

ASSESSING HEALTHCARE SYSTEMS' RESILIENCE AND CONSEQUENCES AMIDST THE COVID-19 PANDEMIC

Cases of Algeria, Jordan,
Lebanon, Egypt, Morocco,
Palestine and Tunisia

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In partnership with





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The background of the page is a dark, textured composition of various geometric shapes and patterns. It features a mix of dark blue and black tones, with some lighter blue accents. The patterns include circles, squares, and irregular polygons, some of which are interconnected to form a network-like structure. The overall effect is a complex, layered, and somewhat abstract design that provides a modern and sophisticated backdrop for the text.

FOREWORD

Like the rest of the world, countries of the Southern Mediterranean region have not been spared from the COVID-19 pandemic and its impact. Even though most of the countries have managed to control the spread of the pandemic, the negative economic and social consequences are now tangible. This result is the direct consequence of the confinement of the region's population, the sudden stoppage of several economic sectors and the drop in domestic demand as well as that of the region's main trading partners. Moreover, the COVID-19 pandemic has been exerting enormous pressure on public health systems across the region, shedding light on these systems' infrastructure and putting to the test their preparedness. Responses, adopted by the countries of the South Med region, to counter the public health crisis resulted by the pandemic and its socio-economic effects have had significant impacts on the lives and livelihoods of citizens across the region. Despite billions being spent in almost two years, it is anticipated that the social and economic impacts of the pandemic may persist for years.

Against this backdrop, the Regional Program Political Dialogue South Mediterranean of the Konrad-Adenauer-Stiftung (KAS PoDiMed) is pleased to publish its study "Assessing Healthcare Systems' Resilience and Consequences amidst the COVID-19 Pandemic". This study was conducted in collaboration with the Euro-Mediterranean Economists Association (EMEA) to evaluate the status of the healthcare systems in the South Mediterranean region with a focus on six countries: Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, and Tunisia. It outlines the social and economic consequences of the COVID-19 pandemic and the adopted responses by the target countries' governments.

Shedding light on the region's social and economic situation is one of the main objectives of KAS PoDiMed, which will continue to examine the developments in the countries of the Southern Mediterranean through insightful publications and studies.

On behalf of KAS PoDiMed, we express our thanks to the authors of this study, Rym Ayadi, Yeganeh Forouheshfar and Sara Ronco, for their valuable contributions.

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EXECUTIVE
SUMMARY



Executive summary

The COVID-19 outbreak hit an unprepared world in February 2020. The pandemic shined a spotlight on the deficiencies of healthcare systems. In response, governments initiated a variety of containment measures, thereby affecting the lives and livelihoods of millions of citizens.

The objectives of this study are to analyse the evolution of the pandemic during 2021 and the adopted policy measures, investigate the resilience of the healthcare sectors in Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, and Tunisia (referred to as the target countries) and the responses to the COVID-19 pandemic, and investigate the socioeconomic consequences of this shock.

The first section overviews the evolution of the pandemic and the responses in the target countries, notably the policy responses designed to enhance the capacity of the healthcare system and curb the evolution of the pandemic. The region displays a shallow level of testing and insufficient data to monitor the prevalence of the disease effectively. Overall, the healthcare sector cannot be considered resilient. Countries are engaged in short-term emergency measures to contain the pandemic, lacking medium-to-long term plan for improving healthcare sector and recover the pandemic.

The second section details the vaccine procurement in the target countries, the availability of vaccines, and the different types and amounts of vaccines administered in each country. The vaccine procurement and rollout analysis highlight an unequal distribution of vaccines, preventing an equal recovery and jeopardising socioeconomic health. We illustrate that the COVID-19 pandemic and different vaccine procurement deficiencies stress the need to enhance global governance on healthcare to guarantee a fair allocation of resources such as testing kits and vaccines.

In the third section, we explore the socioeconomic consequences of COVID-19, including the slowing of economic activity, resulting in lower output and higher unemployment. Tourism and the cultural and creative industries (CCI) have been among the hardest hit by the pandemic, but the digital sector has thrived in response to the increasing demand and become essential to many other sectors. The COVID-19 pandemic has resulted in a change of work behaviour, with a decline in the amount of paid work, a rise in the amount of unpaid work, and a tendency to move towards remote working (despite the fact that the teleworking capacity is relatively low in the region). People in vulnerable groups of the population have been hit the hardest, including informal workers, migrants, and women. As women have been more affected by the pandemic, a widening gender gap has emerged. The number of violent incidents has also increased. In addition, COVID-19 has contributed to the rise in inequality and poverty in the region. Many countries have taken steps to expand social protection. Meanwhile, in countries with substantial informal economies, a narrow fiscal space, and few social protection (welfare) mechanisms, it is difficult to strike an appropriate balance between saving lives and protecting livelihoods.

Based on the findings of this study, certain policy recommendations have been proposed:

1. Increasing investment in healthcare, enhancing PPPs (public–private partnerships), and promoting universal health coverage

The governments of the target countries typically lack fiscal space with which to increase spending on healthcare. PPPs could represent an opportunity for those countries to increase investment in the healthcare sectors and obtain enough resources to pursue universal healthcare coverage. The latter is particularly crucial in the target countries whose poverty and informality translate into unequal access to healthcare services, high reliance on out-of-pocket expenditure, and lack of access to social security. This could be promoted through recovery plans that take examples from the EU and foster a regional dialogue on recovery and universal health coverage. According to the ILO calculator, the cost of having universal coverage is 7.6% of GDP on average in the region¹.

2. Increasing the disclosure and reliability of data

Data transparency has the potential to increase the overall effectiveness of governments' services (including public healthcare services). On the one hand, it makes governments more credible, both for citizens, favouring the attainment of norms, and for the international context, favouring external aid and collaboration. On the other hand, data disclosure and reliability help institutions to build proper policy responses; all countries should invest additional resources in data collection and communication, which would be even more valuable and practical if shared with the neighbouring countries.

3. Adopting coherent policy measures in coordination with the neighbouring countries

Containment measures should be discussed through the regional platform (i.e. the Union for the Mediterranean) and in collaboration with the European Union to better coordinate actions and share experiences. Better coordination would increase regional integration, trade, tourism and migration, favouring an equal recovery in the area. Coordination should be particularly fostered in:

- Formulating coherent and clear travel rules in the region
- Favouring the mobility of workers, particularly in the healthcare sector, across countries
- Opening a regional dialogue on informality and on how to protect the high number of vulnerable people during future pandemics
- Opening a regional conference on the regional capacity to respond to potential future pandemics

¹ ILO calculator (2021). See Appendix E for more details on the calculator.

3. Increasing regional collaboration and coordination on vaccine procurement, production and distribution

Coordinated action between the target countries in the procurement of vaccines could favour fostering an equal distribution of vaccines in the region and broadly in African countries. A few countries in the region have begun producing vaccines; they should start calling on regional coordination to allow the region to increase both its bargaining power in the international scene and the regional capacity to become a vaccination hub, helping a fair and equal recovery to occur and, as highlighted in the study, convincing pharmaceutical companies to increase the technology transfer.

With reference to the socioeconomic consequences of the pandemic, we recommend the following:

4. Developing a buffer emergency scheme within the social security system for crisis situations

The most vulnerable groups in the population (such as women, migrants and the poor) have suffered the worst from the COVID-19 pandemic. An emergency scheme should be created within the social security system that specifically targets these vulnerable groups when a crisis or a pandemic hits the economy.

5. Increasing investment in digital infrastructure

Digitalisation has accelerated due to the COVID-19 pandemic and is regarded as one of the most important pillars of resilience. The region suffers from a digital divide, and efforts must be made to provide rural and remote areas with a wide-bandwidth Internet connection. This would enhance the teleworking capacity within the countries and allow local workers to access foreign labour markets; these workers can be easily absorbed into such markets thanks to their competitive wages.

6. Reforming the educational system

In line with the study conducted by Ayadi and Ronco (2021), school closures and social distancing measures have seriously affected the quality of education in the region. The educational systems require an urgent reform to enhance quality in order to compensate for the losses and equip new generations with the skills necessary for the future labour market, such as digital skills and creativity.

7. Developing sector-specific emergency funds for the most affected sectors

Tourism and the cultural and creative industries have been harshly hit by COVID-19 and the associated social distancing measures. The workers in these sectors are mostly informal and have no access to social safety nets, while they also require targeted support to be able to return to their activity. Moreover, the efforts to diversify the economy should continue with a view to building a more resilient economy.



INTRODUCTION

Introduction

COVID-19 was officially reported by the World Health Organization (WHO) on December 31, 2019, with a global pandemic announced on March 11, 2020. It has had devastating effects on people's lives and the global economy. The Euro-Mediterranean Economists Association (EMEA) launched a policy research initiative on COVID-19 on March 18, 2020 to identify and assess the policy responses and socioeconomic challenges linked to the global pandemic as future responses with which to enhance socioeconomic resilience in Europe, the Mediterranean, and Africa.

In a study published in April 2020, Ayadi et al. (2020) proposed a three-pillar matrix for exploring and monitoring the policies implemented to respond to the global pandemic, focusing on the Mediterranean and African regions. The first pillar assessed healthcare system preparedness, the second pillar examined containment and de-containment policies, and the third pillar explored socioeconomic preparedness and policy responses. In a subsequent study published in September 2020, Ayadi et al. (2020) showed that there was divergence in the level of readiness of healthcare systems, as well as in the level of containment and de-containment (depending on the timing of implementation and the level of carefulness). In addition, countries with socioeconomic vulnerabilities before the pandemic had less room to respond and, hence, fewer policy instruments with which to mitigate the socioeconomic effects of the pandemic. In other words, countries that had already built a resilient system and limited their vulnerabilities over time could be better equipped to respond to extreme shocks, manage them, and recover. In two policy papers by Ayadi (2020a and b), a mutually interactive three-pillar system was introduced in order to enhance systemic global resilience. To combat a global pandemic that will potentially evolve into a systemic crisis, the proposed design includes a global early warning system (GEWS), a global crisis management system (GCMS) and a global crisis recovery system (GCRS), reinforced with a global crisis recovery fund or financing plan.

In December 2020, the EMEA and the Regional Program Political Dialogue of the Konrad-Adenauer-Stiftung KAS PoDiMed published a study applying the three-pillar framework to assess the resilience of the healthcare systems. The study revealed that the region needed a better-equipped, better-prepared and more inclusive healthcare sector to bridge the urban–rural division and extend health coverage to all. According to the first assessment, the analysed countries were far from building a resilient healthcare sector, primarily due to their institutional and socioeconomic vulnerabilities.

The study suggested the following recommendations:

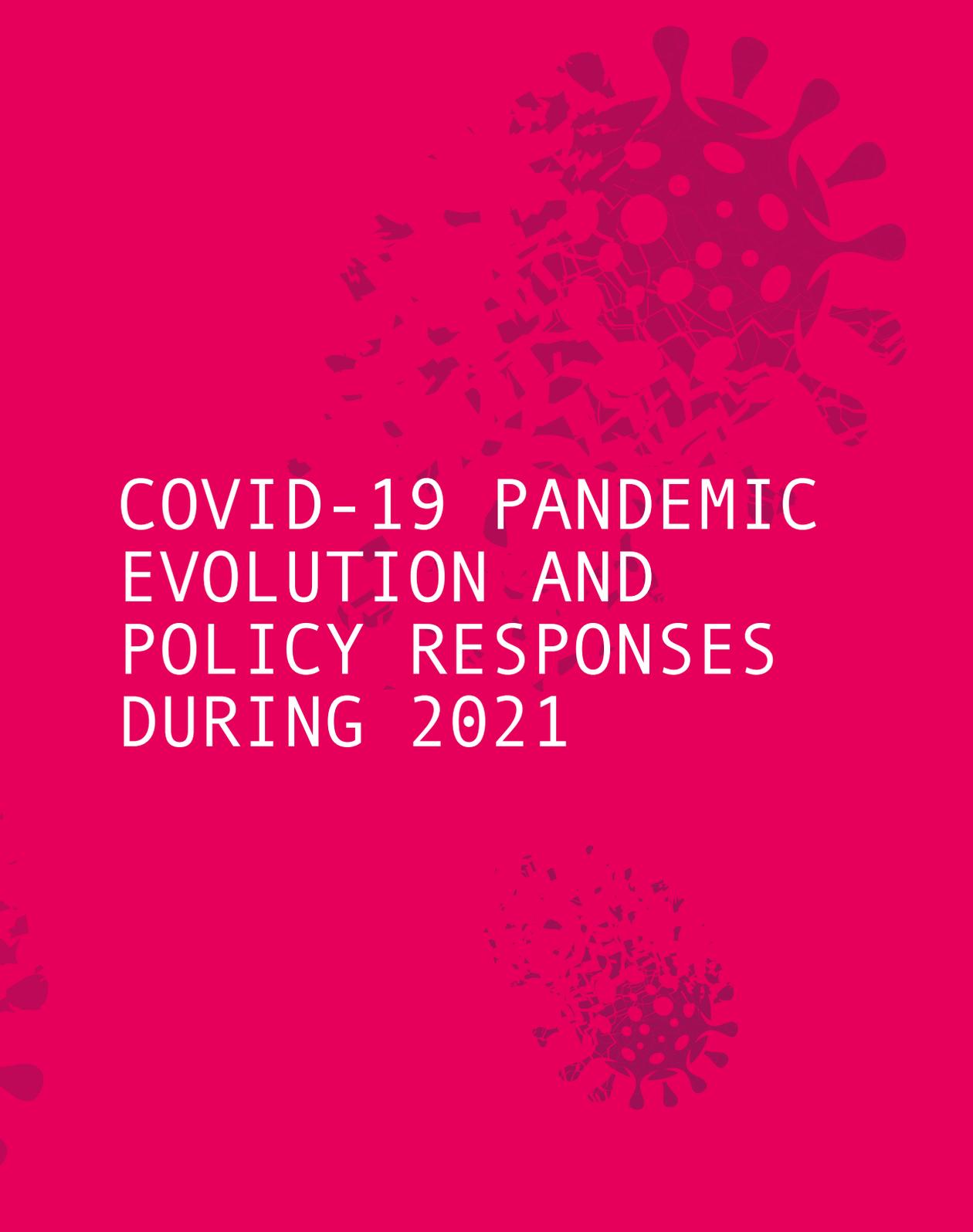
1. Reinforcing the crisis management capability, which would allow for the prompt activation of healthcare policies for combatting the crisis
2. Establishing a recovery capability (which includes an investment plan to enhance the capacity of the healthcare sector further)
3. Effectively increasing the healthcare capacity through medium-to-long-term plans aimed at enhancing healthcare capabilities, particularly:

- Dedicating more public spending to healthcare and reducing out-of-pocket expenditure as part of the recovery plan
- Reducing the public–private gap, investing more in the public sector, and engaging the private healthcare system more to provide support in extreme-shock situations
- Reducing the rural–urban gap in healthcare service provisions through more decentralised and digital healthcare infrastructure and medical staff capacity building
- Increasing social protection coverage and working towards the implementation of universal healthcare coverage, starting with the inclusion, in the social security system, of the most vulnerably excluded (informal workers)
- Increasing cooperation with the neighbouring countries, creating a platform for sharing good practices, and increasing technology, knowledge and worker sharing
- Increasing coordination amongst international organisations to support healthcare systems through increased transparency and auditing (mainly when external funds are provided and there is a better-targeted intervention to maximise their impacts)

This new study investigates the improvements that the countries made in managing the COVID19- pandemic in 2021, one year after the 2020 assessment, with a particular focus on the major global response: COVID19- vaccines.

During 2020, all of the world's governments adopted temporary measures to curb the pandemic, mainly restricting the movement of people (e.g. curfews, lockdowns, border closures, school closures). In 2021, it was becoming clear that the pandemic would last for a longer period of time. When, at the beginning of 2021, the first COVID-19 vaccines were approved, the public hoped for the possibility to "build back better". The vaccines were rapidly seen by some as the solution to the pandemic; however, after one year, the picture was mixed. Countries adopted uncoordinated, confusing strategies, mixing testing plans and vaccine plans based on scarce resources. The pandemic continued to follow its course, and governments continued to apply the mixed strategy of closing and reopening borders, strengthening and easing restrictions of movement, and imposing and releasing curfews, following the non-constant and unpredictable epidemiological curves.

Building on this background, the present study analyses the evolution of the pandemic in the target countries during 2021 and the relative policy measures adopted, investigating the resilience of the healthcare sector in the region. Following the introduction, the study analyses the vaccine procurement, rollout, and socioeconomic implications, whilst also providing an overview of the main socioeconomic consequences of COVID-19 in the region through macro, micro and sectoral lenses. Finally, the study offers conclusions and policy recommendations.



COVID-19 PANDEMIC
EVOLUTION AND
POLICY RESPONSES
DURING 2021

1. COVID19- pandemic evolution and policy responses during 2021

COVID-19 had begun spreading in the South and East Mediterranean by February 2020. The pandemic caught all of the countries unprepared, as it did international organisations. Health organisations (e.g. the WHO, the European Centre for Disease Prevention and Control) began to publish risk assessments, guidance documents, training programmes, and data platforms. In a recent study, Ayadi and Ronco (2020) showed that the fast-spreading nature of the pandemic led to instances of conflicting guidance. On March 11, 2020 the WHO declared COVID-19 a global epidemic, whilst the virus continued its rapid contagion in Europe and the North East Mediterranean. When the WHO officially recognised COVID-19 as a pandemic in Europe, the prevalence of the disease had already reached worrying levels (idem). In December 2020, there were 18,041,338 active COVID-19 cases, with the total number of cases detected around the world reaching 63,285,698, amongst which there were 1,469,226 deaths and 43,775,134 recoveries (Worldometer data, 30 November 2020). One year later, the total number of COVID-19 cases confirmed globally had reached 285,448,054, with total deaths standing at 5,442,799, and total recoveries at 252,895,581, with 27,109,674 people infected (99.7% of whom had mild conditions) (Worldometer data, 30 December 2021).

After the WHO's pandemic declaration, most countries implemented strict containment measures. In particular, in March 2020, all target countries implemented containment measures with different intensities (Ayadi and Ronco, 2020)². During the first containment phase, these countries kept the epidemiological curve flat and well below 20,000 total cases (idem). The 2020 study showed that weekly case variations declined in all of the countries during April 2020, corresponding to around two and three weeks following the implementation of the containment measures. The trend started to worsen at the end of June 2020 when the epidemiological curve rose again due to containment measures being relaxed (idem).

Almost all of the countries faced a first pandemic wave during March and April 2020 and a second wave between November 2020 and January 2021 (idem). Figure 16 in Appendix A shows that, after December 2020, the target countries faced another increase in cases during the spring of 2021 (e.g. Egypt, Jordan, Lebanon, Palestine, Tunisia) and the summer of 2021 (e.g. Egypt). Other countries managed to keep cases low after winter 2020–2021, only to face a new wave in summer 2021 (e.g. Algeria, Morocco, Tunisia). In most cases, countries have experienced several critical moments in terms of the overburdening of the healthcare sector. This is particularly the case with Tunisia, which, in July 2021, faced a disastrous phase of hospital overloading (A3M Global Monitoring 2021; France 24, 2021). During that period, Morocco sent 100 intensive care beds (idem) to Tunisia, and was among the many countries which helped Tunisia via medical aid during the critical summer of 2021. During the same period, Algeria faced problems with regard to the rapid increase of hospitalised people and a shortening of oxygen (Hamdi, 2021). At the time of writing (December 2021), most countries are facing a new wave of COVID-19, and neither the healthcare systems nor the governmental responses seem to have improved much after more than one year of the pandemic. In what follows, we explore the evolution of the pandemic and the policy responses during 2021.

