From Hot Seat to Powerhouse: Managing Climate Change in the Southern Neighbourhood

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When it comes to climate change, we have a host of paradoxes in the southern neighbourhood: on the one hand, it is by now common knowledge that the region will be the hardest hit in the world, but it is, at the same time, one of the least prepared to face this, and its publics do not perceive the problem as such. These points, taken together, are one of the reasons why the topic appeared prominently not just in the Survey but also in the Joint Communication released in February 2021.[1] To make matters more puzzling, the region receives a daily abundance of sunshine but generates only 0.4% of its energy mix from solar power.[2] This means two things: on the one hand, there is considerable work to do to "future-proof" the region for what will come its way but, on the other, the untapped potential to do so is equally considerable. If leveraged well, climate change – or rather, measures to avoid it – could therefore become a crucial driver for modernisation in the region.

Climate change in the southern neighbourhood will have the hardest hit in the world, but it is, at the same time, one of the least prepared to face this.

Three areas can be identified in this order of priority: firstly, publics in the southern neighbourhood need to be urgently made aware of the problem that they are facing, while states in the region need to prepare for those effects of climate change that can no longer be avoided; secondly, it will have to prepare for the coming energy transition in order to benefit from it; and, thirdly, it will have to decrease CO_2 emissions in order to avoid even worse consequences.

If leveraged well, climate change – or rather, measures to avoid it – could therefore become a crucial driver for modernisation in the region.

1. European Commission, "Southern Neighbourhood: EU proposes new Agenda for the Mediterranean", 9 February 2021, https://ec.europa.eu/commission/presscorner/detail/en/ip_21_426

2. Aditi Banerjee et al., "Natural Disasters in the Middle East and North Africa: A Regional Overview", World Bank Working Paper, 2014, http://documents.worldbank.org/curated/en/211811468106752534/Natural-disasters-in-the-Middle-East-and-NorthAfrica-a-regional-overview, p. 14. IRENA, "Pan-Arab RenewableEnergyStrategy 2030: Roadmap of Actions for Implementation," June 2014, https://www.irena.org/publications/2014/Jun/Pan-ArabRenewable-Energy-Strategy-2030-Roadmap-of-Actions-for-Implementation

Facing the unavoidable

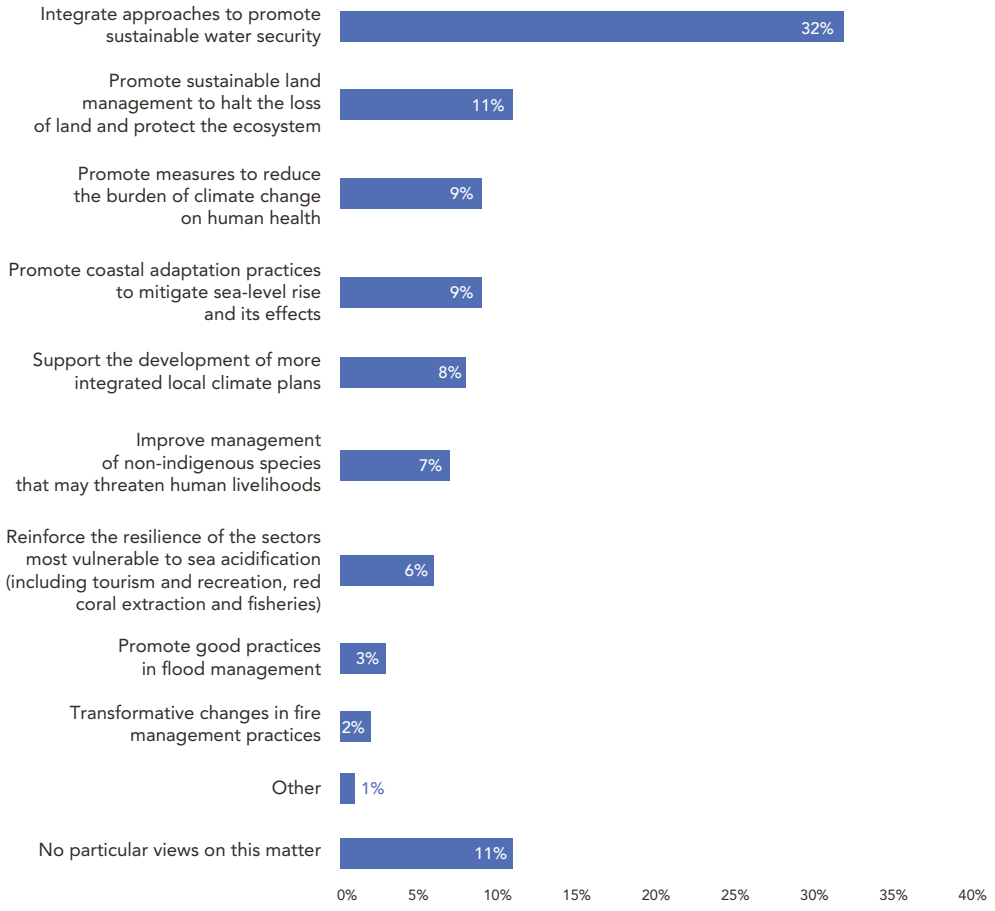
The increase in temperatures will affect water resources and almost all countries in the region will be at water crisis risk.

