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Boiling dry

How the EU can help prevent instability in the water-scarce Maghreb

By Megan Ferrando



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- ★ The Maghreb (Morocco, Algeria, Tunisia and Libya) is increasingly suffering from water scarcity, among others due to the over-exploitation and mismanagement of water resources. Climate change worsens these pressures, causing more intense and frequent droughts, floods and fires, and making rainfall patterns less reliable throughout the year.
- ★ Water scarcity can disrupt agricultural production and access to drinking water. Poorer and marginalised groups become even less able to meet their basic needs, making society as a whole more vulnerable to economic, political and climate shocks. Being less resilient to shocks does not sentence a country to eruptions of violent conflict but makes it more difficult to anticipate and respond to them.
- ★ Water scarcity, when combined with other socio-economic and political grievances, can drive instability. This is now a risk in Morocco, Algeria and Tunisia, where water scarcity is adding to food and energy crises. In Libya, the war has pushed concerns about water security down the agenda.
- ★ Most Maghreb countries are undergoing rapid urbanisation and have large agricultural sectors that are vulnerable to climate change. However, people do not prioritise water scarcity issues, and governments have limited capacity and willingness to invest in making water supply more resilient.
- ★ It is in the EU's interest to help the Maghreb to improve water security – both to be consistent with its own commitments to social and climate justice, and to prevent conflict. The EU has been increasing its investments in water management in the Maghreb as part of its wider climate and sustainable development priorities in the region, but it could do more:
 - ★ The EU should create a dedicated water and climate strategy for the Maghreb. This strategy would help identify how EU policies should complement each other. It would ensure that some EU activities, such as the proposed expanded trade agreements with Morocco and Tunisia, do not perpetuate unsustainable practices or further degrade the environment.
 - ★ The EU should address water scarcity together with social justice issues. The most vulnerable and marginalised groups in society experience higher levels of water scarcity and are least able to cope. They are also especially susceptible to climate shocks. The EU should support civil society organisations in putting environmental, climate and social justice issues on the political agenda.

- ★ The EU is rightly providing climate finance in the Maghreb, but it should put more emphasis on climate change adaptation (as opposed to mitigation) to support people in the region in becoming more resilient to climate shocks. Climate change is already threatening natural resources and societies in the region, so mitigation efforts alone will not suffice.

Access to water is a prerequisite for human well-being, economic development and political stability. But in the politically volatile region of the Maghreb (Morocco, Algeria, Tunisia and Libya), governments tend to prioritise job creation as a means of ensuring social stability. Less attention goes to the urgent issue of the fast-depleting water resources across the region. The current over-exploitation and mismanagement of water, exacerbated by ever-intensifying droughts linked to climate change, are already altering the environment. At the current pace, water scarcity will cause the deterioration of people's health, food security and livelihoods, while further degrading the region's natural ecosystems.

Water scarcity, when combined with other socio-economic and political grievances, can be a driver of conflict. Since the Arab uprisings of 2011, governments across the Maghreb have been worried about new episodes of civil unrest. In Libya, the civil war has caused water concerns to fall even further to the background. In Morocco, Algeria and Tunisia, water scarcity is combining with food, economic and energy crises to increase discontent.

To prepare themselves for a growing population in a changing climate, Maghreb countries will need to change their use of scarce natural resources. As a diplomatic, trade and development partner, the EU has a key role to play in supporting their efforts. But to ensure stability in the Maghreb, the EU will have to go beyond migration management and providing economic opportunities. Water security will need to play a more prominent role in European policies towards the region.

Water security in the Maghreb

Water scarcity has been a challenge in the Maghreb throughout history. Located at the edge of the Sahara Desert, the region only has a few large rivers, most of them in Morocco. Morocco depends mainly on surface water runoff from rainfall and the Atlas Mountains as its principal source of water supply. The other three countries are heavily dependent on groundwater reserves, called aquifers. These aquifers cross international borders and there are currently no agreements governing their exploitation in the region. With no rivers that flow year-round, Libya is dependent on transboundary aquifers for almost all of its water resources.

A person needs 1,700 m³ of freshwater per year to be healthy. If the volume of freshwater falls below this, a country faces 'water stress' (under 1,700 m³ per person/year), 'water scarcity' (under 1,000 m³), or 'absolute water scarcity' (under 500 m³). Chart 1 shows that Algeria, Tunisia and Libya all experience absolute water scarcity. Morocco is the only Maghreb country currently in the slightly less alarming 'water scarcity' category – although the World Bank predicts that it will also suffer from absolute water scarcity within twenty years.¹ In the EU, only Malta and Cyprus experience water scarcity.

Population growth since the 1950s has put more strain on the region's water reserves. On the face of it, water scarcity therefore is the result of a combination of environmental factors and demographic change. These

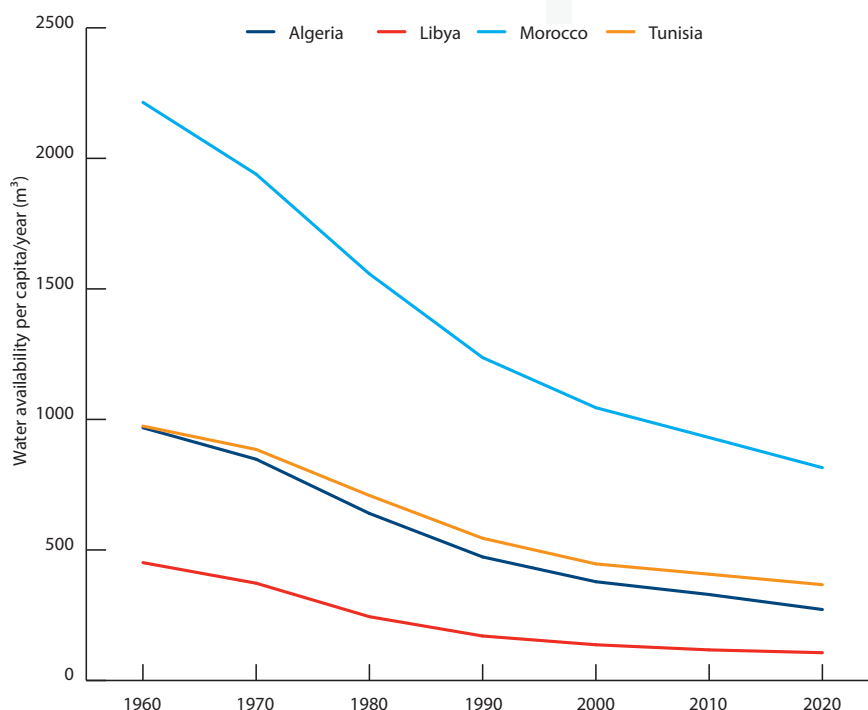
issues could be resolved with technical solutions to make the economy more water-efficient and to increase the amount of water available, such as desalination plants. But the reality is more complicated: Maghreb governments cannot solve the problem of water scarcity with technical tweaks alone. Plants and efficiency can contribute to plugging the supply gap, but they do not solve the complex human factors underpinning scarcity.

For example, the socio-economic and cultural marginalisation of rural regions have made rural populations less connected to water networks. And many governments across the Middle-East and North Africa (MENA) region have long subsidised water, which has meant citizens are largely unaware of the value and scarcity of this resource. Another factor is that Maghreb governments often weakly enforce bans on drilling wells, contributing to the over-extraction of groundwater from aquifers. Governments and societies need to address these various factors throughout the supply and demand chain of water in order to reach what the United Nations calls water security: "the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability."²

1: The World Bank, 'Managing urban water scarcity in Morocco', November 2017.