² See also EMEA COVID-19 Monitoring Tool at <https://research.euromed-economists.org/>

1.1 Pandemic evolution and healthcare policy responses

A previous study (Ayadi and Ronco, 2020) described the healthcare preparedness of the target countries as generally low. The Nuclear Threat Initiative (NTI) and the Johns Hopkins Center for Health Security (JHU), alongside The Economist Intelligence Unit (The EIU), developed, in 2019, the Global Health Security Index (NTI et al., 2019). The overall score assesses a country's capacity to prevent and mitigate pandemics or epidemics, and ranges from a minimum value of 0 to 100. The overall GHS Index score was calculated again in 2021 and the results were not encouraging. The average global score in 2019 was 40.2, indicating global unpreparedness in relation to an epidemic or pandemic (the overall score results from the scores of all the six dimensions assessed) (EMEA, 2020). In 2021, the average global GHS Index score was 38.9, showing a slight decrease in global health security.

Table 1: 2021 GHS Index in target countries

Country	Rank	GHS 2021	Change (from 2019)
 Algeria	163/195	26.2	- 0.6 ▼
 Egypt	153/195	28	- 2.3 ▼
 Jordan	66/195	42.8	+ 1.6 ●
 Lebanon	111/195	33.4	- 3.4 ▼
 Morocco	108/195	33.6	- 2.0 ▼
 Palestine	n.a.	n.a.	n.a. -
 Tunisia	123/195	31.5	- 0.6 ▼

Source: 2021 GHS, <https://www.ghsindex.org/> Note: The rank represent where the country is positioned with respect to others. GHS reports overall indexes for the respective countries. Change report the change in overall index calculated in 2021 with respect the one in 2019.

Table 1 reports the GHS Index scores for the target countries and shows that only Jordan presents an increase in health security overall. In contrast, the other countries in 2021 registered a decrease in comparison to 2019. Furthermore, only Jordan shows an overall Index score above the global average. While the Index could not be considered a predictor of countries' performance in dealing with COVID-19, the World Bank found that the GHS Index was consistently and positively correlated with the testing rate per capita, even after controlling for GDP per capita, indicating that it might provide at least a minimum guess as to the response capacity of a country.

One year on from the first assessment (Ayadi and Ronco, 2020), the healthcare system capacity did not seem to improve, with it being noted that the data lacks health expenditure and infrastructure capacity. Health expenditure accounts for between 5.8% and 8% of GDP in the available years (mostly 2018, World Bank data), which is well below the 12% threshold that the WHO recommends for countries to improve their healthcare systems (Ayadi and Ronco, 2020). These countries seem to follow a declining trend in out-of-pocket spending, although this remains generally high. Morocco spends 5.8% of gross domestic product (GDP) on the healthcare sector and relies on out-of-pocket expenditure for 48.6% of the current healthcare expenditure (*idem*). The economic capacity of the countries varies considerably, with those such as Algeria, which is an upper-middle-income economy, being better equipped to face the pandemic, as compared to countries such as Tunisia or Morocco, which are lower-middle-income economies (*idem*). The availability of hospital beds and healthcare staff is meagre in all of the target countries. Before the pandemic erupted, Tunisia was endowed with around 500 ICU beds (400 in public premises, 100 in private ones) and Jordan had 226 beds in ICUs distributed throughout 32 public hospitals. Morocco's ICU capacity before the crisis was around 1,600 beds across the country, with there being approximately 2,300 beds in Lebanon. Jordan exhibits the highest number of medical staff, i.e. 3.4 nurses and 2.3 physicians per 1,000 people; the other countries are below these levels (*idem*).

Few countries in the target region announced their commitment to increasing resources with which to strengthen the healthcare sector. In Jordan, the state budget for 2021 emphasised strengthening the healthcare system (Kayed, 2021). In Morocco, a programme for 2022 was announced in 2021 to increase the hospital capacity by 2,095 beds and to recruit more healthcare professionals (MEDIAS24, 2021).

The December 2020 healthcare system assessment for the target countries (Ayadi and Ronco, 2020) showed that a relatively short-term emergency approach characterised all of the measures and interventions for curbing the pandemic. Tunisia and Morocco were the only two countries presenting medium-to-long-term strategies. In September 2020, Tunisia presented a detailed plan for managing COVID-19, providing different strategies for different pandemic scenarios as well as readjusting the country's emergency approach towards a "cohabitation with the virus" approach, with a prevention plan, a preparedness and response plan, and a manual of procedures, periodically updated (Portal National de la Santé en Tunisie, 2021). Morocco's plan was announced in October 2020 through two partnership agreements to promote occupational health and safety standards to achieve universal health coverage by 2022, and to promote acceptable standards and practices in occupational health and safety (Ayadi and Ronco, 2020). In June 2021, the Moroccan Ministry of Health organised a national meeting concerning the management of human resources in the health sector to discuss reforming the sector via enhancing public-private coordination and digitalisation (Ministère de la Santé du Maroc, 2021).

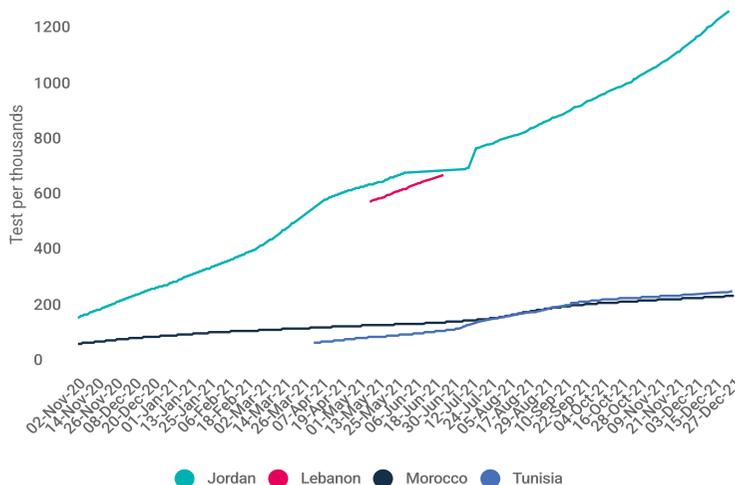
In Tunisia, however, the plan was not sufficient, or not sufficiently well implemented, to prevent further waves of the pandemic. In Morocco, the long-term plans to improve the health capacity seem to represent a guiding example for those countries that are lagging behind.

A recent survey exploring the extent to which the pandemic has stretched the capabilities of health systems in the MENA region (Hoogeveen, Johannes and Lopez-Acevedo, eds. 2021) showed that countries have grappled with low-capacity or weak health systems. Many respondents reported that they had experienced difficulty in accessing healthcare when they

needed to, mainly for COVID-19-related reasons such as the closure of roads to traffic (idem). The survey also explored the role of income in healthcare access, showing that, in countries such as Tunisia, households from higher wealth quintiles have faced better odds of accessing healthcare when in need than have those from the bottom quintile, thus underlining that the pandemic has exacerbated inequality in access to healthcare in the region, which could be particularly affecting vulnerable people in rural areas (idem).

One of the critical policy measures for controlling the contagion is that of testing the population massively, thus preventing hospitals from being suddenly saturated. Systematic testing was considered by the WHO to be essential at the beginning of the pandemic, as reported by Ayadi et al. (2020). Still, after more than one year of the COVID-19 pandemic, most countries present a weak testing capacity, and in the majority of cases they display inadequate data reporting. None of the target countries have been able to maintain and increase surveillance and monitoring measures. Figure 1 shows that most countries lack available data for COVID-19 tests performed or present deficient levels, except for Jordan and Morocco.

Figure 1: Test per thousand of population in target countries (November 2020 – December 2021)



debt is generally foreseen for all of the countries to sustain the cost of tests, vaccines, and increases in healthcare resources in relation to the pandemic and the cost of socioeconomic measures for protecting workers (see Section 3).

In terms of the data reported by Our World in Data, as of December 24, 2021, all of the countries present a public testing policy. Some of them publicly test anyone with symptoms (i.e. Algeria, Egypt, Morocco), while others provide open public testing that is also available to asymptomatic people (i.e. Jordan, Lebanon, Tunisia), therefore requiring enormous governmental spending that could be particularly cumbersome for the target countries characterised by generally meagre fiscal space and high inequality (see Section 3).

While all countries guarantee free testing, the lack of resources and the overburdening of the overall health system imply that testing essentially remains a cost borne by citizens in many cases. For example, numerous centres tested citizens freely in Lebanon at the beginning of the pandemic. Difficult to find, free testing is provided only in a few public facilities and mostly far from rural areas³. Since testing is often required in order to travel, enter public spaces or even go to work, access to tests is critical. A lack of such tests could exacerbate inequalities, affecting particularly the most vulnerable people and those living in remote areas that are far from the big cities (see Table 2).

Table 2: COVID-19 test cost, by type, country, and countries' minimum wage

Country	PCR Test Price	Antigenic Test Price	Minimum Wage/ Month
 Algeria	8500 DA	3000 DA	20000 DA
 Egypt	800 EGP	500 EGP	2 EGP
 Jordan	20 JD	Not offered anymore	260 JD
 Lebanon	250 LBP	150 LBP	675 LBP
 Morocco	400 MAD	200 MAD	2828.71 MAD (minimum interprofessional wage) 1994.20 MAD (minimum agricultural wage)
 Palestine	150 NIS	150 NIS	1850 NIS
 Tunisia	170 DT	30 DT	430 DT

Source: EMNES country experts' desk research based on national sources (December 2021 – January 2022) and from <https://wageindicator.org> (accessed between 7 and 13 January 2022)

Many countries have tried to regulate the prices of tests. In several cases (i.e. Algeria and Egypt), the costs of testing were reduced in 2021, mainly to incentivise travel⁴. Indeed, most countries still require a test for incoming and outgoing citizens (either PCR or rapid testing). Tests are often still needed for vaccinated people (i.e. some countries require COVID-19 testing before entering the country). For example, in December 2020, Algeria decided to cap the prices of scanners and medical analyses for COVID-19 via an agreement reached between the Ministry of Health, the Association of Private Radiologists, and representatives from 11 laboratories across the country (Algérie Presse Service, 2021). Similarly, Egypt reduced the cost of COVID-19 PCR tests specifically for Egyptian travellers. Despite these measures, the cost of testing remains high in all of the countries, considering the relative minimum wage (Table 2).

³ EMNES country experts' desk research based on national sources, December 2021 – January 2022.

⁴ Ibid. and <https://egyptindependent.com/egypt-to-reduce-the-prices-of-pcr-tests-for-covid-19/>

As for the production of tests, both Algeria and Morocco started producing COVID-19 tests domestically in 2020 (Xinhua Net, 2020). However, the price remains high in those countries, suggesting that test fees might be driven more by the freedom of manufacturers to set prices in the market than by the lack of availability and the import costs. The price-setting power of medical device manufacturers could increase further inequality. Another aspect worth noting is that, given the high level of informality and the relative lack of social security protection in the target countries (see Section 3), people could be negatively incentivised to not be tested. Indeed, for people working in the informal sector, being quarantined means not having access to their daily needs (Connor et al. 2021). This factor could contribute to the region's generally low levels of testing.

As already mentioned, the previous study analysing the resilience of the health sector and the policy responses in the target countries (Ayadi and Ronco, 2020) was launched in the middle of the second wave of the COVID-19 pandemic (December 2020). Since then, all of the countries have struggled with the diffusion of the pandemic, implementing restrictions on the movement of people and easing them depending on the evolution of the contagion. Furthermore, new variants of the virus started to be detected. They were considered to be highly transmittable (variant B.1.1.7 in the UK in September 2020, new variant B.1.351 in South Africa in December 2020) (WHO News, 2021). The spread of the variants alarmed the international community due to evidence suggesting that they were more transmissible and the uncertainty surrounding the efficacy of the vaccines developed. Despite the simultaneous development of the vaccines, countries had to continue implementing restrictive policy measures and a high level of surveillance to curb the pandemic.

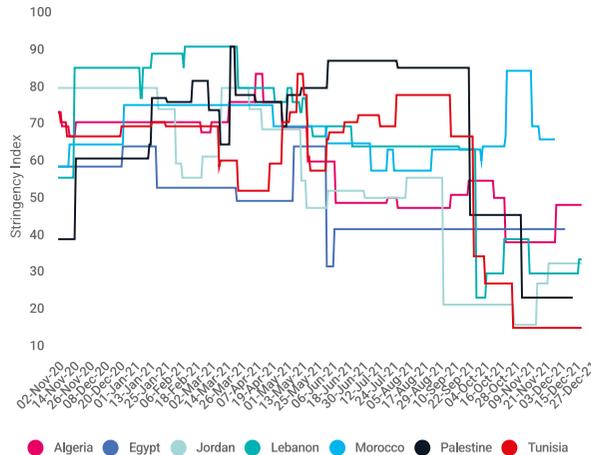
1.2 Policy responses to curb the pandemic and consequences

The Government Response Stringency Index was developed by the Oxford COVID-19 Government Response Tracker. It is a composite measure based on nine response indicators, including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100=strictest) (if policies vary at the subnational level, the Index shows the response level of the strictest subregion)⁵. The trend reported in Figure 2 shows a general decrease of the Index for all of the target countries between October and November 2021. Nevertheless, most countries maintained relatively high levels of stringency between December 2020 and September 2021. Between December 2020 and October 2021, Morocco's scores ranged between 60 and 80. Algeria and Jordan maintained a level of stringency between 60 and 80 from December 2020 to May 2021. Afterwards, both countries eased their restrictions, with Algeria maintaining a Stringency Index between 40 and 60 until October 2021, and Jordan doing so until September (when it started decreasing to levels close to 20). Egypt has maintained levels between 40 and 60 on average for all of the periods observed.

⁵ <https://www.bsg.ox.ac.uk/research/research-projects/oxford-covid-19-government-response-tracker>. It is a composite measure based on nine response indicators, including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100=strictest). If policies vary at the subnational level, the Index shows the response level of the strictest subregion.

In contrast, Palestine has shown an Index well beyond 60, reaching levels above 80 during the summer of 2021, and then decreasing between 20 and 40 points sharply between October and November 2021. Lebanon was reporting the highest levels of stringency during the first months observed (November 2020 – March 2021), although these levels decreased between February and April (values of stringency around 65) and even further after September 2021. Tunisia maintained values between 60 and 80 points on average from December 2020 to September 2021, with these values decreasing during March and April 2021.

Figure 2: Stringency Index in target countries (November 2020 – November 2021)



Source: Authors' elaboration based on Our World in Data data taken from EMEA COVID-19 Tracker, <https://www.bsg.ox.ac.uk/research/research-projects/oxford-covid-19-government-response-tracker>

Furthermore, all of the countries extended the “state of emergency” from the beginning of the pandemic until 15 December 2021, except for Egypt.

In response to the first wave of the pandemic, all countries adopted measures to restrict movement without imposing total lockdowns, so as to avoid further deterioration of an already precarious socioeconomic context (see Section 3). The standard approach was to restrict movement through the use of local or national night-time curfews or via brief localised lockdowns, following the evolution of the epidemiological curves in municipalities, cities or regions. Algeria, Lebanon, Jordan, and Morocco have extended, eased and renewed local night-time curfews many times and, as the vaccines started to become available, in many cases, curfews and access to public spaces were limited to only non-vaccinated people⁶.

Since October 2021 in Jordan, shopping centres, banks, telecommunications companies, galleries, popular restaurants, cafes, hotels, offices of electricity distribution companies, and water companies have been obligated to prohibit the entry or stay of individuals unless their vaccination has been verified by an application called SANAD (Weldali, 2021).

⁶ GardaWorld (2021a), GardaWorld (2021b), GardaWorld (2021c), Human Rights Watch (2021b).

During the same period, Morocco has introduced a COVID-19-related vaccine pass for accessing public buildings or entering businesses, including hotels and restaurants, as well as travelling between cities, regions and provinces (Alarabiya News, 2021).

In October 2021, Tunisia announced that a COVID19- vaccine pass would be required to enter public and private spaces, such as state institutions, hospitals, and businesses, and compliance with this rule would be mandatory for both Tunisians and foreigners. Thus, proof of complete vaccination is required in order to attend any public or private gatherings, demonstrations, and other events, while in some other public places antibody tests are sufficient to gain access⁷.

Lebanon limited entry to restaurants, cafes, pubs and beaches to only those in possession of COVID19- vaccine certificates or those who have taken antibody tests (Reuters, 2021).

All countries have adopted similar policies in terms of travel restrictions, frequently changing the rules for entering the country and the eventual list of countries considered to be too risky, but in general they have adopted easier rules for vaccinated people. For example, Morocco categorises countries in “List A” or “List B” based on local disease evolution. Travellers arriving from a List A country need to show a COVID19- vaccination certificate and a negative result from a PCR test taken within 72 hours before arrival, while those coming from a List B country must obtain special authorisation before travelling and present a negative PCR test taken within 48 hours before entry. If unvaccinated or partially vaccinated, the traveller must undergo a mandatory -10day quarantine period at a government-designated facility at their own expense⁸.

In June 2021, Tunisia introduced a general provision which stipulated that people entering the country would not be required to show a negative PCR test or enter quarantine if fully vaccinated (A3M Global Monitoring, 2021).

From August 2021 in Lebanon, individuals who had been fully vaccinated for over two weeks or who possessed proof of having contracted and recovered from COVID19- no more than 90 days before travelling were exempt from the on-arrival testing requirement, but since December 2021, due to the increase in alarming variants of the virus, all travellers to Lebanon have had to obtain a health pass by registering on a platform with the Ministry of Public Health (MOPH) (Arab News, 2020)⁹.

Algeria reopened non-cargo international air travel in June 2021 after a -14month shutdown, albeit only partially (GHI, 2021), and travellers must hold a negative COVID19- PCR test taken within 36 hours before departure, a negative COVID19- antigen test upon arrival, and submit a form to authorities before departure and upon arrival in the country (Algérie Presse Service, 2021).

⁷ See <https://garda.com/crisis24/news-alerts/538786/tunisia-authorities-update-covid-19-related-measures-as-of-oct-26-update-69>

⁸ See <https://www.garda.com/crisis24/news-alerts/538731/morocco-authorities-introduce-vaccine-pass-to-access-public-buildings-and-businesses-as-of-oct-26-update-75>

⁹ See also <https://www.garda.com/crisis24/news-alerts/553961/lebanon-authorities-plan-to-impose-new-entry-measures-for-travelers-from-dec-15-to-combat-covid-19-update-61>

Egypt and the other target countries also present many differentiated rules for entering the country based on both the vaccination history and the country of provenience (KPMG, 2021)¹⁰.

The strict regulations regarding the containment of COVID19- that applied to travel continued to affect trade and tourism – which are critical sectors for many target countries – as well as migration flows (see Section 3).

