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Water Injustice in Jendouba Governorate

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Water Injustice in Jendouba Governorate

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Abstract

Water is a precious resource even in a tropical rainforest, and in a dry country like Tunisia it is essential. Located in the south central region of the Mediterranean Sea, Tunisia, like nearly every other Mediterranean country, faces a stark challenge in providing clean drinking water to its growing population. Compared to its neighbors, Tunisia, with a few minor exceptions, does a good job in meeting this goal. In the rural northwestern governorate of Jendouba, where most of the country's surface water comes from, there is ironically a dire need for clean drinking water in the rural areas outside the city of Jendouba.

This paper will focus on the challenges facing the rural population, the existing framework for delivering the water, and the perceptions of the people who face this problem and those who deal with it. The situation in the Jendouba is one that could be compared to a painter too poor to hang any of his own paintings on his wall. Instead of paintings, however, we are talking about water here, and instead of wealthy patron of the arts taking the paintings away, we allude to the large cities of Tunis, Sousse, Sfax, and Cape Bon who drain most of the water away.

This paper seeks to discover whether an injustice is being committed in this unfair water distribution. In this puzzle many different players are involved, and hopefully, through a series of interviews and other research methods, it will be elucidated.

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Introduction

After hearing that there might be inequality in the distribution of water produced in the north of Tunisia and transferred to touristic areas in the south, my curiosity was peaked. As natural resources major at my university, specializing in water management, I knew I wanted to do an independent study project on water in Tunisia in my final month here. Upon further research into the topic, it appeared that the real injustice is not so much touristic facilities using more water than the average Tunisian-- which is to be expected-- but rural people's difficulty accessing drinking water in the very place that it comes from.

In the north, the mountainous regions of the country receive an average of 1500 mm of rainfall per year while the number in the south is less than 100 mm¹, signifying that most of the country's surface water is located in the north while the vast majority of aquifers are to be found in the south. This unequal distribution of the resource, together with water quality problems related mainly to salinity, pose various challenges to the distribution of drinking water. The problems reside in the location of the water resources. The large population centers and main agricultural zones are located far away from the source, in the coastal flats by the Mediterranean eastern coastline.

By far, the largest consumer of water in Tunisia is agriculture. Using 84% of total allowances, it takes the vast majority of the resource in comparison to its competitors of industry, tourism, and drinking water². Further exasperating the supply problem, water consumption by

¹Semide, Tunisian Ministry of Agriculture, <http://www.semide.tn/english/contressource.htm>

² Sihem Benabdallah, *The Water Resources and Water Management Regimes in Tunisia*, <https://www.nap.edu/read/11880/chapter/11>

all these sectors are set to grow, drinking water use, for instance, is set to double by 2030³. The vast majority of the country's agricultural and population centers are located on the eastern coastal flats, hundreds of kilometers from the system of dams in the northwest that serve as the country main water source. Providing solutions for the increasing demand that are just for all is one of the country's most pressing tasks. In comparison to its neighbor, Tunisia provides 450 Mcm of water per capita while Morocco provides 1083 Mcm⁴.

While limited by the rate of resources on hand, Tunisia does a phenomenal job in supplying drinking water in urban areas. Since 2011 nearly 100% of urban population has access to clean drinking water⁵. Numbers, however, drop to 90% and below when looking at rural populations. This discrepancy in rates of access does not appear to be huge a first, but it is nonetheless significant and this paper will look into the numbers and the lives of people dwelling in those areas to show exactly what this means.

³ Ibid

⁴ Ibid

⁵ https://en.wikipedia.org/wiki/Water_supply_and_sanitation_in_Tunisia

Methodology

This research paper is largely interview-based. It also relies on multiple online sources and books providing statistics and background information. Thanks to cooperation from groups like the Ministry of Agriculture, SONEDE, and others, a broader picture of the context and ongoing work in this field have been captured.

For most of the interviews I stuck to a general outline of questions. Each interview, however, was slightly varied to tailor to the person or entity in question. I generally started out with broad contextual questions to ease the subject into my topic then gradually moved to more difficult questions such as, “Do you think there is inequality of access to drinking water suffered by the rural peoples of Jendouba?” I was fortunate to deal with mostly cooperative people that did their best to answer my questions. There were nevertheless various challenges along the way.

