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“Embodying the Everyday Practices of Urban Water: the Discourse of Water Scarcity and
Women's Subjectivities in Amman, Jordan”

A Thesis submitted by Katrin Masharqa
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In partial fulfillment of the requirements for the degree of Master of Arts in Gender
and Women's Studies in Middle East/ North Africa
Specialization: Gendered Political Economies

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Abstract
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This thesis investigates the intricate links and interactions between women, water, and government in the Amman, Jordan context. The exploration showed that government water policies of intermittent water supply and strong water discourse are highly gendered. This exploration utilizes feminist political ecology and the Foucaultian framework concerned with governance, subjectivity, discourse, and power. A mix of quantitative and qualitative methods were used, and the bulk of the data was generated through interviews with several women living in East and West Amman, water experts, and government officials to contextualize the water stress in Jordan. Water in Jordan is of high political significance given its growing issue of shortages due to exploitation of available water resources. Therefore, a strong water discourse of scarcity is visible in the media and an instated governmental policy of intermittent water supply. Water scarcity in Jordan is presented as ‘common sense’ and supported by various storylines that justify government policies of extreme rationing. However, one must recognize that water scarcity discourse in Jordan is also covering up a massive inefficiency in managing water supply. The government is managing demand versus expanding supply, which results in placing a huge responsibility on citizens, especially women in households. Through policy and discourse, the government is exercising its power in formulating a type of subject and modifying women’s behavior to follow the hegemonic discourse of what this study calls “gendered water management”. Also, women formulate a subject position of “water managers” with the responsibility of water conservation in households.
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1. Introduction: Water Awareness

In 2008, a water awareness cartoon for children was distributed to over 6000 public and private schools in Jordan. The cartoon aimed to educate the public on conserving domestic water resources or else there would be extreme water scarcity. This cartoon was created by a leading Jordanian cartoonist, Emad Hajjaj prepared in collaboration with the Jordanian Hashemite Fund for Human Development (JOHUD- a non profit organization lead by Princess Basma) and the U.S. Agency for International Development. It was then distributed as part of the late Queen Alia Contest for Voluntary social work.

The cartoon presents water as an essential resource for Jordanian family since it is used for personal hygiene and general cleanliness. The chores inside the home like dishwashing and laundry washing are being carried out by a woman and a female domestic servant, and chores outside the home like car washing are being carried out by the men. It shows that there are various water wasteful practices being carried out by certain members of the family that should be replaced. The boy Ismail learns water conservation techniques at school and he tries to apply them at home. He starts with educating his careless father. Throughout the cartoon the water drops are personified and have dialogue with Ismail whenever he conserves or “saves their life”.

Ismail’s father is presented as wasteful and careless about the water since he does not fix leakages from the water tank, washes the car with a hose instead of a bucket, and keeps the faucet on while shaving.

The father also steals the water from his neighbors by tampering with the water meter so he does not have to pay for the water. There is also a shepherd outside the
town who needs to give water to his sheep. He then makes a hole in the water pipes and essentially steals the water.

Figure 3: Emad Hajjaj Cartoon- Water Theft. www.mahjoob.com

In Ismail’s household, they have a domestic servant that performs domestic chores who is portrayed as a “South Asian” that is ignorant about water scarcity and conservation techniques. Ismail, his mother, and grandmother all attempt to teach the domestic servant how to conserve water while performing domestic chores of washing vegetables, washing dishes, and washing clothes. On the domestic level, the messages involve using less water when possible and also promote the notion of “grey water” which means recycling water for different purposes.
The cartoon shows the worst case scenario and installs a form of fear of the difficulty to live without water, since people would not be able to attend to their personal hygiene or maintain a clean space to live in. Further, the expense of water is another great fear, especially that water could become more expensive than gold.
In the end, it rains and the population is relieved. The message is presented to the viewer; you must conserve water to be able to live well.

This cartoon is an inspiration for this thesis on many different levels. For starters, one can conclude that this cartoon was created because Jordan suffers from water shortage (such a cartoon would not be made in a water abundant country). In that sense, I placed this cartoon as part of a powerful water scarcity discourse in Jordan. The cartoon also illustrates the everyday usages of water on the domestic level as an essential resource in maintaining families’ well being in terms of cleanliness, health, and personal hygiene. It is critical to note here that this water management role inside the home is placed on women, where it is safe to conclude that it becomes part of a greater hegemonic discourse. The cartoon recreates stereotypical images and stereotypical roles of women performing household tasks over and over again, therefore reinforcing the discursive connection between women and domestic labor.
The other notion is that the cartoon portrays the water issue in Jordan as manmade and in a sense placing the full responsibility of the consequences of lack of water on citizen. So until the little town in the cartoon reached the point of no water, it was presented as a crisis caused by all the wasteful behaviors of the people. Even though these behaviors are truly wasteful, there is also the question of how the Jordanian government is actually handling water management. The cycle presented in the cartoon is simplistic; water as a supply resource and citizens demanding it. Citizens use water, and if they do not conserve or ration the water, then the consequence is no water supply. The cartoon omits that the Jordanian government is the main entity and institution managing the supply of water. The government’s role in water management is not evident from the cartoon. What is not shown is that the government possesses and exercises power over the citizens’ water access, demand and management in many different ways.

This thesis is about the spoken and unspoken messages the cartoon conveys, and the ways in which citizens respond to water discourse and policies; it is an exploration of the intricate relationship between gender, water, and government in Amman. After having spent several months living in the capital of Jordan, Amman, I can testify that it is difficult to deny that there is water shortage, as citizens receive water on an intermittent basis. There is also an ever-present reference to a public discourse around water scarcity, water savings, and women as water managers. It was clear to me that water scarcity and confining women to water management in households has become hegemonic or perceived as “common sense”. McGregor (2004, p.598) explains how
hegemonic discourse is a type of normalization in conversations using familiar language and concepts:

Their existence naturalised certain perspectives and denaturalized others. Constructing issues in the language of the dominant discourses was the most obvious, common and therefore powerful way to present issues and arguments. Dominant discourses did not need excessive explaining or legitimising as they were familiar, recognizable and accepted...

Hegemonic discourse provides a type of normalization in conversations which I found to be true throughout the fieldwork in different instances. During interviews, the role of women as household managers and their relations to water management came across as a "common sense" idea that did not require much explanation. This leads me to conclude that the idea had become part of a dominant or hegemonic discourse.

In Jordan, water has become an issue of high political significance, given that the country is classified on the international level as water poor. Water in Jordan is available through municipal piped water for most households, who receive intermittent water supply and a rationing policy that distributes water on a rotational basis. It is a typical sight in Amman, where this study takes place, to see rooftops full of tanks that are used to store the water and alleviate the water pressure (Rosenberg et al., 2008). When tanks become empty or the water supply does not arrive as planned, then households experience water shortages and might have to resort to buying water from private providers.
The distribution and availability of water in Amman is a process that reveals an intricate interplay of political, social, and economic aspects. Even though 98% of households in Amman are connected to the public water supply (Darmame et al., 2010), the reality of government-induced limitations on public water supply may impose unequal means of accessing and storing water. When stored water supplies run dry, wealthier households have access to additional water sources by buying private water.

Water is a resource used in agriculture, industry, and households. The modes of access and management transform water to become socially and politically constructed.
It becomes important to think through how people are accessing water, who is granted access to water and who is excluded, and who manages its usage and with what labor.

In this study, “gendered water management” and “water conservation” are two terms that refer to urban households and in the context of this thesis exclude rural settings. Urban household water management includes the various usages of water in domestic labor such as cooking, cleaning, personal hygiene, and washing clothes (Crow et al., 2002; Jorgensen et al., 2009; Leach, 2007; Sultana, 2009). These domestic tasks are often ‘feminized’ and linked to female roles (Sultana, 2009); they are often performed by either female family members or domestic servants (local or migrant women). When asking women in Amman about how they manage water, I referred to water usages in their domestic sphere only. As for conservation techniques, I asked the women I interviewed whether they were taking any measures to save water or had installed water conservation devices in their household.

I do not assume that water management is the responsibility of women or intend to recreate images of women necessarily performing domestic labor tasks. Instead, I seek to shed light on the strong hegemonic discourse around water management that exists in Jordan and portrays women as household managers, and I test this rhetoric against women’s actual experiences of everyday water management.

Throughout the thesis, I deconstruct interviews with different actors and conduct media analysis. Specifically, I deconstruct how governmental policy of intermittent supply form conservationist subjects and the gendered subjectivities produced around water use and water management. Deconstructive work is a tool meant to give rise to
change, question pre-existing and taken for granted categories, and open up new possibilities and imageries for the purpose of raising consciousness levels. The deconstruction of discourse or ‘common sense’ knowledge involves:

... prying apart the meanings and assumptions fused together in the ways we understand ourselves in order to see them as historically specific products, rather than as timeless and incontrovertible given facts (Davies et al., 2006, p.91).

This research aims to investigate the construction of water scarcity from the perspectives of different actors: water experts, government employees at both the Ministry of Water, and Miyahona Water Company, and women living in Amman. I want to be careful not to take water scarcity in Jordan for granted and account for the narratives and storylines that surround this discourse. This knowledge production also seeks to capture the multiplicity of subjectivities of women as water managers or water conservationists in Amman.

While the scope of this study did not allow for a representative sample of women living in Amman, my research recognizes that socio-economic differences and geographical location play a role in women’s experiences (Rocheleau, 1995). This study is concerned with the socioeconomic variations within Amman where East Amman is housing the urban poor and West Amman is housing the wealthy. I selected to interview women living in the area of South Marka in East Amman and the area of Sweifeyeh in West Amman. The aim is to also build a broader understanding of these women’s experiences in the specific economical, social, and political context of water management in the “two Ammans”.
I explore women’s experiences mainly through qualitative interviews, also using some quantitative data from reports and statistics. Furthermore, the theoretical approaches of feminist political ecology and the Foucaultian framework generate the tools and methodologies for analyzing the complex reality of the management of water scarcity by the Jordanian government and its implications on the daily lives of women living in the capital of Amman.

1.1. Theoretical Frameworks

The theoretical approach of feminist political ecology and the Foucaultian framework are critical in providing the tools and assessing what I observed through field work I conducted for several months in Amman, Jordan. In feminist research approaches, the process of theorizing is seen as inherently subjective and must be placed under scrutiny at all times by increasing consciousness about the means of knowledge production, power relations, discourses, and subjectivity (Wickramasinghe, 2010). These means are explored through theory to open up new possibilities for change and understanding reality further. Theory also helps conceptualize the multiplicity and shifting nature of subject positions that exposes various power dynamics that are at play both within the context of water management in Amman, and within the research process itself.

A Foucaultian framework suggests an awareness of the construction and exercise of power through discourse and governance (Foucault, 1982). First, I seek to recognize the power relations between researcher and research participants in the research process, and recognize the role of the “all-knowing” female researcher I may
have assumed, who exercises power and control over the information given or received from the women I interviewed. Second, I critically examine the power the government exercises over women-citizens as water managers through institutional procedures, and by dominating and producing a certain water scarcity discourse. Discourse here justifies the institutional practices that directly impact women’s lives and that create spaces for subject positions, in this case, women as water managers. Then, on the household level, discursive power structures may create spaces for men to act as providers and to operate in the public sphere, while women are portrayed as moving within the private sphere as household and water managers. This private/public sphere divide dominates Jordanian media, culture, and discourse in their response to water scarcity. This study assesses how far discursive stereotypes represent and affect the role of women as water managers or water conservationists in Amman, Jordan.

In addition to a Foucaultian theoretical framework, I explore feminist theoretical approaches to conceptualizing resource management. Feminist political ecology is an area of inquiry within geography that discursively aims to understand the politics of environmental conflicts of degradation, requirements for conservation, and the management of resources (Elmhirst, 2011). It is particularly helpful when examining the complex relationships between nature and society through focusing on the economics and politics of environmental struggles. It also opens up the space for a gendered perspective on water management and helps analyze the role of females in managing water in an urban context. Further, the feminist political ecology framework of analysis reveals
...how everyday practice is tied to the construction of scales such as the body, household, and city at large. An understanding of the ways in which gendered and cultural water practices are productive of particular social differences disrupts a framework in which distributional differences and “access and control” become the only means for understanding how water practices are tied to power and inequality (Truelove, 2011, p.144).

Faucaltian conceptualizations of power, discourse, and subject formation add theoretical tools for understanding the political ecologies of natural resource management and control taken by people, communities, and women in managing urban water. Conserving water and other environmental resources is important, since we are witnessing global degradation of natural environments that impacts the livelihood of many communities (Resureccion et al., 2008). The natural resource management of water in Amman entails clear political dimensions reflected in the mismanagement of water, and increases in social inequality caused by not allowing equal access to or usage of water to all citizens. The discourse and political power dynamics related to water management further impact the formation of subjects, or the women I interviewed, that either responded to or rejected the call for sustainable resource management (Elmhirst, 2011).

On a national level, the feminist political ecology perspective argues that water scarcity should not be looked at as only a water shortage that refers to a lack in the physical water quantities. Instead water scarcity ...

... is also a function of population and consumption levels within artificially-defined territorial limits, as well as technological and institutional capabilities that change over time [Meerganz von Medeazza, 2004] (Otero et al., 2011, p.1299).
Thus, physical water scarcity is the responsibility of the government and its institutions, and societies are required to handle this scarcity (Mehta, 2007, p.655). More importantly, when this water scarcity is being framed by the media or governmental institutions as simply a natural phenomenon of water shortage, it becomes discursively employed to serve the interests of the elites who profit from the social processes that produce this scarcity, often in the name of solving it [Kaika, 2005]. Framed as a collective, natural problem, scarcity galvanizes support for those in power and depoliticizes choice [Nevarez, 1996; Swyngedouw, 2004] (Otero et al., 2011, p.1299).

The strength and the prevalence of water scarcity in Jordan, and the fact that it is also translated into policies and institutional arrangements that effect power, I argue that it is best examined as a discourse. I have chosen to adopt the definition of discourse from the environmental political discipline since I am investigating an environmental water problem. Maarten Hajer (1997), in his work the “Politics of Environmental Discourse”, defines discourse as:

...a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities and reproduced and involve sets of practices that reinforce its meaning (p.2 of Chapter 2).

In order to critically question, analyze, and understand this strong discourse of water scarcity, it is significant to deconstruct the discourse itself. The exercise of deconstruction is, “The critical analytic work through which relations of power and the constitutive force of discourse is made visible” (Davies et al., 2006, p.99).

The discourses examined here engage various storylines that make the existence of water scarcity in Jordan seem like common sense. I have delineated common themes
and explanations of why there is water scarcity in Jordan through my interviews and from media analysis, and called them “storylines”. A storyline is:

... a generative sort of narrative that allows actors to draw upon various discursive categories to give meaning to specific physical or social phenomena. The key function of storylines is that they suggest unity in the bewildering variety of separate discursive component parts of a problem...As such storylines play a key role in the positioning of subjects and structures (Hajer, 1997, p.11 of chapter 2).

When exploring the positioning of subjects and structures in this research it becomes critical to look at the state of Jordan and its water policies which have a severe impact on the lives of people living in Jordan. The Foucaultian framework becomes beneficial in noting how the government is exercising power over its citizens through discourse and policy and aims to modify their behavior. The means by which governments control populations is referred to as governmentality, a term coined by Foucault in 1970s. Foucault (1982) theorizes governmentality as a method of governing from a distance by getting citizens to govern their own behavior according to certain laws, discourses, rules, or norms. According to this conceptualization, governments govern their citizens through discourses in the media, awareness campaigns, text books, policy formulations and others, prompting citizens as subjects to adapt their behaviors according to the norms and boundaries created by such discourses.

This thesis assumes that water scarcity in Jordan is an environmental problem the government is seeking to solve through modifying citizen’s behavior and to produce environmentally conscious subjects that conserve. This is where I also use the notion of environmentality – derived from governmentality –a term that emphasizes the links between government, environment, and subject formation. Here the concept of
environmentality helps understand how “technologies of self and power are involved in the creation of new subjects concerned about the environment”, or, by contrast subjects that may not be concerned with the environment for one reason or another (Agrawal, 2005, p.166).

The discourses that surround environmental problems such as water scarcity seeks to encourage environmentally sound behavior of water conservation and to produce more environmentally conscious conservationist subjects. Fletcher (2010) shows that there is a growing neoliberalist trend exhibited by governments’ responses and policies towards environmental conservation and natural resource management. Neoliberalism is not constricted to being a “capitalist economic process”, but is also a strategy adopted by governments for purposes of “governing human action in a variety of realms” (Fletcher, 2010, p.171). It is a political theory that suggests that the government creates and preserves an institutional framework in order to govern the citizens’ behavior through practices of

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\text{...maximization of entrepreneurial freedom within an institutional framework characterized by private property rights, individual liberty, unencumbered markets, and free trade. ... It must also set up military, defense, police, and juridical functions required to secure private property rights and to support freely functioning markets (Harvey, 2007, p.22).}
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These neoliberalist practices are exacerbating social, political and economical inequalities gives that it ends up that “wealth, power, and resources are appropriated by the few at the expense of the many” (Fletcher, 2010, p.172). The Jordanian government exhibits a neoliberalist trend in the post 1999 era, which is when King Abdulla II came to power. This trend is translated into various policies such as
privatizing the water company and raising the expense of water (Jordan Times, 2012), excessively relying on international aid and non governmental organizations to “solve” the water problem or support the poor, and focusing on providing most of the water to the capital Amman and especially to the West side where the wealthy live.