Finally, it is worth mentioning that there are rising concerns surrounding the deterioration of democracy and the freedom of people due to generalised governments' states of emergency and the draconian containment measures adopted worldwide to curb the pandemic. In her article, Mérieau (2020) analysed authoritarianism and democracy in relation to COVID19-responses. She underlined how, at the very beginning of the pandemic, the strict lockdown implemented by China was highly criticised by Western countries; nevertheless, soon afterwards, European countries also started to adopt similar stringent measures limiting people's freedom under the declaration of a state of emergency. These measures have been renewed many times since the beginning of the pandemic and are still being practised in the majority of Western democratic countries. The issues surrounding individual freedom are even more concerning in certain areas, such as the South and East Mediterranean countries, where democracies are still fragile (Thomson et al., 2020). For example, at the beginning of the pandemic, countries like Jordan and Morocco suspended the printing and distribution of newspapers, claiming that it was an attempt to combat the spread of COVID19-. Pressuring press freedom occurred in most of the target countries, leading to many political protests and much social unrest hampered by the economic crisis and often accompanied by a violent military governmental response (Dunne, 2020). Besides restrictions on civil liberties (especially freedom of expression), other key challenges to democracy faced by the target countries include the management of elections, worsening gender inequality, deepening social and economic inequalities, disruption to education, the deterioration of media integrity, the disruption of parliaments, and an amplified risk of corruption, all exacerbating and accelerating the longstanding problems in the region (GSoD In Focus, 2021). Nevertheless, the pandemic has also created a favourable atmosphere in which to implement reforms, strengthen parliaments' role and capacity, and mainly put the development of public health systems and access to social safety nets high on the political agendas of many countries. For example, the African Development Bank reported that, while at the start of the pandemic the whole continent had only two testing labs with the technical capacity to test for COVID19-, namely in South Africa and Senegal, the Africa Centres for Disease Control and Prevention, working with governments, the WHO, and several development partners and public health institutes, increased that capacity to 44 countries in only six months (AfDB Group, 2020).

¹⁰ See also <https://rj.com/en/travel-updates>



VACCINE
PROCUREMENT,
ROLLOUT, AND
SOCIOECONOMIC
IMPLICATIONS



2. Vaccine procurement, rollout, and socioeconomic implications

In this section, we explore and describe the processes through which (and conditions under which) the vaccines for combatting COVID-19 have been developed and distributed to the target countries. As of the date of writing (i.e. December 29, 2021), 29 vaccines have been approved for use by at least one national regulatory authority, while nine vaccines are listed on the WHO's Emergency Use Listing (see Table 5 in Appendix B).

The vaccines for COVID-19 have been developed more quickly than any other vaccines in history. The large amount of public and private funding boosted the vaccines' rapid production. The BBC reported data from [airfinity.com](https://www.airfinity.com) which stated that governments worldwide have provided around GBP 6.58 billion and non-profit organisations around GBP 1.5 billion to finance pharmaceutical companies (BBC, 2020).

Furthermore, governments worldwide signed advance market commitments (AMC) or advance purchasing agreements (APA) before the products were fully developed, thereby de-risking companies' vaccine development¹¹. Pharmaceutical companies benefitted from other factors accelerating production timelines, mainly: 1) previous research on SARS, a coronavirus with some characteristics similar to SARS-CoV-2 (the virus responsible for COVID-19); 2) research on new platforms (technologies) for the development of a new generation of vaccines was already advanced before the eruption of the pandemic and received a significant boost thanks to the large investments coming in response to the COVID-19 crisis; and 3) the easing of approval phase procedures. Moreover, the steps for assessing the efficacy and safety of the vaccines ran in parallel (see Appendix B).

While North Mediterranean countries participated, along with the European Union, in a standard procurement scheme for buying vaccines, South and East Mediterranean countries did not coordinate their vaccine purchases, but rather participated in international and regional platforms to procure and administer vaccines (Box 1 and Box 2).

¹¹ An AMC (used by the COVAX initiative) is a financial commitment to subsidising the future purchase of a vaccine when it becomes available at a pre-agreed price and quantity. An APA (used by the European Commission and the African Vaccine Acquisition Trust, among others) is a commitment to purchasing a product (vaccine) when it is produced at a pre-agreed price and quantity. See https://www.who.int/immunization/programmes_systems/financing/analyses/Brief_17_AMC.pdf?ua=1 and <https://ihsmarkit.com/research-analysis/covid19-vaccines-apa-tracker-preorders-price.html>

Box 1: COVAX Facility in brief

Many national solidarity funds were put in place by governments in the region to finance COVID-19 containment measures and responses¹², with a special focus on financing COVID-19 vaccines where crucial public–private partnerships emerged. COVAX is an outstanding innovative scheme.

In April 2020, the WHO launched the Access to COVID-19 Tools (ACT) Accelerator – a global collaboration aimed at accelerating and guaranteeing the global and fair development of, production of, and access to, COVID-19 tests, treatments and vaccines. The initiative was launched during an event co-hosted by the Director-General of the WHO, the President of France, the President of the European Commission, and the Bill and Melinda Gates Foundation (main partners of the initiative). The ACT-Accelerator brought together governments, scientists, businesses, civil society, philanthropists, and global health organisations. The instrument collects resources under four main pillars: vaccines, therapeutics, diagnostics, and healthcare systems. Examining the latest data available from the WHO (as of October 29, 2021)¹³, the vaccines pillar is the one receiving the highest amount from public donors (USD 13.078 million) and private donors (USD 633 million). The COVAX Facility is the financial arm of the vaccines pillar, co-led by CEPI, Gavi, and the WHO. The CEPI (“Coalition for Epidemic Preparedness Innovation”) is a global partnership between public, private, philanthropic, and civil society organisations to finance the development of vaccines with which to combat emerging diseases and enhance equitable access to them. It was launched in 2017. The Gavi (“Global Vaccine Alliance”) is an international organisation created in 2000, with UNICEF, the WHO, the World Bank, and the Bill and Melinda Gates Foundation holding permanent seats on the board. It is based on a public–private partnership model that aims to pool resources in order to satisfy the demand for vaccines from the world’s poorest countries, secure long-term funding, shape vaccine markets, and accelerate access to life-saving vaccines in the countries that need them the most. The COVAX Facility acts as a platform for supporting the research, development and manufacturing of a wide range of COVID-19 vaccine candidates. COVAX negotiated the process with each pharmaceutical company producing promising vaccine candidates, and is in charge of allocating and managing the distribution to lower-income nations experiencing difficulty in accessing the vaccines. The latter objective is pursued through a specific facility funded separately from the COVAX one, i.e. the COVAX Vaccines Advance Market Commitment (AMC). The COVAX AMC is the first building block of the COVAX Facility and was launched in June 2020. It is financed mainly through official development assistance (ODA) and contributions from the private sector and philanthropy, with its aim being to ensure that vaccines are provided for a list of 92 middle- and lower-income countries (ODA-eligible countries). Furthermore, AMC-eligible countries can adopt a cost-sharing approach, allocating additional funds to gain access to more doses in collaboration with multilateral development banks. COVAX has also helped AMC-eligible countries to plan vaccine delivery via technical assistance and cold chain equipment, as well as by developing the Country Readiness Assessment Tool, providing support to countries in assessing programme readiness to introduce COVID-19 vaccines, and identifying gaps, priorities, and opportunities for financial support¹⁴.

Source: Authors’ elaboration

¹² See Ayadi and Ronco (2020)

¹³ See <https://www.who.int/publications/m/item/access-to-covid-19-tools-tracker>

¹⁴ <https://www.who.int/publications/i/item/WHO-2019-nCoV-Vaccine-introduction-RA-Tool-2020.1>

Box 2: African Vaccine Acquisition Trust (AVAT) in brief

The African Vaccine Acquisition Trust (AVAT) was established in August 2020 by the African COVID-19 Vaccine Acquisition Task Team. UNICEF is in charge of procuring and delivering COVID-19 vaccines on behalf of the AVAT to African Union Member States, as well as providing supplemental logistics and related services for countries that request them. The initiative complements COVAX. The Africa Centres for Disease Control and Prevention (Africa CDC), jointly with the African Union Development Agency (AUDA-NEPAD), established the “Africa Regulatory Taskforce”. It is a joint effort coordinated by the African Medicines Regulatory Harmonization (AMRH) Initiative¹⁵ and the WHO’s African Vaccine Regulatory Forum (AVAREF)¹⁶ to enable, and provide support for, an effective regulatory framework for COVID-19 vaccines in Africa. The African COVID-19 Vaccine Development and Access Strategy aims to immunise at least 60% of the population by means of vaccines. Furthermore, the Africa CDC created the Consortium for COVID-19 Vaccine Clinical Trials (CONCRACT) as an umbrella institution for coordinating the relevant institutions and networks on the continent to (1) facilitate the start and successful completion of clinical trials for at least six promising COVID-19 vaccine candidates, (2) strengthen enablers of high-quality vaccine clinical trials on the continent, (3) support the development of vaccine clinical trial sites/cohorts across all African subregions, (4) accelerate post-trial regulatory approval, rollout, and uptake of safe and efficacious vaccines, and (5) foster Africa-based vaccine manufacturing capacity. Under the African COVID-19 Vaccine Development and Access Strategy, the Africa Vaccine Acquisition Task Team (AVATT) enabled faster (AU and Africa CDC News, 2021), more transparent, and more cost-effective access to COVID-19 supplies for the 55 African Union Member States. Moreover, vaccines can be pre-ordered by African Union Member States through the African Medical Supplies Platform (AMSP). The AMSP is an online platform launched by the African Union as an immediate response to COVID-19. The platform is an outstanding model of public–private partnership for the public good. It was developed under the leadership of the African Union Special Envoy, Strive Masiyiwa, and powered by Janngo (African Social Start-up Studio)¹⁷ on behalf of the African Union’s Africa Centres for Disease Control and Prevention (Africa CDC) and in partnership with the African Export-Import Bank (Afreximbank) and the United Nations Economic Commission for Africa (ECA) with the support of leading African and international institutions, foundations and corporations, as well as the governments of China, Canada, and France.

Source: Authors’ elaboration

¹⁵ The initiative was established in 2009 to enable collaboration between the national regulatory authorities making decisions on medical products, favouring a more collaborative and regional approach.

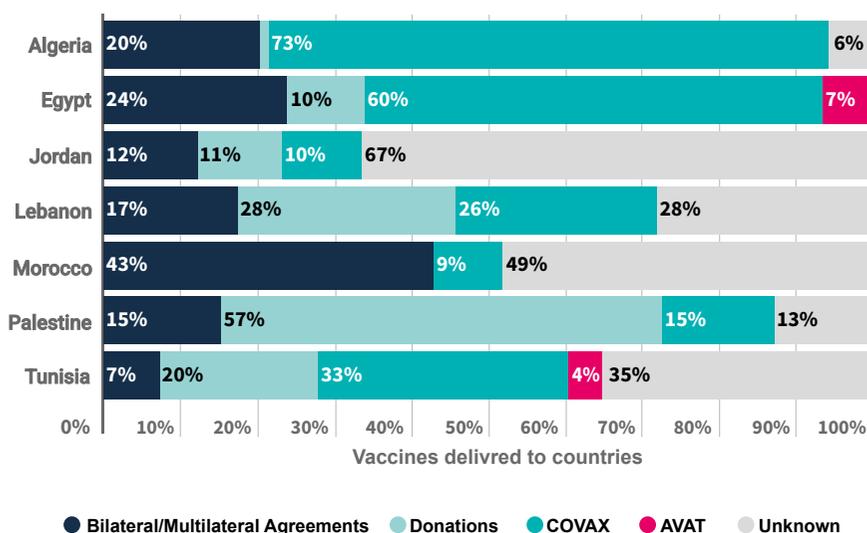
¹⁶ The African Vaccine Regulatory Forum (AVAREF) is an informal capacity-building platform created by the WHO in 2006. It aims at improving the regulatory oversight of interventional clinical trials conducted in Africa, promoting human resource capacity, best practices, common technical requirements, and the efficiency and transparency of regulatory processes.

¹⁷ <https://www.janngo.com/>

2.1 Vaccine procurement and rollout

Unlike the European Union, the target region was unable to put in place an efficient regional system of procurement, and all of the countries pursued their own strategy with little to no coordination. While only a few countries presented a small percentage of vaccines procured through the African Vaccine Acquisition Trust (AVAT), most of the countries relied on donations and COVAX to provide the population with vaccines (see Box 1). As COVAX vaccines were received later than expected (UNICEF Press Releases, 2021), the region diversified its access to vaccines via bilateral/multilateral agreements with different pharmaceutical companies; notably, Morocco provided 43% of its delivered vaccines through this channel (see Figure 3).

Figure 3: Vaccines delivered per type of supply mechanism



Source: Authors' elaboration on data retrieved from <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard> (consulted on January 10, 2021). 'Unknown' represents the residual derived from the difference between the total doses administered for Our World in Data (plus wastage) and the total reported deliveries for the country.

Although almost all target countries started the vaccination campaign during the same period, they reached different levels of vaccination rates. In all target countries, except for Palestine, a vaccination campaign was launched in January 2021, prioritising healthcare workers and starting with Russian and Chinese vaccines, received both via donations and imports.

In Algeria, the scientific committee monitoring the pandemic declared the readiness of the country to start vaccination, from a logistical point of view, in early January 2021 (Algérie Presse Service, 2021b). The first vaccines received came from Russia, with 50,000 doses of Sputnik V arriving on January 29, 2021 (Klouche-Djedid et al., 2021). As in many other

countries worldwide, Algeria also prioritised healthcare workers, vulnerable people, and police officers, and the government covered the cost of the vaccination programme.

Egypt also started by vaccinating frontline medical staff with Sinopharm's vaccines, which were free of charge for all citizens, prioritising the most vulnerable (Reuters, 2021; Africa News, 2021).

Jordan started its vaccination campaign with the Chinese Sinopharm vaccine and the American and German Pfizer-BioNTech (Al-Junaidi, 2021), guaranteeing vaccines for all of the population that were free of charge, and again prioritising the most vulnerable and the most exposed categories (UNHCR, 2021). Moreover, in February 2021, Jordan opened the first vaccination centre in the world based in a refugee camp¹⁸.

Morocco also started by prioritising healthcare workers, public authorities, and people in the national educational system¹⁹. During the third week of January 2021, the country received the first doses of the British AstraZeneca vaccine from the Indian Serum Institute and Sinopharm from China (Ministère de la Santé du Maroc, 2021).

Similarly, Tunisia commenced its vaccination campaign in January 2021 when the Tunisian authorities approved the Sputnik V vaccine under the emergency authorisation procedure. (It was the third African country to register the Russian vaccine at the time.)

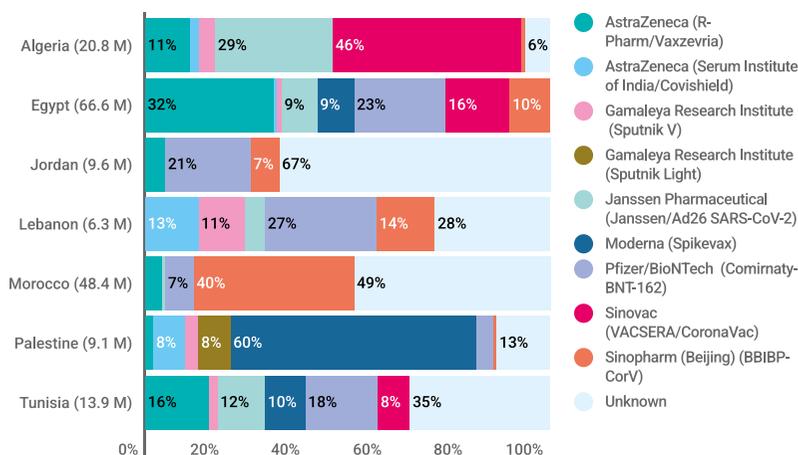
Palestine, on the other hand, launched its vaccination campaign later, in February 2021, when it received some Moderna vaccines from Israel, some Sputnik V vaccines from Russia, and some other vaccines from COVAX (which arrived later in March 2021) (Reuters, 2021)²⁰.

¹⁸ See <https://www.france24.com/en/live-news/20210215-jordan-starts-world-first-covid-vaccinations-in-refugee-camp>

¹⁹ See also <https://www.liqahcorona.ma/fr/operationdevaccination>

²⁰ See also <https://blogs.bmj.com/bmj/2021/04/01/palestine-is-bearing-the-brunt-of-vaccination-inequalities/> and <https://www.france24.com/en/middle-east/20210321-palestinians-expand-vaccine-campaign-after-receiving-covax-doses-from-un>

Figure 4: Total million doses delivered to countries per vaccine type



Source: Authors' elaboration on data retrieved from <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard> (consulted on January 10, 2021). Parentheses near countries' names report the total million doses received by the governments. Bars report the percentage of the total doses received per type of vaccine. 'Unknown' represents the residual derived by the difference between the total doses administered for Our World in Data (plus wastage) and the total reported deliveries for the country.

Figure 4 illustrates that all target countries present different vaccine portfolios. Algeria's vaccine portfolio is composed mainly of the Sinovac and Janssen vaccines. In Palestine, most of the vaccines received come from Moderna. Morocco largely relies on vaccines from Sinopharm, while Egypt, Jordan, Lebanon, and Tunisia present a more diversified portfolio. The different compositions of the vaccine portfolios among the target countries partially reflect the diversity in supply mechanisms adopted and other international relations patterns (i.e. Palestine has received many vaccines from Israel, while in Morocco, vaccines have been mainly delivered from China).

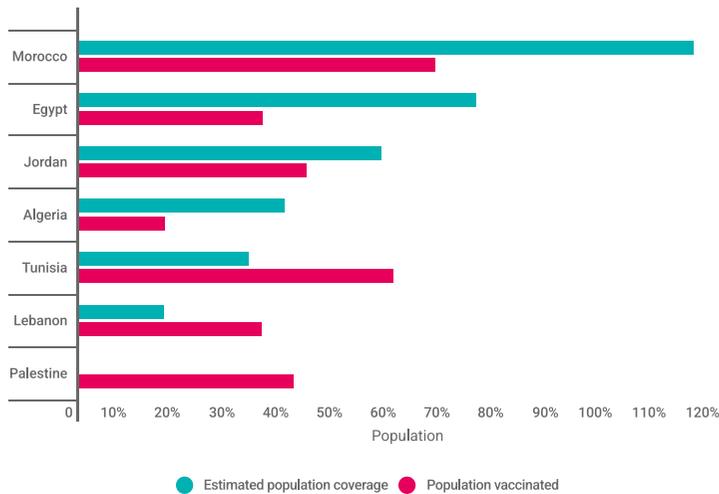
As mentioned previously, the diversity in vaccine availability between countries is driven by the absence of a standard procurement scheme in the region. Among the many disadvantages that the latter could bring in terms of prices and logistical aspects, it could also hamper regional integration when a neighbour does not recognise some vaccines administered in another country. Nevertheless, as will be discussed later, most countries recognise vaccination certificates if the vaccines are on the 'WHO Emergency Use Listing' (see Table 5 in Appendix B).

After several months of the vaccination campaigns, the target countries reached different vaccination levels, almost all of which were far behind those of European countries (e.g. France counted 179.17 doses per 100 people as of December 24). At the time of writing (i.e. December 29, 2021), Algeria was the target country with the lowest number of administered doses per 100 people (28.12), followed by Egypt (50.66), Palestine (59.76), Lebanon (63.04), Jordan (79.58) and Tunisia (97.58). Lastly, Morocco was the highest-performing target country with 131.60 administered doses per 100 people²¹.

²¹ All of the data on vaccines was collected from Our World in Data (as of December 29, 2021, last available data).

Figure 5 shows that most target countries have not procured enough vaccines to cover 100% of the population, except for Morocco. The exact figure also reports the percentage of people who have received at least one dose of a vaccine. In some cases (i.e. Lebanon and Tunisia), the latter is higher than the former, possibly driven by the fact that the estimated population coverage accounts only for the doses that countries have procured via bilateral or multilateral agreements, without taking into account donations, platforms such as COVAX delivery, and other initiatives which play a crucial role in some of the target countries. Although Figure 5 shows an alarming picture in which most countries have not been able to procure enough vaccine doses almost one year on from the start of the vaccination campaign. On the other hand, data concerning the estimated population coverage from publicly announced bilateral and multilateral government vaccine supply agreements in April 2020 shows that most of the high-income countries had already reached the agreed level of more than 300% at that time (Switzerland and Canada exceed 500%); meanwhile, almost all of the African countries were well below 100%²². The unequal distribution of vaccines is undoubtedly hindering the global recovery and exacerbating socioeconomic problems, mainly in vulnerable countries.