No matter what actions are taken between now and 2030, there are certain effects the southern neighbourhood will no longer be able to avoid. This is because measures against CO_2 emissions take several years to take effect as it takes a long time for the gas to be dissolved in the atmosphere. Even if all CO_2 emissions ceased today, we will therefore see effects in the near future. For the southern neighbourhood, this means that by 2030, the region will be 1-1.5°C degrees hotter – on average but with significant differences at the national or local level. In Lebanon, temperatures will rise by 1 degree on the coast but by 2 degrees inland.[3] Matters are even worse in Tunisia, where temperatures are expected to rise between 1.5 and 2.5 degrees. This is a problem because the region not only already faces summers of 42 to 45 degrees on average but also because heat will not increase evenly. Instead, as already visible now, it will face extreme heat waves whereby temperatures will regularly climb over the level where it is still tolerable for human beings.[4] Under these circumstances, water resources will decrease by 20% and rainfall by 10 to 20% by 2040. This means that the region will face significant water problems: with the exception of Egypt, all states in the southern neighbourhood are at water crisis risk – Lebanon even ranking second in the world, just behind Qatar. Between 60 and 100% of populations in the region are exposed to very high surface water stress. By 2030, water demand is to increase between 13% in Lebanon and 92% in Egypt. It is therefore no coincidence that respondents to the Survey singled out water security as the highest priority to be addressed (see graph 1).

3. World Resource Institute, "Aqueduct tool", https://www.wri.org/aqueduct/

4. R. Varela et al., "Persistent heat waves projected for Middle East and North Africa by the end of the 21st century", PLOS One, 17 November 2020, https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0242477. UNDP Lebanon, "Goal 13: Climate action", https://www.lb.undp.org/content/lebanon/en/home/sustainable-development-goals/goal-13-climate-action.html#:~:text=Droughts%20are%20already%20more%20frequent,of%20renewable%20water%20by%202030.&text=Lebanon%20is%20also%20vulnerable%20to,increasing%20due%20to%20climate%20change

Graph 1: Q.19 Priority measures to face climate and environmental change in the Mediterranean (Ranked as first option)



Source: Compiled by the IEMed based on the results of the EuroMeSCo Euromed Survey

Although big differences exist between states in terms of preparedness, overall measures to manage extreme heat waves or water shortages are insufficient. In large part, this is because states in the region share with their populations a very low sense of urgency when it comes to climate change – a perception which stands in stark contrast to the magnitude of the problem. While states are poorly prepared for the first order effects of climate change, they are even less prepared for the knock-on effects this will have – for instance on agriculture (Tunisia's olive production, for instance, will be cut in half under the current conditions[5]). In contrast to other world regions where industry is the main user of water, the southern neighbourhood's agricultural sector is the one drawing most water, at 70%.