To take the example of how governmental policies has created two Amman’s (East and West Amman). From my field work and interviews with women from Sweifeyeh (West Amman) and South Marka (East Amman), there was a vast economical and visual disparity in terms of the areas. There was also disparity in terms of how citizens were handling the policy of intermittent water supply and implementing a system for managing the water whether through conservation, obtaining extra water storage, or purchasing private water. In that sense, the women were the ‘water managers’. The women in both areas were all connected to the public water supply or had the option to be connected.

In this thesis I am committed to feminist standpoint theory concerned with “subjectivity, identity politics and personal experience [Harding, 2004] that privilege woman’s ways of knowing” (Wickramasinghe, 2010, p.133). Through the theoretical framework of feminist political ecology, I am carefully bringing in women’s voices from field work to observe the discourse, policies and water management practices shaping women’s multiple subject positions as ‘water managers’ or ‘water conservationists’.

In this study, the notion of gender is crucial with its multiple meanings, and becomes a focal point in exploring everyday dynamics and practices that lead to oppression, discrimination, or degradation. Gender is significant in environmental and resource
management, as through “work, discourses of gender and the performance of subjectivities...gender is inextricably linked to how environments are produced” (Nightingale, 2006, p.2). The recognition that water management is gendered means recognizing men’s and women’s differentiated access to and control of environmental resources and socio-political processes (Elmhirst, 2011, p.129).

Gender includes an awareness of the social construction of “masculine” and “feminine” that influences individuals in their subjectivities and behaviors. It is a theoretical concept referring to “identities, roles and responsibilities, relations, needs and interests, as well as gendered characteristics, behaviors, performance” that shape social structures, actions, and interactions between men and women [Young 1988; Moser 1993; Butler 1999; Wickramasinghe 2000] (Wichramasinghe, 2010, p.47). This is as opposed to viewing the differences between men and women as “natural”.

In the next several chapters to come, the theoretical approaches outlined in this chapter are interlinked with data from the field in order to explore relationships between women, water, and government in Amman, Jordan. The first chapter outlines the methodology of this research; it clarifies the methodological framework underpinning this thesis research and explains the spatial context of Amman, Jordan. The second chapter examines how the government of Jordan manages the country’s water resources through policies and discourse. The third chapter is an analysis of the water scarcity discourse in Jordan, based on the justifications, storylines, and narratives explaining water scarcity used by the individuals I interviewed. In the fourth chapter, I portray the everyday practices and domestic usages of water through the stories of the
women I interviewed. The fifth chapter is dedicated to exploring the ramifications and power of the Jordan government on the people I interviewed in modifying behaviors and transforming citizens into water conservationist subjects.
2. Methodology: A Mix of Methods

In this chapter, I provide the framework for this thesis and the mix of tools and methods used for exploring complex relationships between women, government, power, and water scarcity discourse. I use relevant quantitative data, such as population statistics, water supply availability, maps, and water requirement figures for Amman. These numbers and figures are derived from academic journals or provided by Jordanian government agencies. I use these numbers as supporting evidence for data generated through interviews. However, the bulk of the data was collected through qualitative methods. I am most concerned with discourse, language, storylines and their implications on the daily lives of women as water managers in Amman. Interviewing is my primary source of data collection in the field. I created different sets of questions for water experts, government employees, and women as water managers (see Appendix for questions). In different instances I had to modify the questions according to the interviewees, opening the space for them to express themselves and keeping with the flow of the interview. In this sense, the interviews are semi-structured and flexible.

The research process involved monitoring the Jordanian newspapers both in Arabic and English (I am a native Arabic speaker), over a period of eight months for the purposes of analyzing the water scarcity discourse. I also conducted a literature review of gender and water, water as a natural finite resource, water as a social construct, and the history of water scarcity in Jordan. After completing the literature review, I commenced my field work in Jordan and started interviewing the research subjects (experts, government employees, and women). The process of field-based research
proved to be messy since it revealed a variety of opinions, discourses, and narratives that at times contradicted each other. Therefore, one of the challenges of this work was the process of linking academic knowledge with local knowledge produced from field research.

2.1. Interviewing Process: Positionality and Reflexivity

To remain true to the kind of feminist methodology I outlined above requires being cognizant of how my attitudes and beliefs are constructing the knowledge being produced in this research. I am a woman and identify myself as a feminist researcher who is committed to the feminist methodology that is self-reflexive and values women’s standpoints as the starting point for knowledge production (Wickramasinghe, 2010). That is due to the fact that I am enrolled in a Master’s degree in Gender and Women Studies and seek to fulfill my degree requirements by using feminist theories. My interest in gender and water resource management started when I first completed a course on “Gender, Space, and Environment” in late 2010. When I arrived in Amman, Jordan, in August 2011, I found it interesting that households received water intermittently. I also realized that this water sanctioning had immediate effects on gender roles as I witnessed women being confined to wash clothes on the day that water was delivered by the government.

My relationship to Jordan is personal, since I am a Palestinian carrying Jordanian citizenship. I am fluent in Jordanian Arabic and lived in Amman from the age of seven to twelve. I frequently travelled Amman during the summers to visit my extended family. When I returned to the city for field work in August 2011, I came to live with my mother
in West Amman and initially took up an internship at the Jordanian University. Most people I interacted with in the context of the research process deemed me a Jordanian. Many times the interviewees would make statements like, “You know how it is in Jordan, you saw how we had no rain last year.” Or, “Of course anyone who has lived in Jordan knows there is a water problem.” This position as a “Jordanian” probably granted me easier access to interviewees.

Further, I positioned myself differently depending on the research situation. For instance, when I went to conduct interviews at the Jordanian University Water Research Center, Ministry of Water and Irrigation, and Miyahona Water Distribution Company, I highlighted that I was an intern at the Jordanian University. I noticed that the interviewees were more comfortable to share information since I worked for a Jordanian government institution, just like them.

When I interviewed women in East and West Amman, I positioned myself as a Master’s student from Cairo and avoided associating myself with any governmental institution, given that the intermittent water supply could be a source of discontent towards the government. I wanted to maintain a level of neutrality during the interview process.

My subject position as a researcher was negotiated according to different situations and interactions with interviewees. For instance, when I went to East Amman for interviews, Ismahan who is an acquaintance who lives there, introduced me to her neighbors as, “Katrin is here to ask us about the water problem.” Everyone I came across seemed keen on sharing their “water problem”. However, one of the women
named Sanaa said to me jokingly, “We will tell you everything as long as you don’t report us to the government”. This joke was in fact very much political and reflective of citizens’ relationship with the Jordanian government. Firstly, this woman is married to a non-Jordanian citizen (an Egyptian), which may result in her perception to be granted fewer rights by the Jordanian government than other citizens and may result in certain fears towards the Jordanian government. The Jordanian government is viewed as authoritarian by citizens and installs in citizens the fear of being monitored, as people feel they enjoy limited freedom to express their opinions freely (Moghadam, 2010). On another note, it is evident how the “water problem” is often automatically discursively associated with the Jordanian government (more on this in later chapters).

In another situation, I was interviewing Ibtisam from West Amman who was disconnected from the government water supply and purchased her own water. She asked me to help her to get back the government water supply through my “connections”. Ibtisam positioned me as someone who had government connections. This put me in an uncomfortable situation and I had to politely decline for ethical reasons.

2.2. Finding the “Women Water Managers”

When I first started the research, my biggest concern was to find women water managers to interview since they are the focal point of this research. Initially, it seemed reasonable to find Non-Governmental Organizations that have projects that are gender and water related. In a basic internet search, I found many NGOs that run projects
targeting women and water conservation. One of the projects that gained exposure in
the daily newspapers was the Water Wise Women Initiative, a project to train women as
plumbers and teach various water conservation techniques (Jordan Times Online,
December 16, 2011). This project is organized by the Jordanian Hashemite Fund for
Human Development (JOHUD) and funded by the German Agency for International
Cooperation (GIZ).

I visited JOHUD and interviewed one of the trainers on the project, engineer
Eqbal Hamad. What I learned from her was that the project operates outside of Amman.
She also added that most projects on water resource management focus on low-income
areas (further discussion on this later). This meant that it was not possible to access
women through the NGOs, since I wanted to focus my research on women living in West
and East Amman.

I also interviewed a water expert who had recently completed her post
doctorate research in water management practices in East and West Amman, Dr.
Khadije Darmame (several of her articles are used in this research). I asked her how she
selected the women for her work on water management and conservation. She
indicated that they were randomly selected and backed up by socioeconomic statistics,
which is the method that I used in this research too. The other main criterion became
that these women identify themselves as responsible for managing their households
and are over the age of twenty-one. This study excludes domestic servants.

The other means of accessing women was presented to me when I was
conducting my interviews at Miyahona. The head of the Technical Support Unit of
Customer Services, engineer Abeer Momani, offered to give me the telephone numbers and addresses of households that have participated in their “Let’s Save Water” campaign. This campaign involved installing conservation devises for customers with high water bills. There were several reasons why I did not accept this offer. For one, when I researched this campaign I noticed that it was operating in West Amman only, since they are the highest consumers of water (Jordan Times Online, September 2, 2009). Moreover, I had ethical concerns with approaching interviewees this way and wondered how I would justify having access to their personal information. Further, I did not want to be associated with Miyahona as the company itself may be a source of discontent for some water users.

I chose to find female respondents by starting with acquaintances in both parts of Amman and using snowballing techniques to extend my sample. There are reasons that justify selecting the areas of South Marka and Sweifeyeh. In the 2006 consensus, Marka was one of the most densely populated areas in Amman as it accounts for about 25% of the population (Makhamreha et al., 2011). Further, according to my interview with engineer Maen el Bawab in the Technical Support Unit at Miyahona on February 26, 2012, Marka has the largest number of water customers. For a sample of women living in West Amman, I chose Sweifeyeh area where I live and asked the women in my neighborhood to participate. The households in Sweifeyeh are among the highest consumers of water in West Amman (according to my interview with engineer Maen el Bawab on February 26, 2012).
The sample of women I interviewed were housewives and mothers between the ages of twenty-six and seventy. In this sample and research I do not intend to focus on whether the women are formally employed or conduct informal work outside the house. Further, in order to test the validity and impact of government water saving advertisement focusing on housewives, I decided on households as my spatial area of focus. The field work involved individual interviews in West Amman. For interviews done in East Amman (the area of South Marka) they resembled focus group interviews.

Each of the women I interviewed had their different stories and different living conditions that impacted their views on the water issues in Jordan. I want to briefly describe below the interviews situation in order to identify more about these women I interviewed. I am aiming to also shed some light on these women’s socioeconomic situation since there is a direct correlation between it, water consumption, and lifestyle.

South Marka in East Amman houses mostly the working class and is classified as a low water consumption district, given that most homes are subsidized (more on this in later chapters). The acquaintance that gave me access to the women I interviewed in South Marka was Ismahan (47 years old). She is married to a bank employee and lives in a semi-detached house with her seven children. She seemed to be more affluent than some of the women I interviewed in South Marka, given that she owned a car, her house was spacious, owned several water tanks, and had many electrical appliances including an automatic washing machine (critical discussion on automatic washing

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1 Water consumption is linked to lifestyle and the size of houses (Jordan Times, 02/09/2009 http://www.jordantimes.com/?news=19249)
machine versus manual washing machine in later chapters). Ismahan and I went to visit the neighbors who lived in another semi-detached house, and there were three women gathered: Om Abdalla, Om Ali, and Om Rabee. Om Abdalla (55 years old) was the owner of the house and had a separate apartment on the second floor for her son and daughter-in-law, Om Ali (28 years old). Om Rabee (60 years old) was their neighbor. I individually asked the three women questions, but the result was that they discussed the answers as a group. These women did not have many complaints about the water situation since they had extra water tanks or wells.

In the second place I visited there were six women gathered in a small room. They were visiting Sanaa (31 year old) who was renting that small room, and married to an Egyptian worker. Fadwa (52 year old) was a widow with four children, living across from Sanaa in another rented room. They both had to share one water tank. In this focus group situation, I had less control over individually interviewing each person. Out of the six women that were there, Sanaa and Fadwa were the most vocal about their water issues, given that they were facing many challenges from sharing one water tank.

In West Amman, I started my interviews at my building with Um Eisa (50 year old), the wife of the owner of our building and supermarket. Nehad (26 year old) is the wife of the supermarket worker and living in the basement, and Worood (26 year old) from Iraq is renting a spacious apartment in the building. Then through Nehad’s husband I was introduced to Lateefa (70 year old) living across the building in a three-story villa with her four sons and their families. I then interviewed Ibtisam (48 year old),

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2 The more water tanks one owns, the more they are able to store more water to be comfortable to consume throughout the week.
a widow who owned and rented out four apartments. Um Eisa, Worood, Lateefa, and Ibtisam were relying on private sources for water to cover their needs and had to deal with high water bills given their high consumption. The water bill in Jordan is designed in terms of subsidizing low water consumers who happen to also be categorized as low income (Darmame et al., 2010). Nehad, on the other hand, had to share the water tanks owned by Um Eisa, who was also providing the water in exchange for her husband’s labor in the supermarket. So Nehad had to be careful in her consumption and had no other means to purchase water.

There is a socioeconomic disparity evident between the two Ammans, and it is possibly fair to characterize East Amman as mostly low-income households and West Amman as high-income households. A classification of high income averages 1,932 JDs (approximately 2,726 USD) per month and low income averages 235 JDs (approximately 331 USD) per month (Darmame et al., 2010). Then there are middle-income households on both sides of the city which have an average income of more than 235 JDs (approximately 331 USD) and less than 1932 JDs (approximately 2,726 USD) (Tabaa, 2008).

In terms of the women I interviewed, I did not ask questions pertaining to their socioeconomic status. I was able to make judgments based on my observation in terms of their space sizes, their ownership of electrical appliances and cars, and also how many water tanks or extra storage they owned. A clear cut distinction between residents of East and West Amman was not the case for all the women I interviewed. For instance, in East Amman I would categorize Ismahan, Om Rabee, Om Abdalla, and
her daughter-in-law Om Ali as middle income given that they owned cars, lived in
spacious houses or apartments, and had various electrical appliances including an
automatic washing machine. In terms of the six women I met at Sanaa’s place, I was not
able to judge all of their situations except for Sanaa and Fadwa. Both seemed to be
placed in a low income category given that they rented one bedroom (as opposed to
owning) and had to share only one water tank. In West Amman, I would categorize Um
Eisa, Worood, Lateefa, and Ibtisam on high income side given that they lived in spacious
and luxurious homes, owned cars, had domestic servants, and privately purchased
water. However, Nahed is a wife of a supermarket worker and lived in a small space, so
she is placed in the lower income category even though she lives in West Amman.
2.3. The Research Context of Amman Areas of Sweifeyeh and South Marka: History and Urbanization

What is striking about capital city is the visibility of the “two Ammans”, and through my fieldwork I witnessed this disparity in terms of the water issue. The two areas of Amman that I selected were Sweifeyeh (West Amman) and South Marka (East Amman). The distance between the two areas is fourteen kilometers, and it is about half an hour drive.

Figure 9: Map of Amman Distance between Sweifeyeh (point A on Map) to South Marka (point B on Map)
(16.6 KM about 30 minutes drive. Reference from http://maps.google.jo/maps?hl=en&tab=wl)

The women that I interviewed in both areas had vague ideas about the other part of the city or who resides there. In that sense, it is difficult to escape the disparity between those two areas and a growing alienation between East and West enforced by the city’s structure. In this section, I outline the history of the cityscape in Amman and its economic segregation.
One would identify the disparity between East and West Amman through terms such as poor and rich, yet what does that entail? There is certainly drastic socioeconomic disparity creating the ‘two Ammans’. I provide below a visual description of my journey Sweifeyeh (West) to South Marka (East) in order to make this disparity more vivid for the reader. Sweifeyeh is an area with countless options for going to restaurants, shopping for branded clothing stores, Malls, or hypermarkets, availability of five star hotels, hospitals, nightclubs, churches, and mosques. In the residential area of Sweifeyeh, on the street where I live and conducted the interviews, one finds villas with gardens and apartment buildings. On that same street, there is a private school, an entertainment center for children, a dentist clinic, and a small store. All the buildings are neatly numbered and built from white stone, there are trees and flowers planted, and manicured grass areas.

Contrast this with driving half an hour towards the east side of the city, I went through three or four roundabouts, drove into a couple of tunnels, drove for a while on a highway, and the scenery slowly changed. It becomes hillier and mostly residential, with denser population and housing conditions. More visibility of the public is evident from transport busses and people waiting to catch them. In South Marka, one can find the Amman Civil Airport (small one terminal airport used for domestic flights), a small strip of small local shops, and car repair stores. In the residential area where I conducted interviews, the road was uneven and dusty, with several yellow colored two story houses on the left hand side, and many newly built three story buildings on a steep hill. Going further on this road, there are empty hills and a factory. Off this road on the
left where I went for interviews there is a whole neighborhood accessed through unpaved narrow roads.

The urbanization and development of the city was carried out in several phases. Amman was established around the Amman Water Stream in the downtown area, which is difficult to fathom in lieu of water scarcity. The shape of the city today is a result of a long history of political and economical changes, internal migration from rural to urban, and migration from neighboring countries due to regional conflicts.

