelihood in Cusco, Peru, by Crawford and Bell³⁴ highlights the differences on the infrastructure level of three neighborhoods. Thus, the status of access to water is affected by the type of infrastructure each area receives, impacting on living conditions and livelihoods of the people residing there. The research shows substantial differences in availability and quality of the water supply and in the attitude of residents, from both better-off and worse-off households. The results lead the authors to conclude that in some of the areas people are privileged and take advantage of bypass strategies to gain better water supplies. While in other areas, households, are already disadvantaged, and, thus, are further exposed to vulnerability since they lack involvement and participation in the decision-making and management.³⁵

2.4 Conclusion

The literature on Palestinian refugee camps of Jordan is extensive and while other relevant articles I encountered on the issues are out of date, the ones presented in this chapter vary from recent years up to ten years old and, thus, some of the data might no longer be representative. Nonetheless, they give important insights of everyday issues of life in the camps. However, the issue of water access in the camps is understudied and it is covered only

³¹ Ibidem, p. 125

³² Rahut, et al. *Household access to water and choice of treatment methods: empirical evidence from Bhutan*. Water resources and rural development. ELSEVIER. Vol. 5 (2015)

³³ Ibidem, p. 2

³⁴ Crawford, Catherine, Bell, Sarah. *Analysing the Relationship between Urban Livelihoods and Water Infrastructure in Three Settlements in Cusco, Peru*. Urban Studies Journal. Vol. 49. N. 5 (April 2012)

³⁵ Ibidem, p. 1062

marginally in UNRWA's reports and in other related research that addresses equally important problems such as poverty, unemployment and housing conditions. This the reason I argue that, as studies on other refugee camps and vulnerable communities prove, a safe access to water is the basic asset to improve living conditions and prevent water-related diseases and health issues in general. Literature investigating people's perception on the issue is highly relevant for this study and it is where research on Jordan's refugee camps lacks insights on. Thus, it is necessary to deepen the understanding of access to water in Palestinian refugee camps in Jordan as well as investigate how refugees and non-refugees, living in the camps, perceive water scarcity issues. Moreover, studying access to water in the refugee camps can shed light on differences in distribution, quality and affordability of drinking water in Jordan.

3. Methods

3.1 Research Paradigm

This thesis is guided by a post-positivist approach, a way between empirical and interpretative paradigms. This framework allows the researcher to question absolute objectivity and implies that findings can be subject to falsification.³⁶ With post-positivism comes a different attitude than positivism, which means being aware of the impossibility of a hundred percent accuracy in the findings and taking into account the related limitations.

3.2 Research Design

3.1.1 Inductive approach

I adopted an inductive approach based on previous research carried out in Palestinian refugee camps. This means that there were empirical generalizations on existing differences between life in and outside the camps. I aimed to applied similar research on analyzing a particular aspect, i. e. access to water in the refugee camps. Starting from the framework of the “human right to water” combined with the concept of distributive justice, the question of an inductive approach leads to “whether” there are differences and then moves to attempting to explain “why”.³⁷

3.1.2 Premises of the research design

I designed this research project aiming to compare the opinion on access to water and inequalities of people living in two Palestinian refugee camps in Jordan. The fact that they have a refugee status or not is not the focus of this research and does not influence the aim of the study, i. e. addressing issues related to access to water. In fact, whether the people living in the camp are officially refugees (meaning that they are registered with UNRWA) or not does not influence the type of access to water they get, which is likely to be similar for people living within the same area. Moreover, the harsh conditions of the refugee camps – as highlighted in the literature review, especially in the study of Hejoj³⁸ – are such regardless

³⁶ Guba, Egon, G., Lincoln, Yvonna, S. *Competing paradigms in qualitative research*. In N. K. Denzin & Y. S. Lincoln (Eds.). *Handbook of qualitative research*. Thousand Oaks, CA: Sage. (1994) p. 110

³⁷ Babbie, Earl, R. *The Practice of Social Research. 13th Edition*. International Edition. Wadsworth Cengage Learnig. (2013) p. 22

³⁸ Hejoj, I. *A Profile of Poverty for Palestinian Refugees in Jordan: the Case of Zarqa and Sukhneh Camps*

one being a refugee or not. There is actual evidence by the study of Alduraidi³⁹ that refugees living outside camps have better HRQL⁴⁰ than camp-refugees. Thus, it is argued that the social environment characterizing the camp facilitates poverty and poor socio-economic conditions.

For these reasons, I chose two of the ten Palestinian refugee camps recognized by UNRWA, which host mainly Palestinian refugees, but not exclusively, and above all host people who experience everyday socio-economic hardship. I believe it was important to evaluate the conditions of their access to water, since it is one of those resources without which even a basic human life is not possible. The choice of Jabal el-Hussein and Zarqa camps was due to two main reasons. One due to the history of Palestinian refugee camps and the other one for practical matters. On the former reason, both Zarqa and Jabal el-Hussein are two of the first four camps established as a result of the Palestinian diaspora of 1948. This means that together with Amman New camp (al-Wihdat) and Irbid camp, these have been on Jordanian territories as refugee camps since 1949. For the latter motive, I asked locals, friends and member of the organization I was interning for, which of the first-established Palestinian refugee camps were easy to reach and at the same time might also differ from each other and provide a good comparison. Thus, the decision fell on Jabal el-Hussein, one of the two inside Amman, which has become a neighborhood of the city, and one outside the capital, Zarqa Camp, in the Zarqa Governorate. This latter camp is still reachable by public transportation and in a reasonable time, unlike Irbid camp, located in the northern part of Jordan. After that, I started designing the surveys for the research, following the guidelines of WHO / UNICEF Joint Program for Water Supply and Sanitation (JMP).⁴¹ Of those guidelines specifically meant for household, I used the questions addressing drinking water, although after a talk with my advisor, we decided that a simplification of the terminology was needed in order to make the questions understandable for the respondents.

To test whether the survey and how I designed was feasible for the purpose of this study, I ran a pilot test of the survey on ten people in Jabal el-Hussein camp. This pilot test helped me realizing several important aspects and changes needed. For instance, at first, the research aimed to be carried out by going household by households in the two chosen camps. However, the reality of life in the camps (mainly Jabal el-Hussein) and the circumstances I found myself in did not allow this approach. With this statement, I mean that in order to

³⁹ Alduraidi, H. *Health-related quality of life of Palestinian refugees inside and outside camps in Jordan*

⁴⁰ As mentioned in the literature review, HRQL stands for health-related quality of life.

⁴¹ World Health Organization (WHO) and United Nation Children's Fund (UNICEF)

access households and carry out the structured interviews door-to-door, a gatekeeper was needed and my correspondence with UNRWA responsible for both camps remained until now with no response. Thus, people who helped me with carrying out the research argued it would be uncomfortable for both the interviewees and interviewers to find themselves in the situation on the doorstep. Additionally, several parts of Jabal el-Hussein are no-go zones, because of issues of gangs, drug-dealing and crime. It was, thus, considered safer to stick to the main roads of the camps for the data collection.

A second aspect revolved around the questions, which composed the survey. Few of them had to be simplified in order to be more understandable and certain features, which I did not include, were added (for instance, several respondents claimed they did not pay for water and this answer had to be added for the following data collection section). Lastly, the pilot test was run using the survey in English, being translated on the spot for the respondents by a volunteer who helped me. This way did not seem feasible for running 100 structured interviews and thus the survey was translated into Arabic. Once the data was collected, the responses were translated back to English, which being mainly pre-coded did not turn out to be extensively time consuming. The survey from English to Arabic was translated by a volunteer, who I got to meet in Amman thanks to my advisor. He managed to find other volunteers willing to help us with the data collection. Finally, the answers to open-ended questions were translated from Arabic to English by two of the 11 volunteers who helped and then coded by me.

3.1.3 Research strategy

In order to answer the research questions I presented in the introduction, the strategy of this study is to do quantitative research through a cross-sectional study, including also elements of comparative research design. Firstly, this strategy means including more than one case to verify whether variation in the variables occurs (for instance, what is the main source of drinking water or ways of treating water in two different communities). In this research, two cases are the subjects of the study, i. e. the two refugee camps. The two cases' results are compared to find contrasts and similarities.⁴² Secondly, this study is cross-sectional meaning that the data collection happens at a single point in time or more less simultaneously.⁴³ Lastly, the information must be quantitative or being able to be quantified and used to examine relationships between variables.

⁴² According to Bryman, comparative designs usually analyze contrasting cases. However, in this study, the aim is to explore both contrasting and similar results of the two camps.

⁴³ Bryman, Alan. *Social Research Methods*. 4th Edition. Oxford University Press. (2012) p. 59

Thus, the methodological tools I use are surveys for the data collection and IBM SPSS Statistic software to analyze the findings. By using cross-sectional design with a comparative compound, I aim to strengthen the external validity of this study⁴⁴ as well as suggesting that this strategy can be replicated to make comparisons for similar cases, or it can be applied to the other Palestinian refugee camps in Jordan to show differences and similarities and to help the authorities in charge to tackle existing issues.

3.2 Sampling selection

As for the N-sample, this research reached 102 subjects, i. e. individuals stopped on the streets, 2 of which not being valid (one was a minor and the other one did not finish the survey), leaving 51 for Jabal el-Hussein and 49 for Zarqa. Thus the valid number of respondents was composed of 100 people. I calculated the sample size I needed through a sample size calculator online.⁴⁵ The population registered with UNRWA is of 20 000 people for Zarqa and 32 000 for Jabal el-Hussein.⁴⁶ In the beginning, I picked 50 as sample for each, which would give me a confidence interval (margin of error)⁴⁷ of 13.9 and a confidence level of 95%⁴⁸, for both populations. For the samples to be more representative, the sample size should have been at least 200, however I did not have the time and financial resource to conduct a bigger and more extensive research. Nonetheless, I am confident that this sample can provide a sufficient understanding of the two populations' issues and realities. In order to enhance the external validity and even more the samples' representativeness, the method of probability sample was used. This consisted of approaching the first respondent encountered and skip three after this and repeat all over again. However, a pre-requisite of the respondents was for them to be living in the refugee camp where the data collection was held. Thus, if the respondent did not live there, the following one was approached.

3.3 Data collection

The data collection was carried out by the volunteers by stopping people right on the spot, mainly near the shops, at cafes and in the weekly market streets of the two camps. The data collection was in form of surveys using structured interviews. The volunteers asked the

⁴⁴ This means that the sample aims to be representative of the two population and that the research model can be generalized and applied to other cases.

⁴⁵ <https://www.surveysystem.com/sscalc.htm#two>

⁴⁶ source: UNRWA <https://www.unrwa.org/where-we-work/jordan>

⁴⁷ Confidence interval or margin of error means how far the selected sample is from being representative of the population.

⁴⁸ How sure a researcher can be about the sample level of representativeness for the population object of the study.

questions to the people and wrote down the responses. I was an observant and I was supervising the data collection so that the praxis of the research would be followed. Both questions and answers were in Arabic. The interview started with the introduction regarding the aim of the research and information on confidentiality, anonymity and the aspect of free participation to the interview.

The data collection was held in two visits, one to each camp and lasted several hours until the set number of the sample was reached. For it to be cross-sectional, the data collection in the two camps was done within two weeks from each other, on December 2nd, 2017 in Jabal el-Hussein Camp and on December 9th, 2017, in Zarqa Camp. In Jabal el-Hussein, 7 volunteers carried out the interviews for me, since my level of Arabic was not high enough for the purpose. In Zarqa, five volunteers carried out the interviews.

