

Watered Down: the Intersection and Integration of
Tourism Development and Water Resource
Management in Marrakech, Morocco

Alison Maassen
School for International Training
Center for Cross-Cultural Learning
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"The environmental effects of tourism development...harm the local population. In most areas water is a limited resource. It has become common-place to refer to the next Middle East conflict as one over water resource. Tourism only makes this situation worse as the tourist zones per person use up about 8 to 10 times per day the amount of water of the rest of the country."

-Waleed Hazbun, *The Impact of Tourism Industries in the Arab World: Trapped Between the Forces of Economic Globalization and Cultural Commodification*

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It was with some irony that I stepped off the train in steady drizzle to begin my

Independent Study Project on water resource management and tourism development in Marrakech. As our Academic Director told us before we began, if you do not feel lousy part of the time you are researching, you are not doing it right. Well, that sums up my feelings, politely, on that day while I dragged all of my belongings down the soggy street and searched for a taxi. I wondered what I was doing there, and if I had any right to be there. I also wondered what in the world gave me the assumption that in three weeks I could even begin to think about this project, let alone conduct the interviews, surveys, observation, and analysis that would be required. Eventually, it was past the point of thinking; it involved a lot of doing in blind faith and relying on the inexhaustible generosity of the Moroccan people. I made phone calls in broken Arabic, knocked on doors, and—the worst part—became “that” person, the one who just needs a moment of your time for a survey—while you are on vacation, no less. Slowly, the pieces started to come together, but not in the way I expected, but then what ever does turn out exactly as expected?

An important concern at the beginning of my project was the ethical aspect of my research. As an American researcher, many people would object to my research in a “non-Western” nation as a sort of neo-colonialist project, as a project that doesn’t really concern me. The debate over whether I should be allowed to research outside of my culture rages amongst people more learned and experienced than myself, and I just made the greatest attempt possible to be objective. The difficulty in this, however, for me personally was that throughout the entire semester I struggled with my identity in Morocco. While “student” is the most adequate term, since I do study the Moroccan culture, sometimes it is just not enough, and I find myself wavering between “tourist” and “resident.” During my studies in Rabat, I often found myself resenting all of the tourists with their cameras and t-shirts and blond hair, mostly because I looked just like them and wanted to feel that I was different (or technically “normal” in a Moroccan context). This

was an important fact to remember during my studies in Marrakech; to the majority of people who saw me I was nothing more than a tourist, and I had to remember to look at tourists objectively after my time in Rabat.

Aside from the ethical issues of my ethnographic self, the field I have chosen to study is fraught with ethical issues. Between tourism and water resource management in Marrakech, there are thousands of lives and a spectrum of emotions involved. It can be a very sensitive issue to discuss with organizations on both ends, and it can be difficult to receive straight answers regarding the topic. While explaining my project to the Agency of the Tensift Hydraulic Basin, the organization that oversees Marrakech's regional water supply and management, one Director began to laugh and said, "You are touching on fire!" Both the water resource management sector and the tourism sector have vested interests involved in their respective fields, and wish to protect those. Regardless of these vested interests on either side, however, the intersection of these topics touches issues from ecological to economic to social, and every resident of the city and its environs has a stake in the outcome. What I have discovered in this research is not a compilation of facts pertaining to water management and tourism, those are already in existence and I would be duplicating the research of others. What became apparent to me as I interviewed and observed is that these two sectors are almost impossible to study solely in relation to one another, since they are so heavily entrenched in the facets of everyday life and society in Marrakech, and carry many other implications beyond themselves.

Through research and interview, I found that many people had concerns regarding water and tourism in Marrakech, but not necessary in direct relation to one another. Many people worried about the social impacts of tourism as much as the ecological impacts of tourism in the city. The truth is the vast majority of water usage occurs in the agricultural sector, and water reform has to come from irrigation practices and unauthorized well-

digging as much as it does from hygiene-obsessed tourists and golf courses. The most important concept that emerged from my research is *integration*: integration of water management policies, integration of organizations to monitor development in the water resource management sector and the tourism sector, integration of ecological and tourist organizations, and integration of tourists and new foreign property owners into the society of Marrakech.

Upon beginning my research, I was unfamiliar with all of the research that has already been conducted in this field. There is a vast amount of information available on the internet, or through searching the appropriate channels for official government documents, ministerial actions and plans. There are also many, many dedicated people who work on these issues, both in Marrakech and outside of it, and I was unfortunately unable to speak with all of them. Many people I was able to interview would ask me, “So have you contacted so-and-so yet?” When I answered in the negative, they would respond with “Ah, well that person is an expert in the field, they would be a great resource, and you should really talk to them.” The research information I was able to obtain is based as much on luck as it is on my academic abilities. My linguistic abilities were also a limiting factor in my research, both on an interview-survey level, and on a document level; hours were spent in cafés over mint tea and a French dictionary, deciphering the French-language documents I received from different ministries, individuals, and organizations. Thus, I do not claim to have the most thorough research or understanding of the field, considering the many people who already study this interaction of tourism development and water resource management. I do, however, maintain that this is a field where there can never really be an over-saturation of knowledge and particularly of awareness. Just because documents and action plans exist regarding the topic, does not mean that they cannot be studied from a different angle.

In this research, I would like to present an overview of the topic of tourism development and water resource management, covering some of the basics of each sector in Marrakech. I will include some personal research and surveys I conducted with tourists in the city of Marrakech, as well as with Moroccan students at Université Cadi Ayyad, in the “Tourism, Patrimony, and Sustainable Development” Masters program. I would also like to include personal observations made as I walked the sometimes-thin line between researcher and tourist here in Marrakech. Integration of historical background is important in this research in order to understand the long-term usage and preservation of Marrakech’s water resources, as well as to understand if this current development in the city has any correlation to the past, and what its implications may be for the future. Some of the sources I will utilize are articles from the world press, documents from Moroccan ministries and organizations, and interviews conducted with officials in this field. To truly understand this issue, it is valuable to compare and contrast it with issues faced by other Arab nations and other Mediterranean nations regarding the ecological and social impact that tourism development can have. I will include some information pertinent to Morocco from these regions and their experiences with tourism development. I would also like to include some of the actions and proposals made by the different sectors to address this issue, and the actions’ compatibility with one another.

Modern-Day Marrakech

From my observation, modern-day Marrakech is, in a word, chaotic. From the swirling smoke, sights, and sounds of Djemaa El Fna, the Medina’s legendary square, to the endless streams and whines of motorbikes on the street, to the construction cranes dotting the horizon, this is a city buzzing with vitality. Half of the streets are impassable, save for the undaunted and ubiquitous motorbikes, due to construction and improvement projects. It is very much a Moroccan city, but with a strong international flair, provided by the flocks

of foreigners who dot the street. French, English, Spanish, and even Japanese seem almost as common on the street as Derija, the Moroccan dialect of Arabic. Preparations are currently wrapping up for the 7th Annual Marrakech International Film Festival, and a large screen is being erected on the edge of Djemaa El Fna.

Initial appearances are only so much, however. Under this teeming activity, there is a deeper current of society and culture often missed by the casual visitor to the city. Urbanization in the city has greatly increased in the last decades, as have discrepancies in income amongst residents. The current urban population for the Marrakech-Tensift-El Haouz region (one of 16 geographic, economic, and political divisions of Morocco) is 57%. The prefecture of Marrakech represents 89% of the urban population in the region, and the average population density for the region is 195 inhabitants per one square kilometre.ⁱ The demographics of the Marrakech medina itself, the heart of the city, have radically shifted. According to the article *Marrakech in Two Minds over the Tourist Boom*, Tom Pfeiffer writes, "Foreigners have bought and restored more than 1,000 riads in the medina, creating much-needed work for local craftsmen but also forcing house prices up five-fold in 10 years."ⁱⁱ Society faces complex concerns today regarding cultural integrity, as well as some of the other unsavory side effects of heavy development, not the least being sex tourism, pedophilia, strain of environmental resources, and uneven distribution of assets.