The most significant obstacle in the interviews and research generally was the language barrier. All the interviews were conducted in French and most of the limited research material to be found on the subject is written French too. While I have a modest grasp of the language and was able to successfully conduct interviews, it was at times difficult to get my exact point across. When dealing with a subject as serious as access to drinking water, there is little room for error, and I was constantly fearful of making some linguistic blunder or not understanding a key piece of evidence. Beyond French, a mastery of Tunisian Arabic would have been key in securing more local interviews with the citizens of rural Jendouba.

Another problem is the bias behind the very nature of my question. I would be lying to claim that my initial impulse wasn't to prove there isn't any inequality in the distribution of

drinking water. But then, inversely, entities like the National Water Board (SONEDE) and the Ministry of Agriculture have obvious interest in convincing me there is no problem and everyone in the country has the same access to water. In every interview I did my best to leave behind any preconceived notions I had harbored and tried to be as objective as possible. To ease the potential tension arising from “a meddling foreigner wanting to point out the flaws of a nascent democracy”, I emphasized, before every interview, that I am an independent university student doing research for the sole purpose of a project required by my course work. Proof of my studentship was necessary on multiple occasions to assuage people into answering my questions.

The last obstacle I encountered in carrying out this project is obviously the time factor. If given added time, more extensive interviews and research would have been conducted. More specifically, I would have spent enough time in the governorate of Jendouba to begin to live the reality of “water distribution” and understand the perceptions of people living there and how they view the work being done around them and the challenges they face. It is not so hard to secure an interview with a director at the Ministry of Agriculture, but to build a relationship of trust with a rural family with whom you have little in common, takes time.

All of the challenges aside, I was able to acquire a holistic understanding of the problem and the work being done to ameliorate it. I acknowledge that there may be some errors and even mistakes in the translations I have done, but I guarantee the validity of the general message. Any bias, whether from the subject of the interview or myself, will be noted and analyzed in the discussion portion of the paper.

Research and Findings

After completion of the research, I have acquired a clearer and better understanding of the issue of water inequality in Jendouba governorate and the efforts its rural peoples to secure the supply of clean drinking water. There are still various aspects that remain entangled in complicated politics. The biggest takeaway, and doubtlessly the largest problem, was every organization's quickness to point out the faults or shortcomings of the other.

To understand the complexity of the situation, one must first understand the various players involved in the distribution of rural drinking water. The biggest actor is the Ministry of Agriculture. The ministry directs water policy in each governorate through the CRDA or the Regional Office of Agricultural Development. The CRDA is in charge of the realization of water projects and the funding of groups like the GDA, or the Agricultural Development Groups, there are thousands of them. GDA's are independent cooperatives of farmers that maintain the water infrastructure in rural areas, collect money from beneficiaries, and pay SONEDE and STEG. STEG is the power company. If STEG is not paid, the electric pumps cannot pump water, regardless of the resource's availability. SONEDE, or the National Company of Water Exploitation and Distribution, sells water to households as well as providers like GDAs in rural areas (although their focus is urban). They also carry out studies and construct infrastructure and technically fall under the tutelage of the Ministry of Agriculture. Also falling under the jurisdiction of the ministry is Genie Rural whose job is to coordinate water projects in both rural and urban areas as well as to carry out studies to ameliorate access to drinking water. The cooperation of all these actors is complex and most likely part of the problem.

When conducting an interview with SONEDE in the rural southern town of Tozeur, the SONEDE regional manager, Meussri Bassem, explicitly said that the distribution of drinking water for rural citizens falls under the jurisdiction of the Ministry of Agriculture. When interviewing the Ministry of Agriculture, both interviewees there mentioned that it is the job of both SONEDE and Genie Rural to distribute rural drinking water. This cycle of mutual blame is a common theme and quite symptomatic of the Tunisian bureaucracy.