3.4 Methods of analysis

I designed the survey in a way that most of the questions would be already pre-coded. This means that answers correspond to a certain category to which a certain number is attached. This allows the respondents and/or the volunteers to circle the number corresponding to the chosen category. In this way, I inserted the numbers in an Excel file. Some answers were numeric such as age and the number of people per household. Other answers were string and were inserted as words in the file. The open-ended answers were coded as multiple response sets, based on the recurring themes and each of them was numbered as well. For instance, multiple people mentioned “drugs”, “crime”, “gangsters”, and “security”. These similar responses were coded as belonging to one theme: “crime and drugs”. Another example concerns the theme “water-related issues”. Every response connected to water was coded in this category (water supply, quality, behavior of Water Authority, etc.). The boxes of missing data were left blank and once the Excel file with the answers were inserted in SPSS, blank spaces were coded as missing data.

The data analysis carried out in this study is meant to establish relationships, but “cannot infer that one variables causes another”.⁴⁹ By using statistical analysis, I aimed to describe the situation of access to water in the two camps as well as establish relationships between variables. The way I proceeded involved univariate and bivariate analysis by employing descriptive statistics (frequencies and percentages) and by combining variables through cross-tabulation. I used the calculation of mean and median to find out average and recurrent values as well as the standard deviation to measure the degree of dispersion.

⁴⁹ Bryman, Alan. *Social Research Methods*. P. 341

3.4.1 Coding

The coding of the answers to the four open-ended questions was carried out on similar patterns of qualitative analysis. Then, the main themes found for each questions were consequently coded as number in order to be analyzed in SPSS.

A preliminary analysis was made when I copied the answers in a Word document and I managed to manually highlight patterns and key words occurring for each question. Consequently, these patterns were grouped into main themes, which were given a headline and associated with a number for entering the data in SPSS. As preliminary mentioned in the previous section, I grouped “events, happenings, objects, and actions/interactions that are found to be conceptually similar in nature or related in meaning [...] under more abstract concepts termed categories”.⁵⁰

For the nature of the research methods, in the analysis I did not dwell on the specific responses received, since I was interested in the overall categories and how to represent them in charts and percentage. However, I did found some of them worth mentioning and I reported them in the findings.

3.4.2 Limitations

Language was the first and foremost issue I encountered when I started the research in the field. Because of the significant low chance of encountering a consistent number of people speaking English in a way to understand and respond to the survey, the survey was translated from English into Arabic. Beside, excluding those people who could not answer in English would have limited consistently its representativeness, since the knowledge of English language might imply a better education and better living conditions overall. Thus, due to this choice, there might have been limitations that I could not avoid. For instance, the translation of the survey might have distorted the original meaning of questions and answers. Another limitation consisted in translating back the answers, especially the four main ones, which are open-ended. The original answer of the respondents as the volunteers wrote it down might not be represented truly by its translation into English. Additionally, since I did not carry the structured interviews myself, I am not aware of how the volunteers helping me asked them and whether they misinterpreted them as well as I cannot know the way they reported the open-ended answers.

⁵⁰ Babbie, Earl, R. *The Practice of Social Research*. p. 397

A further limitation of this research regards the lack of access the volunteers and I experienced, as mentioned before. In fact, without a gatekeeper knowing people from the camps, accessing directly households (as the research was originally designed) was impossible and dangerous. This latter point is particularly true regarding Jabal el-Hussein. We limited the data collection to the mains streets, since several streets were considered potentially dangerous due to crime and drug dealing. Thus, the sample of Jabal el-Hussein risks not being as representative as the one in Zarqa due to these reasons.

An additional limitation relates to the difficult task to interview and talk to women. This meant not being able to have a sample that is gender-balanced. Thus, the opinions collected mainly describe men's opinions rather than overall opinion of people in the camps. This was a limitation I did not know how to avoid, since my volunteers' group consisted of mainly men who felt uncomfortable approaching women on the streets, especially if young and alone.

When carrying out research in the Middle East, a researcher might encounter people's unwillingness to respond due to "political sensitivity of the topic".⁵¹ In fact, if respondents worry and are scared of possible repercussion because of what they might say, they will not give frank and honest answers, especially if the actors to blame are related to governments and local authorities. I attempted to avoid this issue by asking broad questions without inquiring about government and state actors in particular.

An important matter, to take into consideration as researchers, regards reflexivity, which means, for instance, the fact that who I am and my personal beliefs can influence my role as researcher and how I see and interpret the data. This bias concerns also the way I structured the research, created the survey and collected the data, not just the analysis part. Additionally, the issue of reflexivity can relates to how "the research setting could affect the person's responses".⁵² This means that the choice of the refugee camp as setting for the data collection might have affected the results, or that results might have been different if we interviewed the respondents in a more neutral space. This scenario, however, would imply two steps: select the respondents in the camp and, in a second moment, conduct the interview by meeting in another place.⁵³ My expectations as research on the data and results of the study are also related to reflexivity, since these beliefs could affect the way I analyzed the data and how I privileged certain pieces of information over others.

⁵¹ Clark, Janine, A. *Field Research Methods in the Middle East*. PS Online. (July 2016) p. 418

⁵² Babbie, Earl, R. *The Practice of Social Research*. p. 331

⁵³ As it will be mentioned later, I did not dispose of enough time and resource for a more extensive data collection.

Another weakness of this research lies in the existence of possible survey errors such as a poorly worded question, which can lead the interviewee to misunderstand what they are being asked.⁵⁴ I aimed to avoid these survey-related errors by testing the survey on a limited sample in order to see whether questions or particular terms could be misunderstood, but I cannot be sure I avoided completely this issue. Another issue related to the survey could also be that if “answers do not adequately cover the appropriate range of possibilities, the question will not provide a valid measure”.⁵⁵ I, once again, attempted to avoid this possible limitation by leaving the four main relevant questions of the research open, so that the respondents could express themselves and reveal their opinion on the different matters. Lastly, I disposed of limited amount of time and financial resources. This has affected my ability to interview greater number of people and to strengthen the level of confidence and confidence interval of the sample.

A structural limitation, which highly influenced the outcome and results of the thesis as well as its ability to connect to the concepts of social and distributive justice, lies in my methods choice. In fact, my decision to collect quantitative data, leaving aside the qualitative aspect due to time and language constrains, has weakened the results and, foremost, the analysis of the perception of inequalities related to water. This last point will be further highlighted in the conclusions of the thesis.

3.5 Ethical considerations

When carrying out this study, I always kept in mind ethical issues, especially since the research setting was a refugee camp. Thus, I always aimed to “minimize disturbance both to subject themselves and to the subject’s relationships⁵⁶ with their environment”. For instance, whenever a question regarding the life of the interviewee in the camp made them feels uncomfortable, I suggested we would avoid it. I asked the volunteers helping me to act in the same way with their respondents. Additionally, all the surveys were coded through an ID number and real names were not included among the responses. In this way, identities and opinions of the individuals remain protected by confidentiality and when findings are published, interviewees will not be recognizable.⁵⁷ This has been a not difficult task thanks to the quantitative nature of this research. For future research to be carried out in refugee camps, assuring that the identity of refugees is protected is fundamental both for people to feel safe

⁵⁴ Bryman, Alan. *Social Research Methods*. p. 210

⁵⁵ *Ibidem*, p. 212

⁵⁶ *Ibidem*, p. 136

⁵⁷ *Ibidem*

and researchers. In fact, the latter might not be trusted in the future in the case confidentiality has not been respected.⁵⁸ Another important ethical aspect revolves around the topic of informed consent and respect of one's privacy. In order for the respondents to have as much information as needed to be aware of the nature of the study, which types of questions will be asked and whether they want to take part in it, the surveys were backed by an introduction section. In this part, I introduced my affiliated university and myself and explained the nature of my study and what I aimed to ask to the respondents. Then, I assured that participation was voluntary and thus respondents can leave the survey anytime they feel uncomfortable as well as they can avoid questions perceived as invading their privacy. Another assurance specified in the informative introduction is that the identity and answers of the respondents will be protected by confidentiality and kept anonymous. Lastly, an issue brought up in the limitations section, related to carrying out research in Middle East and North Africa, is whether people feel free to speak their minds or are scared about their safety. In fact, if some issues such as the ones this research focuses on involves somehow central authorities or governments, it is important to protect anonymity and guarantee this status to the respondents.⁵⁹ Additionally, when I carried the research in Jabal el-Hussein Camp, in spite of stating at the beginning of the survey that participation was voluntary, several people asked for monetary assistance. Other researchers in the region reported similar events and I experienced this situation as an "ethical discomfort"⁶⁰, since I was unable to help them.

⁵⁸ Ibidem, p. 138

⁵⁹ Clark, Janine, A. *Field Research Methods in the Middle East*. Pp. 419-420

⁶⁰ Ibidem, p. 420

4. Conceptual Framework

4.1 Introduction

In this chapter, relevant concepts related to the research questions and the study will be explored as an attempt to build on pre-existing knowledge and theoretical concepts. For instance, in the field of research related to access to water, the concept of water as a human right and all the set of beliefs and implications linked to it are extremely helpful for the sake of this research. Additionally, I believe that the theory of distributive justice, although as developed by different theorists more relates to political economy, wealth and state policies, could help explaining how access to water, if seen as a good, can be distributed equally or not among the citizens and on which bases states do so.

4.2 Water as a Human Right

“The right to drinking water is defined as the right of every individual to have access to the amount of water required to meet his or her basic needs. This right covers access by households to drinking water supplies and waste water treatment services managed by public or private organizations.”⁶¹

The concept of safe access to drinking water was mentioned for the first time as “the right to water” by the United Nations Committee on Economic, Social and Cultural Rights in 2002. As stated in the literature review, safe access to drinking water was also further on included in the Millennium Development Goals (MDG) of 2015 and although the goal set for the 2015 MDG has been reached, there are still 700 million people worldwide who do not have access to improved drinking water.⁶² The issues related to unimproved access to water can be linked to poverty, inequality and unfair distribution of resources and worsened by factors such as climate change, population growth and urbanization.

It is thus important to consider access to safe drinking water as a basic need and, thus, an essential human right. The contribution that this concept can give to this research is that it has helped establishing new ways to identify and measure inequalities and thus address issues that concern “the underserved, the most disadvantaged, and vulnerable groups in each

⁶¹ Klawitte, Simone, Qazzaz, Hadeel. *Water as a Human Right: The Understanding of Water in the Arab Countries of the Middle East*. International Journal of Water Resources Development. Vol. 21. N. 2. (June 2005) p. 255

⁶² Alagidede, P., Alagidede, A. N. *The public health effects of water and sanitation in selected West African countries*. Pp. 59-60

context”.⁶³ This can be done through considering equity, for example, between communities belonging to the same country and taking into consideration other MDGs’ concepts such as extreme poverty, gender inequality as well as environmental sustainability.

Furthermore, Klawitter & Qazzaz argue for the interrelation and indivisibility of all human rights.⁶⁴ Thus, the reason behind the concept of water as a human right can be linked to the fact that if an individual is lacking access to safe drinking water and proper sanitation, other human rights such as right to health, work, education and life itself are hindered as well. Finally, the absence of these human rights threatens the bases to eradicate poverty and boost human development.

4.2.1 Key aspects of right to water

The right to water entails a variety of freedoms and entitlements and its importance can be clarified by defining the various aspect of this UN concept. It is based on three pillars: *availability, water quality and accessibility*.

Availability means that a minimum amount of safe drinking water must be guaranteed for living and health; this amount must be adequate to fulfill domestic and personal use. While between 50 and 100 liters per person per day is considered the amount sufficient to meet basic needs, 20-25 liters is the extreme minimum. However, it can be argued that this extreme minimum is not enough to achieve basic hygienic and health conditions. With water quality, it is meant that the water supplied should not have parasites, chemical substances and microbes and the amount of safe water must be enough for domestic uses as well.⁶⁵

Lastly, accessibility entails that access to water must be guaranteed to every person. This concept refers to physical accessibility. This means that reaching the water source must be safe, within a fair distance from home and that the water collection does not endanger physical security, so that the amount of water needed is guaranteed. It also means economic accessibility, implying that water should be affordable in a way that the price people pay for water should not be an obstacle to safe drinking water. Lastly, it is based on non-discrimination, meaning that marginalized areas or vulnerable groups of people must be granted safe access and governments are held accountable and must take measure in order to end any form of discrimination. All these principles must be combined by a constant work of informing and creating awareness on water issues.