Figure 5: Estimated population coverage and actual percentage of the population with at least one dose of vaccine in target countries



Source: UNICEF COVID-19 Vaccine Market Dashboard and Our World in Data (consulted on January 4, 2022). Estimated population coverage represents the estimated percentage of the population covered by at least one dose of a vaccine as declared by publicly announced bilateral and multilateral vaccine supply agreements (excluding COVAX and donations), not available for Palestine. Population vaccinated reports the actual percentage of people who have received at least one dose of a vaccine.

²² See the UNICEF COVID-19 Vaccine Market Dashboard at <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard> (consulted on April 13, 2021).

2.2 Sources of vaccine inequity and related socioeconomic factors

The COVID-19 vaccine inequity undermines the global recovery from the pandemic and puts a strain on the most vulnerable countries²³. The COVAX multilateral platform (see Box 1) was put in place to gather and distribute vaccines with the goal of guaranteeing vaccine accessibility in all countries throughout the world, including the most vulnerable ones. The target countries have participated in the platform (see Table 2). Nevertheless, despite the outstanding efforts in coordinating a fair, global distribution, COVAX was slow in starting the distribution of vaccines, which began with the first-trimester plan published only on February 23, 2021²⁴, and ended up not being sufficient to guarantee fair access to vaccines for all. Several causes drove the unequal vaccination rate around the world, particularly in the South Mediterranean region.

2.2.1 Unequal fiscal space among countries

One of the significant challenges is that countries in the region present an insufficient fiscal space to purchase the required vaccines. Finding financial resources for the procurement and rollout of vaccines has been challenging due to the already meagre fiscal space being worsened by the economic slowdown associated with almost one year of the pandemic (see Ayadi et al., 2020b). This can be considered one of the main obstacles standing in the way of a faster vaccination rollout. The International Monetary Fund (IMF) divided MENA countries into early, slow and late inoculators. For the first group, wherein vaccination started earlier and with more capacity, only Morocco qualified. Meanwhile, Algeria, Egypt, Jordan, Lebanon, Tunisia, and Palestine (West Bank and Gaza) are part of the second group, in which vaccination started with limited coverage due to little advance purchase agreements and a lack of financing, and these countries are not expected to vaccinate a significant proportion of their population until mid2022- (IMF, 2021). All of the African countries needed to swiftly re-prioritise their budgetary spending to allocate enough resources for vaccines in the medium to long term²⁵. Countries such as South Africa (not in the target region) have announced the possibility of increasing taxes for the richest to fund their vaccination plans²⁶.

Other countries have negotiated with pharmaceutical companies for cheaper and earlier access to their vaccines via holding clinical trials or for the production of the vaccines (e.g. Morocco, Egypt, Kenya, and South Africa)²⁷. As highlighted by Ayadi and Ronco (2020), public–private partnerships and international cooperation have played a crucial role in the region, helping governments to face and share the costs of the pandemic. This is also true for vaccination campaign management. For example, in Tunisia, the estimated cost of the COVID-19 vaccination campaign is KWD 307 million (USD 109 million) – an estimation that

²³ <https://data.undp.org/vaccine-equity/>

²⁴ We have used the manufacturer's name for the vaccine, as is often preferred to vaccines' complex characters. The complete list of vaccines within the WHO EUL/PQ evaluation process is available here: <https://www.gavi.org/sites/default/files/covid/covax/COVAX-First-round-allocation-of-AZ-and-SII.pdf>

²⁵ See <https://www.cabri-sbo.org/en/blog/2021/covid-19-vaccine-financing-and-purchasing-in-africa-wherefrom-the-money>

²⁶ See note 41.

²⁷ Ibid.

includes the purchase of vaccines and the strengthening of the cold chain, as well as part of the information system integration and communication, without accounting for the salaries of the vaccination teams and the use of the vaccination sites (Portal National de la Santé en Tunisie, 2021). To cover this estimated cost, Tunisia called on the support of various development partners to mobilise the necessary funds (national budgets or exceptional funding, and the COVID funds) (idem). Nhaili (2021) reported that (as of July 2021) the vaccination campaign has cost Morocco approximately AED 2 billion, not taking into account all of the costs associated with the delivery and administration of the vaccines to the population (air freight, refrigeration, land transport, conservation equipment, etc.), and said cost is primarily borne by the Covid Fund, which was created upon royal instruction and financed by several public and private contributors (Nhaili, 2021).

Meanwhile, the effectiveness of the vaccines seems to reduce over time, and many countries have already started the rollout of a third dose without knowing how many more doses might be needed in the future. This has increased the uncertainty in citizens' perceptions and in governments' plans. If the vaccines are still required in the medium to long run, many countries in the region might not be able to provide citizens with the necessary vaccines free of charge. On the other hand, since the allocation of vaccines is undertaken under market forces and most of the leading vaccine manufacturers are in Western countries, the wealthiest nations are able to access more vaccines faster. Furthermore, many internationalists started raising concerns surrounding the so-called "vaccine diplomacy" used by some international actors (e.g. China, Russia, Europe, and Turkey) procuring vaccines for the region as a tool for extending their influence (Woertz and Yellinek, 2021). In the case where countries in the region remain dependent on third-party countries to help them obtain the doses needed to protect their citizens, vaccine diplomacy could largely influence the region and the global governance landscape.

2.2.2 Lack of transparency on prices

Other factors triggering the unequal distribution of vaccines include the inequality in vaccine prices, which has mainly been driven by the lack of transparency in the conditions agreed under the bilateral and multilateral agreements with pharmaceutical companies. This is mainly due to the pharmaceutical industry's freedom in setting prices, combined with the lack of governments' and international organisations' capacity to regulate those prices (or the lack of willingness – see Appendix C on the patent waiver issue). Two main channels through which price volatility leads to unequal distribution are observed:

- 1- Prices affect the capacity of low-middle-income countries to buy vaccines;
- 2- Profit-seeking pharmaceutical companies are incentivised to sell more vaccines to countries willing to pay higher prices.

As for the first channel, it is worth considering that the current estimated cost of vaccines is (on average) around USD 15.80. Vaccinating at least 70% of a population would lead to an increase in healthcare cost of more than 50% in low-income countries, while the same figure in high-income countries is merely 0.8% (forecast by the University of Oxford, 2021). Indeed, the capacity to purchase vaccines is strongly unequal among countries.

Additionally, the high prevalence of infectious diseases, the increase in companies' initiatives to enhance vaccine research and development, and the significant governmental sup-

port for vaccine development drive the projections regarding global vaccine production to significantly increase.

As for the second channel, since pharmaceutical companies aim to reach the best price in each market, one can observe high price volatility with regard to vaccines. UNICEF reported that the price range of vaccines per dose is between USD 2 and USD 37 (UNICEF Vaccine Market Dashboard, 2021). In the case of Tunisia, UNICEF reported that the country purchased the Comirnaty vaccine produced by Pfizer BioNTech for USD 7 per dose (idem). The same source disclosed that South Africa bought the Comirnaty vaccine for USD 10 per dose, while the European Commission purchased it for prices ranging from USD 14.70 to USD 23.25 per dose²⁸.

Therefore, as of the end of December 2021, low- and middle-income countries were still lagging behind in vaccination because the majority of pharmaceutical companies and partnerships tended to prioritise high-income countries, to which they could apply higher prices (Malpani and Maitland 2021). Malpani and Maitland (2021) reported that Johnson & Johnson delivered 50.5% of its vaccines to high-income countries, while Pfizer/BioNTech delivered 74.4% and Moderna 83.3% respectively. This trend is driven by the purchasing capacity of high-income countries, as well as by the lack of capacity of some low-income countries to manage sophisticated ultra-cold chains for those kinds of vaccines. Indeed, Oxford/AstraZeneca delivered most of its doses to lower-middle-income countries (data from Airfinity as of October 2021 in Malpani and Maitland, 2021). This could be partially driven by the fact that the Oxford/AstraZeneca vaccine requires a less complicated cold chain to be stored and distributed, as well as by the fact that, in contrast with other multinational pharmaceutical companies such as Pfizer/BioNTech and Moderna, AstraZeneca licensed the Serum Institute of India to manufacture its vaccines, increasing the distribution in India and other middle-income countries in the region and beyond, as well as via COVAX.

2.2.3 Manufacturing and technology transfer

Another main driver of unequal access to vaccines is the lack of vaccine manufacturing in low-middle-income countries. As of the date of writing, there have been 33 vaccines approved by at least one national authority globally, all developed by only a few countries. China alone has developed nine of the authorised vaccines. India, Russia, and the US have developed five vaccines, Cuba and Iran three vaccines, and Australia, Germany, Kazakhstan, Taiwan, Turkey, and the UK one vaccine. Nevertheless, not all of the vaccines are part of the WHO's Emergency Use Listing (WHO EUL) (see Appendix B).

Most of the target countries do not have any developer or manufacturer of the vaccines, but some of the target countries started domestic manufacturing of vaccines through the technology transfer agreement (see below). This could bring advantages in terms of both self-sufficiency and additional resources from exports.

The Sothema manufacturer in Morocco started producing the BBIBP-CorV vaccine developed by the Chinese Sinopharm (Beijing) thanks to a technology transfer agreement (production type: fill-finish)²⁹. Soma aimed to create approximately five million doses per month (the agreement between the Chinese and Moroccan companies was possible thanks to a public-

²⁸ UNICEF COVID-19 Vaccine Market Dashboard: <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard> (consulted on December 25, 2021).

²⁹ Ibid.

private partnership worth USD 500 million) (The Arab Weekly, 2021). Egyptian manufacturer VACSERA started producing CoronaVac – a vaccine developed by the Chinese Sinovac through a technology transfer and with a fill-finish/end-to-end production type³⁰. The Egyptian Health Ministry affirmed that the country's production could reach 80 million doses annually (Reuters, 2021). Furthermore, at the end of September 2021, Algeria started manufacturing the Chinese Sinovac. The partnership between the Chinese Sinovac Biotech and the Algerian Saidal aims to produce six million doses per year (CGTN, 2021). In spite of this, there is substantial discussion surrounding whether patent waivers could expedite more equitable vaccine distribution by allowing developing countries to manufacture COVID-19 vaccines domestically, but many Western countries have been against the patent waiver proposal (see Appendix C).

2.2.3 Logistics

The region has also presented logistics-related hurdles that impact the different vaccination rates. Beyond the availability of vaccine doses, one key challenge faced by all of the countries, particularly the less developed ones, concerns the logistics beyond the administration of doses, in terms of both distribution and storage. Indeed, COVID-19 vaccines require different storage conditions: BioNTech/Pfizer requires an ultra-cold chain (°60-C to °80-C); Sinovac, Janssen (J&J), and Oxford/AstraZeneca call for refrigeration at between °2C and °8C; and Sputnik V and Moderna refrigeration is between °2C and °8C; all can be frozen at a temperature between °15-C and °25-C³¹. COVAX has also helped AMC-eligible countries (see Box 1) to plan vaccine delivery readiness via technical assistance and cold chain equipment to enhance the Country's Readiness Assessment Tool. In November 2020, the World Bank, the WHO, UNICEF, the Global Fund, and the Gavi rolled out readiness assessments in more than 100 low- and middle-income countries (under the COVAX initiative). In February 2021, results from 128 countries showed that more than %80 had completed the national deployment vaccination plan and had a national coordination body (World Bank, 2020b). Still, only %50 had accessed cold chain capacity, less than %30 had developed a social engagement strategy, and around %30 had completed the training for the vaccine deployment process³².

Logistical difficulties are also related to the processes of approving or importing vaccines. In Africa, the Africa Centre for Disease Control and Prevention (Africa CDC) guided Emergency Expedited Regulatory Authorisation and Access to COVID-19-, calling on African states to speed up these processes to authorise vaccines' imports and distribution, underlining the importance of using vaccines in large-scale rollouts that have been approved through an established multi-stakeholder process (i.e. being authorised by an SRA³³ or the WHO EUL

³⁰ Ibid.

³¹ Pfizer/BioNTech and Moderna are RNA vaccines. Sputnik V, Janssen, and AstraZeneca are non-replicating viral vectors. Sinovac is an inactivated vaccine. Source: https://vac-ishtm.shinyapps.io/ncov_vaccine_landscape/ (consulted on March 17, 2021). For further information on the different types of vaccines see <https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained>.

³² <https://documents1.worldbank.org/curated/en/467291615997445437/pdf/Assessing-Country-Readiness-for-COVID-19-Vaccines-First-Insights-from-the-Assessment-Rollout.pdf>

³³ Stringent regulatory authorities (SRAs) are national drug regulatory authorities who are members, observers or associates of the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) that are considered (as per the Global Fund Quality Assurance Policy for Pharmaceutical Products from July 1, 2009). See <https://www.who.int/medicines/regulation/sras/en/>.

or PQ listing process)³⁴. The African Regulatory Task Force developed a framework for the market authorisation of COVID-19 vaccines to guide Member States. In Africa, however, a set of barriers related to the in-country evaluation of vaccines by each National Regulation Authority (NRA) persist. These barriers often delay the national approval of a vaccine already listed by the WHO³⁵. Therefore, the logistics are much more complex in these countries and quite costly. Moreover, the region's large urban–rural gap in terms of digitalisation and infrastructure exacerbates the logistical difficulties, particularly in remote areas. Thus, even those target countries that seem to be well equipped present a high rural–urban divide, which makes it complicated to reach everybody.

2.2.4 Sociocultural factors

In several of the target countries, factors other than technical capacity seem to significantly hinder vaccination. Reluctance and scepticism towards vaccines in the region seem to be triggered by the lack of trust in governments, fear of the potential side-effects, and the speed at which COVID-19 vaccines were developed, as well as misinformation and the spreading of conspiracy theories³⁶. The Arab Barometer reported that, in Algeria, Jordan, and Tunisia, more than 50% of the population are unlikely to receive a vaccine (53%, 51%, and 63%, respectively). In comparison, the percentage is lower in Lebanon (30%) and the lowest in Morocco (12%) (Arab Barometer, 2021). Moreover, the Institute for Strategic Dialogue reported that conspiracy theories on COVID-19 and the subsequent development and rollout of COVID-19 vaccines are widespread throughout Arabic-language Facebook pages and groups, connected both to the dominant COVID-19 vaccine misinformation narratives coming from Western countries and also to the region-specific history tied to the Middle East and North Africa's geopolitics and religion³⁷. The willingness to receive a vaccine could also depend on the level of trust in the government and in the healthcare system. According to Arab Barometer Wave 5 data (Arab Barometer, 2021b), trust in governments varies from 66% in Egypt to 38% in Jordan, 33% in Palestine, 29% in Morocco, 20% in Tunisia, and 19% in Lebanon. Examining this data on trust shows that, the higher the freedom to criticise the government, the lower the number of people who trust the government, triggering data on confidence for countries in which these figures are the lowest (i.e. Lebanon and Tunisia) (idem).

At the same time, according to Arab Barometer Wave 6 data, although few Tunisians have confidence in the government, there is much higher trust in the government's reporting on COVID-19 (i.e. official statistics from the government on the infection and death rates relative to the pandemic) (Afrobarometer, 2021b); nonetheless, trust in the healthcare system has fallen in Tunisia over the course of the pandemic (ibid.). In Lebanon, only 16% positively rated the government's performance in managing COVID-19, and roughly half of the Lebanese stated that they wanted to emigrate primarily due to the perceived high governmental corruption (Arab Barometer, 2021c). The Moroccan government has been among the most effective in the region when it comes to tackling the COVID-19 pandemic, mainly because of its capacity to secure a large stock of vaccines before many other target countries (Arab Barometer,

³⁴ See <https://africacdc.org/download/guidance-on-emergency-expedited-regulatory-authorisation-and-access-to-covid-19-vaccines-in-africa/>.

³⁵ The guidance on Emergency Expedited Regulatory Authorisation and Access to COVID-19 in Africa reports that in some cases, NRAs authorised vaccines up to nine years after the submission of an assessment. Ibid.

³⁶ <https://www.dw.com/en/middle-east-covid-vaccine-rollout-hesitancy/a-57227395>

³⁷ https://www.isdglobal.org/digital_dispatches/covid-19-vaccine-misinformation-monitor-mena-jan-1-feb-28-2021/

2021d). Thus, it comes as no surprise that, according to Afrobarometer Wave 6, the vast majority (86%) of Moroccans are satisfied with their country's response to COVID-19, and Moroccan citizens are the most likely to receive a vaccine if available among all other seven MENA countries participating in the survey, thus suggesting that trust in governments plays a crucial role in vaccination rates.

Finally, it is worth highlighting that those vaccines, as a pillar of governments' response to COVID-19, are crucial when it comes to accessing public spaces and transport in all of the target countries. This means that vaccine inequality could translate into an accelerator of the overall inequality and poverty in the region and an exacerbation of the lack of mobility. Since the vaccines are critical for travelling and trade, unequal vaccine access negatively affects economic recovery, particularly in countries basing their economy on trade and tourism. In a previous section we explored the restrictions that countries are applying, noting that almost all started differentiating between people who are vaccinated and people who are not. On the other hand, people from different countries have access to different types of vaccines that other countries might not recognise, thus affecting people's movement.

Nevertheless, in most cases, national authorities consider people to be fully vaccinated against COVID-19 two weeks after receiving their second dose of any vaccine approved for emergency use by the WHO (see Appendix B). Furthermore, some countries underwent bilateral agreements for easing the reciprocal recognition of vaccine certificates. This is the case with the European Union and some of the target countries (i.e. Lebanon, Morocco, and Tunisia), allowing them to enter the European Union with the EU Digital COVID Certificate (recognised as the one provided inside of the Union)³⁸. Nevertheless, there is a lack of clarity and too frequent changes in the norms regulating travel among countries. The complex monitoring of the evolution of standards creates a high level of uncertainty that negatively affects tourism and people's mobility.

³⁸ https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/safe-covid-19-vaccines-europeans/eu-digital-covid-certificate_en#what-is-the-eu-digital-covid-certificate



SOCIOECONOMIC CONSEQUENCES OF COVID-19

3. Socioeconomic consequences of COVID-19

COVID-19 caught those target countries insufficiently prepared, both economically and socially. It has exerted a great deal of pressure on the healthcare systems, as discussed in detail in Ayadi and Ronco (2020), although the level of preparedness of the healthcare systems varies from one country to another; overall, the region suffers from a low level of preparedness, similarly to many other countries around the globe³⁹.

Governments responded to the pandemic by putting in place a number of measures and regulatory responses. These include stringency measures, COVID-19 relief funds, cash programmes, the expansion of existing social assistance programmes, and suspension of the payment of social security contributions. These measures are extensively presented in the previous study conducted by Ayadi and Ronco (2020). Gentilini et al. (2020) examined all measures associated with social protection and the labour market. The levels of the adopted stringency measures also varied from one country to another, with different levels of influence on economic activity. For instance, Figure 2 shows that Egypt has adopted less strict measures on average since the beginning of the pandemic, which could potentially contribute to relatively low levels of losses in terms of output and employment. In the extreme, Lebanon, facing multiple shocks, left very little to no room for the government to respond to the pandemic, thus experiencing a loss of output, employment, and a near collapse of economic activity and the healthcare system (see Ayadi and Challita, 2020).