2: UN-Water, 'What is water security? Infographic', May 8th 2013.

Chart 1: Water scarcity in the Maghreb



Source: World Bank's World Development Indicators.

Climate change is adding to existing pressures. Droughts, floods and fires are now longer, more frequent and more intense, rainfall has become more unreliable throughout the year, and areas across the region are experiencing desertification. Maghreb countries used to experience acute droughts every seven to ten years until the 1990s. They now happen every two to three years, and the region is currently experiencing its third consecutive year of drought. These changing weather patterns are gradually changing the landscape, increasing the number of areas in the Maghreb under water stress.³ This is particularly affecting groups most reliant on water for their livelihoods – such as agricultural workers – which make up a large portion of the Maghreb workforce. They were already gradually moving towards urban centres in search of jobs, but the pressures of climate change on jobs in agriculture have accentuated this trend. Many cities do not have adequate infrastructure to support the rapid pace of urbanisation and will not have enough jobs to offer.

Water scarcity can therefore contribute to disruptions across society. Groups who were already vulnerable to shocks like economic and political crises, or intense droughts. Being less resilient to shocks does not mean a country will necessarily experience eruptions of violent conflict, but a society may have more difficulty anticipating and responding to them.

While water insecurity is never the sole cause of conflict, smaller-scale protests over water are increasingly common. The Tunisian NGO 'Tunisian Water Observatory' reported over fifty local protests across Tunisia related to water scarcity in the first quarter of 2022.⁴ Climate change makes water insecurity worse, but the roots of most social conflicts over water lie in weak water management and governance and the adverse impact of these problems on poor and rural communities.⁵

Where Maghreb countries stand today

Morocco, Algeria, Tunisia and Libya face many similar challenges – a lot of them linked to water insecurity. The high unemployment rates they are experiencing have been driven by the COVID-19 pandemic and a drought

that is now in its third year. Climate change is starting to severely disrupt the Maghreb's important agricultural sectors, reducing food production and job opportunities. Food prices, which had already soared in 2021 because of

3: World Resources Institute and others, 'Aqueduct water risk atlas' (see 'water stress' indicator for the years 2030 and 2040).

4: Observatoire tunisien de l'eau, 'Alertes', 2022.

5: Marwa Daoudy, 'The many faces of environmental security', in 'The origins of the Syrian conflict: Climate change and human security', Cambridge University Press, March 2020.

the pandemic, are set to rise further as the Russia-Ukraine war disrupts global food markets, and in particular cereals imports on which the region depends heavily.

Morocco

Together with neighbouring Algeria, the Moroccan government is the only one in the region to have survived the 2011 Arab uprisings relatively unscathed. Unlike protest movements in Tunisia and Libya, protesters in Morocco did not openly ask for the removal of the king, Mohamed VI, but for constitutional reform. But the reforms that followed fell short of solving the grievances that had fuelled the 2011 uprisings, like unemployment and regional inequalities. Despite strong economic growth, income inequality is higher in Morocco than in any other North African country.⁶ The loss of tourism revenue during the pandemic has further widened inequality. Many people working in the informal sector lost all or most of their income during the pandemic. Trust in public institutions has continued to fall, particularly among rural communities.

“Climate change is starting to severely disrupt the Maghreb’s important agricultural sectors, reducing food production and job opportunities.”

Morocco’s economy relies mainly on agriculture, mining, tourism and fisheries. The agricultural sector in particular drives water insecurity as it uses 80 per cent of all freshwater resources in the country. A third of Moroccans work in agriculture, and the sector represents 12 per cent of the country’s gross domestic product (GDP) – in the EU, agriculture represents between 0.2 and 4.6 per cent of national GDP, depending on the country.⁷ Morocco’s recent economic and population growth, combined with fast evaporation of surface water resources and poorly managed stocks, has rapidly reduced per capita water resources (see Chart 1 above). The recent drought has not helped: Moroccan authorities reported that the country’s water reservoirs are filled to just 11 per cent of what they should be in an average year.⁸

Morocco is also engaged in a long-standing dispute over Western Sahara, a region to its south, the status of which is contested. Algeria supports the Western Sahara’s pro-independence Polisario Front, which was also supported by Spain until recently. Spain now backs Morocco, and this may negatively affect the EU’s relationship with

Algeria (important to Europe for energy supplies) but positively affect its relationship with Morocco (important for migration co-operation).

Algeria

Algeria has been struggling with economic stagnation and political instability. In the spring of 2019, protesters with the pro-democracy Haraki movement forced the resignation of President Abdelaziz Bouteflika, who wanted to extend his twenty-year rule. In December 2019 newly elected president Abdelmadjid Tebboune promised reforms to ensure compliance with the rule of law and respect for human rights. But only months later, the government used the COVID-19 pandemic lockdown to repress civil society and opposition figures.

Although agriculture represents a sizeable 14 per cent of GDP, Algeria’s economy is dominated by oil and natural gas exports, accounting for over 95 per cent of total export revenue and nearly half of its GDP – with its state-owned oil and gas company Sonatrach being one of the main suppliers of natural gas to Europe. As a result, Algeria has not had the same incentive as neighbouring Morocco and Tunisia to diversify its economy.⁹ It has also been able to use its hydrocarbon revenues to fund food subsidies. But the country has felt the fluctuations in gas and oil prices in recent years, with the COVID-19 pandemic drastically reducing the government’s capacity to finance subsidies. The Algerian government might be able to increase subsidies with the recent higher oil prices, but they will also have to deal with soaring food prices. The country is experiencing 8.5 per cent inflation, forcing the government to spend more on supporting incomes than it can on economic diversification.

Algeria also sits on the world’s third largest reserves of shale gas, but Sonatrach’s attempts to engage in fracking together with multi-nationals such as Shell and ENI were met with protests from the local population, who fear – with some reason¹⁰ – that fracking would pollute water resources, making access to usable water even more difficult. The protest movements have successfully halted the fracking projects for now, but a surge in gas demand as a consequence of the Russia-Ukraine war might lead to renewed impetus for this project – particularly as European countries are already looking to expand gas pipelines between the Maghreb and Europe.¹¹

Tunisia

For a long time, Tunisia was the poster child of the 2011 Arab uprisings. Within a month, protesters had ousted ruler Zine el-Abidine Ben Ali, in power since 1987, and

6: African Union Commission and Organisation for Economic Co-operation and Development (OECD), ‘Africa’s development dynamics 2018: Growth, jobs and inequalities’, OECD Publishing, 2018.

7: ‘Agriculture, forestry, and fishing, value added (% of GDP) – European Union’, The World Bank Data, 2020.

8: Agence France-Presse, ‘Water supply fears as Morocco hit by worst drought since 1980s’, France24, March 23rd 2022.

9: Interview with a Dutch Ministry of Foreign Affairs official, March 16th 2022.

10: Roger Harrabin, ‘Does fracking affect the water supply?’, BBC News, October 6th 2016.