During my first interview at the Ministry of Agriculture in Tunis, some interesting data was obtained. The first interview with Habaieb Hamadi was one of general context. Mr. Hamadi outlined the general policies of the Ministry and how they work within the larger legal framework of the whole system. The most telling part of the interview came when he was asked about injustice in rural people's access to drinking water. He replied: "I think there is no difference, there are areas where it is more difficult, they will find difficulties. In areas where a lot of people live, there is no problem. It is expensive to transfer water to individual homes. But in my opinion, there is no problem." He mentioned no statistics about the people living without access to drinking water, but he seemed assured there was no problem, and, of course, no injustice. He further insisted that the building of dams, like Sidi Barrack in Jendouba, had only a positive impact on the area whereas locals living in the area indicate otherwise.

Since the construction of the dam in 1995, a myriad of problems were encountered. They included the confiscation of tens of square kilometers for the reservoir of the dam⁶. While the dam is beneficial for the inhabitants of Cape Bon, to whom the water was destined, there is little infrastructure in place to deliver the water to nearby rural towns and villages. When people try to build small wells to access groundwater, they are charged with not having the necessary

⁶ Nour El Houda Chaabane, "Tunisia's Parched North", <https://nawaat.org/portail/2015/12/29/tunisias-parched-north/>

paperwork done --no one has property deeds in rural areas-- because the water company wants that water to infiltrate the soil and trickle down to the dam⁷. It is the plight of the small villages and remote families that the Ministry does not appear to be keenly aware of.

In the second interview at the Ministry with Nejet Gharbi, some more concrete numbers were presented. Mrs. Gharbi started off by emphasizing the difficulty in installing water distribution networks to rural homes and how costly the process was. However, she noted that since 2007, the Ministry has changed its strategy of having communal drinking fountains in rural areas to installing individual branches of water piping to each house. The problem, for her, lies in financing these individual home installations . SONEDE, who is in charge of building the water infrastructure (in some parts of the governorate of Jendouba), doesn't have the capital to do so because the GDA (a cooperative of farmers) does not pay them. In turn, the GDA has no money because the beneficiaries themselves are not paying their water or electricity bills. It is a confusing chain of dysfunction in which the Ministry is simply blaming the citizens for not paying their bills, hence the lack of drinking water.

After some cajoling, Mrs. Gharbi divulged that in 2007, 38% of Jendouba is still without access to drinking water, that is, 123,000 people of the governorates roughly 450,000 inhabitants. These numbers are shockingly below the national average, (100% in urban areas and 93.5 in rural ones)⁸, but Mrs. Gharbi insisted that it is the citizens who are not cooperating. She even went to “accusing” Jendouba inhabitants of “preferring natural spring water to SONEDE’s”. She

⁷ Ibid

⁸ African Development bank, <https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/TUNISIA>

also appeared out of touch with the over 100,000 rural citizens, some of whom have to walk more than 10 km every day with a heavy load of water just to bring clean drinking water home.⁹

In other statistics presented by Ms. Gharbi, SONEDE supplies roughly 107,000 people with drinking water and Genie Rural 143,000 in the governorate of Jendouba. This is interesting when looking back at the assertion that “SONEDE doesn’t work in rural areas” made by the regional director in Tozeur. Since the revolution there has been somewhat of a breakdown in communication and deadlines are not being met like they were in the past.

From an interview with Mrs. Oum Elkhir Zarra, SONEDE manager for the northwest I learned more about this dysfunction. Mrs. Zarra started the interview by emphasizing that living in rural areas is a “choice”, implying perhaps that not having access to drinking water is a voluntary choice. SONEDE has multiple projects ongoing in the area, but many have either been disrupted by dissatisfied local people or slowed down by lack of funds from “fund providers”, essentially meaning the Ministry of Agriculture. Mrs. Zarra also noted the effectiveness of strong governance before the revolution and how now, SONEDE relies occasionally on “the police force” to implement some of its projects in rural areas. The theme of more cooperation and better rates of success with projects before the revolution recurred again and again in the interviews. The government used to be “more present” to ensure the completion of projects. Mrs. Zarra cited the GDA’s as another source of the problem, being run by “unqualified” local personnel.