Marrakech's economy is heavily supported by tourism, but agriculture is still the largest facet of the economy. The agricultural industry represents 60% of the regional production. 1.4 million hectares (ha) are used for agricultural purposes, representing a quarter of the agricultural zone of the country.ⁱⁱⁱ In the Haouz plain, the plain surrounding the city, agriculture is mainly composed of irrigation-fed cereal-growing and tree agriculture. The Marrakech region produces the most olives of any region in Morocco.^{iv} Yet, Marrakech and its environs receive only 220 mm of precipitation annually, and the vast majority--80-

93%-- of this precipitation happens in the season from October to April. The plain is characterized by an arid continental climate.^v Thus the irrigation of these crops is very important. Other important parts of the economy are mining, handicrafts (such as leather and textiles), and services; the handicrafts and services are largely supported by the tourism industry. In the region, the unemployment statistics are significantly lower than the national average; 6.5% in Marrakech-Tensift-El Haouz, while the national average is 10.8%.^{vi}

Marrakech is truly a bridge of the global "North" and global "South" today. This is mainly reflected in the city by the increasing numbers of Moroccan and international visitors arriving each day. This interaction and integration of people from so many parts of the world is a tangible sign of globalization. According to Waleed Hazbun, author of *The Impact of Tourism Industries in the Arab World: Trapped Between the Forces of Economic Globalization and Cultural Commodification*:

"The international tourist is one of the defining icons of the many facets of globalization. Through this figure we can observe the new mobility of people, information, commodities, and cultural trends constantly crossing national borders and reaching previously remote locations on all parts of the globe... These images may provoke us to suggest that the experiences of the international tourist-through which one can view the dissolving of the limits of the nation-state and national economy is an essential vantage-point from which we can gain insights from which we can gain insights for study the processes of globalization."^{vii}

Brief History of Marrakech

Marrakech has always been a city of integration and interrelationships. It has been an important crossroad for the Moroccan north and south, as well for trade routes and cultures of West Africa. Berber tribes, Saharan nomadic tribes, and traders from the ancient empires of Songhay and Mali arrived to Marrakech with goods and traditions, creating the unique cultural fusions that make Marrakech the city of interest it is today. In fact, this history is one of the things that attracts so many tourists to the city.

Marrakech was founded in the 1060s by the first Almoravid sultan, Youssef Ben

Tachfine. At this time, the Almoravid Dynasty, one of Morocco's two great Berber dynasties, had already successfully captured the North of Morocco. They maintained Fez as an imperial capital, but also founded the city of Marrakech. Under Youssef's son, Ali Ben Youssef, Marrakech became the dominant capital.^{viii} Andalusian craftsmen constructed palaces and baths, and the city was provided with water from the "khattara," traditional Moroccan underground water irrigation channels. In fact, according to Dale R. Lightfoot's *Moroccan Khettara: Traditional Irrigation and Progressive Desiccation*, "The Moroccan hearth for khettara was the Haouz Plain around Marrakech, where khettara were being built by the early 12th century."^{ix}

The successive dynasty to the Almoravids, the Almohads, took over Marrakech in 1147. They sacked the city, destroying many of the monuments and works of the Almoravids. They kept Marrakech as the capital of their empire, however, and it entered its greatest age under the leadership of the third Almohad sultan, Yacoub el Mansour. During this period, the Koutoubia mosque and minaret were built, as well as a prestigious court of scholars and poets. The Almohads were also responsible for the construction of the Menara and the Agdal Gardens, two huge artificial water basins that still irrigate olive groves and garden in the city. In the 1220s the Almohad dynasty began to splinter, and "Marrakech fell into the familiar pattern of pillage, ruination, and rebuilding."^x

Marrakech did not revive as a strong imperial center until the Saadian dynasty in the 1500s. Under the Saadians, the El Badi Palace and the Saadian Tombs were constructed, but the dynasty fell to rival factions as the Almohad dynasty had. Moulay Ismail, the second sultan of the Alouite dynasty sacked the city, and it has had a diminished role in the empire and state since that time. Just before Moroccan Independence, Marrakech was under the rule of the charismatic pasha T'hami el Glaoui. T'hami el Glaoui was a controversial figure that strongly supported colonial rule, and was a

famous party host to some famous visitors.^{xi} In the 20th century, Marrakech hosted many charismatic figures. Winston Churchill was a personal friend of the pasha, and both American Presidents Dwight D. Eisenhower and Franklin D. Roosevelt visited the city. Yves Saint Laurent is an enthusiast of the city, and owns the famous Majorelle Gardens. The popularity of Marrakech with famous Western personages has only increased current tourist interest in the city.

Since Independence in 1956, the city has undergone significant changes in demographics and experienced a tourism boom, as well as implemented new agricultural techniques on the plain surrounding the city. The city is the best known Moroccan city internationally, perhaps in part to the people mentioned above. It is now the third largest city in the country after Casablanca and Rabat.

The Tourism BOOM in Marrakech

Looking at the skyline of Marrakech, the cranes are unavoidable. Each year the city of Marrakech adds 5,000 hotel beds. The city's registered hotel industry represents 25% of the entire nation's tourism capacity.^{xii} In fact, the development, according to the Director of Marketing at the Conseil Régional du Tourisme (Regional Council of Tourism), or CRT, has actually taken away some of the regular visitors who come to enjoy golf in Marrakech. Because so much construction is underway, it has created a great deal of noise and visual pollution of the city's traditional landscape. Many golfers have stated that they will stay away until the current growth explosion quiets down some. Yet, all current statistics don't indicate any slowdowns in the near future. In the British article "Mass Tourism Threat to Morocco," Charles Starmer-Smith writes, "Last month UAE-based companies announced \$19billion (£10 billion) of investment in tourism and infrastructure projects in Marrakesh over the next three years. In an attempt to deal with the expected influx, the government is expanding Marrakesh airport, building a larger train station and improving the roads in and around the city."^{xiii} The article "Marrakech in Two Minds over Tourism Boom," adds

that the Moroccan government, “Last year approved investment projects around Marrakesh worth over \$2 billion.”^{xiv} The recent New York Times article “36 Hours in Marrakech” even emphasizes the undeniable place of Marrakech as a tourism destination:

“Every generation, Westerners find new reasons to go gaga for Marrakesh. For Edith Wharton and Winston Churchill, the draw was medieval Islamic architecture and rugged mountainous landscapes. For the globetrotting hippies of the woozy “Marrakesh Express” days, the appeal lay in “charming cobras” and “blowing smoke rings,” to quote Crosby, Stills and Nash. These days, with Marrakesh emerging as the center of North Africa’s style and night life, everyone from Julia Roberts to Naomi Campbell has threaded through its labyrinthine old lanes in search of celebrity chefs, opulent spas and designer boutiques. Indeed, for many of Europe’s jet set playgrounds — Ibiza discos, Riviera beach clubs, Paris hotels — a Marrakesh outpost is now *de rigueur*.”^{xv}

The statistics from the National Ministry of Tourism (or ONMT for its French acronym) Newsletter state that Marrakech far outstrips all other Moroccan cities as a tourist destination. According to May 2007 statistics, 2,656,561 tourists visited Marrakech (WHEN?), while the second highest receiver, Agadir, received only 1,924,503 tourists. Marrakech’s growth variation has also far exceeded that of other cities. From January 2006 to May 2007 the growth was 12%. The second closest was Casablanca with 9%. Out of total tourist revenue for the state, Marrakech earns an average of 36%, though this has recently been on an upward trend, at 38% in May 2007.^{xvi} According to the Director of Marketing at the CRT, tourism in Marrakech is becoming “a more important and strategic sector” than the agriculture sector, which has dominated the economy here and throughout the nation since Independence. When asked about all of the development in Marrakech today, this Director compared Marrakech’s growth to “natural selection.” He said that “Marrakech is en vogue today,” but there is no way to guarantee what tomorrow may bring. This may be a very telling statement based upon Marrakech’s past history of reversed fortunes and periods of growth and decay. At the present time, there are dozens of huge holding companies investing in Morocco, more particularly in Marrakech. There has been an increase in companies from the Persian Gulf, who are now competing with European

firms which have been established in Marrakech. According to the Director of Marketing, all foreign investment plans of over 100 million dirhams (the Moroccan currency unit, currently worth 7.95 to 1 US dollar) must be ratified by a convention and signing with the Moroccan Prime Minister. The Director suggested that while Marrakech is "en vogue" the Moroccan government is loath to reject investment plans for the city, although they may not be very socially or environmentally integrated. He also said that it is impossible to talk about the large resorts that these developers finance without golf courses. Thus, Marrakech has seven new golf courses with approval to begin building, and seven more which are awaiting approval.

All of this may seem to represent a new golden age for Marrakech, but many locals, observers, journalists, and experts might disagree. According to the Tom Pfeiffer, "... Hotels, holiday homes and golf courses are transforming the ancient city into a mass tourism destination, leaving some residents fearing the development may be too much, too fast...The biggest change is taking place on the edge of town where leisure developments, swimming pools and lush lawns are spreading across the arid terrain. Five golf courses have been built and developers have asked for permission to lay out another 10. With a new town, Tamansourt, due to house 300,000 people, farmers are worrying about dwindling water supplies." He also states that an increasing number of European men are viewed with young Moroccan women in bars and nightclubs, "stirring suspicions that sex tourism is growing."^{xvii} The Oxford Business Group, a publisher specializing in developing economies throughout the world, said in their *Emerging Morocco 2007* that, "The increase in arrivals and the numerous tourism and residential development projects - which usually encompass lush gardens and a flurry of swimming pools - are putting local water resources under serious stress..."The city's main selling arguments have long been its picturesque quality and tradition - two aspects that might be put in jeopardy if the building

goes on without check."^{xviii} A thorough questioning of the current development process deserves merit, since Morocco's Ministry of Tourism promotes Marrakech as a "cultural destination." What sort of cultural promotion exists when the city is overdeveloped?