11: Vijaya Ramachandran, ‘Germany should look to Africa for gas, not Russia’, Foreign Policy, March 11th 2022.

elections were held the same year. But eleven years after the start of the democratic transition, Tunisia is now increasingly unstable. The post-revolution governments have failed to deliver on economic and political reform. Major grievances remain over regional and socio-economic inequalities, regional marginalisation, and unemployment – which stood at 18 per cent last year. Tunisia's economy relies heavily on agriculture and tourism, providing 10 and 16 per cent of GDP respectively. Around 80 per cent of all economic activity is concentrated in the resource-rich coastal north, while the south and west experience high poverty rates. The increased demand for food and water to sustain the rapidly growing urban populations is forecast to further reduce Tunisia's surface and groundwater resources by 28 per cent by 2030.¹²

“The conflict has overshadowed any significant debate on sustainability and socio-economic development in Libya.”

Worryingly, Tunisia has recently taken an authoritarian turn. In July 2021, President Kais Saied partly suspended parliament, sacked his prime minister, and later announced that he would rule by presidential decree. Following this, he has increasingly cracked down on civil society organisations, recently announcing that they would be barred from receiving foreign funding. Saied has said he will hold elections in December – but it is unclear whether this will happen and if so, whether the government will respect the rules. The response from the EU to the political crisis has remained very cautious, limited to statements recalling the importance of respect for democracy and the rule of law.¹³

Libya

Unlike its neighbours, Libya is experiencing ongoing internal conflict. Here, water scarcity is both a source of tension and a direct consequence of the war, which started in 2011 after Libya's long-term ruler Muammar al-Gaddafi was toppled, NATO launched a military intervention, and Libya descended into civil war. The

proliferation of armed groups instigated a renewed civil war in 2014, when the country split between an eastern and a western part, each with its government. Attempts to reunite the country have so far failed, and the UN-backed elections scheduled for December 2021 were cancelled. Libya is now again ruled by two rivaling governments, each side backed by different local and international actors. Italy and the United Arab Emirates defend the UN-backed and Tripoli-based interim government of Abdulhamid Dbeibah; France, Qatar, Russia and Egypt back the Tobruk-based government of Fathi Bashagha, himself supported by General Khalifa Haftar, who led an assault on Tripoli in 2019. Armed groups have started to mobilise around the capital Tripoli, threatening a resurgence in violence.

Libya's economic situation is the worst in the region. But because of the continuing war and migration routes going through Libya, European governments tend to overlook this problem. GDP per capita in Libya is among the highest in Africa, but this is primarily due to the oil and gas exports, which do not translate directly into society's well-being (see table 1). Worse, control over oil is one of the driving forces of the conflict. Since Libya does not have any permanent rivers, Libyans depend on groundwater for almost all of their everyday use. The majority is transported via the Great Man-Made River project (GMMRP), a gigantic 4,000-kilometre network of pipes launched by Gaddafi in 1983. It pumps water all the way from the Nubian Sandstone Aquifer, located in Libya's south and shared with Egypt, Sudan and Chad, towards the urban areas and centres of agriculture and industry in the north, supplying 80 per cent of the population living along the coast. Intensive pumping in some areas has significantly decreased local water levels – between ten and twenty-five meters, depending on the location.¹⁴ Warring parties have blocked and sabotaged the GMMRP during the conflict to deprive populations of water. Notoriously, armed groups loyal to Haftar did this during the 2019 Tripoli siege.¹⁵ From an environmental and economic perspective, the pipeline is unsustainable as it overexploits water from the Nubian Sandstone Aquifer. But the conflict has overshadowed any significant debate on sustainability and socio-economic development in Libya.

12: USAID, 'Climate risk profile: Tunisia', Climatelinks, November 9th 2018.

13: Council of the European Union, 'Tunisia: Declaration by the High Representative on behalf of the European Union', December 16th 2021.

14: Alvar Closas and François Molle, 'Groundwater governance in the Middle East and North Africa', International Water Management Institute and USAID, December 2016.

15: Arianna Poletti, 'Libya: The water war', The Africa Report, September 3rd 2019.

Table 1: Comparison of Maghreb countries in key areas

	Morocco	Algeria	Tunisia	Libya
Population size	37.7 million	45.3 million	12.0 million	7.0 million
GDP per person (2020)	\$3,009	\$3,310	\$3,319	\$3,699
Unemployment rate (2021)	12.5%	14.5%	18.4%	19.0%
Inflation rate (2022)	3.6%	7.6%	6.5%	8.0%
Human Development Index ranking (2019)	121 st /189	91 st /189	95 th /189	105 th /189
Gini coefficient (data 2011-2015) (Inequality measure: closest to zero is best, world average is 35.45)	39.5	27.6	32.8	No data
Share of food insecure population (2019)	28.0%	17.6%	25.1%	37.4%
Share of water used for agriculture (global average 70%)	80%	70%	80%	85%
Agriculture as share of GDP (2017-2020)	11.7%	14.1%	10.1%	1.3%
Share of population employed in agricultural sector (2019)	33.3%	9.6%	13.8%	16.4%
Food as percentage of merchandise exports (data 2017-2020)	23.0%	1.0%	10.7%	2.0%
Share of cereals imported (2016-2020 average)	19.9% (but 70% in 2020)	62%	53%	94%
Main sources of energy consumption (2018)	Oil (59%) Coal (25%) Renewables (11%) Gas (4%)	Gas (67.5%) Oil (32%) Coal (1%) Renewables (<1%)	Gas (49%) Oil (41%) Renewables (9%) Coal (1%)	Oil (53%) Gas (43%) Renewables (3%)

Data from the World Bank, the Food and Agriculture Organisation (FAO), the Middle East Institute, the International Renewable Energy Agency (IRENA), and Statista.

Why is freshwater in short supply in the Maghreb?

The Maghreb is experiencing a faster pace of natural resource deterioration and warming climate than other regions, with temperatures projected to rise by around two degrees Celsius within the next two decades.¹⁶ But Maghreb governments are wary of substantial reforms for fear of disrupting the economy and returning to the instability of the early 2010s. This section examines the main issues that are blocking progress on achieving

water security. Resolving these issues is essential if the Maghreb is to cope with the effects of climate change and prevent further unrest.

Fragile and water-consuming agricultural sectors

One of the main drivers of water scarcity in the region has been the unsustainable management of water in

¹⁶ Florence Gaub and Clémentine Lienard, 'Arab climate futures: Of risk and readiness', European Union Institute for Security Studies, October 2021.

agriculture. Agriculture in Maghreb countries consumes 70 to 85 per cent of national freshwater use, consistently higher than the global average.¹⁷ Many crops are grown using flood irrigation, a traditional method which involves flooding fields and allowing the water to flow among the crops. Drip irrigation – a system of thin tubes stretched across fields that trickles water drops on crops – is more efficient but expensive. Because Maghreb countries use a relatively high share of their available water for irrigation, they are more vulnerable to climate shocks, as droughts and evaporation directly hit their domestic food supply and exports. As water becomes scarcer, agricultural yields will fall and people working in the sector will lose their jobs. The region's soil is fast losing its richness by being depleted of valuable resources and biodiversity. Governments and farmers have attempted to find alternative sources of water by tapping into underground aquifers, but these reserves are limited. Many agricultural areas located next to the coast are also suffering from heightened salinity levels due to rising sea levels, which affects the quality of water and soil.

“Droughts lead to increasing reliance on food imports, and therefore greater vulnerability to external shocks, like the ongoing war in Ukraine.”