Mrs. Zarra also noted an interesting phenomenon that does not appear in any statistics. Since the revolution, the Ministry of Agriculture has been trying to get SONEDE to do as many projects as possible, instead of actors like Genie Rural, CRDA, or the GDA. She thought this

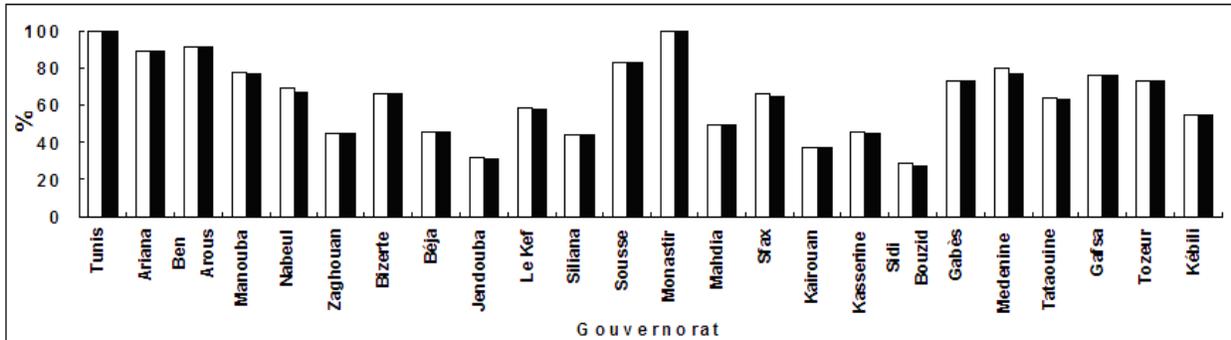
⁹ Nour El Houda Chaabane, “Tunisia’s Parched North”, <https://nawaat.org/portail/2015/12/29/tunisias-parched-north/>

was ironic because “the ministry has more engineers than we do” and they simply cannot handle the workload. SONEDE accepts as many projects as they can from the Ministry of Agriculture, but they do not necessarily have the same “trust” that they used to in the system. Mrs. Zarra also said SONEDE does not cut water transfer if a few bills go unpaid, unlike STEG who “immediately cuts electricity”. However, thanks to the testimonial of Nesreen Baccara, it is clear that SONEDE is just as quick and ready to cut off the water supply. After Nesreen failed to pay her bill (she was in arrear by a single week), due to the bill getting lost in the mail, her water was turned off.

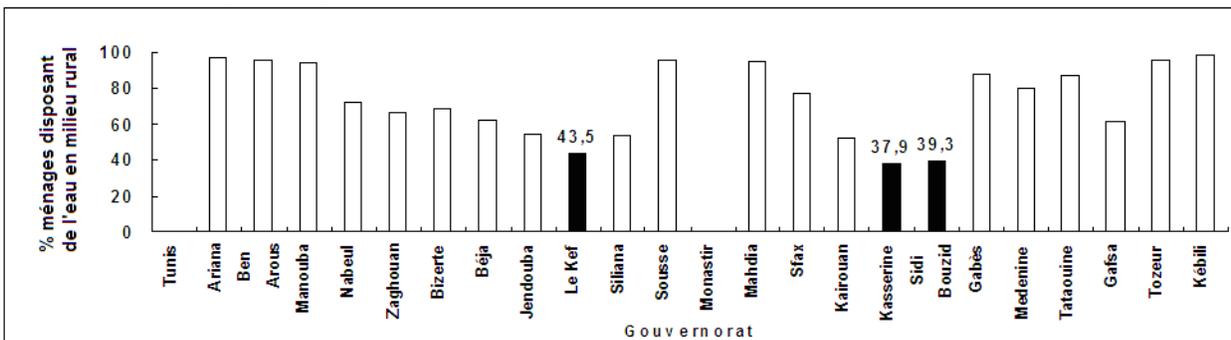
In Jendouba, the CRDA and especially the GDA’s seemed to have an axe to grind with SONEDE. In Jendouba governorate, there are 66 GDA’s but only 55 of them are currently functioning, with some of the others at a barely working capacity. They are struggling with a number of problems. Some of these include SONEDE and STEG rate increases, customers’ refusal to pay their water bill even if they have the means, a lack of resources in the CRDA, and shortage of qualified personnel. For example, the head of the Mjez Charf region of Jendouba has 385 homes in his jurisdiction and 20 of them choose not to pay their water bill. Furthermore, since 2007 when the Ministry changed its policy from a central fountain for the village to individual piping to each house, he did not have enough money to buy another pump to provide the necessary additional water pressure. Simple oversights like these are errors that can be expected with such a complex system of distribution. In addition, the GDA director for the Mjez Charf region receives no salary. His two employees receive 500 dinar per month, and neither have received payment for the past 14 months. Even the regional head of the CRDA in Jendouba has not received his salary in months, I was told by Soukaiyna Hkimi, director of the CRDA in Bou Salem, Jendouba. The question then is how is a group, charged with the distribution of