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5. Food and Agricultural Organization of the United Nations, "Tunisia's olive production could halve by 2030 due to climate change", 2015, http://www.fao.org/family-farming/detail/en/c/350689/. "Solutions to water challenges in the Middle East and North Africa region", http://www.fao.org/fao-stories/article/en/c/1150870/

But solutions do exist

Improving infrastructure, reuse of wastewater and harvesting rainwater are measures to enhance water management as one of the first priorities in the preparation for climate change.

One of the first priorities in the preparation for climate change's unavoidable fallouts is of course water and its management. At the moment, water is over-exploited because governments have failed to implement incentives to curb water consumption and promote conservation. Pricing water as a service rather than a commodity could be an incentive to treat it more carefully. Improved infrastructure, such as through the reduction of leakage or pipe pressure are additional measures, but more important is a change in how water is treated by the agricultural sector in particular.

The problem is, however, that this is not enough: even a reduction of agricultural water use by 30% would reduce the water stress for only about 3% of the currently exposed population. This means that this measure alone is not enough. Water will have to be saved and generated elsewhere. One example is the reuse of wastewater: in the region overall, 82% of wastewater goes unused (with the exception of Jordan, which reuses 90%), so the potential is enormous.[6] In addition, harvesting rainwater in cisterns and wells is an interesting option particularly for city dwellers. Because domestic use ranks second in the regional use of water, citizen behaviour will be an important ingredient in reducing water use.

Europe can be instrumental in facing these challenges. Since change of behaviour – be it at home, in cities or in the agricultural sector – stands at the centre of tackling the water crisis, engagement with civil society but also with the municipal level, where most of the water use increases are expected, will be crucial. The Survey supports this approach, and finds some applicability for conditionality in this regard.

Leveraging the energy transition

Climate change will bring more challenges for the region in the energy sector, in two different ways. Firstly, more energy will be needed because both populations and industrial activity will grow. By 2030, demand will have increased by 55% compared to today.[7] In addition, more cooling will be needed to face increased temperatures. In Saudi Arabia, air conditioning currently swallows 51% of total electricity demand in the summer, giving us a frightening preview of what could become the norm in the southern neighbourhood, too.

But not just more energy will be needed as the region faces the fallout of climate change: the global energy market itself will shift towards renewable energy. For

6. World Bank, "Beyond Scarcity : Water Security in the Middle East and North Africa", 2018, https://openknowledge.worldbank.org/handle/10986/27659

7. BP, "BP Energy Outlook – 2019. Insights from the Evolving transition scenario – Middle East", https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019-region-insight-middle-east.pdf

oil-exporting states like Algeria and Libya, this means that they will lose an important source of their income. The fiscal crisis Algeria faced in early 2021 as a result of a low global oil price was only a preview of a situation that will become the norm as Europe shifts increasingly towards renewable energy: by 2030, Europe will have halved its imports from fossil fuels.[8]