Despite their large agricultural sectors, all four Maghreb countries are net food importers, in particular when it comes to cereals (see Table 1 above). Current trends are expected to continue, with the Maghreb projected to import 68 per cent of its food by 2050.¹⁸ When domestic agricultural yields are low, more food must be imported. More frequent droughts lead to increasing reliance on food imports, and therefore greater vulnerability to external shocks, like the ongoing war in Ukraine. The conflict is already having devastating effects on some food supplies, as commercial shipping in and out of Ukraine has been halted. Morocco depends on Ukraine and Russia for 22 per cent of its wheat imports, and Tunisia for more than half. Supply shortages will increase the price of wheat, affecting already vulnerable populations in these countries. These higher food prices will come on top of increases in the cost of food and fuel in the past year – global prices for cereals already

reached a record high last year, and will probably rise further this year. Algeria might be shielded from the worst effects of the surge in prices as it will be able to subsidise citizens with its higher export revenues from higher energy prices. The less water these countries have to sustain their agriculture, the more vulnerable they become to rising food and energy prices – which, in turn, can fuel social unrest.

The region uses a lot of water in its agriculture, and the range of products it grows is limited. It largely relies on intensive agriculture – a model which focuses on monocultures of products like olives, citrus and almonds, which is productive but bad for the soil's health. The EU has been pushing for a deepening of trade relations with the Maghreb, seeking to expand existing trade agreements with Deep Comprehensive Free Trade Agreements (DCFTAs) – far-reaching trade agreements which integrate partners more closely into the single market. Negotiations with Morocco and Tunisia have been under way since 2013 and 2015 respectively, but they have faced public opposition in the Maghreb. Populations and civil society are concerned that the DCFTA will benefit big corporations to the detriment of small-holders, which represent the majority of farms across the Maghreb.¹⁹

DCFTAs might make inequality worse, at least in the short run. They could also encourage the expansion of intensive agriculture, including in very intensely irrigated products such as dates and olives, and Moroccan farmers might turn more land over to livestock, which also consume a lot of water. The expansion of production would likely lead farmers to use more pesticides, further damaging soils. These investments would make the Moroccan and Tunisian economies even more reliant on a water-consuming and climate-vulnerable sector,²⁰ particularly at a time when water and food insecurity prompt more civil unrest.²¹

The EU has the ability to shape water security in the Maghreb through its trade policy, being the largest trade partner of all four Maghreb countries: trade with the EU represents for Morocco, Algeria, Tunisia and Libya between 47 and 58 per cent of their global trade in goods.²² But this will require the EU to take the environmental sustainability of its proposed trade agreements more seriously, and build on some recent positive initiatives such as the public consultation on

17: Algerian agriculture uses 70 per cent of water, Morocco and Tunisia 80 per cent, and Libya over 85 per cent. The global average is 70 per cent. Water Fanack, 'Country files', 2022.

18: INRA Science & Impact and Pluriagri, 'Addressing agricultural import dependence in the Middle East – North Africa region through the year 2050 – Short summary of the study', October 2015.

19: Ricard González, 'Tunisia holds off a 'deep' free trade agreement with the EU', Equal Times, October 4th 2021; Bettina Rudloff and Isabelle Werenfels, 'EU-Tunisia DCFTA: Good intentions not enough', German Institute for International and Security Affairs (SWP), November 2018.

20: ECORYS, 'Trade sustainability impact assessment in support of negotiations of a DCFTA between the EU and Morocco', European Commission Directorate-General for Trade, November 25th 2013; ECORYS, 'Trade sustainability impact assessment in support of negotiations of a DCFTA between the EU and Tunisia', European Commission Directorate-General for Trade, November 25th 2013; Arjen Hoekstra, 'The relation between international trade and freshwater scarcity', World Trade Organization, July 2010.

21: Impact Assessment Research Centre, 'Sustainability impact assessment of the Euro-Mediterranean free trade area: Final report of the SIA-EMFTA project', European Commission, November 2007.

22: 'Countries and regions', European Commission DG Trade, 2022.

trade and sustainable development.²³ At the moment, however, the European Commission is hoping that DCFTAs will also allow for modernisation of the agricultural sector, and that the EU could incentivise and financially support more farmers to switch to more efficient forms of irrigation. For both proposed DCFTAs, the EU has proposed to let governments and civil society oversee the implementation of the DCFTA and its environmental impacts.²⁴

Cities are growing

Urban centres in the Maghreb have expanded over the last few decades – the Moroccan statistics office expects 80 per cent of the region's population to live in cities by 2050.²⁵ Water insecurity is both a cause and a consequence of urbanisation. On the one hand, water insecurity in rural sectors like agriculture – which employ many people but are hit hard by climate change – will lead to a fall in rural employment, pushing people to move to urban centres looking for better job opportunities. As more people move to cities at a rapid pace, this puts an additional strain on already-fragile urban infrastructure. This intensifies the struggle to access water services, job opportunities and food. Still, access to water is significantly higher in cities than in rural areas. In 2017, 36 per cent of Morocco's rural population did not have access to running water against 4 per cent of those living in cities; in Algeria these figures were 11 per cent for rural, and 5 per cent for urban populations.²⁶

“In 2020, Tunisia experienced several thousand ‘thirst protests’ denouncing extremely low water reserves and numerous water cuts.”

At the same time, cities can drive faster resource depletion, because of higher pollution, more waste and increased demand for water due to higher living standards. Soil in urban areas also retains less water than the countryside, decreasing the capacity of nature in urbanised areas to store the precious resource. On top of this, across urban areas in the Maghreb up to 40 per cent of all stored water is wasted because of old water network infrastructure. Tourist hot-spots in Morocco and Tunisia also waste huge quantities of water – the average

annual consumption of tourists in the region is two to five times that of the local population.²⁷

Water scarcity is not a public or political priority

Issues of water scarcity still tend to be low on the public and political agenda in Maghreb countries, although this may be changing. Water security has been long overlooked for several reasons. First, many people think of water as a free public good instead of a limited resource to be used with restraint. The past decades' technological advances such as dams and groundwater pumps have offered the false promise of endless water supplies. This, in combination with widespread water subsidies has led large segments of the population to undervalue water. Marked by the Gaddafi era, Libyans in particular have developed a particular relationship with water. In his 'Green Book', published in 1975 and setting out his vision for Libya, Gaddafi enshrined access to water as a human right. With the launch of the GMMRP, he made water free for Libyan citizens and paid for it through government subsidies. Decades later, many Libyans have difficulty considering water as a scarce resource that ought to be preserved, rationed, and eventually paid for.²⁸

Second, many people in the region do not yet view water security as an urgent daily challenge. The risk of water shortages has grown incrementally and almost imperceptibly, and is by no means at the top of citizens' concerns. Algerians are grappling with the fall-out of the 2019 Haraki demonstrations, and the rising number of political prisoners. In Tunisia, Saïed's authoritarian tendencies and the unfulfilled promises of the 2011 revolution worry people more than water levels. Libyans are still fearing for their safety amid eruptions of violence. And Moroccans, like many of their neighbours, are struggling with recovery from the COVID-19 pandemic and several years of drought.

Third, many people are not aware of how climate change worsens environmental problems, like access to water. According to the data site Arab Barometer, people in the Maghreb consistently consider issues like water pollution, waste and air quality to be more serious problems than climate change (see Chart 2). Only 34 to 40 per cent of people in the Maghreb consider climate change to be a 'very serious problem' (against 78 per cent in Europe today).²⁹ Water pollution is indeed a big problem across the Maghreb. Surface waters in all four

23: DG Trade, 'Open public consultation on the trade and sustainable development (TSD) review', April 13th 2022.