⁶³ Flores Baquero, O., Jiménez Fdez. De Palencia, A., Pérez Foguet, A. *Measuring disparities in access to water based on the normative content of the human right*. Social Indicators Research. Springer. Vol. 127. (2016) p.742

⁶⁴ Klawitter, S., Qazzaz, H. *Water as a Human Right: The Understanding of Water in the Arab Countries of the Middle East*. P. 257

⁶⁵ Ibidem, p. 267

4.2.2 Category at risk: refugees, displaced people and water-stressed populations

The right to water for vulnerable categories is also addressed by the United Nations Human Rights Commission and refugees and Internal displaced people (IDP) fall in this category. First of all, refugees and IDPs experience the trauma of displacement, fleeing conflicts or as a matter of natural disasters and, thus, when in a situation of emergency, basic services such as safe access to drinking water and sanitation can be lacking. However, there can be water-related issues also when the situation of asylum or displacement is protracted, since often the places where refugees are hosted become overcrowded and living conditions deteriorate as time passes. Thus, basic services provision worsen and “poor sanitation and lack of access to safe drinking water in these camps often lead to the spread of waterborne diseases [...]”.⁶⁶

The framework of right to water provides important guidelines not only by addressing different categories of people, but also in coping with diverse situations, for instance, in scenarios of water scarcity and water stress. In fact, it is claimed that beside climate change and population growth, human behavior has also a strong influence on this issue. Thus, obligations for states are entailed with the principle of right to water: governmental policies should prioritize use of water for domestic and personal uses and those categories that do not have access should be guaranteed one (vulnerable and marginalized groups).⁶⁷ Equal access for everyone even in situation of water scarcity is a responsibility of the states. Several states already include prioritizing domestic and personal use in their legislation, but the list of “water-stressed” countries, which do not guarantee and ensure this right, is still long.

4.2.3 How this human right approach deals with providing safe drinking water

The approach of human right to water means that safe access to drinking water is a right and an entitlement of each individual and it is defined through the guidelines established by this concept. The agenda related to this specific human right aims to empower and mobilize individuals, in particular those who are more affected by the issue such as poor, marginalized and vulnerable category of people (refugees, women, elders and children) by creating awareness and informing them on the issues related to access to water. Moreover, governments are held accountable and responsible for providing and guaranteeing the right to water and another goal of this approach is participation of the population in the decision-making on the topic. Lastly, it can be argued that there are limitations within this approach, one of them being the fact that it merely provides a framework and guidelines, leaving

⁶⁶ High Commissioner for Human Rights. August 2010. *The Right to Water. Fact sheet No. 35*. United Nations. Available at: <http://www.ohchr.org/Documents/Publications/FactSheet35en.pdf>

⁶⁷ Ibidem, p. 36

governments to figure out the practical aspects and implementation of this right. Nonetheless, the human right approach to water is an important step forward in achieving the goal of safe drinking water.

4.3 Social and distributive justice

With the notion of justice, it has been intended a concept based on fairness, equality and equity. John Rawls⁶⁸, as main exponent of this theory, strictly intertwines justice with fairness. Distributive and social justice are based on the same set of values, but with the aim of applying them to the society as a whole, expanding the idea of justice as related to an individual and looking at the bigger picture. In particular, theorists of social justice are interested in how the society works and read its functioning through the lenses of social justice. This means looking at governmental policies, resources allocation as well as how to respond to those who commit crimes and incur into a punishment. Social justice means also listening to and understanding the social actors and their concerns and voices.

On the other hand, a relevant question when the topic is distributive justice is “Did I get my fair share?”⁶⁹ Using this question as the starting point of this concept, I argue that distributive justice, as the main relevant concept of social justice, could be considered a tool to study access to water for refugees living in camps and in urban areas and help revealing where and whether there are inequalities, unfair distribution of resources, and lack of interest from those in charge towards impoverished areas. Additionally, this concept can become an essential lens to use in comparing different communities, which belong to the same country such as in this study.

However, when John Rawls debates on distributive justice, this concept is applied solely to the sphere of political economy, with a particular focus on markets, economic systems and shares. For instance, the state, as institution aiming to preserve even and fair conditions, has branches in charge to keep prices competitive in a way to contrast strong market power. Another task involves preserving “justice in distributive shares by means of taxation and adjustments in the rights of property”.⁷⁰ Thus, this theory does not consider water as a resource to which the concept of distributive justice can be applied, nor following theorists have included water resources as goods to be analyzed regarding fair allocation and distribution. Nevertheless, in this section I argue that water can be considered as much as other resources a public or private good and thus I am attempting to draw parallels between

⁶⁸ Rawls, J. *A Theory of Justice*. Belknap Press. (1999)

⁶⁹ Forsyth, D., R. *Group Dynamics*. Wadsworth Publishing. (2009) p. 388

⁷⁰ Rawls, John. *A Theory of Justice*. P. 245

the world of economic shares and distribution and water resources allocation, by applying concepts of distributive justice to access to water.

One of the few exceptions of theorist found dealing with distributive justice and allocation of natural resources is John Pullen in “An Essay on Distributive Justice and the Equal Ownership of Natural Resources”⁷¹. Natural resources as defined by Pullen are those provided by nature, besides human action and intervention: rain water, soil, coal, air, gold, etc. These resources, in his opinion and quoting Rawls, must be seen as a “common pool”, where those who are poorer should be given by those who are richer as compensation.⁷² Interesting to notice how natural resources are framed by Pullen as “natural rights”, meaning “Earth’s resources as a right inherent in the nature of each and every human being”⁷³. This argument can be linked to the previous part of the conceptual framework section, where I highlighted how water is and can be considered a human right. Both rights highlight the importance of equal “share” and “access”, aiming for the practical application of these concepts.

However, a limitation of Pullen’s view, I argue, lays in his looking merely at natural resources, which each individual should have access to, as these are part of their natural rights. Yet, those natural resources, changed and transformed by human intervention, such as safe drinking water or transformed oil, coal or gas for providing electricity are as nowadays as important as the primary natural resources. In many ways, these resources are essential in order to guarantee the right to life. Thus, I argue that each individual should have a fair share of or access to both the primitive and improved state of these resources.

4.3.1 Distributive norms

There are different distributive norms that can be applied by those in charge (for instance, governments): equity, equality, power and need. These concepts belong to the so-called “fairness dilemma”.⁷⁴ Each interpretation of distributive justice determines which of the concepts is applied. For instance, the concept of equality implies that all the citizens, independently of their contributions, should be given equal share of water. On the other hand, there is the concept of equity, which bases the share received by the people according to their inputs. Power, instead, means that those who belong to a certain status or have a certain

⁷¹ Pullen, John. *An Essay on Distributive Justice and the Equal Ownership of Natural Resources*, American Journal of Economics and Sociology. Vol. 72. N. 5. (November 2013)

⁷² Ibidem, p. 1046

⁷³ Ibidem

⁷⁴ Forsyth, Donelson, R. *Group Dynamics*. p. 388

authority or control “should receive more than those in lower-level positions”.⁷⁵ Lastly, if governments base the distribution on the basis of need, those who need the most resources such as water should receive the amount necessary to meet their demand.

So, if water is distributed according to one or several of these norms, it is on states’ governments to decide which. According to the chosen norm and to the individuals affected by it, the fairness perceived varies. To establish fairness in distribution of resources can also help detecting inequalities, or if and how they are perceived by those receiving certain goods.

4.3.2 Social equity

The framework of social equity as presented by McDermott et al.⁷⁶ appears relevant as theoretical concept since it takes into consideration different aspect of equity and equality. In the analysis of the concepts, it includes among the three dimensions of equity a distributive aspect. This framework is used in the paper to address the issue of “local equity”⁷⁷ in contraposition to a new global trend of “payments for environmental services”⁷⁸ such as water resources. The argument is that the cost of these measures might affect and endanger local actors who could “lose access to significant livelihood resources” and thus it is unclear for the authors where social equity lies. For this reason, a framework evaluating social equity is needed, which entails aspects of distributive, procedural and contextual justice. Distributive justice has been addressed previously, while procedural justice deals with “fairness in the political processes that allocate resources and resolve disputes”.⁷⁹ So for this type of justice to be applied, inclusiveness in decision-making is a key aspect. Lastly, contextual justice deals with the social context where political and distributive decisions were taken. This is necessary in order to understand where the injustice and inequity come from.

4.4 Some conclusions

The framework of “water as human right” provides important guidelines to investigate safe access to drinking water as well as identifies vulnerable categories of people such as refugees and IDP as well as water-stressed populations. This approach can be combined with the distributive justice and social equity frameworks. These can be theoretical tools to investigate water allocation among people, assist in evaluating whether fairness is the standard used or

⁷⁵ Ibidem

⁷⁶ McDermott, M., Mahanty, S., Schreckenber, K. *Examining equity: a multidimensional framework for assessing equity in payments for ecosystem services*. ELSEVIER. Environmental Science & Policy. Vol. 33 (2013)

⁷⁷ Ibidem, p. 416

⁷⁸ Ibidem, p. 417

⁷⁹ Ibidem, p. 418

there are forms of discrimination occurring and to analyze the impact distributive and procedural norms have on people's access to resources such as water.

5. Findings

This section will report the main findings of the data collected through surveys and carried out with structured interviews. The data is, thus, quantitative and it was mainly pre-coded. The responses to the open questions were coded, by merging together the main themes. The three sections will explore: the characteristics of the samples and general information about it, the type of access to water of both and each community and the main challenges found.

5.1 Overview of the sample

The selected sample of 100 people is composed of 51 respondents from Jabal el-Hussein camp and 49 from Zarqa camp. The age of people in the selected sample is quite spread between 25 and 80 years old, with bigger percentage of people of age between 35 and 55 for Jabal el-Hussein and 45-50 and 65-70 as a range of age for Zarqa. As shown in Fig. 3, gender representativeness has not been achieved for the reasons mentioned in the limitations of the research. Thus, the sample represents 82 male and 13 female respondents, while 5 percent of people didn't answer. Through a cross-tabulation analysis, I was able to show household income of the two camps. As shown by Fig. 4 & Table 1, 36.1 percent declared that the average income is between 200 and 300 JOD monthly (roughly 230-340 euro)⁸⁰, while 23.7 percent chose the range 300-400 JOD, which is the second biggest concentration.

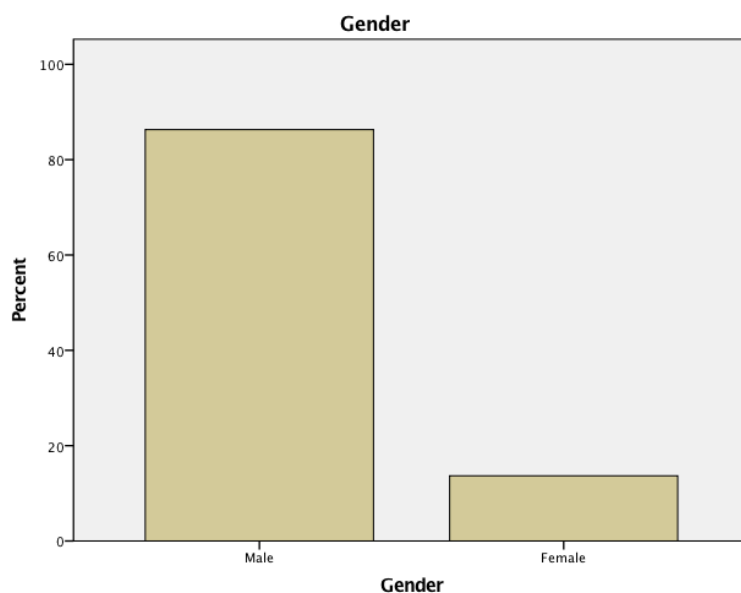


Fig. 4: Gender distribution of the full sample

⁸⁰ <https://www.xe.com/en/>: exchange rate website, accessed on April 12th, 2018.