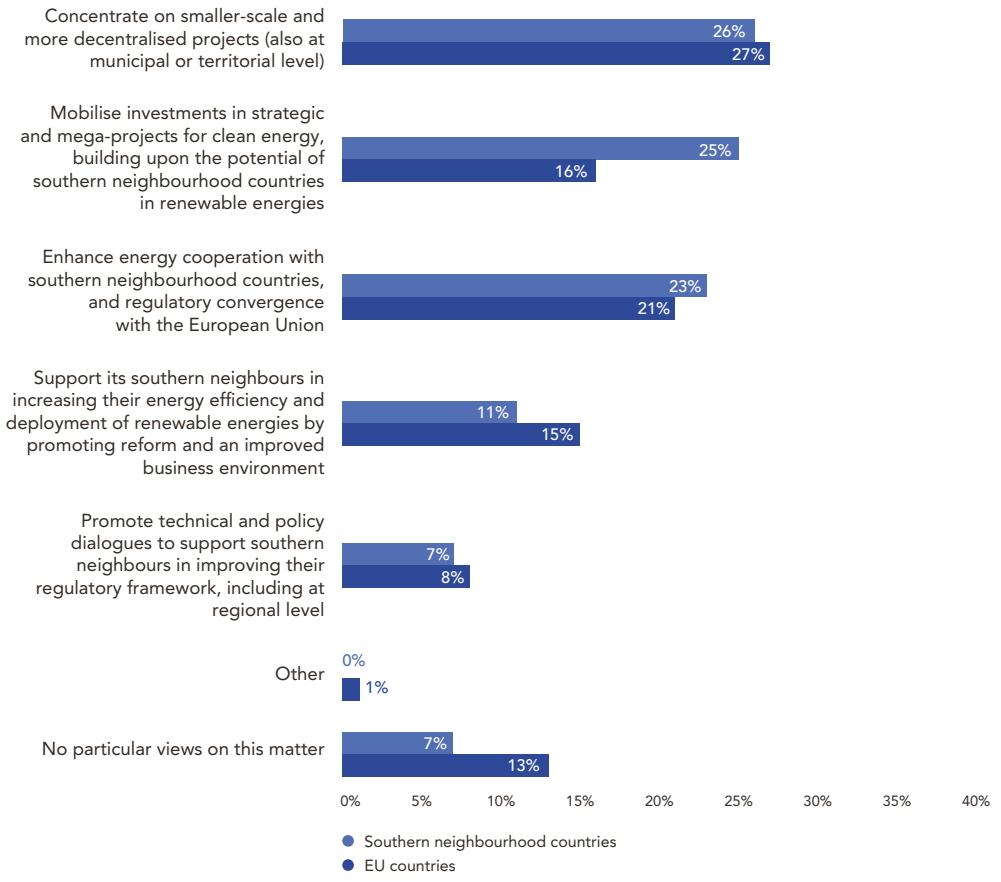
Renewable energy may be the answer to face the increase energy demand. Transiting to renewable energy is not just feasible for the region but is indeed an interesting opportunity.

But renewable energy may very well be the answer to both problems. As mentioned above, it currently plays no significant role in the regional energy mix with 4% (of which a negligible amount stems from solar power) – but more than 95% of the potential remains untapped. Its geographical location might come with the challenge of heat, as it is flanked by an abundance of sunshine and wind. This means that transiting to renewable energy is not just feasible for the region but is indeed an interesting opportunity.[9] This could be an explanation as to why in the Survey southern neighbourhood respondents are more prone than European Union (EU) participants to consider the mobilisation of investments in strategic and mega-projects on renewable energy as their top priority (respectively, 25% and 16%). Not only could the region meet its own energy needs but it could even export surplus energy once a solution to the transport question is found. In addition, renewable energy would allow for a decentralisation of energy generation, meaning that individual and remote households will be able to either contribute to generation or be self-sufficient. This is currently already trialled in conflict zones such as Libya, where hospitals are powering themselves with solar panels. Of course, an end to oil exporting could have other political consequences as it would lead to a diversification of national budgets and with it, perhaps, to a diversification of the political landscape.

8. IRENA, "A New World: The Geopolitics of the Energy Transformation", January 2019, https://www.irena.org/publications/2019/Jan/A-New-World-The-Geopolitics-of-the-Energy-Transformation#:~:text=Chaired%20by%20former%20President%20%C3%93lafur,%2C%20trade%2C%20environment%20and%20development

9. Arman Aghahosseini, "Towards sustainable development in the MENA region: Analysing the feasibility of a 100% renewable electricity system in 2030", Energy Strategy Reviews, Volume 28, March 2020, https://www.sciencedirect.com/science/article/pii/S2211467X20300201#:~:text=Electricity%20demand%20is%20assumed%20to,to%20the%20year%202030%2C%20respectively

Graph 2: Q.18 What should the European Union do to accompany the energy transition of the southern neighbourhood countries? (Ranked as first option)



Source: Compiled by the IEMed based on the results of the EuroMeSCo Euromed Survey

The southern neighbourhood is still far from ready for the coming transition. Europe's technical know-how and investment could play an important role in pushing the transition forward.