As the capital of Jordan, Amman underwent remarkable growth considering a population of two thousand in the 1920s to over two million in 2011. The city’s topography is marked with steep hills and valleys. The city was originally built over the upper slopes of seven hill systems that are 700-800 meters in altitude (Darmame et al., 2007). Then the urban development spread to steeper and mid-slope locations of over nineteen hill systems.

Amman was influenced by the different policies and visions instated by the Hashemite Kings. King Abdalla I founded Transjordan in 1921 and declared Amman as the capital. He was succeeded by King Hussien in 1952 and for forty-seven years focused on building Jordan’s infrastructure. King Abdalla II, crowned in 1999, became known for his modernization policies.

In post 1999, the King’s policies and efforts were geared towards modernizing Jordan in order to integrate global trade and finance, and further the setup of

...new, quasi-formalized economic decision-making bodies, and took part in the new agencies and governance networks being supported by USAID and other donors. With donor support, efforts were made to mobilize these same planning and financial networks to refashion Amman as a global ‘destination city,’
generating development through foreign investment and tourism (Parker, 2009, p.112).

Amman spaces were reconfigured and various efforts of ‘modernization’ are visible through the new structures of tunnels and bypasses in West Amman, building two tall high rises and redesigning a new downtown area. All these efforts simply pushed East Amman further east and alienated certain populations (Parker, 2009).

Even though this research is concerned with the governmental policies in the post 1999 period, I want to go through critical events that shaped the city’s development and how and why populations settled. History starting from the declaration of Jordan state in 1948 also sheds light on reasons for the development of the “two Amman’s” where the East side began housing the urban poor and the West side housing the rich.

When the Israeli state was declared in 1948, this resulted in large influx of Palestinian refugees into Amman. The number of Palestinian refugees estimated at that time was 100,000 (UNRWA 1972, as cited in Abu Ghazalah, 2010). To accommodate these numbers, the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) built the first two Palestinian refugee camps, one at the center and the other at the east of the city. The area of Amman expanded to 42 km² and the population reached 225,000. The urban expansion at the time was oriented towards Zarqa city, located 25 km east of Amman, and housed army personnel and industry workers (Al Rawashdeh et al., 2006). In 1955, the government introduced the first law for regulating buildings. This is also when the first water pipes were built in the
downtown central area (interview with engineer Nadia Sammour Haddadin- Head of Technical Support Unit at Miyahona, February 26, 2012).

In 1965, the municipality of Amman started to adopt the western city planning of the division of urban spaces according to functional criteria, such as separate areas for housing, commerce, and industry (Abu Ghazalah, 2010). The commercial and industrial expansions were concentrated in West Amman (Al Rawashdeh et al., 2006). The Six Day War with Israel in 1967 brought more refugees from Palestine and the establishment of a new refugee camp in East Amman called Marka. That is when the area of South Marka was established. Further, Bedouins and farmers were migrating to East Amman (Nyrop, 1980).

The years of 1973 to 1983 were marked as the “boom years”. Many Jordanians were working in the Gulf States and sending back remittances. This new wealth gave rise to the financial district and fancy homes in the area of West Amman, Shemeisani (Parker, 2009). There were further expansions towards the western and northern sections of the city by more affluent residents seeking a cooler climate and more greenery (Darmame et al., 2007). West Amman is characterized by fertile lands and lush green areas (Al Rawashdeh et al., 2006). This is where the divide between a more affluent West Amman became more evident in comparison to a “poorer looking” East Amman.

By the mid 1980’s, about 300,000 Jordanians returned to Amman from work in the Gulf States and Iraq. The infrastructure was inadequate to handle the numbers of people. This resulted in the establishment of the Greater Amman Municipality (GAM) in
1987 to handle the large population which reached more than 1 million by the end of 1980s (Abu Ghazalah, 2010). That is when the rationing of the water started and intermittent water supplies were provided to the populations. After the 1991 Gulf War, about 400,000 more Jordanians returned and settled in the west-side neighborhoods with multimillion-dollar villas springing in areas like Abdoon and Sweifeyeh (Parker, 2009). Then after the Iraq war and by 2003, about 750,000 Iraqis took refuge in Amman. According to the 2006 population census, Amman reached 2.5 million (Abu Ghazalah, 2010).

This quick preview of the history of Jordan and focus on the development of the capital Amman is critical to contextualize the setting of this thesis. It also develops a better understanding of the where the women I interviewed live and also how their water situations may differ given the socioeconomic disparity between the “two Ammans”.
3. Government’s Management of Water Resources

“The water deficit in Jordan, caused by limited water resources and dwindling rainfall, necessitates strategies that exploit all available sources and techniques,” the secretary general said yesterday (Jordan Times Online Daily English Newspaper Online, November 1, 2011).

Jordan is part of the Middle East region which is characterized with aridity and future water shortages resulting in a rationing of water for its citizens (Hadadin et al., 2010). When comparing the annual water share of Jordan with neighboring countries, Jordan has access to only 200 cubic meters per head of the annual water share, while Egypt’s accesses an average of 1,200 cubic meters, Syria’s 1,800 cubic meters, and Israel’s 480 cubic meters (Hadadin et al., 2010). Managing this amount of water, mechanisms of distribution, and amounts allocated to different sectors within Jordan is the responsibility of the government.

The water share is distributed to the agricultural, industrial, domestic, and other sectors which all have recorded great losses. The agricultural sector suffers from losses estimated at 45%. It consumes about 70% of the water share, which is attributed to inefficient irrigation methods using surface and ground water. The other reason for this high consumption is attributed to the misuse of fertile highlands used for Jordan’s urban sprawl, resulting in intensified cultivation in the dry regions with poor soil quality, which in return, need more water (Jaber et al., 2001).

The industrial sector in Jordan also requires water and uses almost 5% for various industries essential to Jordan’s economy, such as phosphate mining, production of potash, cement, and others (Halasah et al., 2006). Water usage here requires
considerable improvement, for example, by adopting the method of recycling waste water (Jaber et al., 2001).

The government places most of the pressure to conserve water consumption on its citizens. The domestic sector consumes about 25% of the water share (Halasah et al., 2006). The domestic water usage per capita and per day is 0.08m³/day in Jordan which is considered very low when compared to 0.15-0.30 m³/day in neighboring countries (Jaber et al., 2001). Jordanians are actually using minimal amounts of water given the extreme rationing system implemented by the government. The ramifications of using little water “could damage public health and lead to economic and environmental disasters” (Jaber et al., 2001, p.85) given that water is required to sustain human life, maintain acceptable health, and sanitary conditions.

The water strategy in Jordan in post-1999 has adopted a new approach encouraged by donors and development agencies called the “water demand management” approach, which originated as a response to “environmental pressure in industrialized economies that have completed their hydraulic mission” (Zeitoon et al., 2012, p.55). Water demand management is defined by the International Development Research Centre as “any practice or policy implemented which results in water being used in a more efficient, equitable and sustainable way” (Arafa et al., 2007, p.2; as cited in Zeitoon et al., 2012, p.55). The Jordanian government mainly uses the supply-side approach, deemed ineffective by the global “North”, which involves improving the water supply by building diversion structures, canals, deep tube wells, and desalination plants (Zaitoon et al., 2012). Only recently, and given the various donor agencies’ work,
the water demand management approach has since been incorporated into Jordan’s and Yemen’s National Water Strategies (Zeitoon et al., 2012).

The neoliberal mode of governing in Jordan entails closely working with donor institutions to implement any water strategies. The water strategy in Jordan, published in 2009, included that there needs to be public awareness in order to advance water conservation in the country (USAID Jordan, 2009). These water conservation efforts, including the numerous projects implemented by NGOs and development agencies, have been targeting women specifically. This narrative of including women and making a connection between the importance of women in the household and their role in resource management is an indication of a type of gender mainstreaming in public discourse and policy. Gender mainstreaming can have positive and negative implications on society depending on how it is used and by whom.

Gender in this sense has become institutionalized in Jordan through government policy and the work of development agencies. Yet, the way in which this has been done has had an instrumentalizing effect on women and gender. One must note that “gender has lost its critical and politicized edge, having been institutionalized into a series of tools and techniques that are far removed from the transformatory potential of gender as a feminist concept” (Cornwall et al., 2007; as cited in Elmhirst, 2001). The discourse and policies that attempt to turn Jordanian women into sole water managers of the household are embedded in wider discourses of water scarcity and water demand management that operate in Jordan, the Middle East, and beyond.
In the next section, I will look at the Jordan water resources and how they are being depleted and providing pretext for water shortage in Jordan. In the second section I will examine how the government of Jordan is governing citizens through their water scarcity discourse and intermittent water supply policy. Then I provide a section on the Amman water situation and its management by the government.

3.1. Jordan Water Resources and Management

Jordan’s size is about 91,880 square kilometers with large areas of desert land on its eastern side with Iraq and south-eastern side bordering with Saudi Arabia. It has the Dead Sea, which is the lowest point on the surface of the earth -about 400 meters below sea level - and Jabal Ramm is Jordan’s highest point with an altitude of 1,754 meters (Encyclopædia Britannica Online, 2012). Jordan has a short coastline on the Red Sea in the most southern part of the country called the Gulf of Aqaba.
In terms of available fresh surface water, there are three rivers: the Jordan River, the Yarmuk River, and the Zarka River. There are two important non-renewable groundwater resources, the Disi and Shedia, which are sandstones fossil aquifers extracted for agricultural and domestic purposes (Jaber et al., 2001). The Jordan River is about 320 km long and originates from several headstreams in Syria and Lebanon flowing towards Lake Tiberias. The river continues south through the Jordan Valley towards the Dead Sea. It forms part of the Israeli-Jordanian and Israeli-Syrian borders, making it a contested site between these states (Penguin Encyclopedia of Places, 1999).
Alarmingly, what was previously the Jordan River is now nothing but a creek. Its waters disappeared into “a wide variety of pipes, pumps, and fields to sustain the ever-growing demands of the human population in its vicinity” (Hadadin et al., 2010, p. 198).

The Yarmuk River and Valley Streams also drain into Lake Tieberias, which is affected by water pollution, given that it is used as a sink for municipal wastewater (Hadadin et al., 2010). The Zarka River receives wastewater from municipalities, industry, and agriculture as well, making it unsuitable for domestic use or irrigation altogether. Both the Jordan and Yarmuk Rivers are depleted through over pumping and diversion by the upstream countries of Israel and Syria. On the Jordanian side, their water is clearly polluted and contaminated given that they are downstream from wastewater treatment plants and solid waste disposal sites. One of the biggest dams in Jordan, the King Talal Dam, creates a freshwater reservoir. However, the reservoir also contains untreated waste from factories and suffers from rising levels of salinity and contamination by chemicals and metals. The other source of water available in Jordan is the aquifers of Azraq Springs, which are basically depleted.

The Jordanian government has invested in the water infrastructure by building several dams and developing the irrigation infrastructure of the Jordan Valley. Yet Jordan has been incapable of controlling the flow of the Jordan River or use of its water (Haddadin, 2000). The reasons are that Jordan is drawing the water at the river’s tributaries before it becomes part of the river flow for the purpose of saving electricity used for pumping water.
It becomes evident that there are water resources in Jordan, yet manmade pollution, depletion, and over pumping is diminishing what is already there. The proposed solutions for increasing the water budget include water harvesting in the desert, desalination, buying water from neighboring countries, wastewater management and treatment for irrigation use, as well as reducing demand through public awareness campaigns (Hadadin et al., 2010). These solutions should also include better management and further study on who pollutes these resources and why factories, for example, should be prevented from dumping their waste water into the country’s rivers.

Water legislation dates back to the 1936 British Mandate, which handled the settlement of land and water rights. In the 1950s, legislation was established for regulating the Jordan Valley irrigation. In 1983, the Water Authority was established for managing and distributing water with the exception of irrigation. In 1988, the Water Authority took over irrigation as well, growing into an institution that employed over 10,000 staff. By the 1990s, the Water Authority was deemed inefficient and the decision was taken to privatize the sector (Hadadin, 2000b).

The privatization of water is part of the neoliberalist trend and capitalist global order that emerged in the 1990s, which involves privatizing the main sectors of resource management (Fletcher, 2010; Nail, 2002). It is a policy instated by the modernist state of Jordan given the view that it is a solution for the massive issue of water loss facing Jordan. The water supply networks suffer corrosion and damages which amount to 50% losses commonly attributed to “leakages and overflows from reservoirs, unreliable
meters and meter-reading problems” (Jaber et al., 2001, p.87). At the same time, there are massive projects dedicated to updating the pipes which have been typically focused on West Amman (Interview with Engineer Nadi Sammour Haddadin- Head of Technical Support Unit, February 26, 2012). This coincides with the neoliberalist governmental policies that continuously focus on improving West Amman and in return excluding the many inhabitants living in East Amman, thus exacerbating inequality.

3.2. Governing Citizens through Discourse and Policy

Governments govern citizens through policies and discourse. However, a population does not simply consist of individuals who obey laws issued by the authorities. Populations have their own reality and regularities of everyday life with dense relationships between “people and people, people and things, people and events” (Rose et al., 2006, p.87). Therefore, the government has to implement strategies that adhere to the complexities of processes that are at play within the population.

Lemke (2000) offers two points about governmentality in order to explore this relationship between the government and citizens. First, governmentality constitutes technologies of power and forms of knowledge that aim to study meanings that link the governed with modes of thought, and which require observing the political rationality underpinning them. This brings about two aspects regarding governmentality. One is that the government rationalizes the art of governing in a way that justifies its use of power. The government would potentially allow for certain problems to emerge and then offers strategies for solving that problem. The second aspect deals with government structures of intervention, like “agencies, procedures, institutions, legal
forms... that are intended to enable us to govern the objects and subjects of political rationality” (ibid, p.191). Lemke’s second point on governmentality is the links between power relations and the process of producing subjects. The government comes to signify control and guidance for families, children, and households, thus emerges the term “the conduct of conduct...which ranges from governing the self to governing others” (ibid, p.191). From this perspective, one may understand how the government of Jordan manages the environmental situation of water scarcity and thus has an interest in naturalizing the narratives, languages, and constructions used in advertising and selling the idea of water management to the public and community (McGregor, 2004).

Having lived many years in the Middle East, and specifically in Jordan between 1991 and 1996, and then in the West Bank until 2002, I grew up with various narratives of “water scarcity” that shaped my environmental consciousness. There are certain behaviors I exhibit, such as turning off the water tap when brushing my teeth, taking shorter showers, washing my car with a bucket, and feeling very happy when it rains. These behaviors and attitudes in conserving water are taught from various sources such as school books, billboards, newspaper articles, and television advertisements. Even if real water scarcity is a source of scientific debate, the discourse on water conservation is omnipresent in Jordanian public life. Hana Namrouqa writes articles on water scarcity in the daily English newspaper, *Jordan Times*, and on different occasions discusses water scarcity in Jordan:

*As water scarcity persists in light of shifting rainfall patterns and increasing population, Jordan is relying on restructuring its water sector, reducing water loss and pressing ahead with ambitious mega-projects to address a shortage that*
restrains the country’s growth and development (22 October 2011, Jordan Times Online).

Batayneh underscored that 98 per cent of the population in Jordan has access to clean drinking water, while 70 per cent are connected to the sewage network highlighting that due to water scarcity in Jordan, households receive water once during a certain period, which can be a week or a month depending on the area (1 November 2011, Jordan Times Online).

The water scarcity discourse and alarm of dwindling water supplies came at its peak in the 1980’s (Jaber et al., 2001). This may be attributed to high population growth and massive urbanization witnessed in the capital (Al Rawashdeh et al., 2006). The Amman water stream dried up in the 1970s, leading Bater Wardom to comment in an editorial piece in the Dustor Arabic Daily Jordanian Newspaper: “We are the ones that have paved our river!” (December 10, 2012).

There is a strong discourse of water scarcity in Jordan that is supported by various narratives of water scarcity, water poverty, and sound water management. This discourse, facilitated by the government, the Jordanian media, and educational projects place considerable pressure on Jordanian citizens to be more responsible in conserving this water and to modify their water management behaviors, essentially to govern their own behavior in addressing the water crisis.

In managing the water situation, the government of Jordan instated a rationing system in 1987 by sanctioning public municipal water supply to only once or twice a week for the whole population. Water scarcity has acquired another very real dimension that affects people’s lives on a daily basis. This policy is deemed to save water and limit high consumption as reflected in one of my interviews at the Ministry of Water and Irrigation. The Head of the Supply Unit explains:
We have enough supply as long as we provide it intermittently. We here at the Ministry of Water and Irrigation control and provide the water quantities, so we handle the publicly owned aquifers. What we suffer from is water loss, but our water situation is very acceptable in Amman, we have enough quantities. In addition, the Disi project will bring in 100 million cubic yearly and it will improve the water situation in Amman. With the current situation of rationing water we have no problem, it is manageable and we have enough (Interview on February 26, 2012).

The Disi project to which he was referring aims to pump water out of the ancient Disi aquifer in southern Jordan and build a long pipeline from south Jordan to transport this water to Amman (Jordan Times Online, October 22, 2011). Even though the government is providing water once a week, the issue is not with quantities. Instead, intermittent water supply is a management tool to conserve water in the long run and modify the behavior of citizens in order to conserve water.

Intermittent water supply is a policy instated in many different countries around the world. The general causes to this policy are attributed to “polluted sources, inadequate storage, treatment, or distribution systems; or population growths exceeding the rate of new water resources and infrastructure development” (Thompson et al., 2001; as cited in Rosenberg et al., 2008, p.488). All of these causes match the Jordan situation.