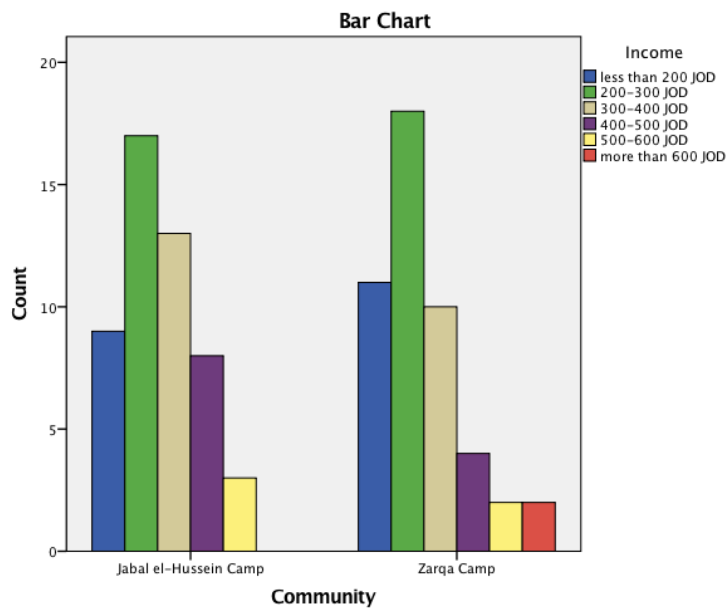


Fig. 5: Income distribution in the two communities.

In Table 1, it is possible to see that, on one hand, only 7.3 percent of the total respondents declared to have a household income above 500 JOD, while on the other hand, 20.6 percent have a total household income of less than 200 JOD. Among the latter group, some declared no income as their financial status, living off the charity of the camp.

When comparing the two camps, the results are similar. For instance: the higher percentage of people for both camps declared household income between 200 and 300 JOD (34 percent for Jabal el-Hussein and 38.3 percent for Zarqa). However, in Zarqa 4.3 percent declared an income of more than 600 JOD, while there was no one having the same income in Jabal el-Hussein.

Table 1: income distribution in the two communities

			Household income						Total
			Less than 200 JOD	200-300 JOD	300-400 JOD	400-500 JOD	500-600 JOD	More than 600 JOD	
Community	Jabal el-Hussein Camp	% within Community	18.0%	34.0%	26.0%	16.0%	6.0%	0.0%	100%
		% of Total	9.3%	17.5%	13.4%	8.2%	3.1%	0.0%	51.5%
	Zarqa Camp	% within Community	23.4%	38.3%	21.3%	8.5%	4.3%	4.3%	100%
		% of Total	11.3%	18.6%	10.3%	4.1%	2.1%	2.1%	48.5%
Total	% of Total	20.6%	36.1%	23.7%	12.4%	5.2%	2.1%	100%	

When looking at the household size, Fig. 5 shows that the mean for number of people per households in the camps is 6, with a standard deviation of 2.743, with the highest value 14 and lowest value 1. When looking at the two separate communities, small differences can be noticed.

In Jabal el-Hussein the size of the household falls in the range between 4 and 9 for 40 samples up to 51, while in Zarqa, there is a peak of 6 people per household indicated by 12 samples only and a more spread distribution of answers.

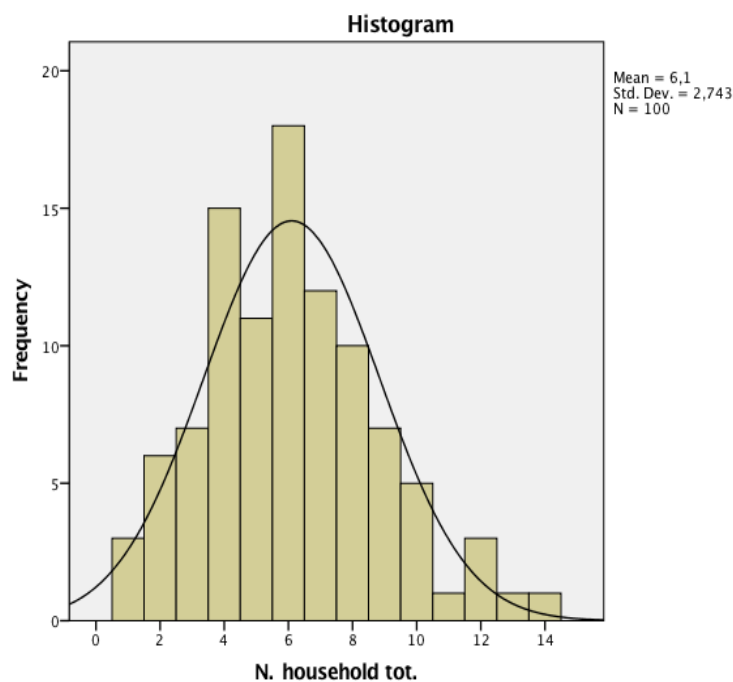


Fig. 5: number of people in the household

When asked about the type of house ownership, the findings show that the response has been similar between the two communities, with overall 60 percent of the respondents answering that they own the house, while 38 percent rents it. Some of the respondents specified that they have received it from UNRWA as related to their Palestinian refugee status.

5.2 Type of access to water

After looking at how the sample looks like, here are the findings on the type of access to water of the two camps. When asked about water supply and how many days a week people receive water, 71.7 percent of respondents declared they receive water once a week, 22.2 percent twice a week, 5.1 percent between three and six times a week and only 1 respondent claimed to have water supply 24/7 (see Table 2).

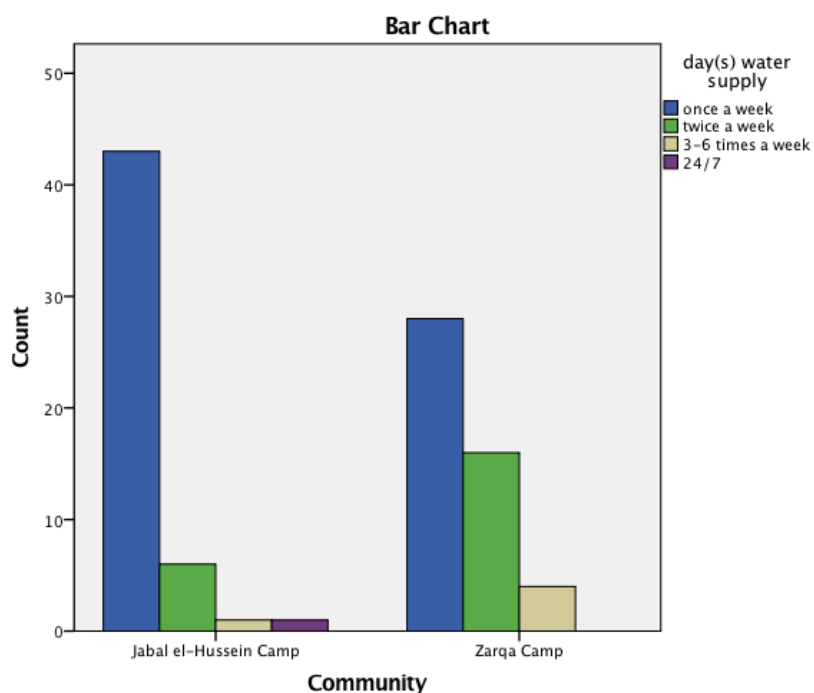


Fig. 6: Day(s) of water supply in the two camps.

When looking at the two camps separately, as in Fig. 6, it is noticeable that in Jabal el-Hussein camp more people than in Zarqa are supplied with water 2 days a week (16 respondents for the former and 6 for the latter).

Table 2: Overall responses on day(s) of water supply in both

		Percent	Valid Percent ⁸¹
Valid Data	Once a week	71.0	71.7
	Twice a week	22.0	22.2
	3-6 times a week	5.0	5.1
	24/7	1.0	1.0
	Total	99.0	100
Missing Data		1.0	
Total		100	

Another question involved the main source used for drinking purposes.

The options were various, such as:

- water from the tap;
- water from an external source within the household such as a well or a borehole;
- from an external source outside the household, such as a public fountain or a shared well;
- from a provider (like a tank-truck);

⁸¹ This percentage is based on the valid data and thus does not take into consideration missing data.

- bottled water;
- or others.

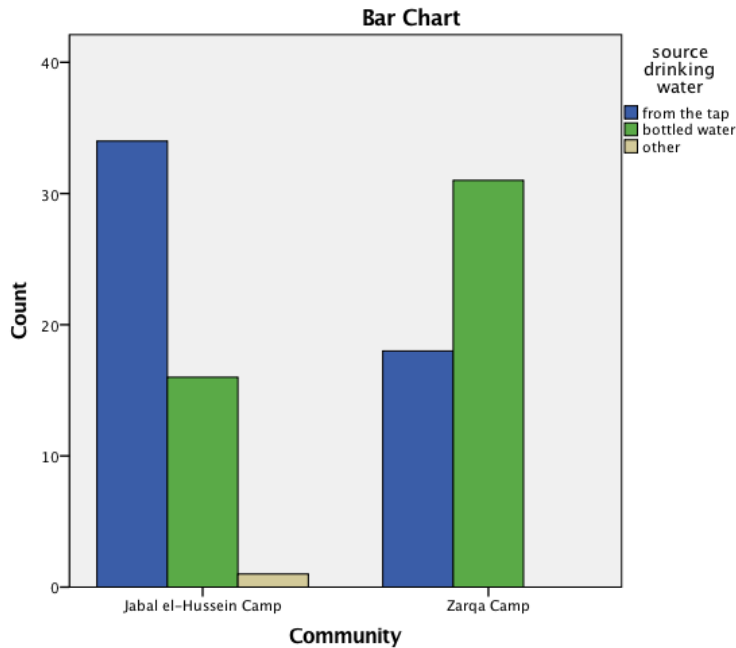


Fig. 7: main source of drinking water in the two camps.

However as seen in Fig. 7, only three of the options were chosen by the respondents of the two camps: tap water, bottled water and others, with a significant difference in the choice made by the respondents of the two camps. In fact, in Jabal el-Hussein camp, 66.7 percent of the respondents declared they use tap water as main source of drinking water, while in Zarqa camp people stating they use tap water were 36.7 percent.

The table also shows that, on the other hand, 63.3 percent of people in Zarqa use bottled water, whilst the respondents from Jabal el-Hussein using this source of drinking water are 31.4 percent. As a related aspect to the source of drinking water, I also asked what is the main source for other domestic purposes such as cooking, washing, taking a shower, etc. In this case, the response was homogeneous for the two camps, with 98 percent of respondents overall declaring they use tap water and the percentage is equal for both camp.

Table 3: Main source of drinking water in the two camps

			Source drinking water			Total
			Water from the tap	Bottled water	Other	
Community	Jabal el-Hussein Camp	% within Community	66.7%	31.4%	2.0%	100%
		% of Total	34.0%	16.0%	1.0%	51.0%
	Zarqa Camp	% within Community	36.7%	63.3%	0.0%	100%
		% of Total	18.0%	31.0%	0.0%	49.0%
Total		% of Total	52.0%	47.0%	1.0%	100%

Table 4: ways main source drinking water is treated

			Way of treating water				Total
			Using a water filter	Other	I don't know	I don't treat my water	
Main source of drinking water	From the tap	% of Total	21.9%	1.0%	0.0%	30.2%	53.1%
	Bottled water	% of Total	3.1%	0.0%	1.0%	41.7%	45.8%
	Other	% of Total	1.0%	0.0%	0.0%	0.0%	1.0%
Total		% of Total	26.0%	1.0%	1.0%	71.9%	100%

Overall, 71.9 percent of the respondents declared they do not treat their water, while 27 percent stated they do, as shown in Table 4.