Marrakech's Water Resources

The quotes included above note a serious need for conservation of Marrakech's water resources in the tourism industry. These articles are not alone in this recognition of the importance of economy and awareness of scarce water. Throughout the course of my research in Marrakech, I would often speak to Marrakechis, other Moroccans, and tourists, formally and informally, about the topic of my project. Once I had introduced the theme of the research, many faces registered a serious expression, and nodded gravely. "Yes, this is a very important issue here in Marrakech," would come the general response. There was a great deal of awareness, particularly amongst Marrakechis, that there is an issue, but when I asked further questions, many people did not seem to have much of an answer or deeper understanding of the situation. I myself had little awareness of the issue before beginning research, either. It would be a simple cause-and-effect research exercise if I said that the majority of over-usage of water resources in Marrakech was caused by the rapid construction of mega-resorts, swimming pools, and golf courses in Marrakech, but this topic is not that simple by any means. In fact, the vast majority of water usage in the Marrakech-Tensift-EI Haouz Region (the Moroccan region of which Marrakech is the capital), is in the agricultural sector.

Aside from being the capital of the Marrakech-Tensift-EI Haouz political region, one of 16 in Morocco, Marrakech is also in the center of the Tensift Basin, one of nine water-basin regions in Morocco. The Tensift Basin is characterized by specific geographic features that delineate the specific drainage patterns of water sources, and is governed by the Agence du Bassin Hydraulique du Tensift (Agency of the Tensift Hydraulic Basin) or

the ABHT. According to a 1995 Water Law that introduced fundamental principles regarding the decentralized and integrated management of water, decentralized regional-level agencies were created and “charged with the management of water at the level of the basin.”^{xix} The Tensift Basin is named for the Tensift River, the main natural water source in the Basin. The Tensift River begins in the High Atlas Mountains, and passes down through the plain to the Atlantic Ocean for a total length of 260 km. The River is seasonal, and some of its principal tributaries include the R'dat, Wale, Ourika, N'Fis, and Chichaoua Rivers. Geographically, the Tensift Basin is characterized by five major zones: the High Atlas Mountains, the Haouz Plain, the Mejjate Basin, the Jbilet Mountains (north of the Haouz Plain), and Essaouira. The topographic division of the Basin is divided into four zones: the High Atlas Mountains, the Haouz Plain, Essaouira-Chichaoua, and the Jbilet Mountains.^{xx}

The Haouz plain is marked by the Tensift River and the Jbilet Mountains to the North, the Chichaoua River to the West, and by the High Atlas Mountains to the East and South. The Haouz Plain is a semi-arid continental climate. The city of Marrakech is located at the center of this Plain; this was a placement decision made by the first Almoravid sultan, Youssef Ben Tachfine, because he wished to avoid placing the city too close to the mountains or river in order to choose a neutral territory between two Berber tribes vying for the honor of the new capital.^{xxi} Marrakech's average annual precipitation is around 220 mm. At Lalla Takerkoust, the site of the region's largest dam at the foot of the High Atlas Mountains, this precipitation is around 260mm. The vast majority of rainfall in the region happens in the season from October to April. The annual evaporation in the city and at Lalla Takerkoust is 2640mm and 1830mm, respectively. Well over 50% of the annual evaporation happens in the four months from June until September. Interestingly enough, there is a peak water demand in those same four months, exactly when there is already the

highest stress level on the water resources. Also, in the last ten years, the plain has experienced particularly severe droughts.^{xxii} There are genuine concerns about global climate change in the region and the nation; as a section of the National Debate on Water states, there is a “frequency and intensity of droughts, devastating and unexpected rises in water levels, reduction of snow-cap periods on the Rif and Atlas, and modification of the spatial-temporal distribution of wells.” Both at the national and regional level, the National Debate on Water suggests discussing questions pertaining to this issue, and recognizes this global concern as a “real opportunity” to educate and activate the participation of all of the actors involved in this field.^{xxiii}

There are several organizations at the regional and city level which work together in order to help manage and monitor the water resources of the Marrakech region. The main agency is the ABHT, which has some authority over the other agencies. The mission of the ABHT is composed of many facets, but the general goal is the evaluation, planning, development, and management of water resources in the region.^{xxiv} Another large agency that works in the Tensift Basin is the regional delegation of the National Office of Potable Water, or ONEP for its French acronym. ONEP was created in 1972 as a branch of the Ministry of Equipment and Transportation. It then became a branch of the Ministry of Territory Management, Water, and Environment. After reforms in January 2004, however, the ONEP became a separate entity charged with providing potable water to the urban populations of Morocco.^{xxv}

Beyond these several large regional organizations, there is a complex system of local, regional, and national, as well as international non-governmental organizations and government aid programs, that work throughout the region on water projects. The majority of these water projects address irrigation, the largest use of water in the region. One of the most agriculturally developed zones of the region is covered by Regional Office of the

Value of the Agriculture of Haouz (ORMVAH). The ORMVAH oversees the management and operations of the Canal du Rocate, an irrigation and transport canal that brings water resources to the region from the Oum Er R'bia Basin (to the north of the Tensift Basin). The Canal is meant to provide the majority of its water for agricultural irrigation. This ORMVAH's proposed responsibility is to work on studies and execution of new irrigation projects and training of new irrigation equipment, as well as aid the formation of farming organizations. ORMVAH works in the zone around Marrakech, and has irrigated 66% of the land; one of the highest percentages of irrigated land in the region.^{xxvi} Yet, according to my interview with a Technical Counsellor from the German aid group GTZ (which collaborates with the ABHT), the ORMVAH is actually not working as proposed. One of the problems the office faces is that agricultural users do not wish to pay for the water provided by the Canal. Thus, the users have the irrigation structures provided by ORMVAH, but they dig their own unauthorized wells into the groundwater aquifer, El Haouz, and then irrigate the fields with this water. The office does not receive any user fees from the beneficiaries of the irrigation, and has gone deeply into debt. The ORMVAH also faces a dilemma in the supply and capacity of the Canal. The official figure included in some documents states that the Canal du Rocate supplements the Tensift Basin with 300 million m³ of water a year. According to the Technical Counsellor, the official numbers have actually been between 50 and 100 million m³ for the last few years. Almost all of this water is sent into the city of Marrakech as potable water supply, but is poor quality.

Another organization that works directly in the city of Marrakech is RADEEMA (Le Conseil d'administration de la Régie autonome de distribution de l'eau et de l'électricité de Marrakech). It is responsible for the support of water and electricity in the city, and was established by the municipal council in 1971. In 1998, RADEEMA began focusing on environmental conservation, and built new sewers for the city in August 2006. RADEEMA

has made plans to construct a water treatment facility to the Northwest of the city, but, according to the Director of Marketing at CRT, this facility has not been built because of prohibitively-high costs. The Technical Counsellor remarked that the government used the water treatment facility as a way to alleviate public fears that new (and existing) golf courses would not deplete too much from the groundwater resources of the city. It has been said that the golf courses will utilize the recycled water from the treatment facility, but it will still take several stages of building at the treatment facility before it is ready to produce water that is fit for re-consumption in any manner.

As for tourism development and water resource management in the region, it is difficult to have a specific percentage of water usage for the tourism sector. One of the reasons for this, according to the Technical Counsellor at ABHT, is that large hotels and resorts in Marrakech often dig their own unauthorized wells to receive water. One quote from a Moroccan geographer echoes this fact, "A dwindling underground water table often coincides with the installation of major hotels. Nevertheless, tourist hotels have always been the last to suffer from water interruptions imposed by drought."^{xxvii} Indeed, according to the Technical Counsellor at ABHT, the subterranean aquifer beneath the Haouz Plain drops 2-3 Mm³ a year, which is a level of critical water stress. The city of Marrakech receives a supplemental portion of its water from the Canal du Rocade, but it is not very high quality potable water. In fact, 80% of drinking water derived from surface water sources is poor quality. For this reason, and for expense purposes, hotels and resorts (as well as some personal homes) choose to dig their own wells. The problem is that these wells must be authorized by the ABHT, and according to the Technical Counsellor, the majority are not authorized.