The pandemic called on the depth of governments' pockets, i.e. their fiscal space and their capacity to receive international support, to withstand such costly external shocks. Most of the target countries present high debt levels⁴⁰ and little room for manoeuvre due to very small or no fiscal space, with the exception of countries such as Algeria, which have financial buffers from exporting oil and gas. In general, a relatively weaker economic capacity is hampered by various socioeconomic challenges exposing the countries to higher vulnerability, which can lead to fragility and, in the extreme case, failure (Ayadi et al., 2020b). Some of the main socioeconomic challenges faced by these countries include high levels of poverty and inequality, low levels of social protection coverage and safety nets, and high levels of informality (with the percentage of informal workers reaching as high as 67% in Egypt in 2020) (ILO statistics, see Figure 21 in Appendix D), inactivity and unemployment, together with a great reliance on food and energy imports (which could place a critical burden on countries' food and energy security). The policy decision to lock down the economy to combat a deadly pandemic without providing a systematic safety net is not a straightforward decision in countries suffering from persistent socioeconomic challenges.

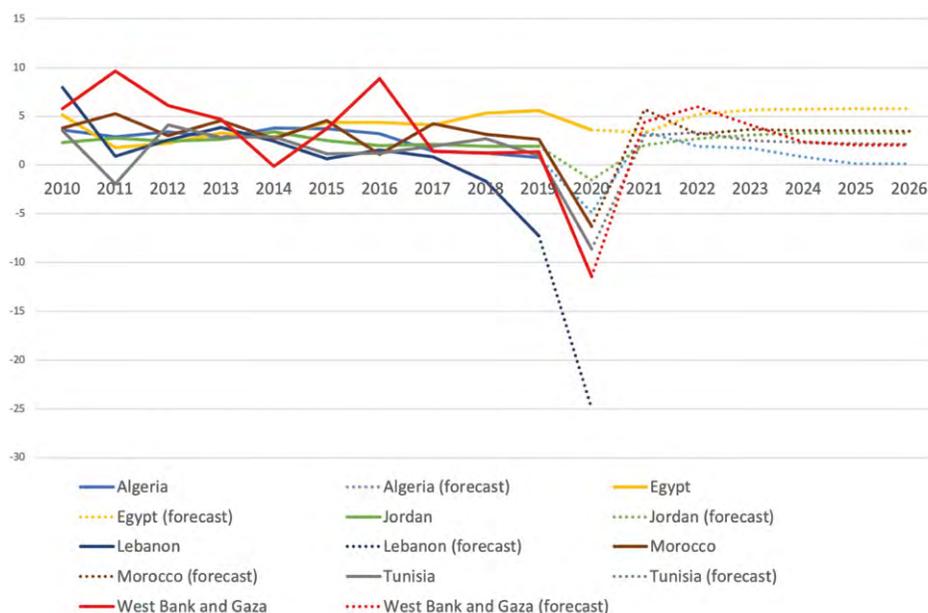
Examining the evidence in 2020–2021, the impact of the pandemic was devastating at macroeconomic, microeconomic and sectoral levels. From a sectoral point of view, tourism, leisure, and the cultural and creative industries were hit the hardest. It is important to note that the impact of the health crisis goes beyond hampering economic activity, with some studies providing evidence of rising inequalities, increases in violence (as well as domestic violence within households), and impacts on other social and health aspects. This section provides an overview of the impact of the pandemic through all of these different lenses.

3.1 Impacts on growth, employment and GVC

During 2020, as a result of the pandemic, the economic output declined in both developed and developing economies. Thus, major disruptions to domestic demand and supply, trade, and finance occurred.

In the euro area, economic output decreased by 9.1%, in MENA by 5.8%, and in Sub-Saharan Africa by 5.3% (Carracciolo et al., 2020; Ayadi et al., 2020). Although by mid-2020 and 2021 countries exhibited better trends than expected in the majority of the principal economic indicators, the socioeconomic landscape remained under stress (IMF, 2021). After a year of negative real growth rates of GDP per capita, in 2021 the IMF predicted positive numbers for all of the target countries (no data is available for Lebanon). The country showing the highest figure is Morocco (5.7%), followed by Palestine (4.4%), Algeria (3.4%), Egypt (3.3%), Tunisia (3%), and Jordan (2%), under certain assumptions⁴¹ (see Figure 6).

Figure 6: GDP growth rate (annual constant prices)



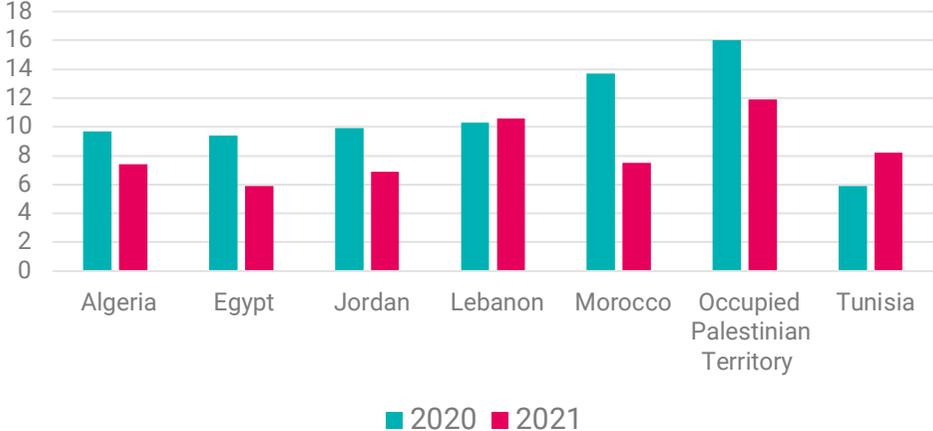
Source: *The World Economic Outlook (WEO) database (October 2021 edition)*

This global economic downturn is associated with economic output and job losses and an increase in unemployment rates. In particular, youth are highly affected in the target region, having already experienced high unemployment rates prior to the pandemic and being among

⁴¹ IMF World Economic Outlook dataset (October 2021 edition): <https://www.imf.org/en/Publications/WEO/weo-database/2021/October>

the most vulnerable⁴². According to ILO estimations, on average in the region, 10% of working hours were lost in 2020, while this figure was 8.3% in 2021, indicating a slow recovery. However, this is not the case in Lebanon and Tunisia, as they experienced multiple crises and were subject to even higher losses in working hours in 2021 (see Figure 7).

Figure 7: Working hours lost due to the COVID-19 crisis – ILO modelled estimates (in percentage)



Source: ILOSTAT (last update on 26 December 2021)

The pandemic has also put under the spotlight the fragility of global supply chains, as production has been seriously disrupted in a number of sectors. (For instance, the semiconductor chip shortage, which has affected the automobile industry since the beginning of the pandemic, is a well-known example of the highlighted fragility in the global value chain.) In the region, one can note a sharp decline in both import and export levels (Figures 23 and 24 respectively in Appendix D). These disturbances within the global supply chain have affected, in particular, the textile industry in Egypt (Gherzi Egypt, 2020) and the automobile industry in Morocco (Labrar et al., 2021). Meanwhile, according to IMF forecasts, the levels of imports and exports were expected to experience a slow recovery from 2021 onwards. In the case of Egypt, the recovery happened quickly (according to CAPMAS), with total exports increasing by 36.6% in September 2021 and reaching USD 3.45 billion (in comparison to USD 2.53 billion in 2020).

During the pandemic, there has been a rising number of debates focusing on the ways in which to move from the existing system towards robust global supply chains. These new and more resilient supply chain models could contribute to the fight against climate change, economic fragility, and inequality⁴³.

Another macroeconomic trend associated with the pandemic is the increase in inflation rates worldwide. As for the region, the inflation rates, on average, dropped in 2020 and were

⁴² The Middle East and North Africa have long suffered from very high youth unemployment rates, especially among the young educated (Assaad and Krafft 2016). Data on unemployment rates is reported in Appendix D.

⁴³ See Xu et al. (2020) and Van Hoek and Dobrzykowski (2021), among others.

predicted to rise to higher levels than prior to the pandemic in 2021⁴⁴. This increase in inflation rates is, to some extent, due to an increase in global food prices, overall shortages in supply, and the quicker-than-anticipated recovery of global demand. The Food and Agriculture Organization (FAO) developed the Food Price Index (FFPI), which is a measure of the monthly change in international prices of a basket of food commodities. This Index has been constantly rising since 2020 and 2021⁴⁵, with a direct impact on exacerbating poverty and inequality in the region. Ramadan (2021) studied the determinants of food security in the region and showed lower food security in rural areas, among women, and among workers within the agricultural sector, as they are within the most vulnerable groups of people suffering worst from COVID-19 consequences.

Box 3: Lebanon case: a multiple-crisis situation

Lebanon has been undergoing the worst economic crisis in its history (ranked among the top three most severe crisis episodes globally by the World Bank since the mid-nineteenth century) (Al Saeed and ElKhalil, 2021). The country has been suffering from a compound of crises that were worsened by the COVID19- pandemic (Ayadi and Challita, 2020). These crises are economic (a decrease in the real GDP per capita of %37.1), monetary and currency-related (1,500 LBP in exchange for 1 USD in 2019 versus 30,000 LBP in exchange for 1 USD in January 2022). The currency crisis has led to hyperinflation, rises in poverty and inequality, massive brain drains, and political instability. These crises have affected many facets of day-to-day life, including regular shortages in fuel, numerous electricity cuts, Internet cuts, and so on. The COVID19- pandemic has put additional pressure on the lives of the Lebanese people in the context of shortages of medication, a collapse of the healthcare system, and the migration of qualified doctors and nurses. The Beirut blast on August 2020 ,4 added to the crises by destroying a large part of the capital and three of the major hospitals. On the public side, one can notice a lack of willingness and/or power to tackle this complex situation, and the government has lacked a strategy or plan with which to overcome the crises up to this moment, thus contributing to high levels of uncertainty. The complex negotiations with the IMF for Extended Facility Funds remain ongoing (as of the time of writing this study). The Central Bank's policy was expected to remove subsidies on all products which were worsening the economic conditions, increasing the income inequalities, and reinforcing the hardships of the vulnerable population. The international community and organisations provided targeted aid and exerted pressure on the Lebanese political class for credible actions and higher transparency.

Source: Authors' elaboration

⁴⁴ The inflation rate, representing "annual percentages of average consumer prices", was (on average) 2.2% in 2019, compared to 1.6% in 2020, and was forecast to be 3.3% in 2021 and 3.7% in 2022 (Lebanon and Egypt were not taken into account in these averages, as Lebanon is undergoing a major currency crisis and Egypt underwent major macroeconomic reforms in 2019). Inflation rates for all countries are reported in Figure 22 of Appendix D.

⁴⁵ <https://www.fao.org/worldfoodsituation/foodpricesindex/en/>

Box 4: Egypt case: macroeconomic reforms prior to the COVID-19 pandemic

Egypt's economy has performed fairly well during the COVID19- pandemic, being the only country in the region with a positive GDP growth rate in 2020. This growth was mainly driven by an increase in private consumption and investment (Decode, 2021).

The stringency measures applied have been less strict than in other countries. The country has been particularly reluctant when it comes to applying lockdowns over long periods of time; thus, the economic cost of the COVID19- pandemic has seemed to be lower.

Total exports and imports increased by %36 and %4.2 in 2021 in comparison to 2020, respectively. According to the Suez Canal Authority, Suez Canal revenues increased by %12.8 during 2021 to reach an all-time record of USD 6.3 billion (Decode, 2021). Regarding the currency, the Egyptian pound broadly remained stable at EGP 15.7 per 1 USD from October 2020 until December 2021, with the inflation rate standing at %5.9 (Decode, 2021).

Over the past few years, Egypt has implemented a number of macroeconomic and structural reforms. As a result of these reforms, the economy has stabilised, with improved fiscal and external accounts, but has fallen short of responding to the long-term socioeconomic challenges (World Bank, 2020).

Furthermore, amidst the COVID19- pandemic, the long-lasting challenges of the Egyptian economy have been brought under the spotlight: the persistent high ratio of governmental debt to GDP (%90.2 in FY19–2018); the low budgetary allocation to key sectors of health and education (WB, 2020); the below-potential performance of non-oil exports and foreign direct investment (FDI); low (formal) job creation in the private sector; persistent informality; and an increasing poverty rate.

Source: Authors' elaboration

3.2 Sectoral assessment

The impacts of COVID-19 on production activity include various aspects: firstly, there has been a decrease in the labour supply, as many workers became infected or had to dedicate time to childcare due to confinement measures and school closures or commit to taking care of affected people in their surroundings. Secondly, there has been a decline in demand due to the general decrease in revenues. Thirdly, there has been a scarcity of capital due to liquidity shortages. These factors impact both large and small firms; however, the impacts on SME are more severe. As they are less flexible and resilient, for instance, the cost of teleworking may be higher for SME (OECD, 2020).

From a sectoral perspective, tourism is one of the most important sectors of the global economy, and has been greatly affected by the pandemic; indeed, it accounted for 10% of GDP before the pandemic (Behsudi, 2020). Tourism has been directly affected by lockdown measures and restrictions on people's mobility. According to the World Tourism Organization (UNWTO), the negative impacts of the crisis on this sector have seemed to last much longer than the impacts on other sectors of the economy. During 2020, international tourist arrivals declined by 72% in Egypt, 76% in Jordan, 71% in Lebanon, 79% in Morocco, 86% in Palestine,

and 79% in Tunisia⁴⁶. Naturally, countries that are more dependent on tourism have been subject to larger losses, such as Lebanon, Jordan, Morocco, and Tunisia, wherein international tourism receipts represented more than 5% of GDP before the COVID-19 pandemic (see Table 4).

Table 3: International tourism receipts prior to COVID-19

Country	International tourism receipts (% of total exports)	International tourism receipts (% of GDP)
Algeria	0.4	0.08
Egypt	26.6	4.7
Jordan	42.4	15.4
Lebanon	47.9	16.7
Morocco	22.7	8.3
Tunisia	14	6.4
West Bank and Gaza	9.4	1.5

Source: World Development Indicators (World Bank, last updated: December 16, 2021)

Notes:

- For all countries, the latest available data is for 2019, except for West Bank and Gaza, for which it is for 2018.
- International tourism receipts concern expenditure by international inbound visitors, including payments to national carriers for international transport. These receipts include any other prepayment made for goods or services received in the destination country. They may also include receipts from same-day visitors, except when these are important enough to justify a separate classification. For some countries they do not include receipts for passenger transport items. Their share in exports is calculated as a ratio to exports of goods and services, comprising all transactions between residents of a country and the rest of the world, involving a change of ownership from residents to non-residents of general merchandise, goods sent for processing and repair, nonmonetary gold, and services.

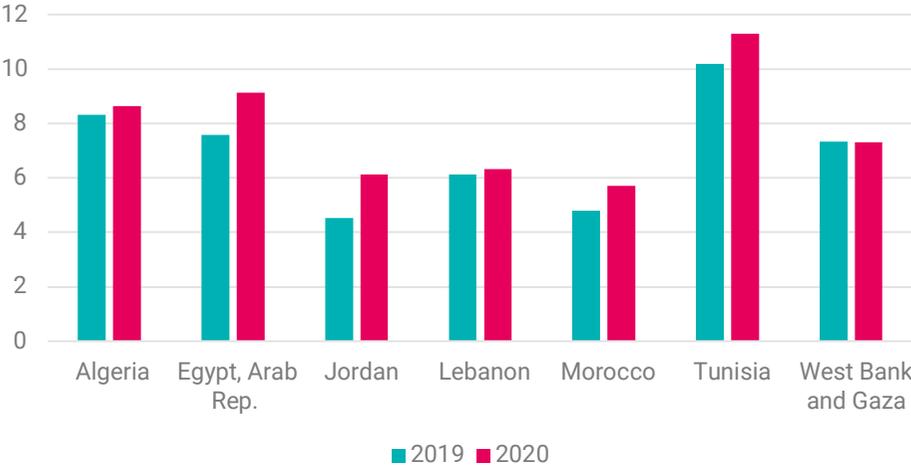
The cultural and creative industries (CCI) are also among the sectors hardest hit by the pandemic, with venue-based activities such as concerts, theatres and cinemas, which were already struggling to survive, being shut down completely due to social distancing measures. In the region, the handicraft sector is one of the major CCI and has been hit hard because of its dependence on the tourism sector. Furthermore, CCI are (by nature) informal, especially within the region, with many artists and independent freelance creative workers being excluded from social safety nets while facing the consequences of COVID-19. The status of artists is generally not recognised, and it is very difficult to identify and target these vulnerable actors.

Nevertheless, COVID-19 has led to a cultural digital revolution, as many artists and CCI workers have been rapidly adopting new digital tools. This has, in turn, created an unprecedented opportunity for digital CCI content to reach international markets at a very low cost. Moreover, by taking into account the importance of CCI, which goes beyond value and job creation, many stress the role of the cultural sector in human well-being and social cohesion; thus, CCI are

regarded as an important pillar in the post-pandemic recovery. This has created an opportunity to spur innovation through crossovers between culture, education and health. Unfortunately, CCI are not regarded as a priority sector in the region, with the sector remaining vulnerable, and policies intended to support creative firms and workers may not be suitable for the non-traditional business models and forms of employment in CCI (Travkina and Sacco, 2020).

A sector which has benefitted from COVID-19 is the digital economy. As mentioned above, digital transformation has accelerated due to the pandemic, and since lockdowns have forced many people to use online services for the first time, the demand for Internet connectivity has risen almost everywhere in the region, with an increase in fixed broadband subscriptions (see Figure 15 below).

Figure 15: Fixed broadband subscriptions (per 100 people)



Source: World Development Indicators (World Bank, last updated: December 16, 2021)

However, challenges to digital transformation in the region are structural and lasting. There is a significant rural–urban digital gap when it comes to digital infrastructure and mobile Internet use, and the market concentration and continued dominance of state-owned enterprises and political isolation are among other factors hindering digitalisation within the region (World Bank, 2018). Investment in digital infrastructure is key to transforming the region and enhancing speed, affordability and usage.

3.3 Impacts on labour markets

The impacts of COVID-19 (from a microeconomic perspective and at the individual level) include a major change in working behaviour, with a decrease in the amount of paid work in parallel with an increase in the amount of unpaid work. Moreover, the rapid adoption of digital tools has provided unprecedented levels of digitalisation in the region, similar to in other regions of the world, changing working habits by making teleworking the new normal and creating new opportunities.

Based on the Rapid Gender Assessment on the Socio-Economic Impacts of COVID-19, and on the data collected by UN Women between March 2020 and March 2021⁴⁷, both men and women were subject to job and income losses as the pandemic spread. Among the respondents from the region, 16.7% of men and 11% of women on average reported having lost their jobs. Meanwhile, 57% of women and 60% of men reported having lost their income. This is in line with the loss of working hours presented in the previous section.

Figure 8: Percentage of respondents reporting having lost their job, by sex



Source: UN Women, *Rapid Gender Assessment on the Socio-Economic Impacts of COVID-19 (2021)*

Figure 9: Percentage of respondents reporting having lost their income, by sex



Source: UN Women, *Rapid Gender Assessment on the Socio-Economic Impacts of COVID-19 (2021)*

Furthermore, we observe an unprecedented increase in the level of unpaid care work. For both women and men in the region, the pandemic has added to the burden of unpaid care and household chores. However, this burden seems to weigh more on women than on men, with a higher percentage of women reporting an increase in at least one domestic activity and a

⁴⁷ RGA survey by UN Women: <https://data.unwomen.org/rga>

higher percentage of men reporting having received support from their spouse for domestic and care activities (on average, these differences represent 10%; see Figures 10 and 11).

