

Water in Gabès: The battle for the gold of the oasis

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The past three summers have been historically dry in our usually rainy country called Belgium. When the groundwater level reached a worryingly low level, we were told to use tap water sparingly. Many people are seldom aware of the hundreds of litres of water we need every day: for drinking, for the household and in the garden, but also for the production of our food, textiles and many other products. More and more it is becoming clear that access to water will be an important issue of conflict in the future. Especially in countries of the Global South that are already struggling with a limited supply of groundwater and a dry climate.

In the south of Tunisia the question has been asked for some time: How much water is available in a sustainable way? And who can and should have access to it? We asked farmers in Chenini and Chatt Essalam, two small towns near the South Tunisian city of Gabès, how access to water determines their agricultural activities and food security. How do they experience the competition for available water? And is growing water scarcity a threat to the future of small-scale agriculture?



Peasants working on the field in Chatt Essalam. (photo: Myrah Vandermeulen)

Once upon a time...

The oasis of Gabès is the collective name for several smaller oases around the city of Gabès. It is unique in the world for its location between the sea and the desert. For the inhabitants of the region, the oasis is literally the source of life. And it has been for many generations. Small-scale agriculture in the oasis was some kind of permaculture *avant la lettre*, in which a multitude of crops were cultivated in a sustainable and extensive manner. Until a few decades ago, water in the oasis of Gabès came to the surface via hundreds of natural springs and was led via irrigation canals to the farmers' parcels. Water was a common good that was available to everyone even during the summer. This is no longer the case.

For several decades now, natural water resources are drying up. The water has to be pumped up. As a result it is becoming increasingly difficult for the small farmers to get water. A farmer from Chenini expressed the evolution as follows: "In the past, one henna harvest could pay for a full wedding, and if you know Tunisian weddings, you know that's a lot. Now young people are no longer interested in agriculture. Due to the lack of irrigation water, there is a great deal of uncertainty and it just doesn't bring in enough money."



Posters on the wall in a local section of Groupement Développement Agricole (GDA). These show an oasis with abundant water resources in a period not so long ago (photo: Ernest Riva)

Competitors

Water has become increasingly scarce in Gabès and there are several consumers who compete for the scarce resource. This is not a fair competition because political, economic and social power play a major role in determining who gets access first. We will look more closely at the various competitors in the battle for the water of the oasis.

Groupe Chimique Tunisien

The largest competitor is probably Groupe Chimique Tunisien, a chemical factory complex specialising in the production of phosphate. The arrival of Groupe Chimique in the 1970s has had an enormous impact on the region and its population. The production of phosphate is an economically very interesting activity. Since phosphate is one of the most important components in for example fertilizer. This created more than 6500 jobs in Gabès. In addition, the export of phosphates is an important asset. Due to the high international demand, it allows the Tunisian government to present economic growth figures.

From a social and ecological point of view, however, the extraction and production of phosphate is a completely different story. The installation of the GCT in Gabès caused air, sea and soil pollution as well as the forced eviction of an entire city district. Moreover, the process of making pure phosphate from phosphate ore requires an enormous amount of water. Since this was abundantly present in the soil in Gabès, the oasis became an interesting place to install a GCT production unit. GCT has free access to groundwater by means of a few gigantic water pumps in the area. However, this comes at the expense of the flow and the quality of the groundwater used by the farmers. Since the arrival of the GCT, it has quickly become clear that the water coming from the wells was decreasing year after year. By the mid-1980s, the natural resources on the surface had finally dried up and from this point on irrigation water for agriculture had to be pumped up.

Groupe Chimique is therefore a major threat to the availability and quality of groundwater in the region. Because of the exploitation of the groundwater, but also because of pollution. Air pollution from the factory is deposited on the soil and ends up in the groundwater. Part of the waste water also seeps through the soil into the groundwater. If the groundwater level

were to fall even further, there would also be a risk of creating underground channels through which seawater could flow into the deeper groundwater reservoirs. This water is very saline and heavily polluted and would mean an irreversible ecological catastrophe. The current situation of over-exploitation of groundwater therefore poses great dangers to the survival of both industrial and agricultural activities in Gabès.