drinking water to rural people, supposed to function in conditions like these, and why has this level of administrative neglect continued unchecked?

The graph below illustrates the correlation between the access of drinking water in urban areas and the percentage of households located in each governorate. Percentage of access to water in urban areas (in white) and rate of households living in this type of environment (in black).¹⁰



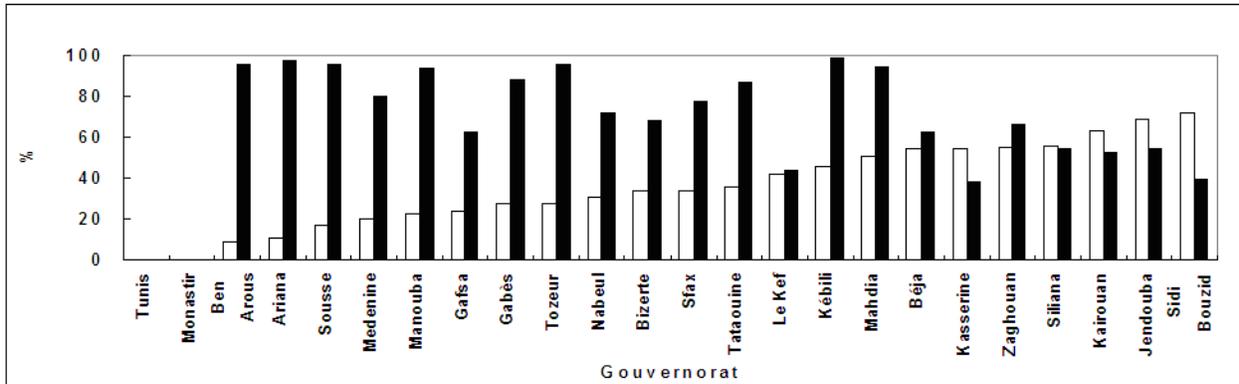
The graph below shows the percentage of households living in rural areas with tap water (relative to all rural dwellers). In black, there are governorates where this rate is less than 50% (shown in the figure).¹¹ Jendouba barely breaks the 50% margin, even when it receives more rainwater than any other governorate.



¹⁰ Mohsen Kalboussi, Nawaat, <http://nawaat.org/portail/2017/06/26/accès-a-leau-en-tunisie-quelles-disparites/>

¹¹ Ibid

The graph below shows that the higher the rate of rurality a governorate has, the less likely it is to have access to drinking water (percentages of access to water in rural areas (in black) and rates of households living in this type of environment (in white)).¹²



These graphs, created by Mohsen Kalboussi using information directly supplied by the National Institute of Statistics (INS), visually prove the inequalities. If you live in a rural area in Tunisia, you will have lower rate of access to drinking water infrastructure. It is also important to know access to drinking water in a constitutional right in Tunisia. The injustice is obvious enough, but the question remains “Why?”

¹² Ibid

Analysis

The overarching result from all of the previously cited interviews and research is that Tunisia does not have a resource problem, it has a management one. Many experts cite Tunisia as a country with dwindling water resources that are over-exploited. Though this is true to a certain degree, the problem of the utilization of the water resources is by far the larger problem behind the injustice of water distribution.