3.3. Management of Amman’s Water Situation

In terms of water access, 98% of households in Amman are connected to the municipal drinking water piping system. However, many issues result from the system of intermittent water supply, such as the unreliability of water services, even on scheduled days. The public distribution of water seems inefficient in managing supply since there
are several issues that require attention, such as reducing lost water, upgrading the network system, and improving billing and debt collection (Daramame et al., 2011b). The challenges that Amman faces are in terms of the physical state of the water networks as 54% of the water in the city’s distribution system is being lost through leakages (Potter et al., 2008). Also, the water pressure is very weak given that the pipes are small in diameter (Abu-Shams & Rabadi, 2003).

In accordance with his “modernization” policies, the water supply system was privatized when Prince Abdulla II became King in 1999. In 2007, the same company was de-privatized and became Miyahona, and came under the ownership of the Water Authority of Jordan. The privatization and de-privatization of the water distribution company still did not solve all the issues facing Amman.

I went to Miyahona’s Awareness Campaign Unit and interviewed the Head of Communications and Water Awareness, engineer Joumana Al Ayed. She gave me water conservation devices and encouraged me to save water at home. At the same time, she listed a number of infrastructural problems with delivering water to households in Amman.

*We have a huge issue with leakages, storages, and pumping. We also have an issue with the water pressure. So we had to promote ground level tanks in order to decrease the electricity charges and pumping, but the customer didn’t know that we changed our water pressure. Customers had to set up ground level water tanks. The customers complained about the new cost so what we did was provide them with plumbers to change the tanks, but still the cost of the tank is on them. These changes in pressure came in 2011.*

The Head of the Technical Support Water Unit at Miyahona provided further insight about why water is not always delivered to households:
The water situation in Amman is good except when we have emergencies. Like it’s an emergency when it rains a lot since the Zara treatment plant gets soiled water and they don’t have time to clean the pump. This requires shutting down delivery of water into an area. Most of our emergencies are seasonal circumstances. It is a temporary issue that we resolve through water tanks. We have emergency tanks that cover an area to receive the water through these tanks. We only have 20 water tank trucks for emergencies that we use when we shut down water from an area. Last year in the summer, we had a situation of the electric company shutting down electricity to a pumping station which resulted in shutting down the water. This affected distribution. Tankers cannot really cover the demand of a full area, but what can we do?

It is worth noting that the Miyahona water supply company is only operational in Amman, which is indicative of government concentration on Amman in securing water supply. In a conversation with Dr. Abbas al Omari from the Water Center at the Jordanian University (January 26, 2012), I asked why the government was focusing on Amman:

*Amman is better, we get water once a week but we are better than other cities which have a really bad situation – Amman has better income and can buy the water. Amman gets priority in getting the water. All Amman receives water regularly and it is not a big issue. The problem is outside of Amman much more. Ninety-five percent of Amman residents get water.*

The Amman water supply comes from surface and ground water from different locations around Jordan:

1. Zay station: water from King Abd Allah Canal which is surface water
2. Zara Maeen Station: from Mujeb and Springs
3. Khoon Station: from Zarqa Aquifers
4. Wala Station
5. Al Joun: from Karak Aquifers

(Ministry of Water and Irrigation, 2012)
The Head of the Water Supply Unit at the Ministry of Water and Irrigation provided me with the water quantities for Amman for the past 15 years, and indicated that the reasons for the increase of water quantities on a yearly basis are due to population growth (refer to Appendix A for the table of water quantities). I asked him how they could cover the extra demand for water and he answered: “We just pump more water from the aquifers since Amman is a priority” (interview on February 26, 2012).

I conducted the next interviews at Miyahona Water Company responsible for managing water and sewage services for Amman. At the Technical Support Unit that handles the water supply distribution for Amman, engineer Maen El Bawab indicated that:

*When we need more water we simply dig deeper into wells. We are looking forward to the Disi project to be completed in 2013 to supply Amman with more water, which will increase the number of days when the water is delivered to 4-5 days a week.*

In the governorates outside Amman it is the municipalities who handle water distribution and bill collection (interview at Ministry of Water and Irrigation, February 23, 2012). Most donor funded projects that address water scarcity operate outside of Amman. This particular conversation with engineer Eqbal Hamad illustrates the issue. She is one of the trainers on The Water Wise Women Initiative (WWWI) for training women to be plumbers and learn various water conservation techniques. The project is run by the Jordanian Hashemite Fund for Human Development Fund (JOHUD), and funded by the German Agency for International Cooperation. She brought to my attention that Amman is not regarded as a “problem” area, and is not mapped under a
“poverty pocket”. Poverty pockets are areas with high percentages of households living on a monthly salary less than 556 JDs (approximately 785 USD) (Jordan Food Security Survey in the Poverty Pockets, 2008). Here are parts of our conversation:

Katrin: How were these areas selected for the WWWI project?
Engineer Eqbal: We focus on central Jordan and also where our centers operate. We also focus on the north of Jordan. The donor funders also pick these things.
Katrin: Is there something particular about these areas?
Engineer Eqbal: They [Donors] just pick these things. It also depends on the donor agency’s interest, like there is PGR, the Federal Center for Sciences and Earth and they care about areas where there are wells and aquifers.
Katrin: Why isn’t Amman part of the project?
Engineer Eqbal: We still care about all of Jordan and the south and wherever there are poverty pockets.

This conversation sheds light on the critical aspect of how the Jordanian state exhibits neoliberal modalities via

...Special Economic Zones, Poverty Pocket Schemes, Development Corridors, community empowerment initiatives, urban regeneration projects, gate communities, planned satellite cities, and new systems of movement and connection (Parker, 2009, p.110).

These modalities are complex yet illustrate decentralization of the government and the bigger focus and power that development agencies are holding in handling the disadvantaged citizen that might be living in poverty or no water.
4. The Jordan Water Scarcity Discourse

The aim here is to unpack the Jordanian water scarcity discourse by looking at the water scarcity storylines found in Jordanian public life and analyze their history and underlying politics. At the same time, it is critical to note that Jordan is part of the “global” system and there are external environmental discourses dominating and influencing the way water scarcity is understood, discussed, and represented in Jordan. The discourse of water scarcity itself is a global discourse that is filled with numbers and metrics to measure the quantities of available water and to make assertions about who has access to water and who does not (Rijsberman, 2006). Many of the storylines found in Jordan’s water discourse make use of the same language global and Middle Eastern water scarcity narratives employ. In these discourses, one can find various descriptions and imageries of the Middle East as a desert that lacks greenery and rarely sees rain (Parker, 2009).

The water scarcity discourse is in a sense an environmental discourse that reveals the connections between humans’ usages of water and means of managing it as a finite resource. Environmental discourse explores the relationships between nature, environments, and human beings and it is expressed in several main environmental discourses found in the academic spheres that are worth mentioning in the context of this study. The water scarcity discourse in Jordan borrows many of its arguments, narratives or storylines, and justifications from the global environmental discourse.

Environmental discourse facilitates a shift from seeing “nature” as detached from humans- represented as remote forests or jungles, or as an entity confined to
scientific study. It shows that an environment is connected to the public domain through public policy and the need to study nature’s social implications (McGregor, 2004). On a global level, the environmental discourse employs several justifications to explain the environmental dilemmas or problems which can be found in the Jordanian water discourse as well. There are explanations that provide justifications to an environmental issue through explanations of lack of management of population growth, economic growth and increased pressure on finite natural resources. Pollution and environmental destruction are a result of population growth and wasteful lifestyles, leading to an increase of deteriorating ecosystems around the globe (ibid, 2004). Each of these discourses emerged for specific reasons as they are embedded in their own political backgrounds and rely on their own discursive practices.

The sustainable development environmental discourse is one of the strongest discourses present on the global level and is mirrored in the Jordanian water scarcity discourse. It emerged from several United Nations initiatives and global conferences such as the Earth Summit in Rio in 1992, and argues that development should satisfy present needs without jeopardizing future generations in meeting their own needs (UNCED, 1987; UN, 1992).

Other environmental discourses include the survivalism discourse that focuses on the urgency of solving environmental issues and the catastrophic ramifications if changes do not occur (McGregor, 2004). The leftist green discourse uses Marxism and socialism to critique the capitalist system as the cause for environmental degradation. Eco-regionalism is the fourth discourse that focuses on decentralization and forming
integrated small scale communities. Fifth is moral extensionism, which focuses on animal rights. Deep ecology discourse uses a spiritual approach to nature. The last is eco-feminist discourse, which focuses on gender and women’s interactions with the environment to which this thesis is greatly invested in (McGregor, 2004).

The discourse that has gained most prominence in western public policy has been sustainable development or ecological modernization (Hajer, 1997). This discourse uses a language that links finding methods to resolve the “ecological crisis” with notions of global cooperation and partnership. The solutions are seen to come through the institutions and sound public policy efforts towards sustaining the environment. In the water scarcity discourse, the idea is that water scarcity forms part of an ecological crisis; that water is a diminishing resource that requires measuring and analyzing, as well as efficient management and sustainable use.

The water scarcity discourse on the global level was popularized in the beginning of the 21 century in connection with the global food crisis, fuel crisis, and financial meltdown in 2008. The food crisis or food price hikes are attributed to more frequent droughts and the inability to sufficiently irrigate crops (Charles et al., 2011). The discourse emphasizes the need to find reasons for water scarcity, for measuring water scarcity, and making global predictions about scarcity. It is also evident from different studies that there is a sense of urgency and a use of language that is trying to alarm the public to the “water crisis” and of the grave consequences that loom unless the public takes immediate action to conserve water.
Global discourses of water scarcity provide various reasons for the enhanced depletion of water resources globally. The global narratives or storylines are intertwined and can be used individually or together. Take the agricultural sector that is deemed as the most affected sector in terms of water scarcity. Here is the narrative: agricultural production impasses attributed to water shortages increase food prices and the vulnerability of the poor. Population growth means increased demands of agricultural produce to feed the population. The food prices go up when there are not enough crops to meet demands, and one of the main reasons why there are no crops is that there is not enough water to grow (Charles et al., 2011). In agriculture, crops are being watered either through rainfall or through irrigation. In general, the global climate is changing with rising temperatures and decreased rainfalls in some areas. There is an increased reliance on irrigation, particularly in the dry and semi-dry areas where “70% of freshwater is currently used for agriculture” (Waughry, 2011, p.20). The problem is that, given rapid population growth and changing dietary needs, we need more food. There are projections by population scientists that there is a growing urban and middle class population globally, which will increasingly demand to eat foods like cereal and meat. Both cereals and livestock use a lot of water (Charles et al., 2011). Furthermore, livestock uses up the most water at the expense of cereals and wheat.

Finding a universal definition of water scarcity and determining its causes is fairly complex, especially when attempting to make worldly or globalized generalizations. Many of the available definitions of water scarcity are complex and depend on measurements and indicators of global water supply and demand. It is difficult “to
assess whether water is truly scarce in the physical sense (supply problem) or whether it is available but should be used better (a demand problem)” (Rijisberman, 2006, p.6). The World Health Organization stated in 2003 that there are about 1.2 billion people in the world that lack access to safe and affordable water (Rijsberman, 2006). These individuals are deemed as “water insecure”, since they do not have access to water for drinking and washing. A region that houses a large number of people where there are water insecurities is defined as “water scarce” (ibid, 2006). Further, defining scarcity depends on:

(a) how people’s needs are defined— and whether the needs of the environment, the water for nature, are taken into account in that definition; (b) what fraction of the resource is made available, or could be made available, to satisfy these needs; (c) the temporal and spatial scales used to define scarcity (Rijsberman, 2006, p.6).

There are several indicators that are used to measure water scarcity that form the basis for most of the water scarcity discourses. One is the relationship between water availability and human population. The Falkenmark indicator or water stress index measures renewable water supply for households, agricultural, industrial, and energy sector requirements, and allocates a figure of 1,700m³ of water. Countries that fall under this figure are deemed as water scarce (Falkenmark et al., 1989, cited in Rijsberman, 2006). A second index used is the Water Resource Vulnerability Index, which measures the amount of water taken out of a country’s water supply. If the withdrawal rate is above 40% then the country is deemed water scarce (Shiklomanov, 1991, cited in Rijsberman, 2006). Both of these indexes pose difficulties for application across different countries since they lack the social dimension of different lifestyles in
domestic usages or the adaptability of societies to handle water stress (Rijsberman, 2006). A more recently developed, third index put forth by Sullivan et al. (2003) is the Water Poverty Index, which is based on a combination of components, looking at the “access to water, water quantity, quality and variability, water uses for domestic, food and productive purposes, capacity for water management, and environmental aspects” (Rijsberman, 2006, p.9).

The next section explores the internal discourse found in Jordan through my field work that looks at rationalizing the water scarcity situation through various storylines. Storylines show perspectives on a certain subject that prevail in society, taking into account how these perspectives emerged as a result of certain historical events, a political climate, and institutional structure (Allan, 2003). I derive several storylines from looking at Jordanian newspaper articles over a seven months period, reviewing scholarly articles, interviewing experts and subjects, and looking at awareness campaigns.

4.1. Storylines from the Field

When I moved to Amman in August 2011, I made the assumption that there is water scarcity in Jordan from a water shortage sense. The notion was based on the fact of receiving tap water only once a week, and at times it was not even delivered on the scheduled day. I assumed that if there was no water every day then Jordan must lack water. Also, since I have lived in Amman between the ages of seven and eleven, I had vague memories of being taught at school that there is a serious water shortage in Jordan and that we had to conserve water. Further, in the initial research phase, most academic articles I found started with the sentence of “Jordan is the 4th most water poor
country in the world”. I also found this statement repeated in the Jordanian newspapers.

When I wrote my thesis proposal, I asserted that there is water scarcity in Jordan without making distinctions between water scarcity, water shortage, water poverty, or water stress. I received critical feedback from the American University in Cairo Thesis committee:

It is problematic to take scarcity for granted as scarcity is part of an institutional arrangement. These processes need to be carefully linked and developed conceptually and empirically (Email correspondence, November 13, 2011).

The committee was correct in that water scarcity needs to be deconstructed as it forms part of complex institutional arrangements. However, even after the interviews I conducted with experts and governmental employees, I was confused about water scarcity: Were there enough water quantities? Why was Amman different from the rest of Jordan? Why should citizen conserve water anyway? And how effective is intermittent water supply?

When it came to interviewing the women in Sweifeyeh (West Amman) and South Marka (East Amman) I wanted to observe their reactions towards the notion of water scarcity. I noticed that some women did not understand the word scarcity when I asked the question, “Why is there water scarcity in Jordan?” I had to start using the phrase “water problem”. I also did not want to make the assumption that they all should think there is water scarcity and instead changed the question, “Do you think there is a water problem in Jordan?”
In East Amman, I interviewed four women individually and held an impromptu focus group with six women. From the four individual interviews, both Ismahan (46 year old) and Um Ali (28 year old) reasoned that there is water scarcity. Ismahan explained that it is due to lack of rain. Um Ali attributed it to droughts and Israel taking all the water. On the other hand, Um Rabeaa (60 year old) thought there was no water problem since it does rain a lot and she collects rainwater for household work. Um Abdalla (55 year old), agreeing with her friend and neighbor Um Rabeea, stated that there was no water problem, but did not provide the reasons for her assumption. Through the discussions in the focus group, the six women seemed to come to a consensus that there is a water problem in Jordan given that they received intermittent water supply.

Also, in West Amman there were mixed views on whether there is water scarcity and what the reasons are for it. Both Worood (Iraq) and Nehad (Syria), who happen to be foreigners, were not sure if there was a water problem in Jordan. Lateefa (70 year old) on the other hand, said that there is no water problem since it rains and she collects the rain water in her well that is eighty meters deep. She also explained that there is no water problem in Sweifeyeh since the “ministers live on our street, the American school is on our street, and the government would never cut off water from the Americans or ministers” (Interview on March 15, 2012). On the other hand, Um Eisa (50 year old) thought there was a water problem due to population growth and that was why the government needed to provide water on an intermittent basis. Ibtisam (48 year old), who is not connected to government water supply and purchases the water from a
private company, thought that there was a water problem. She reasoned that given that in the summer season she needed more water, when she attempted to purchase larger quantities, at times, she found that the water was less readily available even when purchasing it.

The questions that I asked water experts, government employees, and women were: Is there a water shortage in Jordan? Or is there a water distribution problem?” I then linked their responses to discourses that dominate in Jordanian media and political arenas.

I started off the research with speaking with water experts in Amman. I conducted an informal interview with a water expert at the Royal Scientific Society research center responsible for monitoring the water quality in Jordan. The expert explicitly expressed that there is a deficit between supply and demand. That is why she thought it was critical to implement awareness campaigns targeting citizens in order to encourage them to conserve water. The respondent did not see a water distribution problem, but instead a lack of water supplies compared to the demand of the population.

This was again expressed when I went to the Water and Environment Research and Study Center that forms part of the Jordanian University in Amman. I met with Dr. Lina Abu Ghunmi who is assistant researcher of Environmental Engineering and Grey Water Treatment Specialist. Her response was:

*The Ministry of Water always says there is a water deficit on the water budget by about 25 percent. I think there is scarcity because the natural water resources are limited and non-renewable, there is population growth and there is immigration, so there is pressure on the budget of water. Water is limited. Our*
groundwater is non renewable and the river Jordan is taken by Israel. When we see Israel gives back some of the water then we wouldn’t have that much scarcity. Also, precipitation levels are low, because of climate change.