Aside from hotel infrastructure, tourism also encompasses many parks, swimming pools, and golf courses in the city. In Marrakech there are 935 hectares of parks. 580

hectares of this land is owned by the government, in the form of the Menara Gardens and the Gardens of Agdal (large attractions for both tourists and locals). 510 hectares of Marrakech's parks are located on hotel grounds.^{xxviii} Based upon observation, these parks are fed by lots of water hoses and underground sources (Please see photographs in the Appendix for more information). Golf courses are the largest consumers of water in the tourism sector. Marrakech has three golf courses now, and has approved the construction of seven more. According to the Director of Marketing at the CRT, golf courses consume a lot of water, yet one hectare of golf course still "consumes less water than one hectare of potatoes."

The infrastructure of water management in the Tensift Basin is still largely based in large hydraulic projects, such as dams and canals. There is one large dam, Lalla Takerkoust, in the region, which supplies the majority of Marrakech's water, and there are several smaller dams that supply irrigation and potable water needs in other parts of the region. Marrakech also receives a portion of its water supply, as aforementioned, from the Canal du Rocade, which connects from the Oum Er R'Bia Basin. "Lalla Takerkoust dam occupies a most important position in supplying the water of the urban region of Marrakech, and also for the agricultural usage at the center of the Haouz Plain."^{xxix} This dam was built in 1935 to help meet the growing water needs in the region. The dam's water is used not only as a potable water source, but also as a generator of a small amount of hydroelectricity, and a provider of irrigation and industrial water. Lalla Takerkoust dam's artificial lake is even touted as a tourist attraction for swimming, sunbathing, and paddle-boating by the Regional Council of Tourism. Just 20 km north of the Lalla Takerkoust dam, on the N'Fis River, construction of a new dam, the Wirgane, is underway. This dam, upon its completion, is intended to strengthen the supply of water available to the city. At the Lalla Takerkoust dam, there have been serious problems with

silting, caused by deforestation, drought, and desertification. This silting has drastically reduced the capacity of the dam, from 72.5 million m³ to only 56.1 million m³ in 2002.^{xxx}

The Wirgane dam is also supposed to help regulate the capacity of Lalla Takerkoust.

Some have expressed doubts about this dam, however. The Technical Counsellor at the ABHT believes that dams are simply “pools of evaporation,” particularly in an arid and semi-arid climate such as the Haouz Plain. This is especially true when the dams are full, because the highest surface area of water is at the top, and exposed to the sun. The new dam has a budget of 80 million Euros, and a great deal of this money may be going “into the pockets” of the officials and investors of the dam.

Since the 1960s, the Moroccan government has been promoting and executing large-scale hydraulic projects to provide for the ever-growing water demand in the nation. According to Morocco's *50 Years of Human Development: Perspectives to 2025*, “The dam policy launched by King Hassan II permitted the country to assure hydro and crop security, to improve irrigated plots' agricultural revenues and to intensify and diversify agricultural production and to develop agricultural exports.” The report goes on to state that this strong focus on water resource mobilization left little thought for the future mobilization and quality of water supplies. Thus, water quality has been severely damaged by pollution, and groundwater tables have been heavily overexploited. The government now states its water policy, in the report, as the following, “The principle of demand management has become the guiding principle of public water policy.” The demand management policy has been included in the irrigation sector, “but the results obtained, up to now, remain lukewarm.”^{xxxi} It is sometimes difficult to read Moroccan government reports, and understand exactly how the proposals and the actions fit together. The previous attempts may have been lukewarm, but the following case-study

offers an excellent example of how stated policy and executed action fit together to meet objective goals.

A case-study of the demand management as Moroccan public policy was published in the *Water Demand in the Mediterranean* report. The area of Rabat-Casablanca has experienced a drop in the rate of water demand growth for the last 12 years. Though there has been strong urbanization, the growth was slowed by repairing and finding leaks in the water system, as well as “setting up a banded pricing system to make consumers-including public users-more responsible.” A strong water resource awareness campaign was also enacted. Because of a good framework that combined private and public interest with authorities, this was all possible. It has also slowed the demand and need for expensive large-scale hydraulic investments. The Technical Counsellor remarked that all water investment and management in Morocco does not require more large projects, but instead necessitates increased public awareness, repair and renovation of current systems, and a decentralization of the water management framework.^{xxxii} The report on *Water Demand in the Mediterranean*, succinctly puts it at:

“Demand management necessitates a profound change in policies and practices (methods of management, consumption and production). The challenge is to succeed in combining standard or new "hard" approaches that place the accent on technology and infrastructures (hydraulics, desalination), with “soft” approaches (the art of acting with all the organisations involved to find the best use for each m3 of water, without forgetting the needs of nature). The objective is to put today’s and tomorrow’s people at the heart of the argument by considering them not merely as users or customers but also as citizens who are expected to take responsibility, and to manage water as a heritage (whether natural, economic, or as expertise) to be treated carefully and passed on to future generations.”^{xxxiii}

Tourism Development in the Arab World

Morocco may face some serious questions and debates regarding its tourism industry and its ecological and social impacts, but, as is shown in the aforementioned report, it is not alone in this. As a North African state, Morocco can often share comparison with other Arab nations, as well as with Mediterranean nations. Many nations of these regions have

long histories with tourism industry, and its side effects—good and bad. As Waleed

Hazbun writes:

“The promotion of tourism is not new to the Arab world and other developing countries. In the 1950s and 1960s many developing economies sought to promote tourism to decrease their dependence on primary sector exports (such as minerals) while diversify their economies. At the same time, tourism was generally viewed as a labor intensive industry able to provide many jobs not requiring extensive skill training or technology...Since the 1970s the logic has changed. Many boosters view tourism as an outward-oriented growth strategy similar to those promoted by the East Asian tigers. Such strategies seek to promote a sector that is competitive in the global marketplace and does not require tariff protection nor extensive government intervention, as earlier strategies to create local industries to produce (often less efficiently) goods imported from industrial economies. Outward strategies are guided by a logic of microeconomic efficiency instead of national autonomy.”^{xxxiv}

According to the Director of Planning Strategy and Reporting at the National Ministry of Tourism, Moroccan tourism development closely followed this pattern. In the 1960s, the Moroccan government invested in hotels and tourist developments in the city of Marrakech. Beginning in the late 1970s and by 1980, all tourism in Marrakech had been privatised. Now, the government applies a particularly hands-free investment policy toward the city of Marrakech. Despite this hands-free policy in the investment sector, the government closely monitors the growth and performance of tourism, considering that, “...Tourism likely employs indirectly about one out of every ten people in Morocco, Tunisia, and Egypt.”^{xxxv} With statistics such as this, it would be dangerous for the government to not carefully track this sector. Another point Hazbun makes, however, is just because the sector employs citizens now, does not mean that it will in the future. Tourism development is a seasonal and cyclical field, wherein there are sometimes many jobs, and sometimes very few. Hazbun suggests that it is dangerous for Arab nations to place so much of their future economic performance in the hands of such a sector. He asks, “...What kind of future will tourism development offer? Tourism is a commodity...The ‘tourism product’ is not simply a reflection of the existing state of the natural geography or the remaining

historical monuments and ruins, but most of all it is a product of political and social constructions bounded by global economic processes.”^{xxxvi} He suggests that the governments might wish to consider carefully the impacts of placing national economic security in the shifting ‘global economic processes.’ Yet, he recognizes also that these states have already placed so much of their economies into this system that “The hard currency tourism brings in has made tourism so critical to the health of national economies and state budgets that for many governments the maintenance of tourism flows often now ranks with issues of national security.” Indeed, in Morocco, the plans for tourism took a very strong turn the year 2000, perhaps for these reasons.

Morocco’s 2010 Vision

Moroccan tourism’s current development plans are very similar to those described by Hazbun in his paper. In the year 2000, Morocco initiated the “Morocco 2010 Vision,” an ambitious set of plans and developments with an ultimate goal of attracting 10 million tourists by the year 2010. It was signed into law on October 29, 2001.^{xxxvii} This plan, which has national government backing and private support, actually encompasses several large plans in and of itself, including Plan Mada’in, Plan Azur, and a rural tourism promotion. According to the Director of Planning Services and Reporting at the Ministry of Tourism in Rabat, with whom I conducted an interview, the 2010 Vision will increase the number of hotel beds in the country by 160,000—130,000 beds at beachside resorts under Plan Azur, and 30,000 beds in “cultural destinations,” such as Marrakech, Fez, and Rabat. It will seek 80 billion dirhams in new tourism investment, and 80 billion dirhams in tourism receipts. The government will also attempt to create 600,000 new jobs with the tourism development, and to push tourism to 20% of the GDP.