In this section I will analyze the problems, their causes, and the work being done to ameliorate the situation. The first problem is one of perception or civil mindedness; there are citizens who consciously choose not to pay their water bill for “political reasons”. The second problem is a lack of proper coordination between the different actors in charge of delivering drinking water. The third problem is a lack of strong governance in this field and the problems that arise from it. There are obviously other difficulties hampering the delivery of drinking water to rural areas, but these three are the main ones.

Throughout the interviews and site visits, there appeared to be some oversights in matters that seem to be obvious to a relatively novice observer like myself. For example, in the Mjez Charf region of Bou Salem, in Jendouba, after the Ministry of Agriculture switched in 2007 its rural drinking water policy from communal fountains to supply to individual homes, the implementation of this policy encountered enormous problems. Bou Salem GDA reported a loss of up to 40% of the water purchased from SONEDE. So where was the water going? The answer was simply: as the meters did not come with a locking device, everybody was stealing water and distorting the meters to their advantage. The GDA of Mjez Charf had to build a completely new set of conduits, this time with a locking system to prevent water loss. This is not

a general problem of course, but it serves as a pertinent example of a minor oversight that has real consequences, though on a small scale.

After this improvement, the regional director reported a current water loss of about 12%. A vastly improved figure, but a significant amount of water was still unaccounted for. Upon further inquiry the director of the GDA, Barkaoui Fadhel, reported that of his 385 clients, about 20 do not pay their water bill. Apparently it was not a question of whether they could pay--I was told they had enough money to do so--, it was a deliberate so to speak “political” decision. They deliberately chose not to pay their bill because they think the “state is obliged” to pay their water bill and provide this resource for them, free of cost. It is a matter of civic perception, one that has many different factors weighing into the decision to not pay the water bill.

The mentality of the 20 peoples who chose not to pay their bill is a complicated one to diagnose, and just one of the myriad of problems, but it is important and is worth considering. This mentality could possibly be explained as a dereliction of civic duty from which the country seems to suffer. For travelling around the country, one will see trash littering the roadsides and landscape. Citizens are reluctant to clean the trash up or even refrain from polluting it in the first place, because of a perception of the public space as “*beylik*” (Bey’s property), signifying that which is not yours did not concern you and concerns public authority. Therefore it is possible that the citizens who refuse to defray the cost of their water bill are protesting the fact that the state, still, has utter control of the land and its resources, like water, and must therefore supply it for free. It is always important to consider historical context when addressing problems like these.

According to locals, there used to be plenty of water in Jendouba, both rainwater and from natural springs. Now, water is captured and sent to urban centers like Tunis.¹³ Yet 20 citizens who refuse to pay their water bills have a massive impact on the whole system of rural water distribution, even if they do not realize it.

20 people out of 385 is a little over five percent of the population. This GDA in Mjez Charf runs on extremely thin margins, Mr. Fadhel receives no salary and his two employees have not been paid in 14 months. Therefore, the five percent loss is crucial insofar as it prevents the GDA from paying SONEDE for the water and STEG for the electricity to pump the water. From there, Mr. Fadhel said both SONEDE and STEG raised their prices to make up for the lost revenue, further exasperating the problem. Supplying drinking water to poorer rural areas is a business of fine margins, with little or no room for error. He mentioned that owing to this fact he might have to raise the price of drinking water.

It should also be noted that Mjez Charf GDA is one of the best functioning ones in Jendouba governorate, one that the Ministry of Agriculture has selected for me, and independent researcher, to visit probably as a showcase. So if this five percent financial loss occurred in one of the better functioning GDAs of the region, who knows what the loss may be in other worse-managed ones.

Thankfully, in this particular rural region of Jendouba, all 385 residents have access to SONEDE's drinking water, as distributed by this GDA. This plain fact cannot be overlooked, and even if some do not receive water in this district, it is because they have voluntarily refused to pay their bill for the aforementioned "political reasons."