I want to note here that Dr. Ghuneimi explained water scarcity as water shortage and provided the justifications of population growth and immigration, as well as the political factor of Israel confiscating the water.

Another water expert at the Center called Dr. Abbas al Omari, who specialized in supply networks, complained about water loss as a result of pipe leakages and water theft. Water loss is significant issue in Amman where more than 50 percent is lost through leakages, illegal usage, non-metered connections or meter errors (Al-Halasah et al., 2006).

The interviews with the experts brought about complex storylines on why there is water scarcity in Jordan such as lack of water supplies given non-renewable water resources, political conflict with Israel, massive population growth, inefficient water distribution across the industrial, agricultural, and domestic sectors, and water losses due to old pipes leakages and theft.

4.1.1. Storyline I: Rainfall, Aridity, and Droughts

The country’s major dams currently hold 58.3 mcm of their total capacity of 215mcm, according to Jordan Valley Authority Secretary General Saad Abu Hammour. "Dams in the northern and central regions of the country received the greatest influx of rainwater, while nothing went into the southern dams, such as the Mujib, Tannour and Waleh," he told The Jordan Times over the phone yesterday. Abu Hammour noted that the 110mcm Wihdeh Dam currently holds 6mcm of water. Current storage is 16mcm less than the levels at this time last year, when the dams, excluding Wihdeh, held 75mcm," he said, expressing hope for more rain this winter to boost the dams' “disappointing” water levels. Dams are key for the Kingdom to secure its water needs, according to experts. Jordan is
among the four most water-poor countries in the world, with an annual water deficit of approximately 500mcm. (English Daily Newspaper the Jordan Times Online, December 26, 2011).

Weather temperatures, dams’ storage levels, and rainfall averages are critical notions in Jordan since they are highly connected to the water scarcity discourse. In the winter season of 2011/2012, I found daily articles that gave updates on the rainfall averages and the amount of water in the dams. As part of these regular updates there is almost always mention that, “Jordan is among the four most water-poor countries in the world” (Jordan Times Online).

One of the key storylines for water scarcity in Jordan is connected to the climate which is described as arid. In addition to climatic aridity, an abundance of solar radiation that increases evaporation levels also exacerbates water scarcity (Abdulla et al., 2009). The climate, aridity, and droughts have had policy implications such as establishing a rationing variation in terms of season; winter season municipal water delivered twice a week and summer season municipal water delivered once a week. Further, throughout the interviews, experts and subjects often mentioned the rainfall and seasonal variations as a storyline that justifies water scarcity.

There are certain figures and numbers that illustrate the climatic regional variations in Jordan. Jordan has three physiographic regions with distinct climate condition: first, the highlands comprised of mountains and hills with extreme rainfall quantities and occasional snow; second, the Jordan Rift Valley in the West of the highlands, which has rich water resources and fertile land used for agriculture; third, the
extension of the Arabian Desert located in the northern, central and eastern areas, which make up for two thirds of Jordan’s land area (Al Qinna et al., 2011).

Jordan’s climate in the summer season is rather hot with an average temperature of 32 degrees Celsius in the highlands and 38 degrees Celsius in the Jordan Valley and Eastern Desert. In the winter season, temperatures drop to a maximum of 17 degrees Celsius and a minimum of 1 degree Celsius, with occasional snowfalls. The rainy season starts in October and ends in April, with peak precipitation in January and February. The climatic region of Jordan is arid to semi-arid, since 80% of the country receives the average precipitation of 100mm/yr. The total rainfall of Jordan is “9304 mm3” in 2004/2005 of which “93.9%” evaporates and “only 3.9% of the precipitation infiltrates to recharge the ground water” (Hadadin et al., 2010, p.198). These figures and numbers are used to rationalize public water policies.

At the same time, despite the generalized notion of aridity, Jordan does have variable topographic features that lead to differing quantities of rainfall, “600 mm in the northwest and 200 mm in the eastern and southern deserts” (Abdulla et al., 2009, p.196). Jordan gets an average of 7200X10/6/m3 of rain per annum where about 85% evaporates back into the atmosphere, 4% recharges the groundwater and 11% goes to surface water sources (Abdulla et al., 2009, p.196). These rain quantities could be harvested instead of wasted.

Rainwater harvesting is the technique of collecting rain water from rooftops, roads, parking lots, and others for domestic and irrigation purposes. A study by Abdulla and Shareef (2009) indicates that rainwater harvesting is not receiving enough attention
in Jordan and that it should be adopted as a strategy to increase the water supplies.

There have been some efforts by the government since early 1995 to adopt it, yet it has not gained prominence to date.

At the same time, I found that many women referred to rainwater harvesting as a valuable technique in collecting water. Lateefa (70 years old) from Sweifeyeh discussed how Jordan does not have a water problem because it rains enough and she is capable of collecting the water in the well she owns. Om Abdallah (55 years old) from South Marka referred to the benefits of rainwater for her garden and was collecting rainwater as well. This seems as an indication that it rains often in Jordan. More importantly, many citizens have turned to helping themselves in the absence of municipal water on most days.

At the same time, some women from my interviews have made the assumption that there is water scarcity in Jordan because of lack of rain. Thus it is important to note that rain fall quantities vary on a yearly basis making it difficult to decipher how closely related rainfall is to the actual state of water scarcity. One may also find that there are drought patterns that occur in Jordan in different areas. Om Ali (28 years old from South Marka) made an interesting reference to government warnings about droughts or increases in water conservation campaigns:

...we had droughts two years ago and then they started the campaigns on how to conserve the water and we even heard about it on the radio. But the issue is that we never watch Jordanian TV. We watch satellite but we wanted to see what’s going on in Jordan to be able to know what’s going on.
Droughts occur once every couple of years. A study conducted by a group of experts that looks at drought patterns in Jordan for a thirty-five year period between 1970 and 2005 indicates that there are

...spatial and temporal variations in seasonal rainfall quantities...average seasonal rainfall across the country...was estimated to be 247 mm varying from 1,128 mm at highlands to only 28 mm at southern desert (Al Qinna et al., 2011, p.438).

In this 35 year period there were “frequent non uniform cycles of drought/wet periods in an irregular repetitive manner” (Al Qinna et al., 2011, p.438). The drought events that occurred on a national level in all physiographic regions happened in the years of 1973, 1977, 1984, 1996, 1999 and 2000³.

The occurrence of droughts can have severe social implications. For instance, the droughts of the late 1970s contributed to an accelerated process of urbanization in that it led countless farmers, former nomads, and semi-nomads to migrate to the cities for subsistence and employment (Nyrop et al., 1980). This land flight, coupled with types of water scarcity in the cities, is said to have contributed to increased sanitation and health problems. The discourse in the 1970s was that the country had few sources of surface water, extreme scarcity of wells and streams, and suffered from the contamination of water supplies. The droughts in the 1970s have established a form of heightened concern for water scarcity and have resulted in a political push towards lowering water use. It was in 1987 that the government established that water be

delivered to households only once a week. As a consequence, the use of water storage
tanks spread across the city of Amman. There were also a considerable number of
households in Jordan that did not have piped water and relied on tank trucks to deliver
water (Nyrop et al., 1980).

4.1.2. Storyline II: Population Growth

Population growth and booming economic, industrial and agricultural activities are increasing demand for water, which surged to 1.4 billion cubic meters in 2010, when the water supply reached 870 million cubic meters (mcm), Ministry of Water and Irrigation spokesperson and assistant secretary general Adnan Zu’bi, told the Jordan Times. (English Daily Newspaper of Jordan Times Online, October 22, 2011).

The population growth narrative linked to water scarcity is prevalent in newspaper
articles and academic journals. There are also similarities with the global discourse on
water that looks at population growth as the main reason for why there is “water
scarcity”. The population of Jordan reached approximately 5.75 million in 2008 (Abdulla et al., 2009). Some of the women I interviewed cited population growth as a justification for why the government provided water intermittently:

Om Eisa: *I think there is water in Jordan but there isn’t enough water to be given us daily, only once a week for us to be able to conserve and we have too many people.*

Some of the significant statistics about Jordan illustrate that more than half of the
country’s population lives in Amman, which shows why the government might focus so
heavily on providing the capital with water. Jordan is divided into the northern, middle,
and southern regions with four governorates in each of the regions. About 63% of the
population lives in the middle region of Amman, Zarga, Madaba, Balqa, 28% in the northern region of Irbid, Mafraq, Jarash, and Ajlun, and 9% in the southern region of Ma’an, Karak, Tafielah and Aqaba (Abdulla et al., 2009, p. 197 - refer Jordan Political Map).

Figure 11: Jordan: Political Map.

The population growth seems to be drastic since it was 0.6 million in early 1950s, grew to 3 million in the 1980s, and is projected to reach 7.4 million in 2015 (Amery et al., 2000). Population growth in Jordan is mostly natural, yet it said that it is combined with additional growth caused by the migration of Iraqi, Syrian and Palestinian refugees (Oroud, 2008). Such population growth is mainly directed at urban centers given that traditional agriculture does not “support the extra people in rural areas” (Beaumont, 2000, p.22).
Historically, population growths are linked to certain political events such as the creation of the Israeli state in 1948, bringing thousands of Palestinian refugees into the country. The second crucial event was the 1967 War, which caused even more Palestinian refugees to settle in Jordan. The Gulf War then caused 300,000 people to immigrate and obtain Jordanian nationality. The middle region of Amman-Zarqa hosted most of the Palestinian immigrants between 1950 to 1967, and then again the inflow of Jordanian returnees back from the Gulf States in the 1990s. This increased the pressure in terms of providing utilities and managing the waste water for this specific middle region.

The government diverted agricultural water for domestic use, which resulted “in drying up of the perennial streams, especially the perennial stream of Amman...” (Haddadin, 2000, p.67). In 1979, the Jordanian government diverted the water from Azraq Springs (which dried up in 1992) and Wadi Wala to cover the needs of Amman and Zarqa (please refer to maps in the Appendix). This is when the cost of municipal water increased (Darmame et al., 2008).

### 4.1.3. Storyline III: Jordanian-Israeli Water Problem

The water scarcity discourse is highly interlinked with the regional politics of Jordan and its neighboring countries, which is described as packed with...

...conflicting territorial claims, ethics and historical antagonism, rapid population expansion through natural growth, immigration and refugee flows, combined with limited surface and subsurface water (Amery et al., 2000, p.2).
Many experts described the region as fueled with conflict, where water scarcity is either ignored and marginalized and eclipsed by other conflicts, or by contrast, becomes the very reason for political conflict.

Due to the geographic distribution of water resources regionally, the countries of the Middle East are required to share these “scarce water” resources among themselves. In the River Jordan Basin alone, the countries of Jordan, Israel, Syria, Lebanon, and Palestine share the same water resource. Among these five countries, water is not equally distributed and “power politics” play a critical role in terms of control over the resource.

Israel is singled out as an aggressor state by neighboring Arab countries, which is attributed to the long history of conflicts that accompanied the establishment of the state of Israel in 1948. For many different reasons, Israel in the Jordan River Basin is more powerful and has the upper hand in terms of water resources, its display of hard power through military action, and soft power through gaining support from the international community. There was even a historical situation in 1969 that lead Israel and Jordan into a military conflict in 1969 in which water was classified as a “military target”, meaning that “water resource systems are targets of military action by nation states” like Israel (Zeiton, 2008, p. 22).

In Jordanian public discourse and in interviews I conducted, Israel was portrayed as an aggressor state and one of the causes of water scarcity in Jordan. Take for example the following statements from two water experts and one of the women in South Marka:
Dr. Lina Ghuinemi (Water expert): *Water is limited. Our groundwater is non-renewable and the river Jordan is taken by Israel. When we see Israel gives back some of the water then we wouldn’t have that much scarcity (Interview on January 26, 2012).*

Dr. Abbas el Omari (Water expert): *In Jordan we have a big problem trans-boundary resources, like water is shared with more than one country, Jordan is always the downstream party in terms of the Yarmuk River and Jordan River. Also, you find that 500 mcm per year is taken by Israel and they are polluting water (Interview on January 26, 2012).*

Om Ali (28 years old, South Marka): *On TV they actually announce that there isn’t water. They [Jordanian government] even announced that Israel has poisoned the water in some dam which led us to actually use filters. They [Israel] are sending us dirty water (Interview on March 4, 2012).*

These statements are interlinked to a complex history and a series of events that increased tensions. Indeed, in the history of Israel and Jordan, water has repeatedly led to conflict. Trans-Jordan was established in 1923 under the British Mandate, and formally became an independent country in 1946. Shortly after Jordan engaged in a war with Israel in 1948-9, the Palestinian West Bank was annexed to Jordan, which was later occupied by the Israelis after the Arab-Israeli war in 1967. In 1974, Jordan formally renounced its claim to the West Bank in favor of the Palestinian Liberation Organization to form an autonomous Palestinian territory on the areas of the West Bank and Gaza. This further increased tensions between Israel and Jordan.

After the formation of the Israeli state in 1948, the neighboring countries assumed their actions as provocative towards securing water resources. In 1953, Israel decided to divert the Jordan River waters towards the Negev desert through building a canal (Reguer, 1993). The work on the canal required work in a Demilitarized Zone shared with Syria, which prevented the Syrian residents there from irrigating Jordan
River waters. In the construction process, Israel also killed 53 Palestinians in the southeast of Jerusalem town Qibya, which raised tensions with the Arabs drastically. This led to American intervention to prevent Israel from continuing its canal project. In 1965, Syria and Jordan began to divert the Jordan headwaters, which resulted in Israel conducting a series of military strikes. This show of Israeli military power stalled all the projects in the Jordan Valley (Reguers, 1993).

In 1953, U.S. President Eisenhower sent Eric Johnston to develop a Jordan River regional plan. It included detailed recommendations on diversion works, storage and power dams, reservoirs, and irrigation canals. The plan was rejected by the Arab states on the grounds that the water storage was in Lake Tiberias located in Israel and out of their use (Nyrop et al., 1980). Even though the plan was rejected, much of it was followed by Israel and Jordan and shaped both their national water strategies. Syria was less concerned with the plan, since it had access to the Euphrates River system.

Munthir Haddadin (former Water and Irrigation Minister of Jordan and Jordan’s chief water negotiator in the Middle East Peace Process) describes in numerous articles the Jordanian view of Israel trespassing Jordan’s water share.

Regionally, the political environment of the 1990s contrasted sharply with that of the 1950s. In the latter, the Arabs were concerned that the Unified Plan might draw implicit recognition of Israel whose right to exist at the expense of Palestinians was denied by the Arabs. In the 1990s, the Arabs had already accepted Israel’s right to exist when they accepted the Security Council Resolutions 242 of 1967 and 338 of 1973 (Haddadin, 2000, p.280).

Israel is viewed as exploiting the River Jordan and Yarmuk River, as well as Syria’s trespass by exploiting the Yarmuk River (Haddadin, 2000). In 1955, Jordan agreed with
Israel to receive “100 MCM” from Lake Tiberias to irrigate the Jordan Valley, yet this share was never received after the diversion of the Jordan River by Israel in 1964 (Haddadin, 2000, p.67). Also, on the Yarmuk River, Israel prevented Jordan from building a dam. Since 1964, Israel has been diverting the flow of the river towards the Negev desert since 1964. The water quality has deteriorated given the diversion of the river by Israel and the overconsumption further upstream. Due to saline water springs being diverted by Israel to discharge into the river instead of into Lake Tiberias, its water quality has been lowered even further. The agricultural water drainage from both Israel and Jordan is finding its way into the river as well (Haddadin, 2000).

In January 1964, the Arab Heads of State attended a summit in Cairo to discuss the Jordanian water question. The conference ended with courses of action that impacted the region, one of which was “the diversion of the tributary sources of the Jordan River north of Lake Tiberias in Lebanon and Syria” as a form of pressure on Israel (Nyrop et al., 1980, p.33). The summit also established a unified command of the military under Egyptian control which led up to the 1967 war with Israel. It was then that the Palestinian Liberation Organization was formally recognized.

The six day war in 1967 between Israel and the Arabs ended with Israel gaining control “over most of the contested water sources” (Feitelson, 2002, p.302). Israel took control of the West Bank of the River Jordan, and the Golan Heights that included the Banyas River sources and the northern bank of the Yarmuk River. After the war, the expansion of the East Ghor Canal resumed and provided for enhanced irrigation capacity and a boom in agricultural production in Jordan.
When the peace agreement between Israel, Lebanon, Syrian, Palestine, and Jordan was signed in Madrid in 1991, the water issue was put forth on the agenda. The negotiations involved how to better understand and apply the Johnston Plan from the 1950s (Hadadin, 2000a). Also, the peace agreements symbolized a shift from the 1950s towards accepting Israel’s existence in the region and aiming to negotiate the distribution of shared natural resources. The political climate that shaped the negotiations between Israel and Jordan involved agreements in 1988 to completely disengage the West Bank from Jordan and give all water access and rights to the West Bank. The negotiations were moved from Washington to Wadi Araba in the Dead Sea as a symbol of recognition of Israel being part of the region. Also, President Clinton in 1994 personally and publicly met with King Hussien of Jordan and Prime Minister Rabin of Israel to move the negotiations forward (Hadadin, 2000a).