The 2010 Vision has six general areas in which it will work in order to obtain the objectives of each plan. These areas are: 1) the “product” 2) the training 3) the air policy 4) marketing and communication 5) tourist environment and 6) institutional organization.

The “product” is what the Moroccan government, or more specifically, the Ministry of Tourism, can promote in a city, area, or region as a tourism asset. For example, in Plan Mada’in (which works in “cultural destinations”), Fez’s product could be the fascinating history of the city, and the intricate medina. In Plan Azur (which projects the construction of 6 seaside resorts by 2010), the product will be sun and surf. The training for 2010 Vision includes education of a work force in the tourism industry. An example of this training can be found in Marrakech at Université Cadi Ayyad as a Masters degree in “Tourism, Patrimony, and Sustainable Development.” The air policy is the opening of cheaper and more frequent flights and air carriers into Morocco from Europe and other Western nations. Marketing and promotion has been increased to aid the achievement of the Vision’s objectives; according to the article “Morocco’s Grand Plan,” “there has been a 400% increase in the promotion budget to \$50 million.”^{xxxviii} The tourist environment means better hospitality in the hotel industry, city beautification projects, restaurant and entertainment plans, and projects to make the cities more accessible to tourists. Institutional organization entails the increased partnership between government and private associations to increase the efficacy of tourism plans and projects.

Plan Mada’in involves the “repositioning” of different cultural sites in Morocco, such as Fez, Meknés, Tangier, Rabat, and Casablanca, in order to attract and accommodate more tourists. In order to achieve this repositioning, the six aforementioned objectives will be scaled to the level of each city or region. Fez signed the first convention in 2005 with the Ministry of Tourism to begin regional development plans for the increase of tourism under Plan Mada’in. Casablanca signed its convention in 2006. Marrakech does not yet have a regional development plan because Marrakech is “a specific case,” according to the Director of Planning Services and Reporting. The growth rate has been so steady and successful in Marrakech that the national Ministry of Tourism has made no intervention.

One of the problems with this, however, is that the regional development plans are comprehensive and include a survey of ecological environmental issues as well. The convention for Fez, for example, included a section addressing the water crisis in the medina of Fez. Without a regional development plan for Marrakech, the tourist investment in Marrakech has had almost complete autonomy, and has been given no direction by the ONMT. The regional development plan for the city of Marrakech, according to the Director, will not begin until "next year." The Director also said the ONMT is beginning an educational campaign through the Department of Quality Management and Sustainable Development about water resource demand and environment. He said that in 2006, two workshops were held in Marrakech with hotel managers and staff, as well as with tourists to promote economical use of water and energy. They were only moderately successful, but the ONMT plans to continue promotion of education through a campaign with brochures and more workshops.

One of the positive aspects of the 2010 Vision is that it places a very high emphasis on education in all sectors of the plan. A thorough understanding of the assets and needs of each city or region is necessary to effectively promote the "product" for each place. Training for Moroccans in the university and in the work sector will be very important to the future success of all of the other objectives. I had the pleasure one day in Marrakech of sitting down with some of the Masters degree students in the "Tourism, Patrimony, and Sustainable Development" program. They filled out surveys, which I will introduce and analyze later in this report, and graciously talked to me about all of the aspects of tourism, not only in Marrakech, but in Morocco. Another very positive aspect of the 2010 Vision is the decentralization of tourism planning amongst regions. According to the Director, before 2000, the national level of the Ministry of Tourism would present 3-year and 5-year plans regarding tourism on a national level. Now, many plans are coordinated on a local

or regional level, amongst public and private organizations. Plans made on this level allow the actions to more directly correlate with the community's needs and abilities.

One of the more dangerous aspects of the Vision 2010 plan for tourism in Marrakech is the exponential increase in low-cost airlines flying tourists to Morocco from Europe. While this is meant to boost direct tourism flights to all of Morocco, the vast majority will fly into Marrakech. The Director of Marketing at the CRT explained that the new Marrakech airport and its expanding terminals would be a necessity in the coming years due to the projected increase in hotel beds and interested air carriers. According to the article, "Mass Tourism Threat in Morocco," Starmer-Smith says, "...Ryanair announced that it had agreed to fly 20 routes from Europe over the next five years, carrying up to a million passengers a year. Its routes from Frankfurt and Marseille to Fès, Marrakesh and Oujda open for business in October. EasyJet will begin flights in July from Gatwick to Marrakesh, with one-way fares starting at £30.99, including taxes. Thomsonfly will launch a route from Luton to Marrakesh in October; Atlas Blue has already begun flights to Marrakesh from Gatwick; and another budget carrier, Jet4You, is to begin services from Britain later this year." The article then goes on to explain that this advent of cheap flights was very dangerous for other cities (in Eastern Europe for example) which have seen an increase in crowding and a loss of traditional charms that attracted tourists originally: Starmer-Smith warns, "Marrakesh will be less able to deal with such crowds, and it would be a shame if we were to see mass-market resorts opening up."^{xxxix} According to the article "What Tourists Leave Behind," airplane travel is one of the most ecologically damaging things that a tourist can do. The anonymous author in *Canada and the World Backgrounder* says, "Increasingly, people are flying by wide-body jets to their destinations; civilian aircraft already contribute 3.5% of the world's greenhouse gases and this will increase rapidly as

the number of tourist flights goes up. (It's estimated that 90% of a tourist's energy consumption is spent in getting to and from the destination.)”^{xi}

Another dangerous aspect of the 2010 Vision is that Morocco is still a relatively fragile country in socio-ecological context. According to USAID's *Morocco: The Development Challenge*, “Compared to other countries in the region, Morocco’s Human Development Index (calculated by the UN) places Morocco closer to a low-income country (like Bangladesh) than a middle-income country (like Jordan).” In 2006, Morocco ranked 123rd out of 177 nations on the Human Development Index.^{xii} All of the investment wealth that enters the country as tourism development does not necessarily stay and help the population. Pfeiffer writes, “Veiled women sit begging near marble-clad riad hotels that cost up to 3,000 dirhams (\$350) per night.”^{xiii} From my observation in Marrakech, the visuals of the city can be quite jarring. While eating a pizza for lunch one day at a streetside restaurant, I was approached five times for money. While walking down a street outside Djemaa el Fna, one with expensive jewellery boutiques and tourist-oriented restaurants, my cellular phone was pickpocketed from my bag. Leaving the touristy part of the medina, filled with leather purses, textiles, and jewellery, one discovers a very different world. Perhaps the most uncomfortable thing I experienced while researching was reading the New York Times article “36 Hours in Marrakech.” In this article, advice is given to prospective travellers on the meals and activities they might choose to partake of in Marrakech. One of the sections included the following passage: “everything is romantically presented and expertly cooked in the sumptuously Moorish interiors of Le Tobsil. The menu...typically includes cold Moroccan tapaslike salads, savory-sweet tagines...Dinner for two is fixed at 1,200 dirhams, and includes wine.”^{xliii} When I read 1,200 dirhams, my heart nearly skipped a beat. Though this is very much in part because I am a thrifty college student, I cannot imagine the majority of people in Morocco paying

such an exorbitant amount for one dinner. The article goes on, listing off prices that, after much time spent in Morocco, seem enormous. The ostentatious wealth in the city, represented by wealthy Moroccans and tourists, has palpable tension with the poverty and unemployment in the city. There is no harmony in the increasingly erratic demographics of the city. After a huge fight with another car one morning in Marrakech, my taxi driver explained that even driving in the city has become difficult; there is more traffic, and increasingly non-Marrakechis are moving into the city, making even the smallest interactions—even with other Moroccans—seem forced. There has been a disruption of the sense of community in Marrakech.