¹³ Nour El Houda Chaabane, "Tunisia's Parched North", <https://nawaat.org/portail/2015/12/29/tunisi-as-parched-north/>

Even in this is the better off GDA, there are still serious problems in keeping the supply up. Another pump in its station is needed to supply water to the individual homes, as stipulated by the policy change in 2007. But the CRDA has not yet given the money for the pump and there is no continuing dialogue to resolve the problem. It is hard to imagine what the situation must be like for the 11 regions of the 66 the GDA serves that have no functioning GDA at all. In the other districts, the ones with malfunctioning GDAs, that is where the injustice in the distribution of drinking water lies. Unfortunately, I did not get to visit them and conduct interviews in these other districts.

The lack of communication, as seen between the GDA and CRDA in Mjez Charf is a chronic problem that also happens on the national level. Even at my interviews at the Ministry of Agriculture I was told conflicting things in terms of who to blame for the lack of equitable resource distribution. First Mr. Hamadi told me it was the GDAs who were not functioning properly and halting the progress in water distribution. Then Mme. Gharbi mentioned it was SONEDE, who has “been slow carrying out studies” that would bring more potable water to rural areas. If this level of dysfunction within the Ministry is apparent, then it is only a precursor to what happens in dialogue between the other actors.

In Jendouba, the GDAs were very critical of SONEDE, from whom they purchase their potable water. They complain that SONEDE is capable of distributing water themselves in rural areas, but they chose not to do so. This explains the GDAs’ emphasis on the difficulty of maintaining rural water infrastructure and that SONEDE was not interested in taking on the responsibility because “they don’t enter areas where they cannot profit.” The accusations that GDAs are not run by qualified people or that they are inefficient is true in many cases, but it is

not necessarily their fault. They step into the gap left by SONEDE and Genie Rural to distribute water to rural areas when the latter companies are unwilling to do so.

Mrs. Zarra from the SONEDE emphasized in her interview that an overburdening number of projects were being allocated to her by the Ministry of Agriculture. She said while SONEDE personnel “cooperate” and have a working relationship, the two bodies don’t necessarily trust each other like they did before the revolution. This is even more problematic because SONEDE technically falls under the jurisdiction of the Ministry of Agriculture and in theory should be working hand in hand. But as always in governance, the reality on the ground is different from what is spelled out on paper.

Every institution employee interviewed blamed some other institution for the problem of unjust water distribution. Few of them actually stated there was an injustice. Most just stated that “it’s hard to deliver water to homes so dispersed” and continued to blame another organization or agency for the failure. The cyclical nature of the blame game being played appeared childish to me, but it is the rural folk, the people living in the mountains of Jendouba who actually suffer. If progress is to be made in increasing rates of access to drinking water, an open and frank dialogue between all the players is urgent. This is perhaps the biggest hindrance in making progress as projects stand in semi stagnation today.

The interview with Mrs. Zarra at SONEDE also highlighted something that has come up in every interview, the differences before and after the revolution. Not a single interviewee said the quality of governance had been improved after the revolution. If there is one thing a dictator like Ben Ali is good at, it is controlling the state and insuring a minimum of administrative efficiency, if only to legitimize his authoritarian rule. There are many bad things to say about a

dictator like Ben Ali, obviously, but under his presidency, access rates to drinking water were steadily increasing and there was a more open dialogue between the water agencies.

There is a reason why nearly every interviewee said water governance was “better” before the revolution. For example, Mrs. Zarra from SONEDE spoke about how much more “present” the state used to be in the water sector. She said: “even if there was opposition, the project would still take place”. These days, according to her, the work of SONEDE has been repeatedly stymied by “social movements” and acts of vandalism. She struggles to complete projects on time because the backing of the state is not as overbearing as it once was, helping to hinder whatever the opposing force may be.

Barkaoui Fadhel, Chief of one of Jendouba 66 GDAs was quick to explain the chaos at the time of the revolution. He said there were “many problems” and water was cut multiple times. Since then he reported the distribution has improved but it was still “better” before the revolution. However, he still deals with many problems. He also receives no salary for his work and struggles to acquire the necessary funds to complete projects on time. SONEDE’s network of water infrastructure stops at the border of his region so he knows firsthand what it is like when companies are not pushed to their full potential by a “present” state. He went as far to show the state of dereliction that SONEDE’s pumps were in on the border of his region. The GDAs have a working relationship with SONEDE, but it is a strained one at best without the overbearing force of strong governance.