By 1994, the two sides had reached an agreement on all contested water resources. According to Munthir Hadadin, who is the former Water and Irrigation Minister of Jordan and key negotiator in the peace agreements, the negotiations reached in the peace agreements were fair and successful, and that Jordan earned more gains in comparison to the 1950s agreements (Hadadin, 2000a).

Starting from the 1990s, the official Jordanian discourse towards Israel shifted, and there is a language of cooperation that becomes evident from statements and publications of the official government newspapers.

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4 For further details on negotiation outcomes and comparisons with the 1950s agreements, refer to the Appendix.
“The project’s destiny will be announced after a stakeholders’ meeting in Israel next month, where the final results of the studies will be reviewed,” Saad Abu Hammour, Jordan Valley Authority Secretary General and Head of the Red-Dead Project’s National Steering Committee, told the Jordan Times (22 October, 2011).

Recently, a unified project to “save” the Dead Sea by bringing in water from the Red Sea was started. The Israelis, Jordanians, and Palestinians are all cooperating to make this project succeed.
5. Embodying the Everyday Practices of Domestic Water and Water Subjectivities

There are meanings and consequences to water scarcity in Jordan, which are tied to the regulation of water resources impacted by the urban environment and state policies (Truelove, 2011). Water is a resource and a commodity that is a significant element in our culture, lifestyle, religion, and daily lives. Water use is also connected to the spaces at which bodies are operating on a daily basis. Water produces subjectivities that are constituted socially, spatially and ecologically, which are “negotiated through bodies, spaces and locations that are drenched with symbolic meanings, multiple identities and constructions of gender” (Sultana 2009, p.430). Water scarcity in Jordan is an environmental issues managed by the government through public policy of intermittent water supply and through public discourse which is impacting the domestic water users in multiple ways. I am specifically concerned with the type of subjectivities that are produced for the women I interviewed in the domestic space of a household in the locations of South Marka and Sweifeyeh.

The household itself is a site and a space that contains a series of processes that give rise to the gendered division of labor, hierarchies between family members, and complex power relations. Water is a resource that is managed at the household level, and this management may reflect wider power structures within the household through this gendered division of water management tasks. The way that the water resource is managed in the space of the household produces different potentially gendered subjectivities, and thus it is critical to note the need for
...context-specific analysis of women and water...rooted in the livelihood realities of particular groups of women...and complex gender identities in which men and women experience shared and divided interests (Jackson, 1998, p.315).

Household labor includes series of tasks that maintain a type of lifestyle and an indication of status. Water is a valuable commodity and indication of wealth since to use large quantities means that you can pay large amounts of money as high water consumption is expensive. The way the water is used for cooking in making certain types of dishes, maintenance of personal hygiene, or the religion of the family determining the performance of abolition required, for instance, in Islam (Coles et al., 2005). Further, in many cultures the domestic labor tasks are divided and mark a difference in responsibilities assigned to males and females (50 Key Concepts in Gender Studies, Domestic Division of Labor, 2004).

Domestic labor tasks involve the tasks that utilize water. The women I interviewed regarded the tasks of washing clothes, children’s personal hygiene, washing dishes, and watering gardens as their responsibility. It is difficult to decipher the reasons for this gendered division of labor and why these tasks have come to be the responsibility of women and not men. I tend to agree with the gendered approach that states:

Women and men perform different tasks because such practices affirm and reproduce gendered selves, thus producing a gendered interaction order...the gender construction approach posits active subjects limited by situational exigencies, social structural constraints, and submerged power imbalances [Ferree, 1991; Horchschild, 1989; Hood, 1983; Komter, 1989; Pestello & Voydanoff, 1991; West & Fenstermaker, 1993] (Coltrane, 2000, p.1213).
More importantly, domestic tasks using water are typically associated with women and their femininity, reinforced through gender discourses. In Amman, women are performing many tasks on a daily basis that utilize the resource of water such as cooking, cleaning, and washing. The women I interviewed as part of this research were all mothers and housewives living in households that were either female headed households, households that employed domestic servants, or households dividing tasks between husband and wife. Through my field work, I have come to realize that the women I interviewed identify themselves with the subject position of “water managers”. The intermittent water supply policy in Jordan seems to modify the behavior of women to manage water in a certain way. I explore this water manager role and performance, first through an understanding of the connections between women and water in theory. Then I discuss the daily practices linked to water management forming the water manager subject position.

5.1. Connecting Women and Water

To open up the possibility for critique and analysis of the water subjectivities being produced and reproduced in Amman, Jordan, it is critical to start with connecting women and water through feminist theory. As mentioned earlier, I am writing within the feminist political ecology framework for various reasons. It provides that women are not a homogenous category; rather they are differentiated through social positioning and subjective experiences. Feminist political ecology highlights the interconnectedness of different scales from government public policy, the city, the household, and the body, which are producing certain types of subjectivities (Elmhirst, 2009). Part of feminist
political ecology that I am concerned with has to do with these linkages getting exposed through the everyday practices of water usage, which are constituted through gendered subjectivities (Truelove, 2011).

The roots of feminist political ecology are grounded in two strands; ecofeminism and feminist environmentalism. Ecofeminism, which emerged in the 1970s, combines ecology and feminism and is diverse in its applications in women’s rights, animal rights, wildlife conservation, and environmental degradation (Bennett, 2005). It emphasizes that women are a homogenous category that possess knowledge about the environment and, if liberated, could reverse environmental destruction. Feminist political ecology and environmentalism came to be corrective of the biological and cultural essentialism of ecofeminism and “analyzes the gender politics of labor and livelihood in the rural Third World from an ethnographically grounded political economy perspective” (Gururani, 2010, p.232). Both rejects “woman” as a unitary category that ignores various forms domination other than gender and proposes that woman must be differentiated by class, race, and ethnicity (Agarawal, 1994).

The use of biological determinism by ecofeminists alludes that it is an unchangeable reality. Feminist environmentalism and feminist political ecology both come in and emphasize that “gender and class, caste/race-based division of labor and distribution of property and power structure people’s interactions with nature....also shape knowledge based on that experience” (Agarawal, 1994, p.126). Feminist political ecology is slightly different from feminist environmentalism in its focus on gendered knowledge, gendered environmental rights and responsibilities, and gendered politics
and grassroots activism (Nightingale, 2006). At the same time, the idea still remains to reject universalizing overgeneralizations and emphasize context specific analysis

...rooted in the livelihood realities of particular groups of women, differentiated by age, ethnicity, class...dynamic and complex gender identities in which men and women experience both shared and divided interests, and would understand environmental relations as primarily social relations” (Jackson, 1998, p.315).

The central concepts to this analysis include the gendered division of labor, rights and property rights, and responsibility to understand gender differentiation on the household and community levels (Jackson, 1998). That is not to suggest that gender differentiation is the primary reason for why women are at a disadvantage in the face of male power. Instead, women’s experiences need to be personalized and not limited to a generalized and universalized social category.

Hence, feminist political ecology moves beyond the structuralist reasoning for women's disadvantage. For instance, to observe the situation of the gendered division of labor in households and the confinement of women to the role of managing households, there are sets of questions that I could raise in order to gain a clearer perspective:

*Why do they [women] appear to (mostly) go along with a deal that appears to offer them so little? Are they as powerless as this model suggests and is the deal as bad as this model suggests? How do they understand and represent equity in gender relations? What are the discourses that convince women of the legitimacy of their exclusion [from other roles] ...?* (Jackson, 1998, p.317).

This suggests that there might be strategic advantages to women’s invisibility and that they might be exercising other subtle forms of influence and power (Jackson, 1998). In lieu of these questions, I would contend that the women I interviewed are
going along with the water manager role given the strong hegemonic discourse, which is further explored in the next section.

### 5.2. Women as Water Managers

A woman in the role of the water manager is a performance that is enforced by a strong hegemonic gendered discourse. The notion of gendered performativity, coined by Judith Butler, contends that the performance of masculinity and femininity in various contexts is “fragmented, provisional and wrought through the interplay of culture, class, nationality and other fields of power” (Resureccion et al., 2008, p.15). Furthermore, the theory of performativity looks at processes of repetition that produce gendered subjectivity.

*This repetition is not simply a performance by a subject but a performativity that constitutes a subject and produces the space of conflicting subjectivities that contest the foundations and origins of stable identity categories. Furthermore, agency lies in the work of performativity. Because subjects are constantly reproduced (through repetition), they are never fully constituted. There is always space for reworking and resisting. And because subjects can subversively transform, refuse, parody, or rupture the laws of discourse, thereby reconstituting themselves, identities emerge from discourse and power relations as neither foundational grounds nor fully expressed products. (Jackson A., 2004, p. 675)*

Performativity becomes a helpful theoretical tool in exploring women and water management in Amman because it sheds light on the repetition in the women’s behavior learned through the hegemonic discourse which in the end formulates their subject position of water manager.
This paragraph, taken from an article in the leading Jordanian Daily newspaper Al Dustur, along with many other articles I have seen, places the responsibility for water conservation on women. The Jordanian Daily reinforces the role of women in water management as follows:

...women are responsible for water conservation especially in the home. Men as heads of their families play a critical role at overseeing the family and securing their financial needs. Women are especially responsible for conserving energy and water so to limit these expenses. Women are also responsible for everything in the house where we find men are not too concerned about domestic issues since they work outside the home... (Translated from Arabic, from the Al-Dustur Jordanian Daily Arabic Newspaper, 26 August 2010).

The narrative identifies females as the water managers that need to perform domestic tasks. It maintains the traditional stereotypical roles that men work outside the home and women work inside the home, which enforces the classic dichotomy of the public/private sphere.

The water manager subject, reinforced by this hegemonic discourse in many senses, confines women. This subject position, enforced through public policy of intermittent water supply, seems to be placing a large responsibility on women to manage this resource. It is confining women’s other possible subject positions and roles. In my field work, I did not find many elements of cooperation between men and women in the household to perform the domestic labor tasks involving water. Instead, women were expressing the lack of help they were receiving from their husbands, even when they did receive help, such as in Nehad’s case- it was limited to outside the home.

During my interviews in South Marka and Sweifeyeh, I asked how men and children are involved in conserving water, and many of the responses reinforced the
gendered roles that the above-quoted article was assuming. Om Ali (South Marka, 28 years old) stated:

*We try to advise the men on conserving and I really have to tell my husband to actually conserve. But those men do not care about conserving water.*

Katrin: *why don’t they care?*

*They give the responsibility to the woman to conserve the water, but then they blame women when the water gets cut off* [note: water cuts entails that the stored water in the tank finishes] *and they yell at us if the water bill is too high.*

Nehad’s (Sweifeyeh, 26 years old) husband, on the other hand, was involved. “Ahmed helps me to get more water from another tank so I don’t feel like the water is cut off.”

I found his type of help limited to obtaining the water from outside the home and did not necessarily help her with domestic chores inside the home.

The daily practices in water usage that emerged from my interviews are closely linked to the role of water manager. Part of the identity as water manager includes that these women have a specific day of the week when the government delivers water, recognized as the “day of water”. Virtually all of their domestic work is prepared to be carried out on this day. Such is an example of how strategic these women need to be in seeking ways to conserve water at all times.

5.2.1. **Daily Water Practices**

The women I interviewed identified a series of domestic labor tasks that they perform without necessarily the support of their husbands. Watered domestic tasks are part of the water manager role expected from the women. The women I interviewed identified personal hygiene of their children as one of their responsibilities. Personal

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5 I did not follow up on this statement so I’m not certain whether it is a case of water theft. He is possibly taking water from the neighbors’ tanks.
hygiene in terms of showering, whether on daily basis or not, was at times controlled or approved by the mothers. Some of the women I interviewed in South Marka expressed that their children demanded more frequently to bathe or shower, which marks a change in lifestyle. There are also seasonal variations. People tend to shower more in the summers.

Going back to the Abu Mahjoob cartoon mentioned earlier, where they present the model behaviors in conserving water while performing domestic tasks, the women I interviewed were already implementing many of the recommended techniques. At the same time, it is not clear how they learned these techniques since they did not necessarily see the cartoon. The below accounts are by the women I interviewed where they discuss their responsibilities in managing various domestic labor tasks.

Starting with managing the showering for their children; Om Rabee here was taking different measures to secure enough water for her boys, who were in their twenties, to be able to shower.

Om Rabee (South Marka): I have a well where I collect all the rain water. I am able to store the water. I have a concern that the tank is not enough, so I recycle the water all the time. I don’t throw away any water, because the tanks were not enough and now I put extra tanks to be able to manage, because my boys started to shower all the time, so I have to have water.

Om Ali and Worood were both using the bucket method to bath their small children in order to conserve. Both took it upon themselves to control and conserve the water used by their younger children.

Om Ali (South Marka): I bathe my children and I bathe them using a bucket. Worood (Sweifeyeh): We don’t allow the kids to play with water. I give them a bath so they don’t waste the water (she is bathing her children instead of using the showering method).
In the case of Ismahan, Nehad, and Ibtisam; they had children between the ages of 7 and 25, and they took it upon themselves to manage the showering schedules and discipline their children if they waste too much water.

Ismahan (South Marka): *I try to tell my kids to shower twice a week only and that is not suitable for lifestyle anymore. There are differences between winter and summer seasons, in the summer we have to shower every day. We have a well so we do pump the water up [to the tank] and we have a motor for pumping this water into my tanks.*

Nehad (Sweifeyeh): *When they shower I try to warn everyone not to use that much water- but only if it cuts off...if it is not cut off we have water, so it’s not a big deal...*

Ibtisam (Sweifeyeh): *One of my daughters wastes a lot of water when she showers, so it is a constant conversation of please don’t take that long showering!*

On the “day of water”, almost all women confirmed as housewives they had to complete the laundry for the whole family. In South Marka, the topic of the effectiveness in conservation of the automatic washing machine versus the manual washing machine was a key topic. The passion for this topic reflects the importance of conserving water which they took upon themselves.

Om Rabee (South Marka): *The other reasons why it is not enough also is that the automatic washer is not that good and it doesn’t conserve the water like the regular one (regular is a manual washing machine). The regular washer that we have that has two compartments washes better than the automatic. I was able to wash everything with it. I don’t want this automatic one. I am used to the non automatic washer. We really don’t like to waste the water here.*

Om Ali here was following the recommended behavior (according to the cartoon in the beginning of thesis) that encourages citizens to wash clothes less frequently in order to conserve water.
Om Ali (South Marka): *I always collect the washing and then do the laundry mostly 1-2 times a week but I try to collect it first [she collects all laundry first]. We take a really long time to actually wash.*

Ismahan (South Marka): *Of course, I try to conserve at all times. Only once a week I wash laundry and this means using large quantities of water, but is still is a problem for the rest of the week, because I won’t find clothes, and that is why I feel like I need to buy a lot more clothes.*

Ibtisam (Sweifeyeh): *Yes I conserve, I try to not to open the faucets to the maximum, and now I do laundry only twice a week. In the summer I do laundry only once week, one time.*

Watering the gardens was the responsibility of some of the women I interviewed who had gardens in both Sweifeyeh and South Marka. They also took different measures to conserve the water and to keep the expense of water down.

Om Abdalla (South Marka): *The garden is getting watered from rain water and we store the rain water, sometimes we have to buy water to ensure the garden is watered. The government water would not be enough to finish everything we need to do, so we have to buy.*

Om Eisa (Sweifeyeh): *I changed the way of watering my garden to cutting off the municipal water. It seems like they are treating the West Amman people differently and they are making our water more expensive. I don’t believe that Hay Nazal [an area in East Amman right next to South Marka] are paying that much water. I can’t believe for the quarter 400 JD for gardening so now I changed it to buying tanks for 25 JDs... I cannot believe that East Amman can afford to pay 400 JDs for water, they cannot afford it.*

Ibtisam (Sweifeyeh): *I got certain types of plants that don’t require that much water for the garden. This is better to conserve water.*

Only Worood brought up the issue of washing dishes and how she conserves by using a bucket. The bucket method is highly encouraged in government awareness campaigns
and Miyahona awareness campaigns. Even though Worood is from Iraq and has not indicated that she saw any awareness campaigns, she applied this method.

Worood (Sweifeyeh): Sometimes I try washing dishes in a bucket. I know that I don’t want it to waste all the water. In Iraq we had more water than this. But here I needed to conserve. When I lived in Smeisani and Gardens {two areas in West Amman} I didn’t feel the water problem at all. It used to come Tuesday and Saturday and now I feel the problem in Sweifeiyeh. I think it is because we don’t have a janitor to pump the water up to the roof. We need to always pump the water up [pumping water from a storage tank in the basement to a storage tank on the roof. Roof storage tanks are better for water pressure]. I think that’s why am not getting water [because there is no janitor to pump the water to the main storage tank on roof].

These domestic tasks of water usage are closely related to how these women identify themselves as water managers, and part of water management is to implement various conservation techniques. The women are identifying themselves as water managers in managing the distribution of water in the household according to task and means of conservation. The “day of water” becomes a significant and common day between these women to complete these tasks and chores that are intertwined with their identity as good mothers, good wives, and good citizens.

5.2.2. Drinking Water

One of the critical responsibilities for the women I interviewed involved the health of their family members and ensuring that they are drinking and cooking with clean water. Women have to further manage the issue of obtaining clean drinking water given that lack of trust of drinking tap water which is commonly assumed in Jordan.
The commonality between the two areas of South Marka and Sweifeeyeh is that they were seeking alternatives to drinking water like buying bottled water, installing water filters, or boiling water. The women I interviewed had to manage the issue of drinking tap water or not drinking tap water.