School closures and an increasing childcare burden have also disproportionately impacted women with children, with some being obliged to leave the labour force. This has led to even lower female participation rates in a region in which this rate was already among the lowest in the world and was (on average) 21% in 2019 (see Figure 25 in Appendix E; World Development Indicators; ElAshmawy et al., 2020).

Figure 10: Percentage of respondents reporting an increase in at least one domestic activity, by sex



Source: UN Women, Rapid Gender Assessment on the Socio-Economic Impacts of COVID-19 (2021)

Figure 11: Percentage of respondents reporting having received support from a spouse for domestic and care activities, by sex

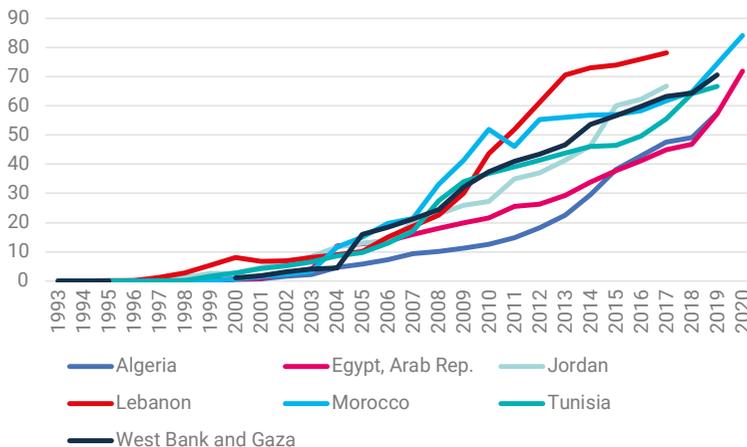


Source: UN Women, Rapid Gender Assessment on the Socio-Economic Impacts of COVID-19 (2021)

Another impact of the pandemic is the emergence of new working opportunities and change in working behaviour due to the acceleration in digital transitions. An increasing number of people are accessing the Internet (see Figure 12), and working from home has become very common in response to social distancing measures. However, the ability to work from

home depends on many factors, such as the country's digital infrastructure, the sector of activity, the nature of the economic activity, and access to vital tools for remote working (such as a personal computer and reliable Internet access), among other factors. Al Azzawi (2021) developed a teleworkability index for Arab countries and found that teleworking is not feasible for most jobs in the region. Among certain groups of workers, remote job opportunities are especially rare: the youth (15–29 years of age), those employed in the informal sector, males, those living in rural areas, those employed by microenterprises, those working in agriculture or manufacturing, those without a university education, and those from lower-income quintiles. Even for workers with potentially teleworkable jobs, very few actually have the tools (such as a personal computer and reliable Internet access) necessary to work remotely. Therefore, as a result of the digital divide, teleworking is unlikely, even for those jobs that can potentially be undertaken remotely. Thus, Al Azzawi (2021) confirmed that the most vulnerable workers would be the most severely affected by the pandemic.

Figure 12: Individuals using the Internet (% of population)



Source: World Development Indicators (World Bank, last updated: 16/12/2021)

3.4 Social consequences

COVID-19 has had a number of social impacts, ranging from increases in violence, inequality, poverty, gender disparity, and brain drain to a decline in educational quality and worsening mental health. Nevertheless, the pandemic has also been a wake-up call for many countries, prompting them to rethink and improve their healthcare systems, increase the penetration of social protection, and (overall) take initial steps towards a more resilient economic system.

COVID-19 impacts on rising inequality and poverty in the region have brought forward already existing social challenges and have been discussed in detail by Ayadi and Ronco (2020) as well as Karamouzian and Madani (2020). Vulnerable groups such as women, youth and the poor have been disproportionately affected by the health crisis and require adapted

policy responses. UNDP has developed a gender policy response tracker to monitor countries' efforts to support women affected by the pandemic⁴⁸. This tracker lists policy measures in the following four categories: economic, financial and fiscal; labour market; social protection; and violence against women. It also reveals information on how countries have responded to the pandemic (see Table 3). Egypt (with 48 policy measure responses) has the highest number of responses, followed by 42 responses from Jordan, 38 from Tunisia, and 29 from Morocco and Palestine; Lebanon and Algeria have the lowest number of responses with 18 and 14 respectively.

Table 4: Number of policy measures (responses undertaken by governments to tackle the COVID-19 pandemic)

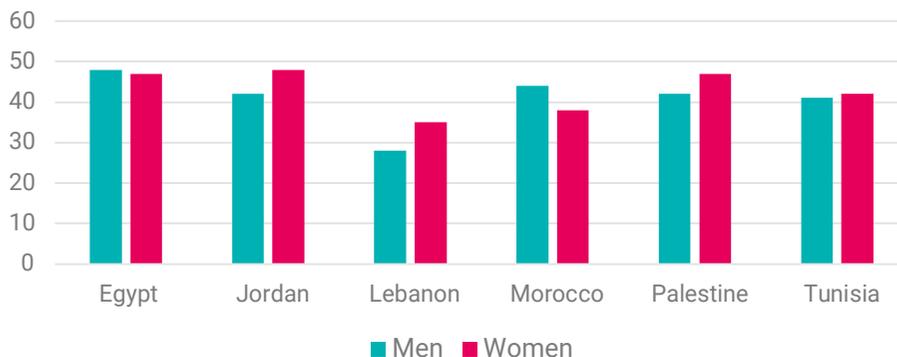
	Total number of policy measures	Number of policy measures on social protection	Number of policy measures on violence against women	Number of policy measures on economic, financial and fiscal support for businesses and entrepreneurs	Number of policy measures on labour market
Algeria	14	8		3	3
Egypt	48	14	9	18	7
Jordan	42	26	4	7	5
Lebanon	18	8	7	3	
Morocco	29	9	5	9	6
Palestine	29	18	7	1	3
Tunisia	38	18	7	10	3

Source: UNDP COVID-19 Global Gender Response Tracker (<https://data.undp.org/gendertracker/>)

During stressful or crisis situations, interpersonal violence can be exacerbated by anxiety, fears and worries. During the pandemic, the incidence of violence, especially against women, has increased worldwide, especially since the beginning of the lockdown measures (UN Women, 2020c). According to an RGA survey, %41 of surveyed men and %43 of surveyed women on average believed that violence has increased in households (Figure 9). This may have been caused by financial hardships, prolonged confinement in small spaces, or other factors associated with the pandemic (UN Women, 2020a).

⁴⁸ <https://data.undp.org/gendertracker/>

Figure 13: Percentage of respondents thinking that violence increased in the household, by sex



Source: UN Women, *Rapid Gender Assessment on the Socio-Economic Impacts of COVID-19 (2021)*

Women are more likely to suffer from an increase in violence and even domestic violence. Moreover, a rise in the number of calls to helplines and shelters for survivors of violence has been reported, especially during the lockdown periods (UN Women, 2020c). For instance, in the case of Tunisia, between March 23 and May 31, 2021, 9,800 calls were made to Ministry of Women, Family, Children and Seniors (MFFES) toll-free numbers, which is nine times higher than usual (UN Women, 2020d). All countries in the region, except for Algeria, have dedicated a number of policy measures to violence against women (these numbers are reported in Table 3).

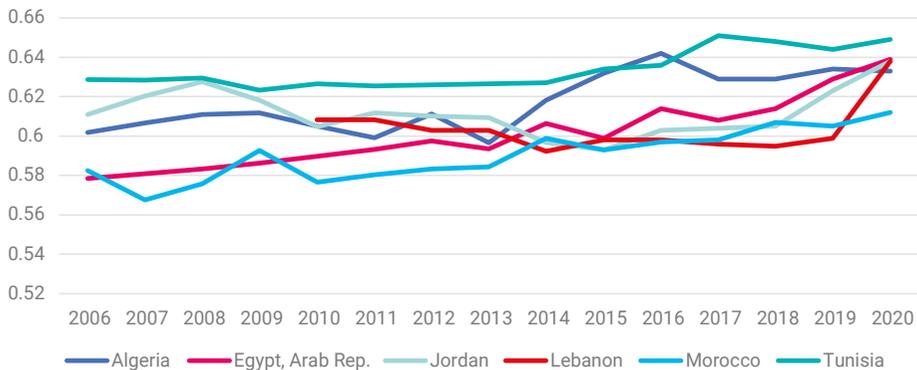
Informality is prevalent in the region, representing (on average) 56% of total employment (see Figure 21 in Appendix D). Those large groups in the population, many active in the agricultural sector, are excluded from social protection schemes and are among the most vulnerable population segments. The pandemic has raised awareness of the importance of tackling informality and providing universal healthcare protection. Moreover, and as reported in Table 3, many of the policy responses to COVID-19 by these countries have aimed to enhance social protection. ILO has developed a calculator to estimate the cost of providing universal health, which in the region is (on average) 7.6% of GDP, making it more affordable than one might expect (see Table 7 in Appendix E).

The gender gap in the region has been rising over time (see Figure 14), but has become even wider due to the pandemic. Comparing the Overall Global Gender Gap Index between 2019 and 2020 (calculated by the World Economic Forum as a measure of the gender gap), one can observe an increase which suggests that women have been hit harder by the pandemic than have men. According to Sharma et al. (2021), although both men and women have been severely affected by the pandemic, women have experienced a bigger impact for several reasons:

- Women are more likely to be employed in sectors directly disrupted by lockdown and social distancing measures, so they have suffered higher unemployment rates;

- Their labour force participation rate has been subject to a sharper decline in comparison to that of men (in the context of the region, wherein the female participation rate was extremely low even prior to the pandemic). The female labour market participation rate in 2019 was (on average) 21.5% of the female working-age population, with the lowest participation being in Jordan (15.5%) and the highest in Tunisia (28%);
- Re-employment has been slower for women, with lower hiring rates and delayed hiring into leadership roles;
- Women continuing to work throughout the pandemic have reduced their working hours more than have men, which has had an impact on their career paths and professional opportunities.

Figure 14: Overall Global Gender Gap Index



Source: World Economic Forum's Global Gender Gap Index (<https://www.weforum.org/reports/global-gender-gap-report-2021>)

Note: The Global Gender Gap Index measures scores on a scale of 0 to 100, and scores can be interpreted as the distance to parity (i.e. the percentage of the gender gap that has been closed)

The educational system has suffered considerably at the hands of the pandemic. School closures, pupils and instructors being infected, and switching to online and hybrid systems without the necessary preparation beforehand, among other factors, have caused a decline in the quality of education. Ayadi and Ronco (2021) provided a detailed analysis of the educational and training policy and the responses to the pandemic in the region, and showed that the educational systems in the Arab Mediterranean countries generally lack the resilience, capacity, and sufficient resources with which to be able to respond to fast changes and sudden shocks such as the COVID-19 pandemic. Meanwhile, the pandemic has been viewed as a key opportunity to expand digital learning; at the same time, it may further exacerbate inequality in terms of educational quality and access (WHO, 2021).

Another social impact is that of migration and new waves of migrants. Migrants have been among the vulnerable groups highly affected by COVID-19. The pandemic immediately affected mobility, with countries imposing restrictions on travelling. Thus, many migrants and refugees have been stranded in host countries, unable to access food, shelter, and essential

services or to return home. Furthermore, many asylum seekers have been unable to access countries that offer protection. Numerous migrants may fall into an irregular situation or find themselves without documentation, as they are unable to follow legal processes to access a visa. Moreover, migrants have been accused of spreading the disease, prompting stigma, xenophobia and discrimination (ESCWA, 2021; Chetail, 2020).

Despite these negative impacts on societies, COVID-19 has been a wake-up call for countries, prompting them to step up their social protection. Meanwhile, there is a difficult balance to strike between saving lives and protecting livelihoods in countries with large informal economies, a narrow fiscal space, and limited social protection (welfare) mechanisms. Nevertheless, as discussed previously, all countries in the region have adopted policies with which to extend social protection (see Table 3).

The background is a dark blue gradient with several large, faint, abstract patterns. These patterns resemble biological structures like cells or molecular networks, composed of interconnected lines and dots, and some resemble leaf-like or petal-like shapes. The overall aesthetic is scientific and modern.

CONCLUSIONS AND POLICY RECOMMENDATIONS

Conclusions and policy recommendations

The COVID-19 pandemic has highlighted deficiencies in healthcare systems all over the world. This study focuses on the South Mediterranean region one year after the pandemic erupted, and demonstrates that the healthcare systems in the region are not resilient.

In 2021, most countries presented a decline in the Global Health Security Index (except for Jordan). Even those countries making plans for pandemic management in late 2020 (i.e. Tunisia) have been critically affected by new critical COVID-19 waves.

All countries have displayed a shallow level of testing, and most of them lack data, thus jeopardising a reliable and comparable monitoring of the prevalence of COVID-19. Furthermore, despite the efforts of several target countries to reduce the prices of COVID-19 tests, they continue to be expensive, leading to the low level of testing observed. The latter could be hampered by high informality and inadequate social security protection, disincentivising people living on a daily wage from carrying out quarantine.

In the region, instead of engaging in precise planned management of the pandemic, the countries have adopted short-term emergency restrictions and containment measures based on the epidemiological evolution of the pandemic. Unlike the first waves that occurred in 2020, in 2021, most countries tried to avoid total lockdowns so as not to further deteriorate the already precarious socioeconomic context. Beyond maintaining social distancing and wearing face masks indoors and outdoors, the target countries have mainly adopted short and localised curfews and restricted access to public places. At the start of the vaccination campaigns, most countries started to differentiate containment measures between vaccinated and non-vaccinated people, raising concerns surrounding the equal rights and treatment of people. For many, civil liberties have also been put under threat due to the postponement of the end of the state of emergency and the use of executive orders – a trend that favours autocratic regimes and hampers democratic transitions.

COVID-19 vaccines have played a crucial role in the overall governmental strategy of containing the contagion while avoiding harming the economy. Still, not all countries have the same capacity to provide vaccines to their citizens. The target countries have procured vaccines through different mechanisms. Most of them have relied on donations and the COVAX Facility. All countries have also diversified their national vaccine portfolio via bilateral/multilateral agreements with various pharmaceutical companies. However, only Morocco has been able to procure more than 40% of vaccines from such agreements, thus demonstrating the low capacity of the other countries within the region to purchase vaccines directly.

Most of the target countries have not procured enough vaccines to cover 100% of the population (only Morocco has reached more than 110%, without accounting for donations and COVAX). Meanwhile, in April 2020, most high-income countries had already achieved an agreed coverage rate of more than 300%.

The vaccination campaigns started between January and March 2021, and primarily relied on donations for almost all of the target countries. Several months after the beginning of

the vaccination campaigns, the target countries had reached different vaccination levels, with nearly all being quite far from the rates observed in North Mediterranean countries (e.g. France counted 179.17 doses per 100 people as of 24 December 2021). At the same time, Algeria presented the lowest number of doses administered per 100 people (28.12), followed by Egypt (50.66), Palestine (59.76), Lebanon (63.04), Jordan (79.58), and Tunisia (97.58). Lastly, Morocco is the best-performing target country with 131.60 doses administered per 100 people⁴⁹.

The vaccine procurement and rollout analysis highlighted an unequal distribution of vaccines, preventing an equal recovery and jeopardising socioeconomic factors.

The primary sources of inequity in vaccine procurement and distribution are identified in five main drivers:

- 1- Unequal fiscal space among countries, with the wealthiest countries being able to afford more vaccines faster and at higher prices; this has led to unequal access and a slow recovery, with countries trying to obtain vaccines for free, which could favour interference from other countries exercising vaccine diplomacy in the region.
- 2- The lack of transparency regarding vaccine prices agreed among the different actors increases the price-setting power of big pharmaceutical companies; besides the overall increase in price consequences, it is worth mentioning that this could cause unequal vaccination because of pharmaceutical companies' willingness to sell more doses to countries which agree to pay higher prices (indeed, this is already the case).
- 3- The concentration of manufacturing in a few global power economies, making it more difficult for developing countries to access vaccines. Furthering local (or at least regional) production would be essential for countries in the Middle East and in Africa; several target countries have started domestically manufacturing some vaccines (mostly Chinese ones), which could represent a first step towards the creation of a valuable hub for the entire region. However, other vaccine developers and countries (EU Member States, among others) have been ostracising the patent waivers, which for many could represent an excellent opportunity for developing countries to be self-sufficient in the production of the vaccines that they need.
- 4- The logistics with regard to importing, transporting, stocking and administering vaccines are particularly tricky, and the large urban–rural divide in terms of digitalisation and infrastructure makes it difficult and very costly to reach remote areas, thus placing an even larger burden on those target countries already lacking financing.
- 5- Data from Afrobarometer reveals that several countries present a high level of people that do not want to receive a vaccine, triggered not only by misinformation and conspiracy theories, but also by a massive lack of trust in governments.

All of the five factors which trigger unequal vaccination bring the risk of exacerbating inequalities between and within countries. Finally, since vaccines are essential for tourism and trade, unequal vaccine access negatively affects recovery, particularly in countries like the

⁴⁹ All of the data on vaccines was collected from Our World in Data (as of December 29, 2021, last available data).

target ones, which are funding their economy through these two sectors. Furthermore, the generalised lack of clarity and the persistent changes in the norms regulating travel among countries create a high level of uncertainty that is preventing people from taking action and participating in the economy.

The COVID-19 pandemic has impacted all facets of the economies, with devastating consequences for people's lives all over the region. At a macro level, the target countries (except for Egypt) have experienced a decline in output and employment, and there has been an increase in inflation as well as a disruption of the global value chains. From a micro perspective, there has been an increase in unpaid working hours as well as a decrease in paid working hours. The digital transition has encouraged remote working and teleworking, but the teleworking capacity in the region is very limited. The educational systems have also been severely impacted and the quality of education has declined. Tourism and the cultural and creative industries have directly suffered from lockdowns and been among the hardest-hit sectors. The impact of the health crisis goes beyond hampering economic activity. From a social perspective, there has been a rise in violence, particularly against women. Inequality and poverty have risen due to the prevalence of informality in the region, as large groups of the population do not have access to social safety nets. The gender gap has deepened and women are among the most vulnerable groups (along with migrants) who face restricted mobility and difficulty in accessing proper documentation.

Policy recommendations

With regard to enhancing the resilience of the healthcare systems in the target countries, we recommend the following:

1. Increasing investment in healthcare, enhancing PPPs (public-private partnerships), and promoting universal health coverage

The governments of the target countries typically lack fiscal space with which to increase spending on healthcare. PPPs could represent an opportunity for those countries to increase investment in the healthcare sectors and obtain enough resources to pursue universal healthcare coverage. The latter is particularly crucial in the target countries whose poverty and informality translate into unequal access to healthcare services, high reliance on out-of-pocket expenditure, and lack of access to social security. This could be promoted through recovery plans that take examples from the EU and foster a regional dialogue on recovery and universal health coverage. According to the ILO calculator, the cost of having universal coverage is %7.6 of GDP on average in the region⁵⁰.

2. Increasing the disclosure and reliability of data

Data transparency has the potential to increase the overall effectiveness of governments' services (including public healthcare services). On the one hand, it makes governments more credible, both for citizens, favouring the attainment of norms, and for the international context, favouring external aid and collaboration. On the other hand, data disclosure and

⁵⁰ ILO calculator (2021). See Appendix E for more details on the calculator.

reliability help institutions to build proper policy responses; all countries should invest additional resources in data collection and communication, which would be even more valuable and practical if shared with the neighbouring countries.