24: ECORYS, 'Trade sustainability impact assessment in support of negotiations of a DCFTA between the EU and Morocco', European Commission Directorate-General for Trade, November 25th 2013; ECORYS, 'Trade sustainability impact assessment in support of negotiations of a DCFTA between the EU and Tunisia', European Commission Directorate-General for Trade, November 25th 2013.

25: Margot Eliason, 'Maghreb faces severe challenges as population increases', Morocco World News, May 24th 2019.

26: Ali Chibani, 'The threat of a water shortage in the Maghreb', Orient XXI, May 12th 2020.

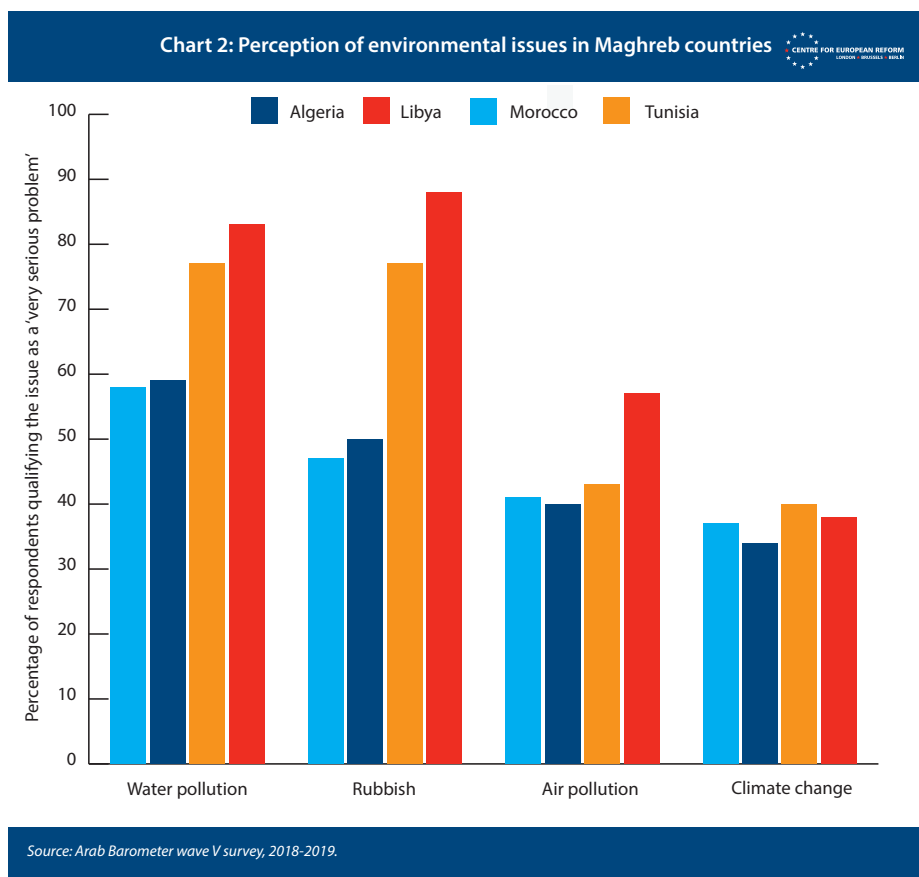
27: Ali Chibani, 'The threat of a water shortage in the Maghreb', Orient XXI, May 12th 2020.

28: Interview with Malak Altaeb, a Libyan researcher working on environmental issues, March 3rd 2022.

29: European Commission, 'Eurobarometer survey: Europeans consider climate change to be the most serious problem facing the world', July 5th 2021.

countries are polluted by the wastewater from cities, industries and agriculture. In addition, in Tunisia only half of the water coming out of wastewater treatment plants meets national standards.³⁰ Climate change contributes to the drying up of surface water resources, which, in turn, can make water shallower and more prone to a build-up of pollutants. But many people, in particular in rural areas, do not make the link between what they see as local issues (water pollution, lack of water, environmental degradation) and the wider phenomenon of climate change.³¹

This can still change: as water scarcity becomes more tangible, citizens are beginning to grasp how much it can affect their daily lives. In 2020, Tunisia experienced several thousand ‘thirst protests’ denouncing the extremely low water reserves in the wells and dams and numerous water cuts, worsened by the drought that year.³² If water and food security continue to make their way up the public agenda, supported by a growing climate change movement, politicians will feel compelled to respond, particularly as calls for a safe environment combine with people’s frustration over bad governance and political marginalisation.



It is important for citizens to understand what water scarcity means for the region and why climate change is making it worse. But groups campaigning about such questions have faced difficulties organising in many countries. While civil society organisations working on civil and political rights are relatively well established in Morocco, Algeria, Tunisia, and even Libya, mostly because of the uprisings, environmental groups are not. This is not only because citizens seem to be less worried about climate than about civil liberties: many also think it should be up to governments to fix environmental matters. Civil society organisations defending natural resources have therefore not been able to anchor themselves deeply into society, and to link up with other environmental or human rights causes across the country or region.

Despite promises made after the Arab uprisings, governments have not been kind to activists, either. Algerian President Tebboune has used the COVID-19 pandemic as an excuse to crack down on activists, journalists and political opponents, in an attempt to silence opposition and calls for democratisation. And Tunisian President Kais Saied has recently announced that he will outlaw foreign funding for civil society organisations. With a shrinking space for non-governmental actors, seemingly less pressing topics like water security are not high on most people’s list of priorities.

30: Raoudha Gafrej, ‘Climate change and Tunisia’s water management challenge’, Qantara, October 6th 2020.

31: Interview with a Tunisia-based journalist, March 2nd 2022.

32: Interview with a Tunisia-based journalist, March 2nd 2022.

Water management institutions lack co-ordination and accountability

On paper, 95 per cent of populations across the MENA region are connected to a water network. In practice, many only receive water intermittently – only once or twice per week – or have access to water of poor quality.³³

Ensuring water security requires institutional expertise, capacity and accountability. Lack of co-ordination often hampers progress in this field, as the various relevant ministries – of agriculture, of water, of urban planning, or social affairs for example – often function in silos. Funding models by international donors are not always helpful: donors tend to focus on large engineering projects, where results are easier to quantify, rather than developing cross-sectoral regulatory frameworks. There are many capacity-building projects throughout the Maghreb, but many are not linked to institutional reform.³⁴

“Water insecurity did not cause the conflict in Libya, but scarcity has complicated the dynamics.”

Effective water management goes beyond technical investments, and requires strong governance. This means that everyone affected should be represented in decision-making, and that capacity-building should not only be done at national level, but also in municipalities. Non-governmental organisations and journalists can function as a mouthpiece for local interests, and educate people about the real costs of water use and practices.

Strong governance also means having the capacity and willingness to regulate water management policies, which is not consistently the case in the Maghreb countries. There are largely unchecked water extraction practices, like private citizens and enterprises digging wells to access water without permits – making it almost impossible to get an overview of the amount of groundwater extracted from the decreasing reserves. Throughout the region, both households and large agricultural enterprises dig wells. In Libya, as state water provision deteriorated after the start of the war in 2011, many people turned to household wells. Alternatively, their communities pay for water tankers

from nearby cities or private companies. All Maghreb countries require permits for well digging, on paper, but enforcement is weak.³⁵ The Algerian government has estimated that there are tens of thousands of illegal wells on its territory. Because of over-exploitation and unregulated digging, wells (whether official or unofficial) have to be dug deeper, at an increased cost.