When I went to Miyahona Water Distributor Company and interviewed the Communication and Water Awareness Manager, engineer Joumana Al Ayed, she held up one of the company’s leaflets and told me that one of the main concerns for the “customers” is the tap water quality for drinking.

*Our other significant problem with the customer involves the water quality- they are not satisfied with it. I think it is because they don’t trust it after the water poisoning situation in 1998. I think what happened back then was that it was a really hot summer and the water quantities in Zay pumping station decreased. So in order to put in more water, there was a mess, and we got fungus in the water. But still, you must note that we do constant check-ups on the water* (February 26, 2012).

Engineer Joumana was correct; in Amman most seemed to distrust drinking the tap water given that all the women I interviewed owned water filters or purchased bottled water for drinking. In Sweifeeyeh, it was a given that everyone bought bottled water or had a water cooler. In South Marka, I found the women discussing this topic since they previously suffered from drinking tap water, and were forced to switch to filtered or bottled water.

In South Marka, Ismahan took me to visit her neighbors. We visited Sanaa (31 year old with one child), married to an Egyptian, rents two rooms and a bathroom. In one of the rooms, she had five women gathered to drink coffee. One of the conversations that came up was the water quality triggered by my question, “Is there a
water problem in Jordan?” Here are excerpts of the conversation. Fadwa was the first to respond. She is a fifty-five years old widow with four children. She is Sanaa’s neighbor, also renting two rooms and a bathroom. Sanaa and Fadwa both share one water storage tank. Dala and Hanan who were visiting too, are sisters and daughters of the owner of the spaces that both Fadwa and Sanaa are renting.

Fadwa: I think sometimes the water is not clean, it is all sand and we are very concerned.
Sanaa: The water is not clean, I put cotton on the tap and saw it, and we can smell chlorine.
Fadwa: That is why we have to buy the water or everyone needs to install filters.
Ismahan: They (doctors) even told us that we should not drink that water and we are getting health problems.
Dala: I can feel pain in my kidneys if I drink tap water.
Ismahan: When we used to drink from the tap the doctor told us not to drink the water from the tap. When the kids get sick, the man would say why you didn’t you boil the water? Many times, we get the kid to the doctor, he tells us they are sick from water! This might not affect us adults but our kids our vulnerable.
Fadwa: I buy water for drinking, it costs me 1 JD (approximately 1.4 USD).
Sanaa: I thought it was 2 JDs (approximately 2.8 USD).
Fadwa: No, it is only 1 JD (approximately 1.4 USD), I buy my comfort with it.

This conversation is an indication of the lack of trust to drink tap water and the additional burden that the women are facing to obtain clean water. If the women do not pay attention to the cleanliness of water then their children might get sick. That is an additional burden to visit and pay for a doctor, and take care of the sick child. That is where Fadwa indicates that she is “buying her comfort” even though paying 1 JDs (approximately 1.4 USD) might be a burden; she still needs to manage as it is a necessity to buy clean water.
5.2.3. The Day of Water

Another aspect to being a water manager entails an awareness of when the municipality water comes per week, and if there are any stoppages to be able to manage the water in the household. All women I interviewed knew exactly when the water came. In both South Marka and Sweifeyeh, they assumed that the water comes on Thursday for about 24 hours. Whether provided for 24 hours or 48 hours, the water would reach these two areas once a week. The day the water comes is referred to as the “day of water”, were “they adopt specific strategies to carry out their household tasks..., whereby they organize bathing, housework, laundry, cleaning and gardening at a specific time or in a specific way...” (Darmame et al., 2011b, p.437). The day of water becomes part of these women’s sense of time, way of organizing their week, and part of their identity.

Getting the water once a week is highly inconvenient for various reasons. First, one is required to confine herself to this single day to complete all the domestic labor. Second, there are risks involved if the water is not delivered on that day. There are frequent stoppages in delivering water even on the scheduled day due to inadequacy from various government institutions management water delivery. Through my field work, as mentioned earlier in thesis, employees from Miyahona water distributor company indicated that the water stoppages could be due to lack of water pressure from water distributor stations, electricity cuts at the water distributor stations, or clogged water pumps due to heavy rains. These reasons are not always clear for
everyone. Therefore, I have the impression that water stoppages often get jumbled into the water scarcity discourse and the façade that there is a water shortage.

Day of water has even impacted my attempts to schedule interviews with women in South Marka, since I attempted to go to South Marka for the interviews one time on a Thursday. Thursday is when the water comes and that is when the women complete their cleaning and washing. My key informant who helped me find the women in South Marka, Ismahan said: “Please pick another day as we need to finish our washing on Thursday”.

Another inconvenience is that the ‘day of water’ is scheduled on a Thursday, a day before the weekend, which particularly conflicts with social events taking place that day. The example of Ismahan (46 years, from South Marka) showed that when given the choice between a social event, like a wedding on a Thursday, she would choose to stay at home to finish the cleaning and washing instead of going out.

Ismahan (South Marka) expressed that:

*It is not convenient that it comes only on a Thursday, why isn’t it another day. I wish it came on another day so I can participate in other social events. Like many weddings happen on a Thursday and it is truly a burden that I consider not going because I would need to finish the washing.*

Her subject position of ‘water manager’ was placed firmly over that of the ‘social subject’, given the responsibility she felt for her family and, perhaps to some extent, the public discourse of good citizenship through sound water and household management practices. The women I interviewed also felt a type of pressure to complete all the domestic washing tasks on this day, as expressed below by Om Eisa and Nehad.
Om Eisa (Sweifeyeh) Only once a week, on Thursdays, we get the water. It is a program that we know about – it is a known day for everyone for Sweifeyeh. I wish for it to come more than once a week. I feel like I am pressured with the water rationing system. I wash on Friday, I do all my work on Friday and Saturday so it is enough for the week. All my cleaning takes place on these days.

Nehad (Sweifeyeh): I know that it does come on Thursday, on that day I am required to start using the water a lot more, Thursday and Friday I do laundry, cleaning the house, I almost do everything needed. But we do shower the rest of the week whenever we want.

The day of water or intermittent water supply is significantly pressuring women to be water managers given that if they miss this very one day then they have to wait a whole week provided that they do not purchase extra water.
6. Government ‘Power’ and Conservationist ‘Subjects’

In Jordan, there is evidence of the government using neoliberalist policies in forming a type of Jordanian citizen and governing their behavior. The art of governing embodies multiple meanings and there are a series of questions that can unveil these modes like, “Who or what is to be governed? Why should they be governed? How should they be governed? To what ends should they be governed?” (Rose et al., 2006, p.84-85). There also is not one single body that manages the conduct of citizens; rather there are multiple authorities that govern at different sites with different objectives. More useful questions include, “Who governs what? According to what logics? With what techniques? Towards what ends?” (Rose et al.,2006, p.85).

The Jordanian government seems to be using certain elements of the neoliberalist philosophy in managing the water situation in Jordan. The neoliberal economic philosophy promotes elements like:

1) the creation of capital markets for natural resource exchange and consumption, 2) privatization of resource control within these markets, 3) commodification of resources within these markets, 4) withdrawal of direct government intervention of market transactions, 5) decentralization of resource governance to local authorities and non-state actors such as non-governmental organizations (NGOs) (Fletcher, 2010, p.172).

The Jordanian government has privatized the resource control of water through the creation of the Miyahona Water Distribution Company in Amman. The Jordanian government has also allowed for the privatization of water wells and for the selling of water through private tankers at higher prices thus creating a water market. There are further many elements of decentralization of the water resources governance to the
local governments seen through setting up the management and distribution of water by governorate. Miyahona Water Company manages Amman only, and local municipalities (Al Baladeyat) manage each of their areas. There is also the strong prevalence of NGOs supporting citizens to manage the water ‘crisis’ evident through numerous projects reported in the media. Another aspect involves the government using economic incentives to force citizens to consume less through water prices. Higher consumers pay twenty times more than low consumers (Darmame et al., 2000).

Through my interviews I have come to see the challenges with this growing neoliberalist trend, especially on women who are burdened to purchase drinking water, required at times to buy additional water for domestic use due to non-delivery of public water on scheduled days. Further, the expense of water keeps increasing and leads to its commoditization, which raises concerns about whether the poorest of the poor in Jordan can even afford it. I stand by the Marxist tradition that points out that this results in the growth of inequality of allocating wealth, power, and control over resources for the few at the expense of the majority. I can also see the concern on how it is producing a certain type of subject that is self-centered, that primarily responds to economic incentives (Fletcher, 2010). In this sense, if a household is characterized as high income then they might not be as concerned to conserve water as they are able to afford expensive water resultant from high consumption overall. This was the case of Lateefa (70 years old from Sweifeyeh) who was not concerned with conserving water and did not even notice the expense of water, since her household had a deep water well and multiple water tanks.
Next is to explore the type of power that the government might exert on subjects to form subjectivities. Therefore, the debates on subject formation become significant, since they look at the subject as an underspecified theoretical entity and looks at subjectivity in terms of “language, power, and the play of identity” (Graham and Amariglio, 2006, p.201). The debates in the 1970s and 1980s involved notions of what constitutes subjectivity and how capitalism as a system is seeking to produce individuals or subjects that imagine themselves as autonomous and self-possessed. Foucault, along others like Althusser, came to challenge this imaginary of autonomy and independence.

In exploring the objectification of the subject, Foucault (1982) identifies three modes of subject formation. First, Foucault (1982, p.777) investigates different categories of subjects: subject as a “speaking subject” expressed in the study of linguistics or philosophy, the “productive subject” who labors to analyze wealth or economics, and the subject understood through its “sheer fact of being alive”, as expressed in natural history and biology. Second, Foucault (1982, p.778) theorizes how subjects are divided within themselves and separate themselves from others using “dividing practices” and exploring discursive categories such as “mad and sane, the sick and the healthy...”. It is discourse and accepted norms here that draw the boundaries for subjects to inhabit different subject positions (Foucault, 1982). The third line of inquiry concerns subject formation, “the way to turn oneself into a subject”, or the moment someone recognizes him or herself as a specific type of subject (Foucault, 1982, p.778).
In order to properly objectify the subject it is necessary to look at dimensions of power (Foucault, 1982). There are multiple struggles involved in the process of subject formation where forms of power are at play. This power is taken effect in everyday life and

\{C\}ategorizes the individual, marks him by his own individuality, attaches him to his own identity, imposes a law of truth on him which he must recognize and which other have to recognize in him (Foucault, 1982, p. 781).

At the same time, Agrawal (2005) also cites Bulter (1997), who cautions against using “subject” interchangeably with person and individual, since one must understand that subject formation emerges from power relations that do not stay the same after the subject is formed.

The subject can either be controlled or dependent on someone else, or the subject is formed through self knowledge that is tied to one’s own identity. Power is visible when exercised on others for purposes of modifying their behaviors or actions. In the case of water management of Amman, the government exercises power over subjects through water sanctioning and campaigns promoting certain types of water-conserving, of which I have argued are gendered subjects. In subject formation, subjects respond to such influences and govern their own behavior – a process Foucault refers to as governmentality. For this process to take place, and for power to be negotiated in this way, subjects must be free. Governmentality is different from domination observed in slavery; a situation where there is no space for resistance or struggle (Yates et al., 2010).
The relationship between government and subject formation is visible through
the “technologies of power that form subjects and encourage them to define
themselves in particular ways and the technologies of the self that individuals apply to
themselves to transform their own conditions” (Miller, 1993, p.xiii-xiv; as cited in

Even though a person does not just have a single subjectivity, one can inhabit
different subject positions at different times, or can understand one’s self through
different subjectivities. When subjects are influenced by discourse or policy, this should
not imply that they are passive victims. Subjects have the agency to act and to resist
discourses and processes of subject formation. How have the women I interviewed
identified themselves as water conservationists, or resist the discourses of water
conservation and adopt different subject positions in the management of water?

6.1. Conservationist Subjects and Fear

The government of Jordan possesses a certain type of power over citizen by
controlling the supply of water and setting the price for it. Instating intermittent water
supply, paired with public campaigns that employ a rhetoric that links efficient water
management to good household management and citizenship, requires Jordanian
citizens to take up the subject position of the “household water conservationist”. The
policy here is to provide water only once a week and that is linked to the subjectivities
of the women interviewed. I asked the women in my interviews whether they were
trying to conserve in their daily lives. More often than not, particularly in South Marka, I
got a puzzled look from the women interviewed. Their look indicated a type of
confusion, they were not certain why I would ask such a common sense questions. Do they have a choice not to conserve when they get water only once a week?

Om Rabee (South Marka) expressed a type of despair: “We have to manage either by getting more tanks by conserving, so we cannot be free in our consumption”.

Even the women I interviewed in Sweifeyeh, despite being higher consumers, having access to larger tanks, and having the financial means to purchase extra water, manage the water provided only once week in one way or another. Om Eisa (Sweifeyeh) made an interesting link that the government is pushing people to conserve through intermittent supply:

I think there is water in Jordan but there isn’t enough water to be given to us everyday, instead it is only once a week for us to be able to conserve, and that is because we have too many people.

The issue of managing the intermittent water supply is transformed into the fears that all these women face from running out of water. All the women expressed that they were concerned about their household being suddenly without water. This fear also forces the women to conserve or become subjects of water conservation.

Ismahan (South Marka): Yes of course I have fears of running out of water; I have two tanks for hot water and four tanks for cold water. In the summer the cold ones finish and then I am left with two 2 meter tanks. Of course, I try to conserve at all times! All this behavior is actually tied towards the tanks size and conserving the water we get in the tanks. We don’t want to run out of water.

Om Rabee (South Marka): I have a fear that it will cut out and I would really hate for the water to get cut off. I really don’t want to be put in a situation to actually buy the water since I don’t trust what it is {she is concerned with unclean water from a private provider}.

Om Eisa (Sweifeyeh): I do have fear that it finishes, and I don’t want to buy water it is too expensive.
Worood (Sweifeyeh): I am a bit worried but I am not always sure when it (water) comes. Sometimes I find that it’s not available and I just have to pump it up or I buy more.

Ibtisam (Sweifeyeh): I always have fears that it will finish. I keep checking the water every two days because I don’t want the tenants to finish the water (she is renting out three apartments in her small house and they all share the same water source of a deep well).

Nehad (Sweifeyeh) Yes of course I have that fear of running out, I get worried that my employer notices that I finished the water or not (she is sharing the tanks with her husband’s employer, and they are being provided water in exchange for her husband’s labor).

Only one woman in Sweifeyeh, Lateefa (70 years old) expressed not having fears of running out of water, and I would argue that it is because she is not managing the water directly as she has a domestic servant and the water supply seems abundant.

Lateefa lives in a large three-storey family home with five of her sons and their families.

Lateefa: We never got water cuts. Once it cut off and we had to buy water and it is about 26 JDs for one tank. We always fill our 80 meter well with water and upstairs we have even more tanks. But we have the problem that the filters use a lot of the water. Generally, I do not do any washing or laundry; I have the “Sri Lanka” (domestic servant from Sri Lanka) or send my laundry to the wives of my sons. We all try to tell each other not to waste water. But I am not really concerned (concerned with water getting cut off).

From my interviews, I have found that the fears of running out of water forces women to conserve water. All interviewed women were taking certain measures to manage the water situation, and that is highly dictated by the government policy of providing water only once a week. The different measures the women were taking are not easily linked to the awareness campaigns that the government launches. Instead, it is the policy of intermittent water supply that sends a strong message that everyone must conserve.
For instance, when I asked the women whether their conservation methods were learned from any government awareness campaigns, they all had difficulty to determine whether that was the case. The government awareness campaigns in forms of comical cartoons are at times aired on the national Jordanian Television, but most stated that they watch Satellite channels instead. At times, some women discussed hearing complaints from citizens outside Amman on Radio shows about water shortages and water delivery only once a month. This led the women to conclude that there is a Jordan water crisis and intermittent water supply is justified.

The other discussed method encouraging conservation or constructing their knowledge of water shortage was school and school curriculum books. This was applicable to women who grew up in Jordan, they recalled that the school books discussed that everyone must conserve. The other theme that emerged also is that “Islam encourages conservation”, using Islamic proverbs that encourage conservation like “Do not waste water even if you were on a running river”, and “one must conserve when performing abolition”. This religious theme was brought up by Ismahan in South Marka and Ibtisam in Sweifeyeh.

6.2. Fear of Expense of Water

Another common fear that was pushing the women to conserve is the expense of water. The expense of water is also an indication of the commoditization of water. The commoditization of water refers to the process of “enabling it to be privatized, sold and attributed a market value” (Cleaver and Elson, 1995, p.6). In Jordan, the government provides the water an expense and allows for a market where water is
privately sold. Given the water scarcity in Jordan, water has an important economical dimension with an intensified value. From my field work, all the women I interviewed had the means to pay for their water, so my sample did not include the poorest of the poor who may not be able to afford the expense of water.

One of my questions was regarding the charges on the water bill, and how my respondents felt about water prices. This question shed light on some of the critical socio-economical differences between East and West Amman resident. Even though I did not always get exact amounts about the cost of water, either because they genuinely did not know as in many cases husbands paid the bill, or they were not comfortable to share their households expenses with a stranger. At the same time, the women had an idea about water expenses expressed differently in Sweifeyeh and South Marka. In South Marka, the common phrase was that, “water is cheap because it is subsidized”. In Sweifeyeh, the common phrase was, “I am not too sure why water is so expensive”.