27 percent of people declared they treat their water and of this percentage, 26 percent use water filter, with similar results between the two camps. However, taking into consideration the high percentage of people not treating water, Table 5 shows that in Jabal el-Hussein, 50 percent of respondents drinks tap water without treatment, while in Zarqa, only 10.4 percent does the same. In Jabal el-Hussein, water filter is used by only 18.8 percent of people drinking tap water while 25 percent use bottled water. In Zarqa, 37.5 percent of people drink tap water, while the rest 62.5 percent drink bottled water. 25 percent of people using tap water have a water filter.

Table 5: Ways of treating main source of drinking water in the two camps

Community			Ways of treating water				
			Using a water filter	Other	I don't know	I don't treat my water	Total
Main source of drinking water	Jabal el-Hussein Camp	From the tap	18.8%			50.0%	68.8%
		Bottled water	4.2%			25.0%	29.2%
		Other	2.1%			0.0%	2.1%
		Total	25.0%			75.0%	100%
	Zarqa Camp	From the tap	25.0%	2.1%	0.0%	10.4%	37.5%
		Bottled water	2.1%	0.0%	2.1%	58.3%	62.5%
		Total	27.1%	2.1%	2.1%	68.8%	100%

An important aspect to take into consideration regarding tap water is whether it smells, it has a taste and/or it looks dirty. On this matter, I report the tables for each of these issues (see Table 6, 7 and 8). Overall, the majority of respondents answered negatively on the matters, although in Zarqa the minority who stated an existing issue with tap water is more consistent than in Jabal el-Hussein. For example, in the former camp, 34.7 percent declared that water looks dirty, while in the latter only 15.7 percent stated the same (Table 7). The same is true for the question on the taste of water: Zarqa 44.9 percent affirms that water has a taste, against 29.4 percent in Jabal el-Hussein. Lastly, at the question if water smells, 14.3 percent in Jabal el-Hussein state that tap water has a bad smell, whilst the number for Zarqa is 26.5 percent.

Table 6: tap water taste

			Does water have a taste?		Total
			Yes	No, tasteless	
Community	Jabal el-Hussein Camp	% within Community	29.4%	70.6%	100%
		% of Total	15.0%	36.0%	51.0%
	Zarqa Camp	% within Community	44.9%	55.1%	100%
		% of Total	22.0%	27.0%	49.0%
Total		% within Community	37.0%	63.0%	100.0%
		% of Total	37.0%	63.0%	100%

Table 7: tap water appearance

			What does the water look like?		Total
			Clear	Cloudy/dirty	
Community	Jabal el-Hussein Camp	% within Community	84.3%	15.7%	100%
		% of Total	43.0%	8.0%	51.0%
	Zarqa Camp	% within Community	65.3%	34.7%	100%
		% of Total	32.0%	17.0%	49.0%
Total		% within Community	75.0%	25.0%	100.0%
		% of Total	75.0%	25.0%	100%

Table 8: tap water taste

			Does water smell?		Total
			No smell	Bad smell	
Community	Jabal el-Hussein Camp	% within Community	85.7%	14.3%	100%
		% of Total	42.9%	7.1%	50.0%
	Zarqa Camp	% within Community	73.5%	26.5%	100%
		% of Total	36.7%	13.3%	50.0%
Total		% of Total	79.6%	20.4%	100%

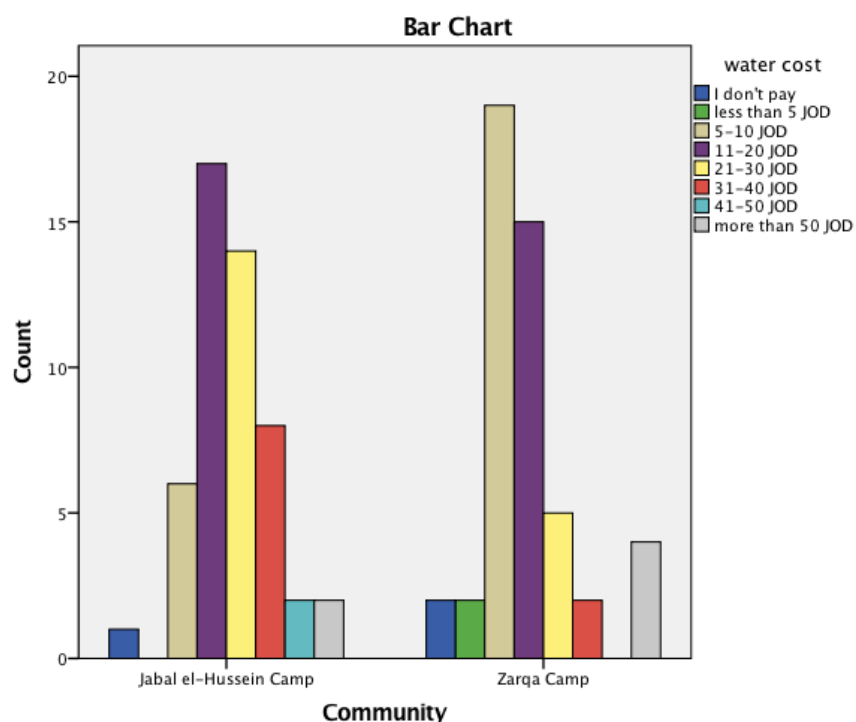


Fig. 8: water bills for three months period

Fig. 8 shows how much households spend in the three months period for water differentiating by the two camps. It shows that in Jabal el-Hussein 17 percent spend between 11 and 20 JOD for water bills and 14 percent spends between 21 and 30 JOD. In Zarqa, 19 percent spends between 5 and 10 JOD and 15 percent between 11 and 20 JOD. Only in Zarqa there are few cases of people spending more than 50 JOD for water (4 percent).

5.3 Issues in the camps

The last part of the findings deals with the four key themes, mainly addressed by the open-ended questions of the survey, which I coded to highlight key concepts. Since several respondents mentioned more than one concept in their answers, it seems from the tables that the sample is bigger, however it is only because there are some answer that recur more than others. The first open-ended question dealt with the challenges and/or issues in living in that particular area. First of all, there is a 20% of missing data, since several people left this question blank. This fact also happens for other open-ended questions. This question was asked at the beginning of the survey, after general information regarding the household.

Table 9: issues related to living in the camp area

Problems related to living in the camps			
		Responses	
		N	Percent
What are the main issues with living in the area?	Overpopulation and housing conditions	9	7.1%
	Lack of cleanness and orderliness	22	17.3%
	Poor services and infrastructure	16	12.6%
	People's ethics and behaviors	6	4.7%
	Crime and drugs	19	15.0%
	Sewage system	5	3.9%
	Water-related issues	24	18.9%
	Unemployment and poverty	10	7.9%
	There are no problems	6	4.7%
	Electricity shortage	2	1.6%
	Others	8	6.3%
	Total		127

When analyzing the data, several key concepts stood out and were coded as they appear in Table 9. I grouped issues as I believed similar or with related effects such as the category containing “crime and drugs”, which also includes “gangsters” and safety issues. This response occurred 19 times and 15 percent of the respondents brought it up.

Another main answer is related to water issues, where I grouped any sort of problem such as weak water pressure, limited supply period, bad water quality, and disagreements with Water Authority⁸²). In fact, 18.9 percent of respondents reported an issue related to water. The third theme that was reported 22 times (17.3 percent) regards overall dirtiness, traffic, noise and lack of orderliness in the camp. Other themes, which were recurrent, although less than the ones already mentioned, are, for instance, poor services, which mainly referred to infrastructure, transportation and lack of government intervention (here it can be added the issue of sewage system which alone concerned 4 percent of people). Secondly, overpopulation, housing conditions and the feeling the camp is overcrowded were also important issues, mentioned by 7 percent of the respondents. Unemployment, poverty and high living cost were matter of concern of 8 percent of the people, while “people’s ethics and behaviors”, especially related to young people were mentioned by 4.7 percent of respondents.

Table 10: problems living in the camps in the two camps

		Problems living in the camps										
		Overpopulation and housing conditions	Lack of cleanliness and orderliness	Poor services and infrastructure	People's ethics and behaviors	Crime and drugs	Sewage system	Water-related issues	Unemployment and poverty	There are no problems	Electricity shortage	Others
Community	% within Jabal el-Hussein Community	15.0%	20.0%	27.5%	10.0%	15.0%	5.0%	17.5%	17.5%	5.0%	2.5%	12.5%
	% within Zarqa Community	7.5%	35.0%	12.5%	5.0%	32.5%	7.5%	42.5%	7.5%	10.0%	2.5%	7.5%

In order to study whether there are differences in the two communities’ perception of challenges and issues in the camp, Table 10 highlights the responses of the multiple-response set related to “problems in the camps” combined with a cross-tabulation. On one hand, “crime and drugs”, “lack of cleanness [...]” and “water-related issues” are perceived as issues more for respondents in Zarqa (respectively, 32.5, 35.0 and 42.5 percent), than in Jabal el-Hussein (respectively, 15.0, 20.0 and 17.5 percent). On the other hand, “poor services and infrastructure”, “Overpopulation and housing conditions” and “Unemployment and poverty”

⁸² Water Authority of Jordan (WAJ) falls under the Ministry of Water and Irrigation but at the same time it has its own tasks, which are dealing with water and sewage systems. For instance, it is the main actor dealing with water supplies and water distribution to households. (source: <http://www.mwi.gov.jo/sites/en-us/default.aspx>)

are more prominent among respondents in Jabal el-Hussein (correspondingly, 27.5, 15.0 and 17.5 percent) than in Zarqa (correspondingly, 12.5, 7.5 and 7.5 percent).

The second key theme deals with the issue of water shortage and, first of all, respondents were asked if and how often they experience it. Table 11 shows that 54 percent of people claim they never experience water shortage, while 16 percent states it happens once a week.

Table 11: frequency of water shortage

Frequency of water shortage			
		Percent	Valid Percent
Valid	Once a week	16.0	16.2
	2-3 times a month	5.0	5.1
	Once a month	6.0	6.1
	Every 2-3 months	7.0	7.1
	Every 6 months	3.0	3.0
	Once a year	8.0	8.1
	Never	54.0	54.5
	Total	99.0	100
Missing	System	1.0	
Total		100	

11 percent of the respondent affirmed that the water shortage happens at least once a month, while 18 percent declared that it happens either every two/three months, every six months or once a year. Several of the people belonging to this group claimed it is related to summer period where water shortage is greater and more often. When using cross-tabulation to compare the responses of the two camps, fig. 9 shows a few differences.

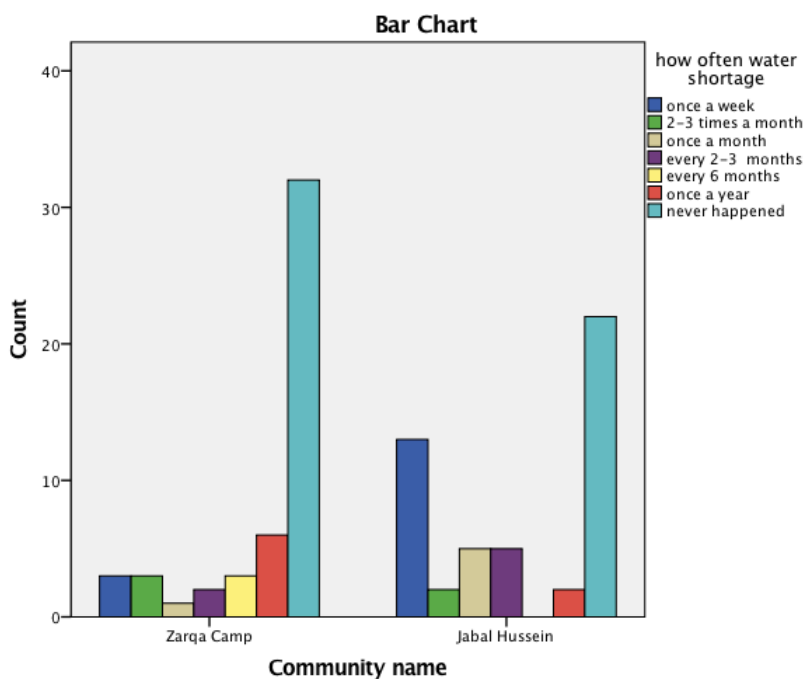


Fig. 9: frequency of water shortage in the two camps

For instance, while in Zarqa, 26.5 percent of the respondents experience water shortage once a week, the number is much lower in in Jabal el-Hussein (only 6 percent).