At different paces, Maghreb countries are turning to alternatives to surface and groundwater to increase water supplies. Growing desalination capacity especially in Morocco, Algeria and Tunisia has helped increase water availability (desalination has largely halted in Libya due to the war). But it is expensive. Water produced in desalination plants in the MENA region costs 50-60 US cents per cubic meter. It costs 5 US cents per cubic meter to extract groundwater, and 20-50 US cents for surface water.³⁶ Not all Maghreb governments are able to pay for this on their own, but attracting significant foreign investments requires accountable and stable institutions.

Water, the forgotten issue in wartime

While water security may be a low priority in peacetime, it can completely disappear from the agenda in wartime. Water insecurity did not cause the conflict in Libya, but scarcity has complicated the dynamics and lowered the prospects for peace. Libya was already facing environmental challenges before the onset of the conflict: desertification was increasing the high levels of water stress, wastewater management was poor, and decades of weak environmental management had allowed the oil industry to pollute with impunity.

The conflict has made things worse. The ongoing destruction of oil storage facilities and pipelines has intensified pre-existing pollution, and the ground and water reserves have been contaminated by explosives and other waste.³⁷ This has made people's lives even more difficult, as they are also dealing with food and water shortages due to the war. In addition, provision of water depends on different government institutions working together, but Libya's continued instability has impeded this co-operation. The Authority overseeing the GMMRP, historically and symbolically tied to the Gaddafi regime, is based in Benghazi. It sells its water to the Tripoli-based General Company for Water and Wastewater, the government institution which distributes this water to the majority of Libyans and is responsible for wastewater infrastructure. The infrastructures of both institutions were severely affected

33: Interview with an expert on issues of water security, climate change and sustainable development, March 17th 2022; Layli Foroudi, 'Thirsty crops, leaky infrastructure drive Tunisia's water crisis', Reuters, November 1st 2019.

34: Roula Majdalani in the Union for the Mediterranean's conference on climate security and the Mediterranean, December 17th 2021.

35: Alvar Closas and François Molle, 'Groundwater governance in the Middle East and North Africa', International Water Management Institute and USAID, December 2016.

36: 'Algeria: A desert nation fighting to maintain water supplies', Stratfor, January 20th 2016.

37: Tweet by Libyan engineer Mahmud Mohammed on oil and gas pipeline attacks, March 4th 2022; 'Country brief: Libya', Conflict and Environment Observatory, March 16th 2018.

by the conflict, and the General Company for Water and Wastewater has large debts with the GMMRP authority, hampering co-operation.³⁸

The conflict in Libya exemplifies the rising trend in the use of natural resources as a weapon in conflicts. The GMMRP is the main source of water for the majority of Libyans, and is therefore an attractive asset for warring parties, who have cut off water supplies on multiple occasions since the start of the conflict in 2011. Forces loyal to military commander Khalifa Haftar used this tactic – a war crime under the Geneva Conventions – during their months-long offensive to seize Tripoli in 2019, but more local opportunistic acts of sabotage have also taken place.³⁹ UNICEF, the UN Children's Fund, estimates the cost of damage to the GMMRP at \$500 million.⁴⁰ As the impacts of climate change increase, making natural resources scarcer, so will the incentives for conflicting parties to use water and other natural

resources to gain competitive advantage and consolidate their power. In the case of Libya, it is an additional reason for the country to diversify its sources of water.

There are some prospects for investment in improving Libya's water situation. For example, UNICEF, together with the Swedish International Water Institution (SIWI), has recently organised training for senior staff from all the relevant Libyan state bodies.⁴¹ These are a good starting point, but economic development projects in Libya still have much smaller budgets than in other countries. Donors and banks do not want to risk investing in rebuilding infrastructure and reconnecting institutions when these might be destroyed again. Without significant longer-term investments, however, war-torn countries like Libya will remain reliant on repeated short- and medium-term projects, and on external aid.

Addressing Maghreb water security through the green transition

European investment in the Maghreb region often tends to be driven by security and migration management interests. Since the Arab uprisings, and in particular since the EU's 2015-2016 border crisis, the Union's main priority has been to ensure regional stability and curb migration towards the EU. The EU and its member-states are hoping to work on two fronts: improving the living conditions in Maghreb countries so people will choose to stay; and increasing co-operation with national authorities to reduce irregular crossings towards Europe. The EU has been training Libyan coastguards since 2017, despite multiple reports of coastguards abusing migrants.⁴² The Union has also invited Maghreb countries to sign 'migration pacts' – EU deals that promise the easing of restrictions on legal migration in return for return and readmission arrangements, and stronger border controls.

“The EU is hoping that investment in jobs will dissuade both locals and Western Africans from crossing to Europe.”

But importantly, the Union has also sought to address migration and instability indirectly through development

projects. This is where climate and environment come in. The EU is hoping that investment in jobs will dissuade both locals and Western Africans from crossing to Europe. This also means addressing climate change, which policy-makers think will increase migration flows to Europe. The link between climate change and international migration is not clear, however: the vast majority of climate-induced migration is within countries, from rural to urban areas.⁴³ Water security plays a part in the EU's calculation, but improving access to water in itself is not the most pressing issue for European policy-makers.⁴⁴

To deal with the aftershock of the COVID-19 pandemic, and to ensure regional stability, the EU has recently offered partners in the Mediterranean region an economic and investment deal promoting a “green, digital, resilient and just recovery”.⁴⁵ The plan includes €7 billion from the EU's international aid fund, and up to €30 billion in private and public investments from the EU and its member-states. In 2021, the EU committed to dedicating at least 30 per cent of its international aid to climate action.⁴⁶ This means that at least €2.1 billion of EU aid funds to the wider Mediterranean region – including the Maghreb countries – will be used to address climate change, and water security as part of it.

38: GIZ, SIDA and UNICEF, 'Assessment of water supply systems and institutions in Libya', Humanitarian Response, March 23rd 2021.

39: Sami Zaptia, 'Saboteurs blow up man-made river station 353 cutting water supply to four main cities', Libya Herald, July 30th 2021.

40: GIZ, SIDA and UNICEF, 'Assessment of water supply systems and institutions in Libya', Humanitarian Response, March 23rd 2021.

41: UNICEF, 'Libya: UNICEF programme monthly update', December 2021.

42: Andrew Rettman, 'EU report speaks of Libyan coastguard violence', EU Observer, January 26th 2022.

43: Juergen Voegelé, 'Millions on the move: What climate change could mean for internal migration', World Bank Blogs, November 1st 2021; W. Neil Adger and others, 'Urbanisation, migration and adaptation to climate change', CelPress, September 16th 2020.

44: Interviews with a senior EU official and a MENA region expert.

45: European Commission, 'Joint communication of the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Renewed partnership with the southern neighbourhood, a new agenda for the Mediterranean', February 9th 2021.

46: European Commission, 'Neighbourhood, development and international co-operation instrument (NDICI) – “Global Europe”', June 9th 2021.

The European Commission, together with EU member-states and the European private sector, has recently stepped up investment in the Maghreb in the areas of water management, the reuse of waste products, desalination technology, and in making agricultural sectors more efficient.⁴⁷ The EU does not have water-related projects in Libya because of the country's instability, but the European Commission funds some bilateral projects on local public service delivery and economic development, which might be potential entry points for working on water service provision.

“The EU does not discuss the negative effects that expanding trade might have on the very protection of these ecosystems.”