Miyahona water distributor company issues the water bills quarterly (every three months), and there have been discussions about moving to monthly bills but it has not been fully implemented (Jordan Times, 2012). The water bill includes domestic water consumption and wastewater discharges per quarter. Miyahona’s role involves distributing the water to each household connected to the service and having a meter. A “meter reader” from the company goes to each household and issues a bill on the spot (Miyahona leaflet, January 2011). Water bills are subsidized through a tariff structure of a fixed price of 3.75 JDs for a quarter if consuming less than twenty cubic meters
(Darmame et al., 2011b; Geerlack et al., 2009). The government in Jordan created a water pricing aimed at lowering water consumption where for households that consume more 100 m3 every quarter would pay 5.5 times more money than the households that consume less than 50 m3 (Halasah et al., 2006).

The women in South Marka indicated that the water bill was not expensive since it is “subsidized”. Both Ismahan and Om Abdala used the term “subsidized” as to why their water bills were low.

Ismahan: *Not expensive because it is subsidized by the government, but if the government does not subsidize it we would be in trouble. So it’s a really nice thing that they subsidize it.*

Om Abdala: *I think the price of water is good but if it is not subsidized... {she did not continue her thought, but most likely would have expressed that if it is not subsidized then they would not be able to afford it}. We do not have a sewage system and that is what is so expensive.*

One of the complaints in South Marka was that the water bills were not delivered on time, which coincides with the general neglect to provide services to East Amman. The “meter reader” from Miyahona did not frequently come to read the meter or issue a water bill. At times, Dala (her father owns several spaces and rents them out) expressed that they are receiving faulty water bills:

*The other day we got 100 JDs for 4 months for the three houses. So we did get expensive water bill, but that was because we had a problem with the meter since it showed 500 JDs. It has been two times that they are making mistakes in assessing how much water we use. We do barely use 100 JDs.*

Many questions came to my mind in light of water subsidy in East Amman like why are the women I interviewed in East Amman all low water consumers? What are
the connections between low water consumption and poverty? Khadije Darmame in her work (2011b, p.430) writes that “there is a marked subsidy to the poor...”. Low water consumption is related to a certain type of lifestyle that increases or decreases water consumption. Taking liberty in water consumption can be a privilege for households that can afford to buy water.

In Sweifeyeh, the issues were different; Om Eisa, Ibtisam, and Worood regarded the water bill as “very expensive”. Receiving and paying bills was not applicable to Nehad since the employers of her husband included water as part of living in the apartment basement in exchange for his labor. In the case of Lateefa, who was living in a massive three storey villa with four of her sons and their families, indicated that she does not have a problem with water expense instead the “electricity is too expensive”.

Om Eisa regarded the water bill as expensive, she owned five water storage tanks that are two cubic meter in size. The expense of water has led her to change the way she waters her garden to purchasing water from a private provider, as it seemed cheaper.

Om Eisa: *I changed the way of watering my garden to not using municipality water. It seems like they are treating the West Amman people differently and they are making our water expensive. I do not believe that Hay Nazal [an area in East Amman, near South Marka] are paying that much water. I cannot believe for the quarter I got 400 JD for gardening so now I changed it to buying tanks for 25 JDs for gardening only. It is not like the East Amman can afford any of this.*

Om Eisa is probably right, in Hay Nazal and many households in East Amman cannot afford to pay 400 JDs per quarter. At the same time, this high expense is due to high water consumption (this is in accordance to Miyahona Leaflet explanation of water bills). Further, Worood from Iraq was renting from Om Eisa a large apartment. She
owned five water tanks and in addition to public water, she was purchasing water from a private company.

Ibtisam also suffered from expensive water and took the measure of disconnecting from the municipality water all together. She lived and owned a house with four apartments that she rented out.

Ibtisam: *I used to pay too much money, every three months I used to get billed 300 JDs, and now it is just easier to buy water. I am buying a tank every month, I pay about 200 JDs but that is for 4 families. Every month they are paying me 10-15 JDs.*

Katrin: Why do you think your water bill was high?

Ibtisam: *I was busy in the hospital with my sick husband for two years. I think in that time they stole water from me. There was this construction site and they were taking the water for me. Each month it accumulated and I did not pay for it. If there is a way to pay Miyahona in installments and I can get back the water from them. Maybe it is cheaper. Do you know anyone from Miyahona that can help me?*

The complaints about the expense of water in West Amman possibly intensify the value of water and its commoditization. For instance, as mentioned earlier Um Eissa and her husband owned the building where Nahed, Worood and I lived in. They also owned the supermarket where Nahed’s husband was working. Um Eissa was providing water and housing to Nahed’s husband in exchange for his labor in the supermarket, which intensifies the importance and value of water. Also, at the unfortunate event of the death of one of Worood’s daughter, Um Eissa decided to help out Worood by providing her “more water”. In the sense that Um Eissa pumped extra water into Worood's water tank as a form of help and gift giving.

In the end, the government is powerful in pressuring the women I interviewed to conserve. The women I interviewed seemed to conform to their role as water managers
in the household, accepting their responsibility for making enough water available for family members across the week. Even though Foucault states that there is no pure freedom and no society that is free of power relations, there is some room for agency and freedom (Yates et al., 2010). Power and power relations contain the possibility of resistance. At the same time, I agree with Foucault’s (1984/1997a) observation that power relations are often fixed and with “extremely limited margin for action, freedom, or resistance” (Foucault, 1984/1997a, p.292, as cited in Yates and Hiles, 2010, p.59). I found this to be the case in this research.
7. Conclusion

This thesis was an exploration of the intricate relationships between people, environments, and government policies and discourse, looking particularly at the issue of water in Jordan’s capital of Amman. These relationships were significant in exploring the efforts to conserve and protect the environment, and in understanding natural resource management and control practiced by citizens, communities, and women.

Jordan is suffering from an acute water shortage that has prompted its government to enact water conservation policies through limiting public water supply and educating citizens through national awareness campaigns. The Jordanian water policies have important implications on the water access of citizens and thereby, as I have argued, on the formation of subjectivities. As I have shown, the Jordanian water discourse suggests certain practices and behaviors of good citizenship practiced by citizens as water managers, creating discursive boundaries for how Jordanians should behave. The government discourse is also deeply gendered, as national rhetoric such as the one represented in the cartoon this thesis started off with firmly establish domestic water management as solely the responsibility of housewives and women.

I have also argued that the distribution of water in the capital city of Amman is both politicized and creates social inequities due to unequal access to municipal water. Since, a “broader process of historical change and development in the city” influences daily water management practices (Truelove, 2011, p.146). Amman underwent massive urbanization and evolved to its current form with a sharp divide between East and West Amman. The experiences of the women I interviewed in terms of their daily practices of
water management and conservation were different according to their geographic location of living in either East or West Amman.

The Jordanian government policies require citizens to govern their own behavior in response to the water crisis. The linking of governmentality with environmentally conscious behavior has been theorized as environmentality and entails processes of subject formation, notions of subjectivity, and the concept of environmental subjects. As I found, women were conserving water out of necessity and fear of running out of water, or fear of the expense of water. Part of subject formation is also power relations that are producing certain types of subjects that are taking care or not taking care of their environments and water resources.

My fieldwork has shown that especially government policies regulating water distribution have very real impacts on the subject formation of women. The government provides water on an intermittent basis, which is highly inconvenient for Amman’s citizens, especially for women. As the accounts provided in this thesis show, the ‘day of water’ is an event that deeply impacts women’s organizational arrangements for the week, household and personal planning, and their subjectivities. The subject position of the water manager who has to maintain secure water supply for the entire family throughout the week leads women to ignore or suppress other subject positions they inhabit outside the household, for example attending social and community events. For the women I interviewed, the ‘day of water’ scheduled on a Thursday, a day before the weekend, particularly conflicted with social events taking place that day. The example of Ismahan (46 years, from South Marka) showed that when given the choice between
social events like a wedding on a Thursday, she would choose to stay at home to finish the cleaning and washing instead of going out. Her subject position of ‘water manager’ was placed firmly over that of the ‘social subject’, given the responsibility she felt for her family and, perhaps to some extent, the public discourse of good citizenship through sound water and household management practices.

The government of Jordan is pressuring and placing a large responsibility on the citizen to conserve water. The water distribution organized by the government across the country and across the sector is certainly problematic. There are many questions that emerge in terms of how the government is managing water. For starters, the question stands on why does Amman get most of the water and the rest of Jordan gets less water? My other question that came to mind has to do with the intermittent water supply practice—how effective is it in saving water? Further, how can it be compared to delivering water on a daily basis?

7.1. Further Explorations

More issues and questions came about throughout the research that I did not get the opportunity to explore due to time constraints. One issue is the growing trend in Jordan of the availability of a private market for water and the implications of the commoditization of water itself. The creation of a lucrative water market for selling water could have serious implications on households.

I wished also to explore more in depth the issue of how water should be a right that needs to be delivered to everyone versus the current situation of providing water
to only those who can pay for it. If we regard water as a commodity and not a basic human need, then some people will be marginalized and excluded from the basic right of accessing water (Cleaver and Elson, 1995). Unequal access to water can happen as a result of access being privatized and commercialized. The poorest of the poor would particularly suffer from limited access to water, since they cannot pay for it when it is all privatized as “water companies are set up for profit maximization, not social justice” (Coles and Wallace, 2005, p.126). This is where my thesis was limited since it did not look at the situation of the poorest of the poor who may not be able to afford the water.

Moreover, the commoditization of water leads to the marginalization of women through making false divisions between domestic and productive water and the gender division of labor associated with these tasks. Domestic water is assumed to be for household use, which again is seen as dominated by women and thus regarded as not productive, or being without monetary value. Productive water, in turn, is seen as dominated by men and involves water used for watering agricultural land and raising cattle, which have market value and can be sold (Cleaver and Elson 1995; Oreilly 2006).

To some extent, this thesis lacks the man’s voice. We find that the portrayal of men in the Abu Mahjoob cartoon was negative, when presented as water wasteful and careless subjects. My work did not test this imagery in depth given that I have not interviewed men in households, just male experts. However, Darmame et al. (2010) in their work present a finding from the household survey that men were handling the education and instruction of children to conserve water on the household. From my field work, it seemed as though the women where handling all the water management
activities, especially educating children to conserve. Further, this does not coincide with the image presented in the cartoon.

I would have sought out further explorations of how water is socially constructed through the history of Jordan and the colonial influence. As Page (2009) in their work shows that the production of water in the pre-colonial period involved water being fetched from springs and wells. The fetching of water was a community activity in which women were heavily involved. Then the production of water changed during the colonial period, as water pipes for local provision were installed. With the piping system, women became excluded from the community management of water and confined to their homes. Similarly, Naguib’s (2009) book *Women, Water, and Memory: Recasting Lives in Palestine*, captures the historical transition from fetching water to getting piped water in 1985 through women’s stories in Musharafa village in the West Bank. When the water became piped, it shifted the role of women of fetching water from the public space and restricted their mobility. I was not able to clearly pinpoint that historical moment of piping water in Amman, which can be left for further explorations.

In conclusion, water shortages in Jordan will remain a problem in the future. Meanwhile, efforts of the government and the country’s citizens to meet their national water crisis will continue to provide interesting glimpses of the interconnections between discourse, policies, practices, gender, and social organization. My thesis has argued that the management of water in Amman is deeply gendered. I sincerely hope that my thesis and the work of other feminist researchers may contribute to abandoning
gendered stereotypes towards the roles of men and women in natural resource management.

I would like to also end this thesis with a cartoon that was recently created by Imad Hajjaj the cartoonist that illustrates how the water problem in Jordan continues to be relevant. This cartoon gives a glimpse of the socioeconomic relationship between class and water that this thesis attempted to capture.

Figure 12: Emad Hajjaj -titled "Water Crisis in Jordan". www.mahjoob.com
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Appendices

Appendix 1: Middle East Geography and Water Resources

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### Appendix 2: Summary Outcomes of the Israel-Jordanian Unified Plan

From Hadadin, 2000a, p.281

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>I. Surface Water Allocation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Yarmouk River</td>
<td>Israel gets 12 MCM in summer and 13 MCM in winter (total of 25 MCM), and Jordan gets the remainder of the flow. Jordan conceded to Israel to pump 20 MCM from the Yarmouk winter flow in return for Israel supplying Jordan with 20 MCM in the dry summer months.</td>
<td>Israel gets 25 MCM and Jordan gets the remainder of the flow.</td>
</tr>
<tr>
<td>B. Jordan River</td>
<td>Flow below Tiberias is split 50:50 after accounting for current uses.</td>
<td>Jordan River below Tiberias not considered among resources.</td>
</tr>
<tr>
<td>C. Other</td>
<td>50 MCM per year of drinkable quality and both sides will cooperate for implementation.</td>
<td>No additional water considered.</td>
</tr>
<tr>
<td>II. Groundwater and Desalinated Water</td>
<td>Israel increases its use of groundwater in Wadi Araba by 10 MCM if hydro-geological conditions allow; and Jordan gets 10 MCM from Israel in the form of desalinated water. Until the desalination plant is operational, Jordan gets its share from Lake Tiberias.</td>
<td>Israel does not get any portion of Jordanian ground water, and no allowance for a Jordanian allocation of desalinated 10 MCM was therefore stipulated.</td>
</tr>
<tr>
<td>III. Storage</td>
<td>Diversion/storage dam on the Yarmouk at Adassiya; storage on the Jordan river course, and storage off the Jordan river course (on the side wadis).</td>
<td>Storage on the Yarmouk at Maqarin by a dam 126 meters high (300 MCM), raisable at the expense of the Arabs to 148 meters. Diversion dam at Adassiya.</td>
</tr>
<tr>
<td>IV. Lake Tiberias Storage</td>
<td>Implicit storage of 20 MCM of Yarmouk winter flow. Israel releases 20 MCM to Jordan from the Lake during five dry months.62</td>
<td>Storage of floods not impounded by Maqarin dam (about 60–70 MCM) in the Lake or any other economic site.</td>
</tr>
<tr>
<td>V. Cooperation</td>
<td>Two parties undertook to cooperate to make more water available and to alleviate water shortage. A joint committee was established.</td>
<td>No cooperation stipulated. An international engineering board would oversee the water releases.</td>
</tr>
<tr>
<td>VI. Operation and Maintenance</td>
<td>Each party takes care of the cost of projects on their respective soils.</td>
<td>No mention of that aspect.</td>
</tr>
<tr>
<td>VII. Political Motives</td>
<td>Resettlement of Palestinian refugees and getting Israel accepted in the region.</td>
<td>Achieving a just and lasting peace between the Arab states, the Palestinians and Israelis.</td>
</tr>
</tbody>
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### Appendix 3: Amman Water Quantities

The quantities of water for the capital of Amman in the past 15 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Amounts</th>
</tr>
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<tbody>
<tr>
<td>2011</td>
<td>132,204,606</td>
</tr>
<tr>
<td>2010</td>
<td>134,184,423</td>
</tr>
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<td>2009</td>
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## Appendix 4: Research Questions

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<tr>
<th>Research Questions</th>
<th>Questions Targeting</th>
<th>Field Work Questions</th>
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| How are the interrelations between water and gender conceptualized? How are the current narratives of water surfacing gendered particularly in the Middle East? | Gender and Water experts - NGO expert | 1) What is the relation between gender and water?  
2) Why are gender and water related and in what ways?  
3) How are water project gendered?  
4) What other projects are happening in the Middle East?  
5) What is different about this water project in Jordan? Or what makes it different from the other projects in the Middle East? |
| What are the Jordanian State narratives of water scarcity and what are its public awareness campaigns, and how do they target households as sites of conservation and subjects as individual water managers? Do these campaigns reinforce traditional gender roles? | Government Officials | 1) Does Jordan suffer from water scarcity of water distribution? Or both?  
2) What are the reasons of water scarcity in Jordan?  
3) What is the government policy towards this scarcity?  
4) What are the current campaigns regarding water conservation?  
5) Who should conserve the water?  
6) Do women play a role in terms of water conservation?  
7) If yes, how can women help towards this water scarcity? |
| Is there an issue of water scarcity in Amman? What is the history of piped water, water access, and water distribution in Amman, and how does water become socially and politically constructed? How is water distribution scheduled, and how is access to water limited by residential area and social class? | Academic Expert | 1) Does Jordan suffer from water scarcity of water distribution or both?  
2) What is the difference between the urban and rural situation for water?  
3) What is the difference between East and West Amman in terms of water distribution?  
4) When did the water in Amman become piped? |
| How do women’s subjectivities reflect the interconnections of discourse, water distribution and gendered practices of water management? | Amman women residents | 1. How many times do you get water from the municipality?  
2. Why do you think you get water that many times?  
3. Why do you think Jordan suffers from water scarcity/? became does Jordan suffer from water scarcity?  
4. How do you manage the water when you get it?  
5. How expensive is the water bill?  
6. How do you feel about the expense of water? |
7. Do you have fears of running out of water during the week?
8. How do you feel about the rationing of water in Amman?
9. Are you trying to save water in your daily life?
   a. If yes, what water saving behaviors did you apply
   b. Where have you heard about these behaviors?
10. Have you seen any awareness campaign about water in Jordan?
    a. If yes, where did you see it?
    b. What did you think about it?