Although acceptance of renewable energy is beginning to grow in the southern neighbourhood, it is still far from ready for the coming transition. At the moment, only three countries in the region – Algeria, Tunisia and Morocco – have set targets for the sourcing of solar energy, and overall only Morocco and to a lesser extent Jordan have truly embraced renewable energy.

As the Survey respondents say, this is where Europe's technical know-how and investment could play an important role in pushing the transition forward. As in the case of water management, conditionality is not likely to yield the best results: here, lack of funds and technical knowledge will not be generated through it.

Decreasing CO_2

Lastly, the Middle East and North Africa has made too few efforts to decrease CO_2 emissions but instead they have grown to the point of now nearing Europe's levels. Although the biggest polluter, Saudi Arabia, is not part of the southern neighbourhood, Egypt, the second biggest, is. Egypt is the 25th biggest polluter worldwide and the biggest in Africa. As we have seen above, a projected rise in energy demand means that this is likely to continue if no measures are taken. Around 85% of the greenhouse gas emissions come from energy production, electricity generation, the industrial sector and domestic energy consumption.

Increasing energy efficiency and improving the transport sector are key to reduce CO_2 emissions. Therefore creating green and sustainable jobs is one of the main challenges for Euro-Mediterranean cooperation in the years to come.

There are several ways in which these emissions can be reduced. Firstly, energy efficiency can be significantly increased. Unfortunately, one hurdle on the way is the reduction – or even cancelling – of electricity and fuel subsidies. At the moment, most states in the region not only spend significant portions of their gross domestic product (GDP) on subsidies but they thereby also encourage wasteful consumption. The extremely high energy intensity and electricity consumption per capita is the result of this: Egypt ranks before Sweden or Poland, Jordan, Lebanon and Tunisia before Slovenia or Lithuania. These subsidies also prohibit private investment in alternative technologies – such as solar panels on a roof – as there is no need to find cheaper sources of energy. In part, this is because national energy efficiency strategies hinge on stable sources of financing and legislation, which many states in the region lack.

In addition, the region's transport sector is not only responsible for a third of the CO_2 emissions, but presents a lot of room for improvement. Although most states in the region have strategies in place to improve public transport, these do not include energy reduction targets or reforms for the transportation sector. For instance, there are no tax reductions on hybrid cars, no enforcements of vehicle emissions regulations, and no promotion of public transport. Most of the latter are buses, which could be switched to battery-operated, or alternatively compressed natural gas and parallel-hybrid electric. A more sustainable and long-term solution to not just CO_2 emissions but congestion and pollution would of course be a train system like the tramway in Rabat or the subway in Cairo. A recent proposal for a coastal metro system in Lebanon would not "just" reduce CO_2 emissions but also create jobs in the process of construction, and stimulate the economy by freeing up circulation. Indeed, creating green and sustainable jobs is identified as an important priority in the Joint Communication on the renewed partnership with the Southern Neighbourhood and it would be one of the main challenges for Euro-Mediterranean cooperation in the years to come.

In all of these areas, Europe not only has expertise but also the capacity to engage in order to accelerate reform efforts.

Taken together, all three priorities are areas in which the EU has garnered significant experiences over the last decade, and is therefore well-placed to assist. Perhaps crucially, all these areas present not just challenges but also opportunities. A move to a cleaner, more affordable, energy source, improved use of water and electricity, and a cleaner environment would not just protect from climate change but indeed ready the region for a better future.