These European initiatives fit within the wider vision for the region which the EU set out in its Multi-annual Indicative Programme (MIP) for the Southern Neighbourhood from 2021 to 2027 – a document that spells out the priority areas and objectives of the EU for the region.⁴⁸ These range from governance, economic investment and peace and security, to supporting the digital and green transition. The MIP acknowledges the importance of protecting natural resources and making food systems more sustainable, as well as the challenge that climate change presents to countries in the Maghreb. This is a good starting point, as it indicates that the EU understands that these problems need to be dealt with together.

But the MIP fails to acknowledge how it will deal with apparently contradictory goals, like trade expansion and economic growth on the one hand, and the protection of ecosystems and sustainable food systems on the other. It does not discuss the negative effects that expanding trade might have on the protection of those very ecosystems. At least for now, the focus of the EU's activities lies primarily on improving the conditions and technologies of partner countries, with limited space for considering improvements on the EU's side.

Climate finance

At the 2011 COP17 climate summit, the international

community agreed to invest \$100 billion a year in climate change mitigation (tackling the causes of climate change, for example through carbon emissions reductions) and adaptation (helping societies adapt to the effects of climate change). European countries, banks and institutions are contributing to international climate funds like the Green Climate Fund (GCF), the Green Technology Fund (GTF) and the Adaptation Fund. The vast majority of money disbursed through international climate funds to MENA countries has gone to Morocco and Egypt (see Chart 3). This is due to a few huge foreign investment activities in mitigation, such as the cumulative \$800 million in loans and grants from the CTF, European Investment Bank, World Bank, and African, French and German Development Banks that Morocco received towards its solar power plants in Ouarzazate.⁴⁹

Thanks among other things to the strong support of Moroccan King Mohamed VI for the country's green transition, Morocco has positioned itself as a climate leader in the region. Its 383 billion dirham (€36 billion) 'Plan National de l'Eau 2020-2050' includes the construction of a large number of dams and investments in desalination. But the country has also secured climate mitigation and adaptation finance from international investors, including a \$10 million grant from the Adaptation Fund to improve the resilience of oases (fertile zones in the desert where water surfaces) and a €37.5 million loan by the European Investment Bank to improve its water supply infrastructure.⁵⁰

Morocco's neighbours have not had the same success with climate finance. Tunisia's €2.7 million 'Eau 2050' water strategy is a fraction of Morocco's national investment plan, co-financed by the African Development Bank and by Germany.⁵¹ Tunisia has received some investments, including a €38 million contract with the European Investment Bank to improve the water supply infrastructure in Tunis and regional GTF investments in solar energy. But the country has had difficulty finding political consensus for large-scale green transition projects amid the many ministerial reshuffles in the past decade.⁵²

Algeria's reliance on oil and gas has long dimmed its incentives to invest in a green transition. But it is now seeking to emerge as a player on solar power, taking advantage of its massive landmass in the Sahara.⁵³ Libya,

47: The investments focus particularly on water in Tunisia; on energy, climate and green economy in Algeria; and on post-crisis recovery, green transition and gender equality in Morocco. European Union, 'Team Europe Initiative and Joint Programming tracker', 2022.

48: European Commission, 'Annex – Neighbourhood multi-annual indicative programme for the southern neighbourhood 2021-2027'.

49: Komal Hassamal and Mohamed Alaoui, 'NDC implementation in Morocco through green investments by private sector: A scoping study', The African Development Bank, March 2021.

50: 'Climate changes adaptation project in oasis zones – PACC-ZO', Adaptation Fund, April 1st 2021; European Investment Bank, 'Morocco: EIB strengthens support for ONEE to optimise drinking water supply and distribution', June 24th 2021.

51: 'Tunisia develops its "Eau 2050" strategy', African Water Facility, August 12th 2021.

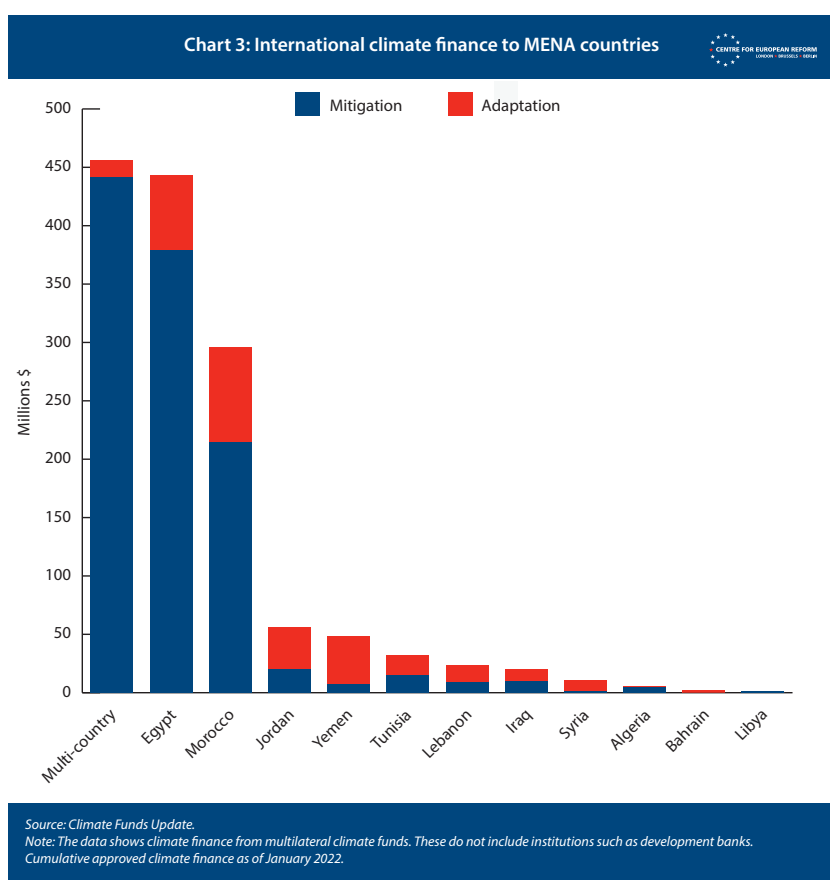
52: European Investment Bank, 'Tunisia: EIB provides fresh support to secure drinking water supply', October 22nd 2020; 'Tunisia', Climate Investment Fund, April 2022; Amine Bennis, 'Power surge: How the European green deal can succeed in Morocco and Tunisia', European Council on Foreign Relations, January 26th 2021.

where the political conflict impedes long-term planning, lacks capacity to invest in green transition at scale. The main investments in this area are driven by international donors such as the Food and Agriculture Organisation and Italy, in collaboration with various Libyan ministries.⁵⁴

Climate change mitigation and adaptation investments are important for a successful green transition. But despite commitments to strive for balanced investment in mitigation and adaptation activities, only 20 per cent of climate finance under multilateral funds goes to adaptation activities in the MENA region.⁵⁵ Mitigation projects are more frequent, and they also have much larger budgets – on average, adaptation projects in the MENA region are less than a third of the size of mitigation projects.⁵⁶ As a result, climate finance projects focus significantly on carbon emissions reductions, exemplified

by the large-scale solar investments. Emissions are an important issue, but they are not necessarily the current biggest challenge for the Maghreb. Natural resources protection and regeneration are equally, if not more, pressing issues in the region. For example, Tunisia emits only 0.08 per cent of global greenhouse gas emissions, but aims to invest three-quarters of its climate budget in cutting emissions.⁵⁷

This is problematic, because the Maghreb is particularly vulnerable to climate change, and some of its ecosystems are already under threat. If Maghreb societies fail to adapt sufficiently, for example by making their agricultural sector more resistant to climate shocks or by improving their water service infrastructure, infrastructure, they will find it more difficult to respond to climate shocks like droughts, fires and floods.