In all of the 2010 Vision development flurry, it seems that there is very little said about ecological environment by the government. When asked if there was any partnership between the Ministry of Tourism and the Ministry of the Environment, the Director answered that it is a very “timid relationship.” He also pointed out, pragmatically, that the vast majority of water usage and water wastage comes from the agricultural sector. Yet, if the tourism sector is to advance on or surpass the agricultural sector as one of the top GDP providers, it must take responsibility for those things now, not continue to look at agriculture and wait for it to reform. There seems to be a lot of recognition of this fact, that something must be done now, but there seems to be little consensus about just how to go about it. Waleed Hazbun goes so far in his article as to state that Arab governments have very little concern for ecological issues when faced against tourism development. He says, “Some states...have a stated goal of meeting best practice standards for environmental sustainability and awareness. But I wonder if this would be the case if environmental degradation and political were not viewed as major threats to the tourism product and its external image.” He then quotes one analyst as saying, “the government

was seemingly more concerned with the environment's impact on the tourism industry than the [impact of the tourism industry on the environment].^{xliv}

Actions of the Water Resource Management Sector

While the Ministry of Tourism and the private tourism sector have been busy at work on the Morocco 2010 Vision, the Water Resource Management sector has also been working diligently on plans and projects to improve the efficacy of water systems and reduce the demand on water sources. Several of the organizations already mentioned in an earlier section have plans underway and at the national level, the "National Debate on Water" began in November 2006. This debate held five large thematic workshops in the following topics, desalinization of sea water, management of river basins, water resources and climate change, governance of groundwater, and economy of water. As well as these large national debates, ten workshops of general debate were held with river basin agencies. As for the Tensift Basin level plan, the national government still plans to carry out the execution of seven large dams in the region, including the Wirgane, upriver from Lalla Takerkoust. The government says that these dams will permit the regulation of a supplemental amount of 200 million m³ to meet the projected needs of the Tensift Basin. The government also has studies underway to explore deep subterranean water basins to understand what sort of supply potential might exist in those.^{xlv}

Though the national government is still working mostly on a large-scale level, there are at least 60 international groups working here and throughout Morocco specifically on the water resource management. One of these organizations is the United Nations-HABITAT program, which is represented in the city by the Marrakech Local Agenda 21 Project. As the organization states in its background and objectives, the city's "development is very dependant from natural resources, especially water, which are in danger of depletion." The Local Agenda 21 Project began in 2002 in Marrakech. Some of the work that the

organization does in Marrakech includes the creation of forums for different actors and sectors to come together and focus on issues such as water management, protection of cultural heritage and promotion of tourism. It helps create action plans and strategies for these fields, trains other organizations to participate in the process.^{xlvi}

Another organization that works in Morocco generally is ECODIT, a group that coordinates with government, private sector, and local communities to create and promote policies and technologies that encourage environmental protection and sustainable development.^{xlvii} ECODIT has three programs that it has run recently in Morocco, including one developed for UNESCO and the Moroccan Ministry of Environment. This program was “a national strategy for environmental protection and sustainable development.” ECODIT looked at all of the environmental policies and development programs promoted by the Moroccan government, and then estimated the expenses of these policies. It then looked at the price of environmental degradation, in a social and financial manner, and then projected the impact of these issues on the national GDP. ECODIT then “worked with the Ministry of Environment to establish environmental quality objectives that will ensure sustainable development and explained how environmental protection measures such as pollution prevention, economic incentives, and institutional strengthening will allow Morocco to reach these objectives.” ECODIT also worked on a regional level in the Northwest (Tangier, Kenitra, Rabat) and North Central of Morocco (Fez). ECODIT and local partners prepared “an environmental profile of each region that identifies environmental priority issues.” These issues were then developed into action plans and strategies for environmental protection in the region.^{xlviii}

Awareness in Marrakech

There are strong forces working in both tourism development and the water resource management sector, but I was curious to know how much information there was locally

about this issue, amongst tourists in Marrakech, as well as with students in Marrakech. Who was studying this issue? Was there any accountability amongst the users—on a local level? An outsider/tourist level? Though so much has been published and researched on the topic, does that mean that anyone is familiar with it? To answer some of these, and more specific questions, I spoke directly with the tourists and some Moroccans, regarding their place in the debate about water resources and tourism development.

I decided to create a questionnaire for tourists I met in Marrakech while in my hotel, as well as in restaurants and tourist-frequented destinations. I was limited in the number of tourists I could interview because I could only speak intelligibly in two languages, English and Spanish, and had only created questionnaires in English. Also, I was limited by the fact that I just simply couldn't receive enough questionnaires in order to have an objective understanding of the results of the questionnaire. Thus, I conducted only about 30 questionnaires (which totals to about 60 participants, since each couple or group I interviewed filled out only one survey). Instead of thoroughly analyzing the results of this questionnaire, which would undoubtedly lead to false or under-researched conclusions, I decided instead to use the questionnaires as an entry point to talking to the tourists further about their experiences in Marrakech, and their opinions or awareness of ecological and social issues in the city.

To be honest, it was very difficult to bring up the topic with the tourists, even after I introduced my topic and they completed the survey. It was an almost tacit understanding in the conversation that both myself as the researcher, and they as the tourists, had a conception of the issue, but it was an uncomfortable one to talk about. It was much easier to change the topic to how lively the Djemaa el Fna was at night, or how lovely the weather had been. For many of the conversations, I was able to receive the questionnaire, but

there seemed to be a disinclination to continue the topic afterward. For those who did continue to discuss the issue, there seemed to be little sense of accountability for the issue. Many ecological articles today argue for the ethical responsibility of the tourist in another country. In the article "Ethics and environment: Point-counterpoint," Pat McCallister writes the following about tourism in Cuba:

"Point: It is the responsibility of the host country to ensure that environmental concerns are met as the infrastructure changes to meet the tourism industry.
Counterpoint: It is also the ethical responsibility of tourists to become informed and consider the impact of tourism on the environment of developing third-world countries. Tourists should consider disposing of travel items such as batteries, personal products, and containers in an environment that is not equipped to handle this waste."^{xlix}

Many of the tourists I spoke to on the trip were on short trip to the city, some only three days. When I asked how such a short trip was economical, they explained that they were flying some of the low-fare air carriers Morocco's 2010 Vision works to attract. Tourists who are in town such a short amount of time do not seem to feel much attachment to the issues or community in the place they are visiting. As the *Water Demand in the Mediterranean* report states: "Since tourists are only passing through, they often do not have an adequate awareness of constraints in the area. However, the tourist sector must show an example in WDM [Water Demand Management]: its buildings must comply and it must totally recover its water cost. Passive and active public awareness campaigns and economic tools (taxes) should be developed." This statement rings very true for the city of Marrakech.

On the other side of the awareness issue were the students at Université Cadi Ayyad in Marrakech. Many of them are native Marrakechis and all are native Moroccans. The issues of water management and tourism development have very lasting effects, and are not just passing concerns for this group. Many of them have been studying "Tourism" since their "License" degree (equivalent to the Bachelors degree in the United States).

While most of them expressed concerns about the social and ecological impacts of tourism development, almost every student intends to work in tourism when they graduate. In the survey I created for the class (included in the appendix), they all mentioned familiarity with the sustainable development issues of the sector—the class is called “Tourism, Patrimony, and Sustainable Development,” after all. In the survey, I asked the following question “Has your tourism study included discussion and classes about ecological issues in relation to tourism?” All of the students replied “yes.” One 22 year-old student from Rabat said, “I think nowadays we cannot imagine a tourist project without taking into consideration the ecological aspect of it; especially in a country like Morocco, and in a semi-arid zone like Marrakech.” One 23 year-old student from Marrakech talked about class field trips undertaken to “observe the daily and direct problems due to tourism on the local environment.” Yet one other student, a 25 year-old from Marrakech, said that the studies of ecology and environment were only theoretical.

Other general issues of tourism and water resource management were discussed with the class. One of the questions included the relationship between ecotourism and resort-tourism. A 25 year-old from Casablanca said, “Every city has to stop this kind of [resort] tourism when it arrives to saturation, and for sure Marrakech will choose the ecotourism to deal with environmental problems. But it will be luxurious ecotourism...” A 23 year-old from Marrakech said, “The two will co-habitat, it’s impossible to have one segment or one market so the best is to have the two in a thoughtful way.” Another question asked about the recent expansions of tourism in the city and whether they might be sustainable. A 23 year-old student from Marrakech said, “I hope so, but don’t believe it is possible unless a serious program is set up, and it starts with firm laws that limit investors’ freedom.” The Tourism program’s Anglo-Saxon Literature professor said, regarding the recent expansions and their sustainability, “I do not think so. These [developments] are basically

carried out at the expense of local population well-being.” All of the responses to these questions and others were very useful to a more well-rounded understanding of the issues at hand. These students and the tourism education programs also represent the future of Moroccan tourism development initiatives and projects.

Proposed Solutions

The most frustrating aspect of the Independent Study Project as a researcher is that only three weeks are specifically allotted to the full conduct and completion of the research. After three weeks and several interviews, it seems to be only enough to truly pique the interests, not enough by any means to be able to propose solutions or even present a thorough discussion of the research field. I would like, however, to present several solutions and several proposed routes for the future of tourism development and water resource management. These solutions are proposed by actors and parties in the field and sectors.