On the other hand, the percentage of people who claim never experiencing water shortage is 64 percent in Jabal el-Hussein and 44.9 percent in Zarqa.

Table 12: Ways of dealing with water shortage

		Responses	
		N	Percent
How do you cope with water shortage?	Calling an external supplier (water-tank)	28	26.4%
	Borrowing water from neighbors	12	11.3%
	Sharing extra water tank with neighbors	2	1.9%
	Buying from stores or from Water Authority	3	2.8%
	There is no water shortage	52	49.1%
	Others (storing water)	9	8.5%
Total		106	100%

The open question dealing with the ways how people cope with water shortage (see Table 12) brought up two main solutions used: calling an external supplier which come with a water tank or asking the neighbors for extra water. These two options were mentioned by the respondents respectively 28 and 12 times (26.4 percent and 11.3 percent), with several people citing both. Other methods mentioned were: buying bottled water from stores or asking for extra supply from water authority (2.8 percent), sharing a water tank among neighbors or storing water during the supply period.

Table 13: ways of coping with water shortage in the two camps.

		Ways of coping with water shortage ^a					
		Calling an external supplier (water-tank)	Borrowing water from neighbors	Sharing extra water tank with neighbors	Buying from stores or Water Authority	There is no water shortage	Others (storing water)
Community	% within Jabal el-Hussein Community	22.9%	10.4%	2.1%	2.1%	62.5%	6.3%
	% within Zarqa Community	35.4%	14.6%	2.1%	4.2%	45.8%	12.5%
Percentages are based on respondents.							

a. Dichotomy group tabulated at value 1.

If we look at the answers each community gave, it is noticeable that 62.5 percent of the responses in Jabal el-Hussein entails that there is no water shortage, while 45.8 percent of people in Zarqa affirmed the same. This slight difference can be linked to the results get in Fig. 9 which showed how circa 12 percent of people in Zarqa experienced water shortage once a week, while in Jabal el-Hussein it was circa 4 percent. Among the ways people cope with water shortage, “calling an external supplier” was the prominent answer for both camps, 35.4 percent for Zarqa and 22.9 percent for Jabal el-Hussein, followed by “borrowing water from neighbors” respectively for the the two camps, 14.6 and 10.4 percent. Other methods of coping with water shortage such as storing water reported different percentage for the two camps as well, 6.3 percent for Jabal el-Hussein and 12.5 percent for Zarqa.

The key theme of the third open-ended question regards whether or not there are differences in access to water in different parts of Jordan, according to the respondents. 73 percent of the respondents answered to this question.

Table 14: responses on differences in access to water

		Responses	
		N	Percent
How does access to water differ between different areas in Jordan?	In supply period	19	23.2%
	In the source of water	3	3.7%
	In water quality	20	24.4%
	In water pressure	5	6.1%
	In amount of water received	1	1.2%
	Due to “wasta”, wealth or corruption	7	8.5%
	There is no difference	25	30.5%
	Others	2	2.4%
Total		82	100%

Table 14 shows that 30.5 percent answered there is no difference in access to water among different areas in Jordan. Nonetheless, two main aspects recurred in the answers of several respondents. For instance, differences in supply period was mentioned 19 times (people claimed many areas get water more than two days a week), while disparities regarding water quality appeared 20 times, respectively 23.2 percent and 24.4 percent. Other relevant differentiating aspects were related to the source the water supplied comes from, better water pressure and the fact that some areas were privileged (specifying regarding quality and days

of supply) thanks to “wasta”⁸³, wealth, corruption or because they are located near the royal palace or in specific parts of West Amman.

Table 15 shows that the opinion of respondents in the two camps differs on the topic of whether there are differences regarding access to water in Jordan. In fact, while in Jabal el-Hussein camp, 48.6 percent state there are no differences, in Zarqa camp, only 19.4 percent believes the same. The opinion of remaining respondents seems to differ also regarding the differentiating aspects.

Table 15: the two camps’ perceptions on differences in access to water

		How does access to water differ between different areas in Jordan? ^a							
		In supply period	In the source of water	In water quality	In water pressure	In amount of water received	Due to “wasta”, wealth or corruption	There is no difference	Others
Community	% within Jabal el-Hussein Community	29.7%	2.7%	18.9%	10.8%	2.7%	0.0%	48.6%	0.0%
	% within Zarqa Community	22.2%	5.6%	36.1%	2.8%	0.0%	19.4%	19.4%	5.6%
Percentages and totals are based on respondents.									
a. Dichotomy group tabulated at value 1.									

For instance, differences due to “wasta”, wealth or corruption are considered a relevant factor by 19.4 percent of people in Zarqa, but by none in Jabal el-Hussein. Additionally, difference in water quality recurs more among the answers in Zarqa (36.1 percent) than in Jabal el-Hussein (18.9 percent).

On the other hand, differences in water supply period and in water pressure are mentioned by 29.7 and 10.8 percent of respondents in Jabal el-Hussein. Regards the two points, 22.2 and 2.8 percent correspondingly gave these responses in the other camp.

The fourth and last open question referred to things related to access to water that need to be improved and 81 people out of 100 gave a response. Table 16 highlights several concepts that pop out from the coding I made.

⁸³ Wasta: it comes from Arabic and it is a form of favoritism sometimes based on belonging to a tribe, or because of family connections or interpersonal relations. Thanks to this network, a variety of services and advantages are accessible. (Source: Ramady, Mohamed, A. *The Political Economy of Wasta: Use and Abuse of Social Capital Networking*. 2016. Springer. P. 3)

Table 16: necessary improvements in access to water

		Responses	
		N	Percent
What improvements regarding access to water should be made?	Filter water	21	17.5%
	Improve water quality or treat water more	27	22.5%
	Improve water infrastructure	15	12.5%
	Improve sewage network	3	2.5%
	Increase awareness of people on water issues	4	3.3%
	Improve water authority's management	3	2.5%
	Extend water supply period	15	12.5%
	Make water more affordable	6	5.0%
	Improve water source	16	13.3%
	No improvements are possible	3	2.5%
	Others	7	5.8%
Total		120	100%

There are five main key themes that recurred:

- Filtering water more, mostly meaning central filtration plants or install filters in houses (17.5 percent)
- Improving water quality and treating water (this last component can also be related to the suggestion mentioned above) which was mentioned 22.5 percent of times;
- Improving the source water from the camps comes from and many respondents suggested connecting the camps to the newly discovered Disi Aquifer (mentioned by 13.3 percent);
- Extending water supply period, with several people asking for at least two days of supply a week (suggestion mentioned by 12.5 percent)
- Enhancing water infrastructure (such as installing better pipelines and fixing water leakage, for instance), this being mentioned again by 12.5 percent.

Other improvements mentioned were related to making drinking water more affordable (5 percent), increasing awareness on water scarcity and issues among people (3.3 percent), better relations and behaviors with Water Authority officers (2.5 percent), and enhance the sewage system (also 2.5 percent). Three people stated that things are damaged in such a way that cannot be fixed, with a particularly striking sentence by an old man that affirmed: “we cannot fix what time has ruined”.

Table 17: the two camps’ respondents’ opinions on necessary improvements in access to water.

		What improvements regarding access to water should be made? ^a										
		Filter water	Improve water quality or treat water more	Improve water infrastructure	Improve sewage network	Increase awareness of people on water issues	Improve Water Authority's management	Extend water supply period	Make water more affordable	Improve water source	No improvements are possible	Others
Community	% within Jabal el-Hussein Community	34.1 %	26.8%	24.4%	4.9%	2.4%	4.9%	14.6 %	9.8%	14.6%	7.3%	12.2%
	% within Zarqa Community	17.5 %	40.0%	12.5%	2.5%	7.5%	2.5%	22.5 %	5.0%	25.0%	0.0%	5.0%

Percentages and totals are based on respondents.

a. Dichotomy group tabulated at value 1.

When looking separately at the two camps' responses, shown in table 17, several differences are visible. For instance, improving water quality is a suggestion brought up by 40 percent of people in Zarqa against 26.8 percent in Jabal el-Hussein. This can be linked to the bigger perspective of differences in water quality among the respondents of Zarqa shown in Table 15. On the other hand, filtering water is considered a prominent improvement more for people in Jabal el-Hussein (34.1 percent) than in Zarqa (17.5). An additional aspect highlighted more in Jabal el-Hussein than in Zarqa regards enhancing water infrastructure and the sewage network (29.3 percent against 15 percent).

6. Analysis

In this chapter, the main results and key themes of the findings will be highlighted. To do so, the finding discussion will connect with different sections of this thesis, such as introduction, literature review and conceptual framework. Three main aspects emerge from the findings: the first one regards the variety of issues that comes with water scarcity. The second one concerns the existing differences in access to water between the two camps and in Jordan. The last one highlights the ways used to cope with water scarcity, awareness on the issues and improvements needed according to the respondents.

6.1 Water issues

First of all, it is important to clarify that, as stated in the introduction of this study, there are several existing issues related to water, which affects people living in Jordan, not just those living in refugee camps. The report by the Ministry of Water and Irrigation (MWI)⁸⁴ highlights, for instance, the reality of intermitting water supply that concerns almost all the people in Jordan. However, in the report, a few issues such as affordability and water quality are considered dealt with by the authorities, while criticisms regarding the approach of managing water resources held by Jordanian institutions are stated in the Working Paper of the Economic Research Forum.⁸⁵

The reality stated by people in the camps appears also different. For instance, findings of the surveys show how several people (9.8 percent in Jabal el-Hussein and 5 percent in Zarqa) complain about water bills not being affordable, despite MWI claiming water prices are subsidized. This can be related to the fact that poverty and unemployment are spread in the refugee camps and thus being able to afford to pay for water can become an issue, especially when almost 8 percent of total respondents are lamenting economic hardship, with a higher percentage in Jabal el-Hussein than in Zarqa.

Additionally, despite the MWI claiming water quality complies with the standards provided by the World Health Organization (WHO), 40 percent of the respondents stated several aspects needing improvements. These were related to water quality and respondents suggested filtering the water or treating tap water more. Nonetheless, despite this high percentage commenting on the quality of water (with a minor group of respondents stating that water has bad taste and smell and looks cloudy), 29 percent of the respondents use tap

⁸⁴ National Water Strategy of Jordan, 2016-2025

⁸⁵ Grover, Velma, I., Darwish, Abdel, R., Deutsch, Eliza. *Integrated water resources management in Jordan. Working Paper 577*

water as main source for drinking without any treatment and this can imply health-related risks or diseases. The literature review highlighted and addressed the risks related to contaminated water, such as in the case of Shatila camp in Lebanon.⁸⁶ Moreover, when looking at the guidelines provided by WHO, we see that tap water is considered an improved source of drinking water. However, the report by the Economic Research Forum shows that tap water in Jordan is exposed to contamination and the findings highlight people's concern on water quality, poor water infrastructure, bad sewage system and the necessity to get water from a better source, such as the Disi Aquifer. For these reasons, I argue that the existing tap water in refugee camps cannot be considered an improved source for drinking, unless water is treated before and other several aspects are also enhanced such as the source and the existing water infrastructure.

Another relevant water issue regards the extension of water supply. In fact, the majority of people interviewed are supplied with water one day per week and it can be argued that this limited water supply clashes with the idea that a certain amount of water should be available and guaranteed to comply with personal and domestic needs. This aspect is likely to worsen considering the prediction of a decrease in renewable water resources that Jordan will experience in the near future, because of climate change, population growth and the other factors mentioned in the introduction.