53: Anna Ivanova, 'Over 80 investors signal interest in Algeria's 1 GW solar project – report', Renewables Now, February 22nd 2022.

54: FAO Regional Office for Near East and North Africa, 'Towards efficient agricultural water use in Libya', FAO, January 31st 2022.

55: Heinrich-Böll-Stiftung Washington DC and Overseas Development Institute, 'Regions', Climate Funds Update, January 2022.

56: Charlene Watson and Liane Schalatek, 'Climate finance regional briefing: Middle East and North Africa', Climate Funds Update, February 2019.

57: 'Tunisia', UNDP Climate Promise, February 3rd 2022; Aida Delpuech, 'Debt-stricken Tunisian farmers 'ignored' as government rolls out solar megaproject', Climate Home News, February 11th 2022.

How the EU can help to secure water in the Maghreb

The EU has significant political and economic stakes in the Maghreb. It is in its interest to support the region in working towards water security – both to be consistent with the Union's own commitments to social and climate justice, and as a conflict prevention measure. This support should take several forms:

1. A coherent water and climate security strategy for the Maghreb

Water security is not only a humanitarian or development priority: the EU should also view it as a means of conflict prevention. By investing now in human well-being, for which water security is a prerequisite, the EU will be able to help countries in the Maghreb prevent or at least reduce the impact of socio-economic, political and potentially humanitarian challenges later.

“The EU should rethink how its own policies might perpetuate unsustainable practices and be a source of tension.”

But these investments require the coherent use of different policies. On paper, the EU addresses this well: its MIP for the Southern Neighbourhood calls for a multi-sector approach to sustainable development in the region, with much attention to water scarcity and environmental protection. And the EU's recently published climate security concept advises the Union on using its policies in a coherent and integrated way.⁵⁸ In practice, however, the EU falls short of taking a truly coherent approach. The MIP's focus is primarily on investing in capacities and green transitions in the partner countries, but it ignores how other policies, might drain its partners' natural resources. If the EU wants to truly support its Maghreb partners, it should rethink how its own policies, as well as policies of EU member-states, might perpetuate unsustainable practices and be a source of tension.

Together with its member-states, the EU should create a dedicated water and climate strategy for the Maghreb, consulting regional partners. Such a strategy would go beyond the various goals laid out in the MIP and address how, in the specific context of the Maghreb, different EU policies should complement each other to ensure water security against the background of a changing climate. This would require the allocation of sufficient human resources and expertise specialised in climate security both at policy planning (Brussels) and implementation (EU delegation and bi-lateral embassies) level. Actors

at all levels of governance, the private sector and civil society should be involved in defining priorities and task allocations for achieving water security.

The EU and its member-states should also continue the important investment they are already making in helping Maghreb partners develop solutions to water insecurity, like improving irrigation systems, developing drought resistant crops, repairing deficient water infrastructure and investing in alternative water sources like desalination technology. In parallel with these efforts, the EU should support the efforts of governments and civil society in the Maghreb to raise awareness of the value and scarcity of water amongst citizens in the region.

2. Address water security together with social justice issues

People who are already marginalised and poorer are disproportionately affected by water insecurity. Some of the most water insecure groups are Algerian farmers living in the south of the country; and Tunisian farmers, who are hit hardest by climate shocks but receive the least social protection from the government. Inequality was one of the reasons for the protests in Tunisia in 2011, and in Algeria in 2019. Increased water insecurity will further widen these inequalities in the coming years. If Maghreb governments are to address water insecurity sustainably, they cannot treat it as separate from social justice issues.

Maghreb governments therefore need to take their citizens' long-standing calls for greater government accountability seriously. A government cannot hope to improve its water service provision in isolation, without improving on its governance more generally. Effective national water service provision requires collaboration between different ministries, the private sector, and civil society. This collaboration cannot function properly without a transparent and accountable government driving it.

Civil society is an important but undervalued player in putting environmental, natural resource and climate justice issues on the political agenda. The Tunisian Water Observatory, which tracks incidences of water scarcity across the country, plays an important role in informing populations and authorities of the prevalence of water insecurity and the societal discontent it leads to. Such initiatives are essential for advancing the water security agenda and raising the authorities' awareness of the risks of instability if they do not address issues of water management. Civil society organisations can also advise the authorities on the best ways to organise

⁵⁸: European External Action Service, 'Concept for an integrated approach on climate change and security', October 5th 2021.

water service provision in a way that meets the needs of local populations. The EU can support civil society organisations financially, since many of them face institutional, financial and socio-political hurdles to their operations. The Union can also help to support NGOs in linking local, environmental issues such as water scarcity and pollution to broader climate justice discussions on local and national level. This will help raise awareness of water, environmental and climate issues in the general population, and strengthen their calls for better government action.

Crucially, creating greater awareness cannot happen if governments continue to repress freedom of expression and assembly, as is the case in Tunisia and Algeria. The EU should use its economic and aid leverage to discourage Tunisia's Saied from moving further towards autocracy, for example, rather than fretting it will undermine co-operation on migration and other issues. Such a move would send a strong message to Tunisians, who have been demanding dignity, equality and accountability for over a decade. Their grievances will deepen the longer the water, food and economic crisis continues. Restricting their ability to make their claims heard will only serve to exacerbate instability.

3. A focus on climate change adaptation

Climate change is already having a significant impact on the environment and societies in the Maghreb. Mitigation strategies are necessary to address some of the causes of climate change, but they are not sufficient for the many people who are already suffering from its consequences.

The EU should shift to a more equal balance between its investments in climate change mitigation and adaptation – which a group of countries including several EU member-states rightly called for during COP26 in Glasgow in November 2021 as part of the 'Adaptation Action Coalition'. The EU should also think beyond narrow aims of carbon emissions reductions, and take a broader perspective by focusing on the protection of ecosystems and the regeneration of the earth's natural resources, because a rich and diverse environment is more resilient. Adopting such an approach in policy planning would be a step towards ensuring that human development takes place within the local environment's boundaries. Local municipalities, civil society organisations and the private sector can all help with policy planning and implementation, especially at the local level. Financial and technical support to them should stay an integral part to the EU's adaptation efforts, as they often lack the resources and connections necessary to carry out their work.

One of the main reasons why the Maghreb is so vulnerable to climate change is its economy's reliance on the climate-fragile and water-intensive agricultural sector. As discussed, technical solutions are being developed to make the agricultural sector more efficient, but this does not decrease the economy's reliance on agriculture overall. Adapting would require decoupling the economy from its excessive reliance on natural resources, and finding alternative livelihoods for the large share of the Maghreb populations that might be affected by this change.

Conclusion

European policy-makers tend to react seriously to instability only once violent conflict has already started. In the case of Morocco, Algeria and Tunisia, they have an opportunity to act preventively. Failure to invest in sustainable and equitable access to water could lead to more instability not far down the road. Achieving water security, in particular in the politically fragile Maghreb, is more difficult because of a lack of economic, institutional and political resilience. At the same time, water insecurity can further weaken the capacity of societies to respond to environmental and climate shocks. European policy-makers should view investing in water security as a conflict prevention strategy. Once a political and humanitarian crisis takes root, as in Libya, achieving sustainable development goals such as safe water gets

even further out of reach. If the EU wants to avoid adding another crisis to its long list of priorities, it needs to take the challenge of the Maghreb's water security seriously.

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