Perhaps one of the most difficult steps in a solution is identifying all of the actors themselves. Particularly when so many of the actors are large investors from foreign nations and interest groups. Even in the agricultural sector, large investors are involved around Marrakech, buying out small farmers and creating monolithic groups that are difficult to hold accountable to regional standards and practices. At the national level of organization, let alone the regional level, it can be nearly impossible to receive guarantees from any large outside investors that they will follow a strict policy or regulation standards. The government does not wish to scare away investors, and has created a very lucrative investment environment currently in Morocco. One can only hope that there is some stringency enacted in the investment environment regarding the well-being of local communities both socio-economically and ecologically. Sometimes these small community actors, those who may be affected the very most by the development, are not

consulted or even considered as actors. To stop cycles of disenfranchisement, and to have truly successful development, it must happen in an equitable manner. Without the participation of all actors, regardless of their balance of power, there can be no sustainable solutions proposed in any sector or field of a society.

In the water resource management field, there are many proposals and suggestions on the horizon. Some of these include desalinization of sea water and water treatment facilities, as well as increasing water capacity with the building of new large-scale projects. Other projects suggest increasing the number of workshops and campaigns directed at sensitizing the public to the importance of economical water usage, and repairing small leaks and breaks in the water transport and storage system to improve the efficacy of the water supply. Regardless of which combination of methods may be applied now and in the future in Marrakech, the most important solution to this process is “decentralization.” As the Technical Counsellor at the ABHT said in our second interview, the best solutions and planning should be directed at the region and its communities. The most logical resource demand solutions are to be found within the community first, and then outside sources may be utilized as auxiliary aid. When viewed from a historical perspective, this concept has many precedents and is very pragmatic. Marrakech and all other cities have always historically relied on the water sources supplied from within the local region, and even now should not have to depend on outside resources. One of the reasons that outside sources have become such an accepted solution is because there are so many outside investments and interests involved in the city, as well as the sometimes overbearing presence of centralized solutions at the national level. When developments are made without consulting or consensus at the community level, such as a new golf course, it is difficult to believe that the management plans will come from a community level, either. Investors are “disturbing” the region, and centralized management plans are

“destroying the process” of water management on an effective regional level. The ABHT has developed a 12-step “planning process” to successfully control and reduce the water demand in the region, but cannot enact this process step-by-step unless all of the actors are involved for each step. It all returns to the vital concept of integration.

In one interview with the Technical Counsellor at the ABHT, simple logic and discussion facilitated a well-rounded hypothetical plan for the reduction of water demand and cost in the city of Marrakech. The Wirgane dam, which is being built north of the Lalla Takerkoust dam, has an elevation of 950 km above sea level. The city of Marrakech is at about 450 km above sea level. At the present time, Lalla Takerkoust is a small generator of hydroelectric energy, but cannot produce very much because the elevation drop is only about 30 km from this dam to Marrakech. With a drop of 500 km at Wirgane dam, it is much easier to have a powerful source of hydroelectric energy. This source of energy could be connected to a turbine, which could then be next to a well field. One of Marrakech’s greatest water problems is that the groundwater beneath the city is not utilized in an effective manner. Many farmers and resorts dig authorized and unauthorized wells to this source, but the majority of the city’s water supply comes from surface water sources. Groundwater, unlike surface water, is a generally very good source with little need for expensive pre-treatment facilities. If the city could use the energy harnessed by the hydroelectric turbine to pump water from the groundwater source under the city, it would provide an “easy, simple, cheap, and clean” source of water. The other half of this, however, is that current levels of the groundwater supply must be maintained or carefully monitored, not allowed to drop at the alarming rate of 2-3 meters a year. One way to do this is to stop the unauthorized well-digging, which requires a decentralized Water Police force with some authority. Another way, and perhaps the most important way, is to educate farmers about the most efficient ways to irrigate their crops. As the Technical

Counsellor said, “there is so much potential” for solving all water demand crises in the region just with this small step. The government is subsidizing those farmers who are installing new or more efficient irrigation systems, which is a good step, yet it still holds problems. Many of the farmers who can afford the new systems are large investors and they do not need the subsidies of the government to finance this. In fact, this subsidy just makes the investors more powerful against the local farmers who cannot afford to install new systems. For many of the farmers who do not choose to change their irrigation method, they are receiving water from unauthorized wells, and are thus being “involuntarily subsidized” by the government, as it finances still more large-scale water demand projects, instead of meeting the challenges at a decentralized level—by giving water police more effective powers, for example. Obviously, it is simple to sit in an office and discuss hypothetical solutions, and the true success of any solution will come from tangible hard work from all participants, but there is no reason that a simple plan addressing some of the above issues has any less validity than some of the current large-scale productions being proposed at various levels on the public and private front. The plans for the region do not have to “always be oriented to extension, and never to economization” of water supplies.

The following passage from *Moroccan Khettara: Traditional Irrigation and Progressive Desiccation*, Dale R. Lightfoot says:

“Traditional water technologies may not be able to keep pace with growing demand, but are usually less expensive to operate and allow farmers and village cooperatives more direct control over the supply and distribution of their water. Newer technologies have been designed to deliver greater quantities of water, and may provide a more reliable source of water less susceptible to natural fluctuations in water regimen, yet withdrawal rates often exceed natural supplies or recharge. But 'out with the old and in with the new' has long been a trend everywhere, and must be as economies develop and populations expand, increasing the need for more water and other resources.”¹

Certainly none of the circumstances Morocco and Marrakech face on this issue exist without parallel. Many societies face the same challenge of integrating modern demands and modern systems with traditional technologies and ways of life. It is important to

accept this as a legitimate challenge, not as a simple cry for the simplicity of earlier days and a vote against progress. Indeed, many of the traditional systems survived because they were progressive and innovative, yet were also pragmatic and locally-organized. Integration of modern advantages to traditional systems or vice versa is just one more facet of the proposals that might be made to address the concerns of water resource management.

As for proposed solutions from the tourism development sector, I was unable, undoubtedly in part to sheer time restraints, to receive any sort of detailed information about plans or objectives for truly ecologically sustainable tourism. Just because I did not receive very much information from the Moroccan government or locally-based private organizations, however, does not mean that proposals do not exist in other places, solutions that could have strong potential for Morocco and Marrakech. Just as with solutions in the water resource management sector, all plans and projects must not exist on a grand level, all projects great and small have their impacts. One small example, given by Cynthia Guttman, in "Towards an Ethics of Tourism," says that "The British NGO Tourism Concern has produced its first inflight video that highlights concerns Gambians have about tourism. It has also made a video for secondary schools, which examines the country as a destination through the eyes of advertisers, tourists and local people." ⁱⁱ The Director of Marketing at the CRT said that future projections of tourist demand in Marrakech will accommodate up to 50 flights into the city a day at the Marrakech airport. With a short inflight video highlighting tourism concerns on 50 flights a day, there can be a huge impact on the way that both tourists and locals approach situations in the city, particularly if a video was also created for secondary schools in Marrakech. Indeed, the ultimate future of tourism and ecologically- and socially-related issues will rest in the hands of the Moroccan people and their actions and reactions to challenges. Waleed Hazbun

says, “I would just like to suggest that tourism more often than not *reflects and reproduces* political and economic disparities, instead of being able to help *reduce* them. The only way that this process might be reversed is by including more community participation in the planning, building, and enjoyment of tourism development projects. This of course requires more popular participation in the economy and politics, first.”^{lii} Thus, without a true integration of the Moroccan people into all steps and processes of the tourism development plan, there can be no true ownership and no true benefit for all the society.

According to the article “Concepts and Tools for Comprehensive Sustainability Assessments for Tourism Destinations: A Comparative Review,” there are three large facts to keep in mind when planning any sort of proposals for a tourist site. The first fact is that “tourism destinations are often located in or close to ecologically fragile or culturally-sensitive areas, which have low resilience to human impacts.” The heart of Marrakech’s tourism is Djemaa el Fna, a vital cultural center for the Marrakechi society as well as the tourist. Each day, even in December, it is possible to view tourists stretching the limits of acceptable clothing in this relatively traditional society. Though Marrakech has always been a welcoming city to outsiders, there should be respected boundaries as a guest in society. The second fact to keep in mind is that “tourism development is inherently unstable and unpredictable.” Nowhere might this hold more truth than in Marrakech currently. It is a fact recognized by all parties, which partially explains the government’s unwillingness to turn away investors, as well as the current media interest in the city. All of this must be kept in mind vigilantly, as the truth is that all of the benefits of tourism can leave, and leave behind all social and ecological impacts it may have made on the society, good or bad. The impacts are all the more significant because of the third fact, that tourism is “an inherently complex system...a conglomerate of many small independent, interacting businesses which are also strongly connected and interdependent.” One

impact in one business or system can reverberate throughout the tourism sector for an entire city, region, or nation.^{liii}

Conclusion

“In a world where many developing nations depend on tourism for a slice of their daily bread, and where this same tourism can burden and threaten the economy and environment of these poorer nations, it is no longer just the host who needs to practice hospitality.”^{liv} This line was excerpted from Patrick McCormick’s “The Occidental Tourist,” in the magazine *U.S. Catholic*. Hospitality, as I have discovered in Morocco, exists in a great many forms. Several of them being, for me as an outsider, an acceptance into the culture, a simple word of encouragement at my hesitant and erroneous *Derija*, or just that one more hunk of bread passed along the table for me to finish my “zone” of *tajine*. One of the most important foundations of any relationship is respect. Without a mutual respect for one another’s differences and similarities, as well as for one another’s resources and rights, there can be no sustainable relationship or development. This is a simple rule that can be applied and integrated into all plans, whether on a personal, regional, national, or international level. Though everyone has the right to seek their own goals and satisfaction, no one has the right to do so at the expense of others and their livelihoods. In order to show respect while in a different culture or society, one must be a hospitable and considerate guest, particularly when it concerns limited ecological or financial resources. There is truly no end to the directions in which further studies in this field might be taken. Because of the interrelation and the need for integration amongst all fields and actors for a sustainable solution, the possibilities to study tourism development or water resource management with any other facet of society are endless. It is also possible to further study the negative or positive impacts that tourism development may have on society or ecological environment. It is a subject that I feel I’ve only been introduced to, and believe there is a rich field of subject matter available for all researchers.