Moreover, there are 20 000 Palestinian refugees in Zarqa Camp and 32 000 live in Jabal el-Hussein Camp. Despite of and due to the situation of protracted displacement, the right to water as a basic human right must be guaranteed in order for refugees to have a dignified life. Lastly, there are issues with the water and sewage infrastructures. In fact, 14.5 percent pointed out leakage of water pipelines as well as of sewage system, which lead to wastewater being mixed with tap water in several occasions, leading once more to lowering standards in water quality and increasing risks for people's health. Additionally, leakage is an issue not only for health, but which also contributes to nullify efforts to cope with water scarcity, since the already limited water resources go wasted in the process (56 percent of municipal water is lost). This has also been highlighted in the introduction as one of the main issues of management in Jordan. Thus, the several respondents' complaints about Water Authority (2.5 percent) can also be related to this situation and emphasize the necessity to reform management and the roles of the different branches of MWI dealing with water.

⁸⁶ Khoury, S., Graczyk, T., Burnha, G., Jurdi, M., Goldman, L. *Drinking water system treatment and contamination in Shatila Refugee Camp in Beirut, Lebanon.*

6.2 Differences

Findings show that there are differences in the type of access to water between Zarqa and Jabal el-Hussein camps.

First of all, the main source of drinking water is bottled water for Zarqa (63.3 percent) and tap water for Jabal el-Hussein (66.6 percent). Moreover, although more people in Jabal el-Hussein drink tap water, they do so without any treatment (50 percent), while in Zarqa more people, among the ones using tap water, treat their tap water (25 percent). However, I do not have data to help me investigate the reasons behind this consistent difference. I can just make few speculations based on other responses received. For instance, a reason behind the differences in choice could be related to higher awareness in Zarqa on water-related issues and health risks, which can be supported by the 42.5 percent of people in this camp mentioning water-related issues as challenge of living in the camps.

Additionally, Zarqa's respondents highlighted major differences in water quality when comparing different areas in Jordan (36.1 percent) and 40 percent suggested improvements regarding the water quality and treatment. Moreover, if we think that either buying bottled water or installing and changing yearly a water filter is more costly, this can relate to a matter of financial capabilities. In fact, according to UNRWA, 28 percent of Palestinian refugees living in Jabal el-Hussein have an income below the national poverty line. In Zarqa, the situation is slightly better, with 19 percent being in the same condition.⁸⁷ In the findings as well, although income levels are similar, the only respondents having an income above 600 JOD are in Zarqa.

Another aspect distinguishing the two camps regards the days of water supply. More than 40 percent of respondents in Jabal el-Hussein declare to receive water one day a week, while in Zarqa, 29 percent declares the same water supply, with a consistent percentage of 16 percent of people gets water at least two days in a row⁸⁸ per week. This factor was also highlighted when asked about differences between areas in Jordan and Amman. More people in Jabal el-Hussein claimed there are differences regarding water supply (29.7 percent), in particular comparing the camp (located in East Amman) and West Amman and Aqaba, which were said to receive water supply for more days a week. This also includes residential areas, while where the Royal Palace is water is supplied 24/7.

⁸⁷ Source: UNRWA, see <https://www.unrwa.org/where-we-work/jordan/zarqa-camp> and <https://www.unrwa.org/where-we-work/jordan/jabal-el-hussein-camp>

⁸⁸ The days of supply period are intended as consecutive, so when household receives two days a week water supply, it means in a row. For instance, during my staying in Amman, I received water from Tuesday night to Friday morning consecutively.

Another aspect distinguishing the two camps concerns the experience of water shortage. In fact, fewer people in Jabal el-Hussein camp claimed they had experience water shortage, while a minor, but consistent, percentage of circa 14 percent in Zarqa claimed to have water shortage weekly. These data are hard to interpret, because I did not further investigate this aspect in the data collection. This may indicate once again that the water supply in Amman, which is the capital of Jordan and bigger than Zarqa, might be better at keeping up with the demand. Lastly, the price people pay for water presents also some differences in the two camps, with few respondents in Zarqa declaring water bills higher than 50 JOD, which could be related to higher consumption of bottled water.

An interesting result received by the findings is the high percentage of people in Jabal el-Hussein believing there is no difference regarding access to water among different areas in Jordan (48.6 percent). This fact can be linked, once more, to a possible lack of awareness on water issues, a condition that it is higher among respondents in Jabal el-Hussein than in Zarqa camp.

Findings show that there are differences in access to water resources, these being regarding quality, supplying period, affordability as well as people's perception on water allocation. Taking into consideration the human right framework, it can be argued that safe access to water is thus not guaranteed to everyone in the same amount and quality standards. Additionally, the distributive justice framework helps highlighting the possible distributive norms adopted in apportioning water in Jordan. For instance, the fact that several respondents argue that difference in access to water is due to "wasta", wealth or corruption, could connect to the distributive norm, mentioned in the conceptual framework, based on power, while equality and need seem to be less taken into account by authorities in charge. Lastly, the perception of fairness among refugees regarding allocation of water seem negative, especially among people living in Zarqa who, to a larger extent, express that there are differences in access to water in Jordan.

6.3 Solutions, awareness and improvements

There are different ways to cope with water scarcity, according to the respondents. As stated in the introduction, people store water in water tanks on their roofs. However, it is possible that the amount of water is insufficient and thus the household runs out of water before the next supply period, especially in summer time. Thus, respondents who experience this situation highlighted the ways they cope with it. The main solutions are either calling an external supplier who comes with a water tank and fills up again (for a certain price, which,

however, I do not know) the tank on the roof or asking neighbors to borrow some of their water. Another interesting method implies calling the supplier and then share the amount delivered among two or more households in order to split the cost. Fewer people, instead, fill up barrels with water during the day(s) of supply, in order to use in case of emergency. The findings show an overall capability and resourcefulness to cope with water scarcity when needed, since for several people this issue is part of everyday life.

To understand how much awareness people have on water scarcity and issues, the question related to challenges of living in the camps give some insights. In fact, among issues related to living in the camps, water-related problems were mentioned by 17.5 percent and 42.5 percent for respectively Jabal el-Hussein and Zarqa. The percentage, especially in Zarqa, is quite consistent. However, it is important to realize it might be related to bias of the research. In fact, before starting the survey, the aim of investigating access to water was brought up and this might have influenced people's response to this question.

So, if, on one hand, this percentage has been somehow induced, on the other hand, it could be argued that the problem related to water scarcity and safe access to drinking water are not as pressuring and urgent for people as I would expect, considering the status of water resources of Jordan. Additionally, the rate of non-response to the open questions on water shortage, differences and improvements, is averagely around 20 percent, which could strengthen this argument. Furthermore, when looking at the challenges perceived by people about life in the camps, a variety of problems are seen as more important and threatening than water scarcity and water-related issues. Crime and drugs, poverty and unemployment, bad housing conditions and over-crowdedness are urgent issues. Issues as the aforementioned ones, which are represented by the studies of poverty by Hejoj and the one on housing conditions by Alnsour reported in the literature review, have an enormous impact on people's life in the camps and can influence people's view on other issues such as water scarcity. This is particularly true for Jabal el-Hussein, where water issues were mentioned less than other matters. In the framework of water as human right, awareness on water and its importance as well and people's involvement in decision-making are important factors, which seem lacking in Jordanian society, in particular among residents of the refugee camps. To tackle water issues and optimize water management, I argue that this inclusive process is fundamental and necessary, especially because of the "dry" future ahead.

This is particular relatable when looking at people's answers to the last question of the survey regarding improvements needed. This part highlights how water-related issues are far from being solved according to the respondents. In particular, the source water comes from in

Zarqa is not considered of good quality and Disi Aquifer was mentioned as acceptable alternative. However, this aquifer is a fossil type and thus the amount of water is not renewable and it is bound to be exhausted soon at the actual level of extraction. Another improvement required involves water infrastructure and sewage network, which causes leakages and infiltration of wastewater into tap water. This issue not only does not help coping with water scarcity, but also worsen the quality of water. Lack of responsibility by the WAJ is a fact reported by several respondents and related to the mismanagement of the whole water infrastructure. Thus, this organ needs improvements in both its organizational structure and way of behaving towards the citizens.

7. Conclusion

In this conclusive part, the aim is to attempt responding the research questions at the basis of this study and to show how this study has tried to build up on existing knowledge of access to water and Palestinian camps in Jordan in order to create more awareness and to suggest further research on the topic.

Findings and discussion has shown several issues regarding the access to water. These problems regard, first of all, intermittency in the water supply, which averagely lasts for one day a week. Secondly, water is not considered affordable by several respondents, which relates to general economic hardship and poverty linked to life in the camps. Thirdly, water contamination, sewage leakage and poor infrastructure are detrimental for the level of water quality in the camps, risking of spreading waterborne diseases.

Additionally, there are several aspects indicating that differences between the two camps exist. It seems that for certain aspects, such as ways of coping with bad water quality (bottled water) and awareness on issues and scarcity, Zarqa's respondents are better-off. However, in Jabal el-Hussein water shortage and bad quality are not considered as great issues as for Zarqa. Nonetheless, the latter aspect could lead people to experience higher health risks, since they are less likely to treat tap water before drinking it.

People's opinions on improvements needed regarding access to water is divergent between the two camps. Perceptions on differences about water in Jordan are different as well, with Zarqa's respondents claiming difference in aspects of water allocation exists.

The other side to the picture sees almost half of respondents in Jabal el-Hussein stating differences do not exist, with a minority stating that there are but concerns mainly supply period. In Zarqa, the existence of distinctions regards, above all, water quality and respondents highlighted how these inequalities are due to "wasta", corruption or wealth.

Thus, the conclusion to this study raises new questions: if, as shown by several findings, differences in water allocation exist, how consistent these are? Additionally, how different is life in refugee camps and other neighborhoods in relation to allocation and access to water? These questions need further and deeper investigations.

It is also necessary to highlight that the analysis of the findings and consequently the conclusions I was able to draw is partially limited by the structural limitation I highlighted in the methodology chapter. In fact, several question marks, while analyzing the responses,

remain unsolved, in spite of my attempt to gain more insights through the usage of open-ended questions.

At the same time, this basic weakness hindered my ability to make use of the distributive justice framework and thus of giving more in-depth analysis of people's perceptions on inequalities.

Nonetheless, this study attempted to contribute to the involvement of the field of social science into water issues, which are believed to be concern only of more natural scientific researches. I claim that the social science approach could, thus, help further investigations, especially by giving useful insights of people's perceptions on water issues. This could be possible by using the variety of methodological tools this discipline can offer, such as mixed methods, which now seems more suitable for the aims of this research.

Furthermore, I firmly believe that broader research is needed on access to water in Jordan. In particular, an analysis of water-related issues in Palestinian refugee camps is necessary to tackle health-related risks and waterborne disease. Additionally, an extensive exploration of differences and inequalities in water allocation between Palestinian refugee camps and other neighborhoods is highly important as well, since it might highlight lack of state actors' interest into vulnerable categories and their compliance with WHO guidelines. Lastly, part of the aim of this study is to highlight how Palestinian refugee camps experience a variety of issues, not only water-related. Especially now, when the focus rightly concerns new and urgent refugee crisis, it is also important not to forget people that since 1949 have been living in refugee camps, whose situation has improved, but it is still far from reaching the standards of a good quality of life. For these reasons, I consider this study important since it underlines difficulties related to a limited and unsafe access to water, especially for those who drink tap water without treating it, which contribute to the hardship of life in the camps. Water issues itself are not the first cause of low quality of life, but together with poverty, unemployment, crime and living in a dirty and overcrowded area all contribute to make life in the camps unbearable, hard and depriving refugees and non-refugees of the right to a dignified life.

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Appendices

Please see the attached documents “Appendix A” and “Appendix B”.