GDA (Groupement Développement Agricole)

The water that came to the surface naturally was managed by the farming communities themselves before the 1980s. They were a kind of cooperative associations that took decisions and dealt with conflicts in a rather egalitarian way. The declining level of groundwater and a broader World Bank water management policy changed this in the early 1980s. Using traditional canals, part of the water seeped into the soil along the way. In a collaboration between the World Bank and the Japanese Institute for Irrigation and Drainage, a system of cemented irrigation channels was implemented worldwide in order to better manage irrigation water. But this innovation also had some perverse consequences for the quality of the soil and the irrigation water. Precisely because the water could no longer seep into the soil on its way to the plots, the salinization of the soil and groundwater has increased considerably since the introduction of the concrete irrigation channels.



The irrigation water is brought to the plots through these cemented canals. (photo: Myrah Vandermeulen)

From the mid-1980s onwards, water pumping was regulated by a local government organisation, the 'Groupement Développement Agricole' (GDA). Although strictly speaking this is still an association, decisions are mainly taken top-down by the Ministry of Agriculture and farmers no longer have a say in water management. They have to pay a membership fee and a variable amount per hour of irrigation. They have to apply for the irrigation in advance and come and pay in the local office. The GDA itself determines the tariffs and the amount of water available to the farmers.

The rates are on the high side for the farmers but affordable. The biggest problem is the amount of water that is made available. Even though the farmers in Gabès mainly do extensive farming to keep the need for water to a minimum, the amount of water provided by the local GDA is far from sufficient. In order to be able to practise agriculture during the summer, the farmers need irrigation water every two weeks. But the GDA often makes them wait 40 days. In this way, it is simply impossible to achieve a successful harvest. Farmers who work together or have more financial resources can install their own water well with a pump on petrol. The wells are very expensive because they have to be at least 100 metres deep. The flow rate is low and the quality of the water is very poor. On top of that, they are also illegal, because the government has declared the oasis a "red zone", which means that no groundwater can be pumped. However, from a country-wide point of view, this designation is not related to the real state of the groundwater. Above all, it is a way of making farmers dependent on the GDA.



Illegally installed water pump that supplies water for the agricultural fields of five farmers in Chatt Essalam (photo: Nele Vanderpoorten)

The scarcity of water also creates great tensions between farmers. Farmers with good contacts or a position at the GDA often receive more favourable treatment. Others have to pay more, wait longer or irrigate in the middle of the night. There are conflicts about injustice or theft of water regularly. The GDA is sometimes involved as both party and judge. And there are complaints about the abuse of power by GDA officials. Farmers are sometimes punished by a price increase or are temporarily denied access to water.

Other major competitors

In addition to the enormous and unlimited water consumption of the GCT and the problems with water supply by the GDA, there are some other (possible) causes of the water shortage in Gabès. The Société de Ciments de Gabès (SCG) is a cement factory that was established in Gabès in 1977. Like the Groupe Chimique, it pumps water from wells several hundred metres

deep. This cement factory is less known to farmers as a direct competitor to groundwater than Groupe Chimique. However, in the long term the water consumption of the cement factory is probably just as fatal for the survival of the oasis. The production of cement is also very water-intensive. In addition, the building materials of the SCG are used to expand the city of Gabès, so that the suburbs begin to take up part of the oasis. This evolution was particularly evident during our visit to Chatt Essalam. It used to be a real oasis, but now it is an urbanised neighbourhood with lots of buildings and very small agricultural plots.

Some farmers also pointed out the high water consumption of two hotels in the city: hotel Oasis and hotel Chems, where we stayed. These hotels have swimming pools and guests can leave the shower faucet open all day, so to speak. This is in stark contrast to the water shortage a few kilometres away and is understandably a thorn in the side of the farmers. However, a responsibly developed tourism sector can be a way of emancipation and an important source of income for the region. Moreover, heavy industry, such as the GCT and the cement factory, are not only affecting the agricultural sector but also the sustainability of the tourism sector.

Finally, there are also large farms that use a lot of water. Through investments they have managed to cultivate several hectares in the steppe or sometimes even in the desert. These dry areas need a lot of irrigation to be able to serve as agricultural land. In contrast to the farmers in the oasis, who practise extensive agriculture, these parcels are mainly used for intensive agriculture: the crops are much closer together, so that the yield is higher, but also much more irrigation is needed. They get their water from deep wells, which they can build with the help of government subsidies.

It is an expensive and unsustainable way of farming, but it is also very profitable. Approximately 80 percent of the harvest is destined for export. They grow certain crops for the European market in the winter, so all kinds of fruit and vegetables could be available all year round in European supermarkets. This also means that only a very small part of their harvest serves as food for the Tunisians themselves. The large farmers and farms are mainly looking for an interesting investment and are less connected to the local community. Furthermore, the working conditions on the large farms are not very favourable. The

employment they offer is in the form of day work and they mainly employ women because they will accept a lower salary.