3. Adopting coherent policy measures in coordination with the neighbouring countries

Containment measures should be discussed through the regional platform (i.e. the Union for the Mediterranean) and in collaboration with the European Union to better coordinate actions and share experiences. Better coordination would increase regional integration, trade, tourism and migration, favouring an equal recovery in the area. Coordination should be particularly fostered in:

- Formulating coherent and clear travel rules in the region
- Favouring the mobility of workers, particularly in the healthcare sector, across countries
- Opening a regional dialogue on informality and on how to protect the high number of vulnerable people during future pandemics
- Opening a regional conference on the regional capacity to respond to potential future pandemics

4. Increasing regional collaboration and coordination on vaccine procurement, production and distribution

Coordinated action between the target countries in the procurement of vaccines could favour fostering an equal distribution of vaccines in the region and broadly in African countries. A few countries in the region have begun producing vaccines; they should start calling on regional coordination to allow the region to increase both its bargaining power in the international scene and the regional capacity to become a vaccination hub, helping a fair and equal recovery to occur and, as highlighted in the study, convincing pharmaceutical companies to increase the technology transfer.

With reference to the socioeconomic consequences of the pandemic, we recommend the following:

5. Developing a buffer emergency scheme within the social security system for crisis situations

The most vulnerable groups in the population (such as women, migrants and the poor) have suffered the worst from the COVID19- pandemic. An emergency scheme should be created within the social security system that specifically targets these vulnerable groups when a crisis or a pandemic hits the economy.

6. Increasing investment in digital infrastructure

Digitalisation has accelerated due to the COVID19- pandemic and is regarded as one of the most important pillars of resilience. The region suffers from a digital divide, and efforts must be made to provide rural and remote areas with a wide-bandwidth Internet connection. This would enhance the teleworking capacity within the countries and allow local workers to access foreign labour markets; these workers can be easily absorbed into such markets thanks to their competitive wages.

7. Reforming the educational system

In line with the study conducted by Ayadi and Ronco (2021), school closures and social distancing measures have seriously affected the quality of education in the region. The educational systems require an urgent reform to enhance quality in order to compensate for the losses and equip new generations with the skills necessary for the future labour market, such as digital skills and creativity.

8. Developing sector-specific emergency funds for the most affected sectors

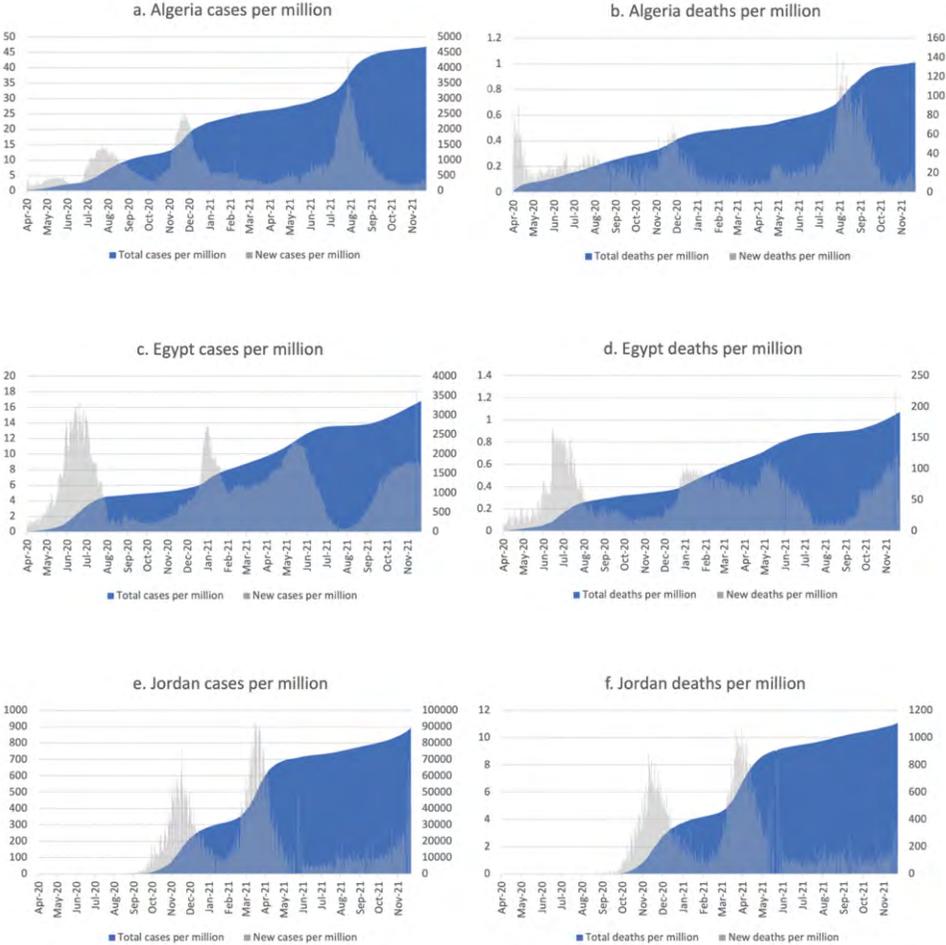
Tourism and the cultural and creative industries have been harshly hit by COVID19- and the associated social distancing measures. The workers in these sectors are mostly informal and have no access to social safety nets, while they also require targeted support to be able to return to their activity. Moreover, the efforts to diversify the economy should continue with a view to building a more resilient economy.

The background of the page is a dark blue color with a complex, abstract geometric pattern. The pattern consists of various shapes, including circles, triangles, and irregular polygons, arranged in a way that creates a sense of depth and movement. The shapes are rendered in different shades of blue, from a very dark, almost black blue to a slightly lighter, medium blue. The overall effect is a dense, textured background that is both visually interesting and subtle.

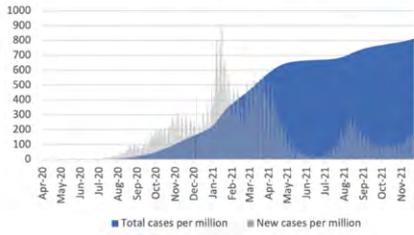
APPENDIX

Appendix A: Cumulative cases and deaths per million (December 2020 – December 2021)

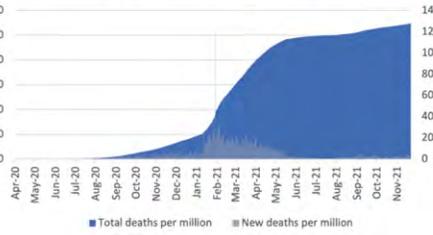
Figure 16: Cumulative cases and deaths per million (December 2020 – December 2021)



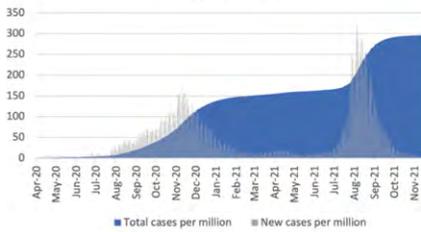
g. Lebanon cases per million



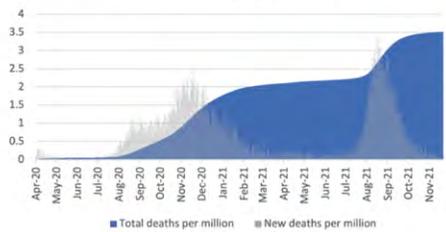
h. Lebanon deaths per million



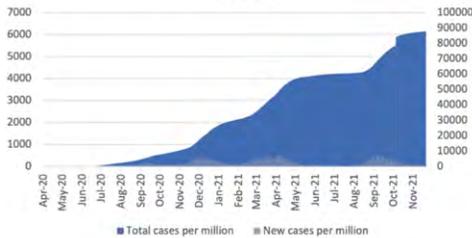
i. Morocco cases per million



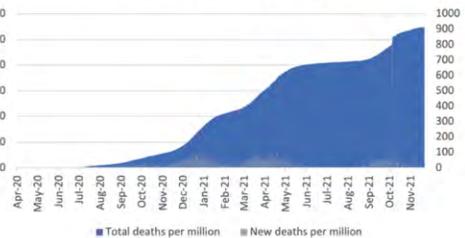
l. Morocco deaths per million



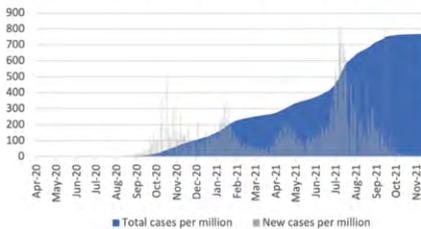
m. Palestine cases per million



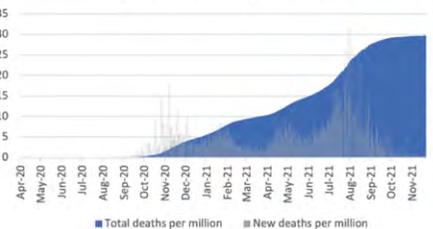
n. Palestine deaths per million



o. Tunisia cases per million



p. Tunisia deaths per million



Source: Our World in Data, <https://ourworldindata.org/covid-cases> (accessed on December 15, 2021)

Appendix B: COVID-19 vaccine approval procedure and the WHO Emergency Use Listing (9th list published on December 17, 2021)

COVID-19 vaccines have been developed extremely quickly. Pharmaceutical companies have benefitted from several factors accelerating the production timelines, mainly: 1) previous research on SARS, a coronavirus with some characteristics similar to SARS-CoV-2 (the virus responsible for COVID-19); 2) research on new platforms (technologies) for the development of a new generation of vaccines was already advanced before the pandemic arrived, and received a great boost thanks to the large investments coming in response to the COVID-19 crisis; and 3) the easing of approval phase procedures. Moreover, the steps for assessing the efficacy and safety of the vaccines ran in parallel. Pharmaceutical companies could request temporary emergency use in national regulatory authorities and an Emergency Use Listing from the WHO.

Table 5: WHO Emergency Use Listing (EUL)

As of December 17, 2021, the WHO EUL was as follows:

Pfizer/BioNTech (Comirnaty)
AstraZeneca (R-Pharm/Vaxzevria)
AstraZeneca (Serum Institute of India/Covishield)
Janssen Pharmaceutical (Janssen/Ad26 SARS-CoV-2)
Moderna (Spikevax)
Sinopharm (Beijing) (BBIBP-CorV)
Sinovac (VACSERA/CoronaVac)
Bharat Biotech International Ltd. (Covaxin)
Serum Institute of India Pvt. Ltd. (Covovax)
Novavax CZ a.s. (Nuvaxoid)

Source: WHO: <https://extranet.who.int/pqweb/vaccines/vaccinescovid-19-vaccine-eul-issued> (accessed on December 26, 2020)

The WHO’s Emergency Use Listing (EUL) allows member countries to expedite their own regulatory approval processes to import and administer the vaccines listed following the WHO’s assessment of the vaccines’ must-have criteria for safety and efficacy (as set out by the WHO), and the benefits of using the vaccines to address COVID-19 to offset the potential risks⁵¹. The key trial phases with which to approve a vaccine are as follows: *pre-clinical trials*, during which a vaccine is tested on animals to assess whether it produces antibodies to identify and fight the virus; *phase one*, during which clinical trials are implemented with humans

⁵¹ The vaccine manufacturers must apply to the WHO with the following information: manufacturing quality data, non-clinical and clinical data, a plan to monitor quality, safety and efficacy in the field, an undertaking to submit any new data to the WHO as soon as that new data is available, and labelling details. See <https://www.who.int/teams/regulation-prequalification/eul> and <https://www.who.int/news/item/31-12-2020-who-issues-its-first-emergency-use-validation-for-a-covid-19-vaccine-and-emphasizes-need-for-equitable-global-access>

(a small group of healthy people) to assess the safety of the vaccine; *phase two*, during which clinical trials are performed with hundreds of people to assess the appropriate dose needed and whether the vaccine stimulates an immune response; and *phase three*, during which clinical trials are conducted with thousands of volunteers to better and further check the immune response, the safety, and the level of efficacy against the disease.

After phase three, the vaccine is usually assessed by a regulatory body and independent policymakers so that the licensing and registration process can then be undertaken. In the case of COVID-19, the process has been shortened through the issuing of temporary authorisation and an emergency listing, allowing for earlier administration of a vaccine, if considered safe, after its efficacy has been checked through data provided from trials⁵². The WHO, the Federal Drug Administration (FDA) in the United States, and the European Medicines Agency (EMA) are considered the most relevant institutions providing guidelines for the design of trials⁵³. All of the different national regulatory authorities (NRAs) are responsible for establishing the requirements and the procedures authorising the introduction and use of a vaccine in a national territory. Nevertheless, the Pan American Health Organization (PAHO) and the WHO recommended that the requirements must follow the international recommendations established in the vaccine standards by the WHO's Expert Committee on Biological Standards (ECBS) and by international agencies such as the International Council for Harmonisation (ICH) as a model for the documents required to be submitted by pharmaceutical companies for the authorisation of a vaccine⁵⁴.

The FDA has set a goal for COVID-19 vaccine trials: each manufacturer would need to demonstrate that a vaccine had an efficacy of at least 50% (with a confidence interval – lower bound – not lower than 30%, similar coverage to that developed for the flu)⁵⁵. This benchmark has also been applied by the WHO⁵⁶ and the EMA⁵⁷. The efficacy and safety of a vaccine depend not only on various factors related to specific characteristics of the people involved in the trials, but also on other factors such as the epidemiological situation in the location where the trial is taking place, as well as the presence of COVID-19 variants⁵⁸. The trials implemented by the different pharmaceutical developers are similar but present differences in the types and number of people included in the sample, the timing of the observation, and the number of sites at which the trials are implemented, among others⁵⁹. The geographical allocation of trials seems to be particularly important, since vaccine efficacy has often shown different results in different parts of the world. The African Consortium for COVID-19 Vaccine Clinical Trials (CONCVACT) (under the Africa Centres for Disease Control and Prevention,

⁵² See <https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/coronavirus-disease-covid-19/treatments-vaccines/vaccines-covid-19/covid-19-vaccines-development-evaluation-approval-monitoring> and <https://vaccination-info.eu/en/vaccine-facts/approval-vaccines-european-union>

⁵³ See <https://www.fda.gov/media/139638/download>, <https://covid19-evidence.paho.org/handle/20.500.12663/1135> and <https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/coronavirus-disease-covid-19/treatments-vaccines/vaccines-covid-19/covid-19-vaccines-development-evaluation-approval-monitoring>. More information on trials is available at [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30773-8/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30773-8/fulltext).

⁵⁴ See https://iris.paho.org/bitstream/handle/10665.2/53229/PAHOIMSHSMTCOVID-19210001_eng.pdf?sequence=1&isAllowed=y.

⁵⁵ See <https://www.nytimes.com/interactive/2021/03/03/science/vaccine-efficacy-coronavirus.html>.

⁵⁶ See https://www.who.int/medicines/regulation/prequalification/prequal-vaccines/WHO_Evaluation_Covid_Vaccine.pdf?ua=1.

⁵⁷ See https://www.ema.europa.eu/en/documents/other/ema-considerations-covid-19-vaccine-approval_en.pdf.

⁵⁸ See <https://www.nature.com/articles/s41591-021-01230-y.pdf>.

⁵⁹ See <https://www.nature.com/articles/s41591-021-01230-y.pdf>, <https://covid19.trackvaccines.org/>.

CDC) called on African countries and their health authorities to strengthen their clinical trial research capacity to generate data on the safety and efficacy of vaccine candidates in African populations⁶⁰.

Comparing the efficacy of the vaccines on the market might not be as useful as it would seem. It is important to highlight that the efficacy of the COVID-19 vaccines indicates the percentage of reduction of the likelihood of becoming sick in a controlled group of people during the trials. Whether the efficacy will translate into actual effectiveness will be observed when a vaccine is injected in the real world⁶¹. A similar consideration applies to the assessment of safety, since when a vaccine interacts with the real world, many side-effects not observed during the trials could arise. In cases such as the AstraZeneca⁶² and Janssen⁶³ COVID-19 vaccines, administration was temporarily suspended in European countries and in the US, respectively, so that the correlation between the vaccines and rare blood clot incidences could be better investigated. Moreover, countries in Africa temporarily suspended the AstraZeneca vaccine rollout (i.e. Chad, Zimbabwe, DRC)⁶⁴. Following the administration of AstraZeneca and Janssen (or J&J), blood clot cases were considered to be rare (in the order of around one in one million)⁶⁵, and seemingly more prevalent in young women⁶⁶. AstraZeneca was reintroduced to the market. Germany, Italy, and Spain reintroduced the administration of these vaccines to people older than 60, and France did so for people older than 55⁶⁷. This was following the EMA statement that the “benefits will outweigh the risks”⁶⁸, integrating the rare likelihood of side-effects (particularly among young women) into the description of the vaccine and suggesting that doctors monitor symptoms during and after the vaccination. Uncertainty surrounding the possible discovery of long-term side-effects of the vaccines is a source of concern for many people and reduces the willingness to be vaccinated. The same applies to the continuously changing and contradictory recommendations on the age range for, and the number of, vaccine doses.