It would be incorrect to say that water governance was flaw-free under the Ben Ali Regime; it surely had its fair share of corruption and other problems. However, even if millions of dollars were siphoned off by corruption, the hyper presence of the state enforced cooperation and ensured project completion in a relatively timely manner. Though many projects are

underway as this paper is being written, few will meet their scheduled deadline, according to Mrs. Zarra of the SONEDE and Mrs. Gharbi of Genie Rural. Here lies the difference between before and after the revolution.

Corruption is something that is very hard to quantify and very hard to analyze. Corruption in the distribution of rural drinking water surely exists today, but whether more so than during the time of Ben Ali is up for debate. In Jendouba, there have been reports of GDAs stealing money funneled for projects and administrators who have a “lack of response” when it comes to dealing with pressing issues¹⁴. According to Mrs. Zarra there are also extreme “disparity” between the hyper rich and the very poor in Jendouba. Generally speaking, the hyper rich are able to influence local policy and projects to their advantage, ensuring they have water at the expense of others. However, this kind of corruption is not at all specific to Tunisia and likely had similar inner workings in the Ben Ali era.

The problem facing Tunisia in the distribution of drinking water in rural governorates like Jendouba is something that will and cannot be improved easily. As previously discussed, the problems are multi-faceted, wide-reaching and all-encompassing. Thankfully, with bad comes good. Now that the roots of the problems have been exposed, we have a better idea of how to tackle a problem as daunting as this one.

¹⁴ Nour El Houda Chaabane, Tunisia’s Parched North, <https://nawaat.org/portail/2015/12/29/tunisi-as-parched-north/>

Conclusion

Jendouba and all rural governorates of Tunisia face an uphill battle in increasing access rates to drinking water. Since the revolution access rates suffered a serious setback and have yet to fully achieve the rate of growth prevalent before 2011. However, there are steps the government, that is ultimately the Ministry of Agriculture, and other actors could take to find adequate solutions to the problem of unjust water distribution in Jendouba governorate. Firstly, institute a better cooperation between all the different players in drinking water distribution. Secondly, more forceful government action to hold those involved accountable for deadlines on projects completion and to fight corruption. Lastly, tackle the civic perception of the issue.

Like any functioning relationship, communication is fundamental. Through the interviews, I have witnessed a breakdown in communication between nearly all parties involved. This produces relationships lacking trust and ultimately stifles anything called collaborative work. A more open dialogue would lead to a more fluid allocation of monetary resources to fund the necessary projects. Groups like the GDAs and SONEDE could work together instead of having an antagonizing relationship increase drinking water access rates. This all starts from one place, the central government and Ministry of Agriculture.

Good water governance starts from the center and works its way out to the fringes. There is good policy on the books; it is just a matter of enforcing that policy. One does not need to go back to the extremes of Ben Ali authoritarian control, but it is true that a more state presence is needed to see through to the completion of projects. It is up to the government to enforce the aforementioned cooperation that is so crucial.

After all is said and done, nothing works without the cooperating and responsible citizen. If the person in either rural or urban area does not do their part, by paying their bill for instance, all is for naught. This is the hardest problem of all to address since it is a theoretical one while the others are of a more material or practical nature. As cited in the Mjez Charf region, there are citizens consciously not paying their water bill even if they have means to do so, a problem that one surmises must extend to other rural regions of Jendouba governorate. Unfortunately, I was not able to interview those people and it goes without saying that there is no research on such specific of a subset of people. If given more time, this is the field where I would return to, where I believe one of the main causes of the problem originates.

Money makes the world go round, a capitalist one at least. Therefore it is, unfortunately, on the backs of the average citizen to foot the bill for rural water distribution. When a citizen chooses not to pay his bill, his action sets off a chain reaction in this complicated system that is already exasperated by all the different factors previously mentioned in this paper. These problems cannot and will not be solved overnight, but it is important to keep in mind the plight of those who do not have access to their constitutional right of drinking water in Jendouba, Tunisia, and all over the world.

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