Appendix A

Hi, I am Giorgia Gusciglio, a Graduate student at Lund University, Sweden. I would like to collect some information on your household, specifically about your access to water. Your identity will be kept anonymous and undisclosed, by using a survey ID number. In any moment while filling up the survey, you can interrupt it if you don't feel comfortable with the questions. The data collected will be used for my master thesis in Sweden and published.

The survey will require 10 min circa. For any questions and infos on the data collected: giorgia.gusciglio.8404@student.lu.se.

Survey ID:

1) Community name:

- 1- Jabal Hussein camp
- 2- Zarqa Camp

2) Age: _____

3) Gender:

- 1- Male
- 2- Female

4) Number of household members in total: _____

Number of adult males: _____

Number of adult females: _____

Number of male children (less than 15 y.o.): _____

Number of female children (less than 15 y.o.): _____

5) Household income in JOD:

- 1= less than 200 JOD
- 2= between 200 and 300 JOD
- 3= between 300 JOD and 400 JOD
- 4= between 400 JOD and 500 JOD
- 5= between 500 JOD and 600 JOD
- 6= more than 600 JOD

6) Type of Ownership of the place of residence (1-4): _____

- 1= owned by HH Head/Member
- 2= Rented/Hired
- 3= Free Living
- 4= other, specify _____

7) Type of household: _____

- 1= house
- 2= apartment
- 3= tent
- 4= other, specify _____

8) What are the main problems/challenges living in this neighbourhood?

9) Do you have electricity in your household?

- 1= yes, 24H supply
- 2= yes, but limited hours:
 - a-less than 4 hours
 - b-between 4 and 8 hours
 - c-between 8 and 12 hours
 - d-more than 12 hours
- 3= no

10) How many days a week you get water supply?

- 1- once a week
- 2- twice a week
- 3- between 3 and 6 times a week
- 4- 24/7

11) Where do you get your main source of drinking water?

- 1= from the tap
- 2= from an external source within the household (for example a well in the garden)
- 3= from an external source outside the household (for example: a public fountain or well)
- 4= from a provider who delivers it (tank-truck)
- 5= bottled water
- 6= other (specify)_____

12) In case bottle water is used as main source of drinking water, what type of water source is used for other purposes such as cooking, washing, sanitation, ect.?

- 1= from the tap
- 2= from an external source within the house (for example a well in the garden)
- 3= from an external source outside the house (for example: a public fountain or well)
- 4= from a provider who delivers it
- 5= other (specify)

13) If you get the main source of drinking water externally, how long does it take to go there, take the water and come back?

- 1. n. of minutes:_____
- 2. Water is available in the household or yard
- 3. I do not know

14) Do you treat your water in any way to make it safer to drink?

1. Yes
2. No
3. I do not know

15) What do you usually do to treat the water?

1. Boil
2. Add bleach or chlorine
3. Use a water filter
4. Other (specify)
5. I do not know
6. I don't treat my water

16) How much water in total does the household use per week approximately?

1. ___ m³/w
2. I do not know

17) How much does water (drinking water and water for the other activities) cost in a three month period for the whole household?

- 1= I don't pay
- 2= less than 5 JOD
- 3= between 5 and 10 JOD
- 4= between 11 and 20 JOD
- 5= between 21 and 30 JOD
- 6= between 31 and 40 JOD
- 7= between 41 and 50 JOD
- 8= more than 50 JOD

18) Have you experienced water shortage or lack of water?

1. Yes
2. No
3. I do not know

19) How often does it happen?

1. once a week
2. 2-3 times a month
3. once a month
4. every 2-3 months
5. every 6 months
6. once a year
7. never happened

20) If yes, could you describe the experience for the household and how did you cope with the situation?

-

-

21) Do you think access to water differs between different parts in Jordan?

- 1. Yes
- 2. No
- 3. I do not know

22) In which ways, you think there are differences?

23) How would you define your access to drinking water?

Circle from 1 to 5, 1 strongly disagree to 5 strongly agree.

available 24/7:

1 - 2 - 3 - 4 - 5

affordable:

1 - 2 - 3 - 4 - 5

good quality of the water:

1 - 2 - 3 - 4 - 5

24) Are you aware of diseases associated with unimproved access to water?

1= Yes

2= No

25) Have you experienced diseases that can be associated with unimproved access to water?

1= Yes, specify: _____

2= No

3= I do not know

26) Generally, how does the water smell?

1= No smell

2= Bad smell

27) Generally, does the water have a taste?

1= Yes

2= No (tasteless)

28) Generally, what does the water look like?

1= Clear

2= Cloudy/ dirty

29) What do you think are things about access to water which need to be improved?

Thank you for the collaboration!

Appendix B

مرحباً، أنا اسمي جورجيا غوشيليو، طالبة ماجستير في جامعة Lund السويدية. أجمع بعض المعلومات عن بيتكم، تحديد عن تزيديكم بالمياه. لن يتم نشر هويتكم وستبقى سرية من خلال استخدام رمز متسلسل للاستبيان. بإمكانك التوقف عن استكمال الاستبيان في عدم شعرت بعدم الارتياح للأسئلة المطروحة. البيانات التي سيتم جمعها ستستخدم لأغراض إتمام رسالتي الماجستير وسيتم نشرها في السويد. الاستبيان يحتاج تقريباً ١٠ دقائق. لأي استفسار بخصوص البيانات التي يتم جمعها بإمكانكم إرسال بريد إلكتروني إلى العنوان التالي: giorgia.gusciglio.8404@student.lu.se.

الرقم المتسلسل للاستبيان:

١. التجمّع السكاني (المخيم):

أ. مخيم جبل الحسن

ب. مخيم الزرقاء

٢. العمر: _____

٣. الجنس:

أ. ذكر

ب. أنثى

٤. العدد الإجمالي لأفراد الأسرة: _____

عدد الذكور البالغين: _____

عدد الإناث البالغات: _____

عدد الذكور الأطفال (تحت ١٥ سنة): _____

عدد الإناث الأطفال (تحت ١٥ سنة): _____

٥. الدخل الإجمالي للأسرة بالدينار:

أ. أقل من ٢٠٠ دينار

ب. بين ٢٠٠-٣٠٠ دينار

ت. بين ٣٠٠-٤٠٠ دينار

ث. بين ٤٠٠-٥٠٠ دينار

ج. بين ٥٠٠-٦٠٠ دينار

ح. أكثر من ٦٠٠ دينار

٦. صفة مكان الإقامة:
أ. بيت ملك
ب. بيت مستأجر
ت. عيش حر (البيت لا يملكه أحد)
ث. غير ذلك _____

٧. نوع البيت:
أ. بيت مستقل
ب. شقة في عمارة
ت. خيمة
ث. غير ذلك _____

٨. ما هي أهم المشاكل التي تواجهك للعيش في هذه المنطقة/الحي؟

٩. هل لديك كهرباء في منزلك؟
أ. نعم، بشكل متواصل لمدة ٢٤ ساعة
ب. نعم، ولكن لساعات محددة
- أقل من ٤ ساعات
- بين ٤-٨ ساعات
- بين ٨-١٢ ساعة
- أكثر من ١٢ ساعة
ج. لا

١٠. لمدة كم يوم تصلك المياه إلى البيت (مياه البلدية)؟
أ. مرة في الأسبوع
ب. مرتين في الأسبوع
ت. من ٣-٦ مرات في الأسبوع
ث. بشكل مستمر (٢٤ ساعة في اليوم وعلى مدار الأسبوع)

١١. ما هو المصدر الرئيسي لمياه الشرب لديك في المنزل؟
أ. المياه العادية (الحنفية)
ب. من بئر مياه تابع للمنزل
ت. من بئر ماء أو بئع قريب من الحي
ث. من مزود مياه (صهريج مياه)
ج. مياه معبأة (قوارير مياه)
ح. غير ذلك _____

١٢. في حال كنت تستخدم المياه المعبأة كمصدر أساسي لمياه الشرب، ما هو مصدر المياه الذي تستخدمه لأغراض أخرى مثل الشطف والغسيل... إلخ؟
أ. المياه العادية (الحنفية)
ب. من بئر مياه تابع للمنزل
ت. من بئر ماء أو بئع قريب من الحي
ث. من مزود مياه (صهريج مياه)
ج. غير ذلك _____

١٣. إذا تحصل على مياه الشرب من مصدر مياه خارجي (غير الحنفية)، كم تحتاج من وقت للحصول على الماء والعودة إلى البيت؟
أ. عدد الدقائق _____
ب. المياه متوافرة في حديقة المنزل
ت. لا أعرف

١٤. هل تعالج مياه الشرب بأي طريقة كانت لتصبح صالحة للشرب بشكل أفضل؟
أ. نعم
ب. لا
ت. لا أعرف

١٥. ماذا تفعل لمعالجة المياه؟
أ. أقوم بتسخينها لدرجة الغليان
ب. أقوم بإضافة مبيض أو كلور
ت. أستخدم فلتر مياه
ث. غير ذلك _____
ج. لا أعرف
ح. لا أقوم بمعالجة المياه أصلاً

١٦. كم تستهلك من المياه تقريباً بشكل أسبوعي؟
أ. _____ متر مكعب / أسبوع
ب. لا أعرف

١٧. كم قيمة فاتورة المياه (مياه الشرب والاستخدامات الأخرى) لديك (كل ٣ شهور)؟
أ. لا أدفع فاتورة مياه
ب. أقل من ٥ دنانير
ت. من ٥-١٠ دنانير
ث. من ١١-٢٠ دينار
ج. من ٢١-٣٠ دينار
ح. من ٣١-٤٠ دينار
خ. من ٤١-٥٠ دينار
د. أكثر من ٥٠ دينار

١٨. هل سبق وأن انقطعت المياه عندك بشكل كلي؟
أ. نعم
ب. لا
ت. لا أعرف

١٩. في حال انقطعت عندك، كل كم من الوقت يتكرر ذلك؟
أ. مرة بالأسبوع
ب. من ٢-٣ مرات في الشهر
ت. مرة في الشهر
ث. كل ٢-٣ شهر مرة
ج. كل ٦ شهور مرة
ح. مرة في السنة
خ. لم يحدث أبداً

٢٠. في حدث وأن انقطعت عندك المياه، كيف تعاملت مع الموقف؟ ماذا فعلت حينها؟

٢١. هل تعتقد أن الحصول على المياه يختلف من مكان لآخر في الأردن.
أ. نعم
ب. لا
ت. لا أعرف

٢٢. إذا كان جوابك نعم، ما هي جوانب الاختلاف؟ (مثل جودة المياه، فترات التزويد...إلخ)

٢٣. كيف تقيّم تزيّدك بمياه الشرب؟ (٥ ممتاز، ١ سيء)

أ. توافر المياه بشكل مستمر (٢٤ ساعة على مدار الأسبوع)

١ - ٢ - ٣ - ٤ - ٥

ب. سعرها في المتناول

١ - ٢ - ٣ - ٤ - ٥

ت. جودة المياه جيدة

١ - ٢ - ٣ - ٤ - ٥

٢٤. هل لديك فكرة عن الأمراض التي يمكن أن تصاحب المياه الغير صالحة للشرب؟

أ. نعم

ب. لا

٢٥. هل سبق وأن عانيت من مرض سببه شرب مياه غير صالحة للشرب؟

أ. نعم، المرض هو _____

ب. لا

ت. لا أعرف

٢٦. بشكل عام، هل مياه البلدية لديك لها رائحة؟

أ. لا

ب. نعم لها رائحة كريهة

٢٧. بشكل عام، هل مياه البلدية لديك لها طعم؟

أ. نعم

ب. لا

٢٨. بشكل عام، هل مياه البلدية لديك لها لون معين؟

أ. لا (مياه صافية)

ب. نعم (يوجد بها شوائب أو لون ضبابي أو أبيض بعض الشيء)

٢٩. برأيك ما هي الأشياء التي يجب تحسينها فيما يتعلق بمياه الشرب؟

شكراً لتعاونكم!