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- ⁱ Agence Japonaise de Cooperation Internationale. *Etude du Plan de gestion integree des ressources en eau dans la plaine du Haouz.*
- ⁱⁱ Pfeiffer, Tom. "Marrakech in Two Minds over Tourist Boom." Reuters Foundation Alertnet. 28 Feb 2007
- ⁱⁱⁱ Agence Japonaise de Cooperation Internationale. *Etude du Plan de gestion integree des ressources en eau dans la plaine du Haouz.*
- ^{iv} Ibid
- ^v Agence du Bassin Hydraulique du Tensift. www.eau-tensift.com
- ^{vi} Agence Japonaise de Cooperation Internationale. *Etude du Plan de gestion integree des ressources en eau dans la plaine du Haouz.*
- ^{vii} Hazbun, Waleed. *The Impact of Tourism Industries in the Arab World: Trapped Between the Forces of Economic Globalization and Cultural Commodification* Johns Hopkins University, Baltimore, MD
- ^{viii} The Rough Guide. *Morocco*. 2004
- ^{ix} Lightfoot, Dale R. *Moroccan Kheffara: Traditional Irrigation and Progressive Desiccation*
- ^x Rough Guide, *Morocco*, Pg. 414
- ^{xi} Ibid, Pg.
- ^{xii} Agence Japonaise de Cooperation Internationale. *Etude du Plan de gestion integree des ressources en eau dans la plaine du Haouz.*
- ^{xiii} Starmer-Smith, Charles. "Mass Tourism Threat to Morocco." Telegraph.co.uk. March 6, 2006.
- ^{xiv} Pfeiffer, Tom. "Marrakech in Two Minds over Tourist Boom." Reuters Foundation Alertnet. 28 Feb 2007
- ^{xv} New York Times article "36 Hours in Marrakech"
- ^{xvi} National Office of the Ministry of Tourism Newsletter. May 2007.
- ^{xvii} Pfeiffer, Tom. "Marrakech in Two Minds over Tourist Boom." Reuters Foundation Alertnet. 28 Feb 2007
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- ^{xx} Agence Japonaise de Cooperation Internationale. *Etude du Plan de gestion integree des ressources en eau dans la plaine du Haouz.*
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- ^{xxiv} Agence Japonaise de Cooperation Internationale. *Etude du Plan de gestion integree des ressources en eau dans la plaine du Haouz.*
- ^{xxv} Ibid
- ^{xxvi} Ibid
- ^{xxvii} Hazbun, Waleed. *The Impact of Tourism Industries in the Arab World: Trapped Between the Forces of Economic Globalization and Cultural Commodification* Johns Hopkins University, Baltimore, MD
- ^{xxviii} Agence Japonaise de Cooperation Internationale. *Etude du Plan de gestion integree des ressources en eau dans la plaine du Haouz.*
- ^{xxix} Ibid
- ^{xxx} Ibid
- ^{xxxi} Moroccan Government. *50 Years of Human Development: Perspectives to 2025*
- ^{xxxii} *Water Demand in the Mediterranean*
- ^{xxxiii} Ibid,
- ^{xxxiv} Hazbun, Waleed. *The Impact of Tourism Industries in the Arab World: Trapped Between the Forces of Economic Globalization and Cultural Commodification* Johns Hopkins University, Baltimore, MD
- ^{xxxv} Ibid
- ^{xxxvi} Ibid
- ^{xxxvii} Te Water, Aman "Morocco's Grand Plan." *African Business*.
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- ^{xxxix} Starmer-Smith, Charles. "Mass Tourism Threat to Morocco." Telegraph.co.uk. March 6, 2006.
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- ^{xli} United Nations. United Nations Development Index
- ^{xlii} Pfeiffer, Tom. "Marrakech in Two Minds over Tourist Boom." Reuters Foundation Alertnet. 28 Feb 2007
- ^{xliii} 36 Hours in Marrakech
- ^{xliv} Hazbun, Waleed. *The Impact of Tourism Industries in the Arab World: Trapped Between the Forces of Economic Globalization and Cultural Commodification* Johns Hopkins University, Baltimore, MD
- ^{xlv} *Debate National Sur L'eau*. November 2006
- ^{xlvi} UN-HABITAT Local Agenda 21 Plan
- ^{xlvii} Ecodit Coporation. Ecodit.com Dec. 1, 2007. www.ecodit.com

xlviii Ibid

xlix McCallister, Pat. "Ethics and Environment: Point-Counterpoint"

¹ Lightfoot, Dale R. *Moroccan Khettara: Traditional Irrigation and Progressive Desiccation*.

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^{lii} Hazbun, Waleed. *The Impact of Tourism Industries in the Arab World: Trapped Between the Forces of Economic Globalization and Cultural Commodification* Johns Hopkins University, Baltimore, MD

^{liii} Schianetz, Karin, Kavanagh, Lydia, and Lockington, David "Concepts and Tools for Comprehensive Sustainability Assessments for Tourism Destinations: A Comparative Review," *Journal of Sustainable Tourism*. 2007

^{liv} McCormick, Patrick. "The Occidental Tourist." *U.S. Catholic*. May 2002. Vol. 67, No. 5

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Appendix

Student Survey

Age: _____ Field of Study: _____ City of Origin: _____

Why do you study Tourism in Marrakech? _____

Do you hope to have a job in the tourism industry after graduation? And, if so, doing what exactly?
(Hospitality, Management, etc.) _____

Has your tourism study included discussion and classes about ecological environment issues in
relation to tourism? _____

What are some of the negative social impacts of tourism here in Marrakech? _____

What are some of the negative environmental impacts of tourism here in Marrakech?

How do you feel about recent expansions of tourist development here, and do you believe they will
they be environmentally and socially sustainable? _____

Do you feel that Marrakech's water resources are threatened by development, and what are some
possible solutions? (Desalinization, Water Treatment Facilities, etc.) _____

Do you think that "ecotourism" will be popular solution in the future for Marrakech, or will big
resorts and golf courses continue to be built around the city? _____

THANK YOU FOR YOUR PARTICIPATION!!!

Tourist Questionnaire

Age:_____ Nationality:_____ Gender: M F

Status in Marrakech (please circle): Tourist Business Traveler Resident

Current Hotel or Residence:_____

Do you utilize the following here in Marrakech (please circle all that apply):

Swimming Pools Golf Courses Spas Hammams

The frequency with which you use each resource (in times per week):

Swimming Pools: 0 1 2 3 4 5

Golf Courses: 0 1 2 3 4 5

Spas: 0 1 2 3 4 5

Hammams: 0 1 2 3 4 5

Please circle if your hotel has any of the following amenities:

Swimming Pool Golf Course Spa Hammam

Does your hotel or residence have in-room showers, toilets, or sinks?

If so, which? (please circle all that apply): Shower Toilet Sink

If you have an in-room shower, how many times a day is it used by all residents of the room? _____

Is this your first visit to Marrakech?_____

If no, how many times have you visited (does not apply to residents)?_____

Would you recommend Marrakech as a tourist destination, or do you intend to return in the future?_____

THANK YOU FOR YOUR PARTICIPATION!

Observational Photographs



ROUTE TAHNAOUTE



GUICHE, Surface : 1200 m²

Prix en 2000, sans frais de papier et notaire - 2,5 Frais d'agencement



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Terrain en bordure de route d'ouarzazate

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1km de piste -
Maison en bois - Oliviers - Eau et électricité
à proximité

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