Political North and Political South

It is clear to the farmers: the presence of the chemical industry in Gabès has meant that there is diminishing access to water and that it is therefore very difficult to engage in agriculture. The farmers want the Groupe Chimique to leave so that the pollution stops and the groundwater level can rise again. They are not satisfied with the modernisation policy of the political elite that regionalised economic activities in Tunisia in the 1970s and 1980s.

For example, the Sahel region, from which most politicians come, is mainly developed as a tourist zone. The interior, on the other hand, is allocated to large-scale agriculture, such as in the Sidi Bouzid region (where the Tunisian Revolution broke out in 2011). Finally, heavy industry was installed in the south of the country: there is mining in Gafsa, and phosphate industry in Gabes and Sfax. This form of spatial organisation has strengthened the gap between the population and the political elite and reinforced the contrast between the richer northern regions and the poorer southern regions.

Tunisians call this the political North and the political South, or as Prof. Habib Ayeub, founder of OSAE (Observatory of Food Sovereignty and Environment) put it: there is a '*Tunisie des riches*' (= the North of Tunisia), and there is a '*Tunisie des richesses*' (the South of Tunisia with their raw materials that are transported to the North). Since the 2011 revolution, many people have been able to express their dissatisfaction with their situation without fear of repression, but the Tunisian people, especially from the political South, still feel hardly represented in Tunisian politics.

Structural problem with the development model?

Since the 1970s, Tunisia's modernisation policy has evolved from a state-led model based on a certain social redistribution to a neo-liberal model. This was done under the leadership of figures such as Prime Minister Hédi Nouira and dictator Ben Ali, who signed a free trade agreement with the European Union in 1995. For water policy in the south of the country,

this meant that industry and medium to large agro-industries were favoured and given unlimited access to groundwater. For the farmers, who consume much less, there is a price tag on their water consumption and the availability is insufficient.

The industries are of course interesting in the economic growth figures that the country can present to the IMF and the World Bank. Unfortunately, they do not take into account sustainability, ecology or the use of human resources in Gabès. The government's decision to prioritize – time and again – economic growth and export over the welfare of the local environment and its population allows us to say that there is a structural problem that has not yet been resolved.

The government may not explicitly opt for this, but the current world economic order imposes a one-size-fits-all development model. This model, promoted in many countries in the Global South, is based on the exploitation and extractivism of natural resources and raw materials. In Gabès, this is mainly an extractivism of water. Indirect water exports are taking place in different ways: through industrial products such as phosphate, through tourism or through agricultural products. Tunisia exports fruits and vegetables (such as tomatoes and watermelons) rich in water all year round, mainly for the European market. Due to the very water-intensive growing process of these crops, Tunisia thus extracts a large part of its water to serve the European market.

The problem of water shortages in Gabès - and also in many other regions in the world - is therefore not only related to climate change. It is the result of the same driving force that is also behind climate change: our global economic development model. The industrialization and globalization of the economy all over the world is accompanied by an over-exploitation of nature. This is no different in Gabès. Jason Moore (2015) calls the intrinsic connection between capitalism and the ecological degradation 'the law of Cheap Nature', which obviously cannot last.

What about the future?

It is clear that the scarcity of water is putting enormous pressure on the population and nature around Gabès. Because small-scale agriculture in the oasis yields less and less, there is an abandonment of the countryside. The degradation of the ecosystem of the oasis is very visible. Of the three layers of crops, vegetable cultivation, fruit trees and date palms, which are so characteristic of an oasis, the very water-consuming fruit trees have disappeared in many places. Even the iconic date palms are threatened more and more.

In the long run, Tunisia would probably benefit much more from a more independent and social agriculture that can guarantee food security for the population while at the same time dealing with groundwater in a responsible and sustainable manner. In this way, a repetition of a food crisis such as the one that occurred in 2008, with a sharp rise in the price of staple foods, can be avoided (Bush & Martiniello 2008). It is striking that water is currently a free, public good for the big industrial players and a private good for the farmers, who do have to pay for it. This disturbance must be rectified as soon as possible and groundwater must cost the same for everyone. A tax on the export of crops grown outside the normal season could limit the indirect export of water. The question is, however, whether a far-reaching alternative policy, based on a sustainable relationship with nature and the population, is possible for Tunisia within the current world order and economy.

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