⁶⁰ See <https://africacdc.org/wp-content/uploads/2021/02/Statement-on-AstraZeneca-Vaccine-ENG.pdf>; <https://www.nature.com/articles/d41586-021-00409-0>; [https://www.thelancet.com/article/S1473-3099\(20\)30773-8/fulltext#:~:text=In%20the%20case%20of%20SARS,sex%2C%20ethnicity%2C%20and%20comorbidities,](https://www.thelancet.com/article/S1473-3099(20)30773-8/fulltext#:~:text=In%20the%20case%20of%20SARS,sex%2C%20ethnicity%2C%20and%20comorbidities,) and [https://www.thelancet.com/article/S1473-3099\(20\)30773-8/fulltext#:~:text=In%20the%20case%20of%20SARS,sex%2C%20and%20comorbidities](https://www.thelancet.com/article/S1473-3099(20)30773-8/fulltext#:~:text=In%20the%20case%20of%20SARS,sex%2C%20and%20comorbidities)

⁶¹ See <https://www.medicalnewstoday.com/articles/what-is-vaccine-efficacy>

⁶² See <https://www.ema.europa.eu/en/news/covid-19-vaccine-astrazeneca-prac-preliminary-view-suggests-no-specific-issue-batch-used-austria>

⁶³ See <https://www.cdc.gov/media/releases/2021/s0413-JJ-vaccine.html>

⁶⁴ South Africa delayed the start of the AstraZeneca rollout because of concerns surrounding its efficacy against the COVID-19 variant. See <https://www.bbc.com/news/56100076>

⁶⁵ See https://www.who.int/news-room/feature-stories/detail/the-oxford-astrazeneca-covid-19-vaccine-what-you-need-to-know?q-clid=CjwKCAjw7J6EBhBDEiwA5UUM2n_VBulqXFjXR5UqJtFJJYD56GMuMo-nKoJPxRfLQlcPvo3VavioxoCXSQAvD_BwE and <https://www.healthline.com/health-news/how-to-think-about-johnson-and-johnson-vaccine-and-rare-side-effects#Do-the-benefits-of-the-shot-outweigh-the-risks>

⁶⁶ See <https://www.businessinsider.com/vaccines-dont-cause-blood-clots-younger-women-have-higher-risk-2021-3?IR=Tthe>

⁶⁷ See <https://www.dw.com/en/germany-restricts-use-of-astrazeneca-vaccine-to-over-60s-in-most-cases/a-57049301>; <https://www.usnews.com/news/world/articles/2021-04-07/italy-recommends-astrazeneca-covid-vaccine-only-for-over-60s>; and <https://www.politico.eu/article/french-health-authority-limits-astrazeneca-vaccine-to-older-than-55/>

⁶⁸ See <https://www.ema.europa.eu/en/news/covid-19-vaccine-astrazeneca-benefits-still-outweigh-risks-despite-possible-link-rare-blood-clots>

Appendix C: Vaccine patent waiver issue

Due to the unfair allocation of vaccines, a strong debate was raised with regard to whether the waiver of intellectual property rights could be part of the solution. In December 2020, all 164 Member States of the World Trade Organization (WTO) met in Geneva to discuss a proposal raised jointly by India and South Africa. The proposal was presented to the WTO's Trade-Related Aspects of Intellectual Property (TRIPS) Council on October 16, 2020 and discussed again at a Council meeting on November 20, 2020⁶⁹. The proposal was to waive broad sections of the WTO's intellectual property rules and request an exemption from patents for vaccines and drugs, as well as diagnostic and other medical technologies developed in the race against COVID-19. The WHO Director-General, Dr. Tedros Adhanom Ghebreyesus, called on the WTO's countries to consider the patent waiver proposal. However, pharmaceutical companies and governments in the US, the UK, and Europe strongly rejected the proposal⁷⁰. The meeting ended without consensus⁷¹. At an early stage, the European Commission was backing the Indian and South African proposal, later declaring that the WTO's rules are flexible enough on patents and that the latter are not an obstacle to ramping up COVID-19 vaccine production, since the "voluntary sharing" of knowhow among pharmaceutical companies already works⁷². Nevertheless, voluntary sharing by the big pharmaceutical companies seems difficult to apply, as they wish to preserve their exclusive rights on product development; in particular, they have little incentive to promote such production in developing countries⁷³. The "voluntary sharing" schemes should be patent-sharing schemes such as the C-TAP. At the very beginning of the pandemic (May 2020) the President of Costa Rica, Carlos Alvarado Quesada, and Dr. Tedros Adhanom Ghebreyesus, launched the COVID-19 Technology Access Pool (C-TAP), aimed at accelerating the development of products needed to fight COVID-19, as well as accelerating the scale-up of manufacturing and the removal of barriers to access in order to make products available globally, with the overarching objective of facilitating access to the needed health technologies by pooling IP, data, regulatory dossiers, manufacturing processes, and other kinds of 'knowhow'⁷⁴. While the initiative received a quick positive response from the international community, in October 2021 the Director-Generals of UNESCO, the WHO, and CERN, as well as the United Nations High Commissioner for Human Rights, reaffirmed "the fundamental right to enjoy the benefits of scientific progress and its applications and advocate for open, inclusive and collaborative science", calling on "all Member States, policy-makers, civil society representatives, youth networks and the scientific community to uphold the ideals of Open Science"⁷⁵. While 41 countries officially supported the C-TAP initiative, they were not concretely committed, and no pharmaceutical

⁶⁹ <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2932581-2>

⁷⁰ See <https://theguardian.com/world/2021/mar/05/covid-vaccines-who-chief-backs-patent-waiver-to-boost-production>

⁷¹ See https://economictimes.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/118-european-mps-ask-eu-to-lift-opposition-to-trips-waiver-proposal-for-accessible-vaccines/articleshow/81202152.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

⁷² See <https://www.euractiv.com/section/coronavirus/news/patents-are-not-an-obstacle-to-ramp-up-covid-19-vaccines-production-eu-says/>

⁷³ See <https://blogs.lse.ac.uk/politicsandpolicy/vaccines-and-patents/>

⁷⁴ See https://cdn.who.int/media/docs/default-source/essential-medicines/intellectual-property/who-covid-19-tech-access-tool-c-tap.pdf?sfvrsn=1695cf9_36&download=true

⁷⁵ See https://cdn.who.int/media/docs/default-source/essential-medicines/intellectual-property/joint-appeal-for-open-sciences-27-october-2020.pdf?sfvrsn=8592e74d_2&download=true; <https://en.unesco.org/science-sustainable-future/open-science/recommendation#:~:text=At%20the%2040th%20session%20of,by%20Member%20States%20in%202021>

company actually joined it⁷⁶. For those in favour of maintaining business as usual in terms of patents, since the big pharmaceutical companies are already engaged in promoting global access, not enforcing their patents in some cases (e.g. Moderna) or licensing deals allowing the expansion of such production in other cases (e.g. AstraZeneca), the IP rights might be preserved⁷⁷. “Vaccine nationalism” and “vaccine diplomacy” have favoured business as usual. Governments and multilateral institutions accepted signing contracts with big pharmaceutical industries in most cases, keeping them confidential and accepting that they would bear all of the risks. Furthermore, those who are against the waiving of the IP rights argue that they are fundamental for boosting research and innovation, that there is no evidence of the positive impact of their suspension on the better distribution and higher production of vaccines, and that even if a suspension were to be reached, many countries around the world would not be able to replicate the vaccines in a proper way⁷⁸. The European Commission commented on the possibility of applying the waiver proposed by India and South Africa at the WTO, stating that it “does not seem to be the appropriate measure as it would undermine the private-public partnerships”, and that it would “risk limiting incentives for research of the innovative medical products that would need to be developed to respond to new health challenges”⁷⁹. On the other hand, in April 2021, more than 170 former heads of state and government and Nobel laureates signed an open letter calling on President Biden to support a temporary waiver of intellectual property rules for COVID-19 vaccines as a “vital and necessary step to bringing an end to this pandemic”⁸⁰. In the letter, it is argued that the WTO waiver should be accompanied by actions for building a more robust international health architecture (i.e. coordinated global investment in research, development, and manufacturing capacity). Between those advocating for the temporary waiving of the vaccine patents and those against the proposal, Ngozi Okonjo-Iweala proposed a “third way”, namely to “broaden access through facilitating technology transfer within the framework of multilateral rules, so as to encourage research and innovation while at the same time allowing licensing agreements that help scale up manufacturing of medical products”, which actually suggests a preference towards maintaining the status quo with voluntary licences and agreements, while many still advocate for the introduction, via TRIPS, of the compulsory licence system⁸¹. The latter also implies that countries should be prepared to manufacture complex biological products such as the COVID-19 vaccines; moreover, it implies complex rules that would be difficult to apply.

⁷⁶ See <https://www.amnesty.org/en/get-involved/take-action/covid-19-vaccination-pharmaceutical-companies/> and <https://medicineslawandpolicy.org/2021/01/the-elephant-in-the-room-at-the-who-executive-board/>.

⁷⁷ See <https://www.theguardian.com/world/2021/jan/22/who-platform-for-pharmaceutical-firms-unused-since-pandemic-began>.

⁷⁸ See <https://www.ipwatchdog.com/2021/03/30/calls-compulsory-licensing-ip-waivers-covid-19-vaccines-ignore-technical-complexities/id=131617/>.

⁷⁹ See https://www.europarl.europa.eu/doceo/document/E-9-2020-005595-ASW_EN.html.

⁸⁰ See <https://peoplesvaccinealliance.medium.com/open-letter-former-heads-of-state-and-nobel-laureates-call-on-president-biden-to-waive-e0589edd5704>.

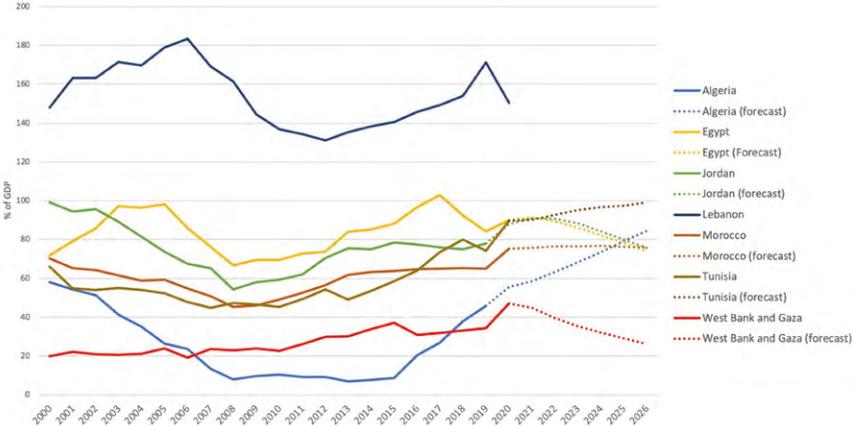
⁸¹ Compulsory licensing is when a government allows someone else to produce a patented product or process without the consent of the patent owner or plans to use the patent-protected invention itself. It is one of the flexibilities in the field of patent protection included in the WTO’s agreement on intellectual property – the TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement. The patent owner still has rights over the patent, including a right to be paid compensation for copies of the products made under the compulsory licence. Now, the TRIPS Agreement has been amended to provide for an additional type of compulsory licensing. This change follows a decision made at the 2001 Doha Ministerial Conference when Ministers recognised that countries unable to manufacture pharmaceuticals should be able to obtain cheaper copies produced under compulsory licences elsewhere if necessary. The idea is that, if such a country needs to turn to the option of compulsory licensing to produce needed affordable pharmaceuticals, then producers overseas can step up and supply that need, even if a compulsory licence is needed in that country. It is therefore a compulsory licence especially for production in one country, for export, to meet the public health needs of one or more other countries. More information on the issue is available at https://www.wto.org/english/tratop_e/trips_e/public_health_faq_e.htm and [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(21\)00507-9.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(21)00507-9.pdf).

Both countries and pharmaceutical corporations seem to prefer a public–private partnership mechanism such as COVAX, which allows IP rights to remain fully protected in the hands of the developers, while also allowing wealthier countries to better negotiate volumes and prices, and less developed countries to access them through AMC schemes. Nevertheless, while COVAX could be a good compromise, the prevalence of nations’ and pharmaceutical companies’ interests seems to prevail, thus undermining the functioning of COVAX.

Appendix D: Overview of the macroeconomic situation

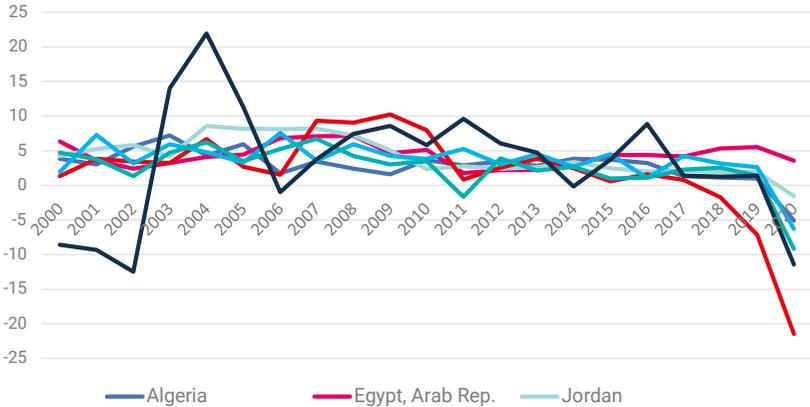
It is argued that most AMCs are relatively unprepared to face a crisis situation due to a number of macroeconomic issues, such as: a high debt level, weak institutions, a small fiscal capacity, high levels of poverty and inequality, the lack of social protection, and high levels of informality, inactivity and unemployment, among other factors. In this Appendix we offer some data which can be used to provide evidence of such macroeconomic challenges.

Figure 17: Government debt as a percentage of GDP



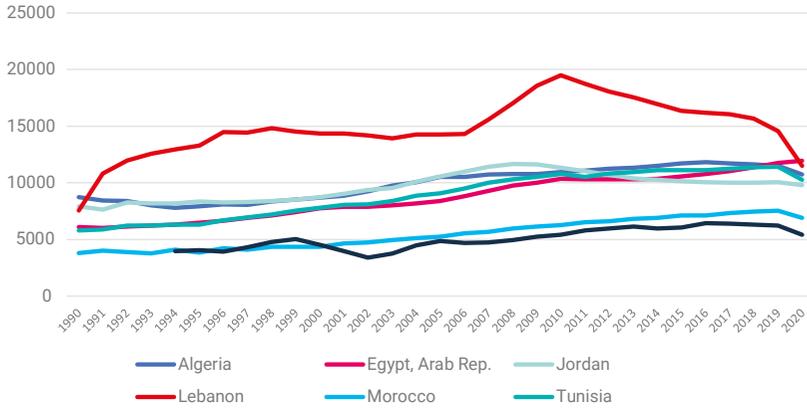
Source: The World Economic Outlook (WEO) database (October 2021 edition)

Figure 18: Annual growth rate of GDP in percentage



Source: World Development Indicators (World Bank, last updated: December 16, 2021)

Figure 19: GDP per capita evolution, PPP (constant 2017 international \$)



Source: World Development Indicators (World Bank, last updated: December 16, 2021)

Unemployment rates are in general higher for youth and women and were on the rise in many countries even before the pandemic:

Table 6: Unemployment rates for youth and by gender

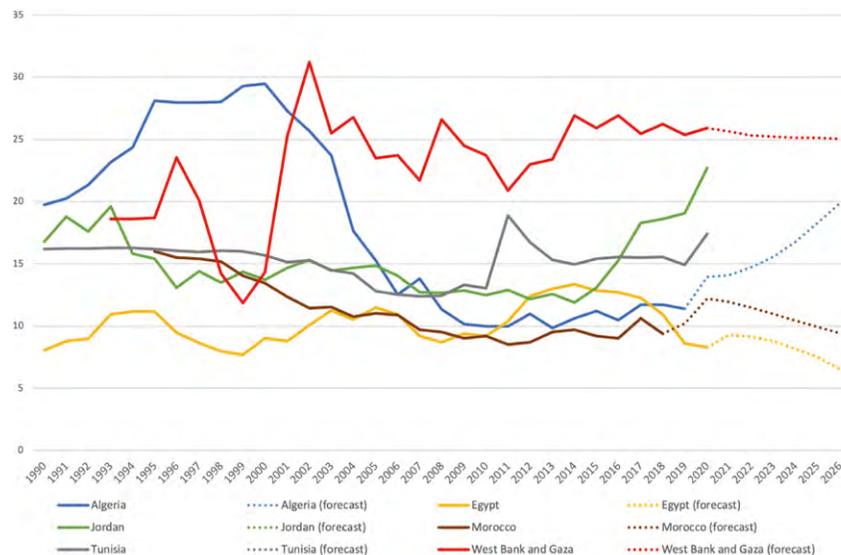
Country	Unemployment rate	2000	2010	2019
Algeria	Female	29.72	19.09	20.44
	Male	29.78	8.11	9.67
	Youth	50.56	21.84	29.69
Egypt, Arab Rep.	Female	22.96	22.12	21.33
	Male	5.11	4.77	6.73
	Youth	24.41	24.53	26.54
Jordan	Female	21.22	21.84	23.81
	Male	12.43	10.47	15.29
	Youth	29.57	28.9	37.28
Lebanon	Female	9.86	10.54	9.77
	Male	7.82	5.1	4.84
	Youth	21.14	17.77	17.1
Morocco	Female	13.02	9.49	10.47
	Male	13.77	8.95	8.54
	Youth	20.49	17.77	22.29
Tunisia	Female	16.11	18.97	22.41
	Male	14.56	10.91	12.39
	Youth	30.98	29.49	35.78
West Bank and Gaza	Female	8.03	21.56	41.14
	Male	11.09	21.39	21.32
	Youth	15.78	36.3	40.04

Source: World Development Indicators (World Bank, last updated: December 16, 2021)

Note: Definition of the rates:

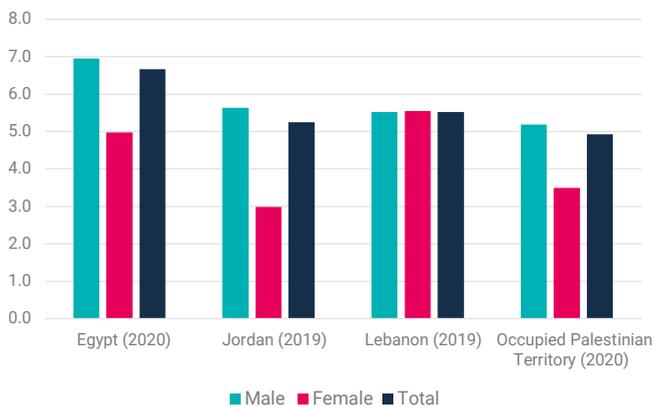
- Unemployment, female (% of female labour force) (modelled ILO estimate)
- Unemployment, male (% of male labour force) (modelled ILO estimate)
- Unemployment, youth total (% of total labour force aged 15–24) (modelled ILO estimate)

Figure 20: Total unemployment rate (trend) as a Percentage of total labour force



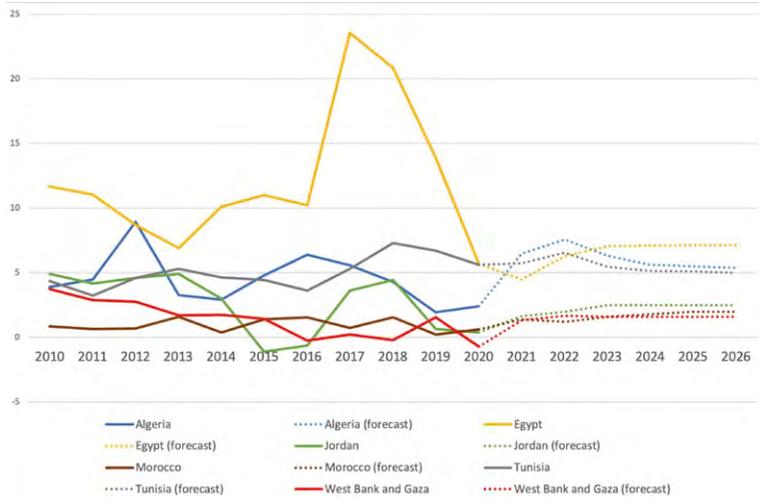
Source: The World Economic Outlook (WEO) database (October 2021 edition)

Figure 21: Percentage of informal employment rate



Source: ILOSTAT, introducing a harmonised series for informal employment which is derived using the same set of criteria across countries to improve comparability. The criteria used are based on employment status, institutional sector, destination of production, bookkeeping, registration, social security contribution, and place of work and size. For more information, refer to the concepts and definitions page (updated on December 26, 2021).

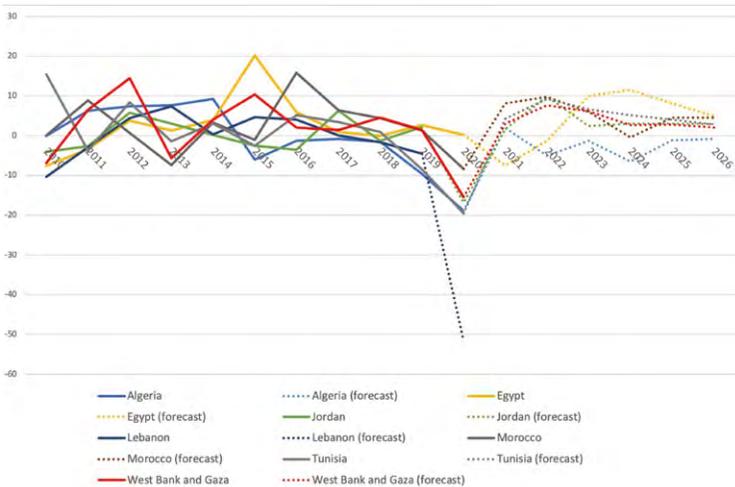
Figure 22: Inflation rates (short-term trends), excluding Lebanon, based on percentage of annual change in consumer prices



Source: The World Economic Outlook (WEO) database (October 2021 edition)

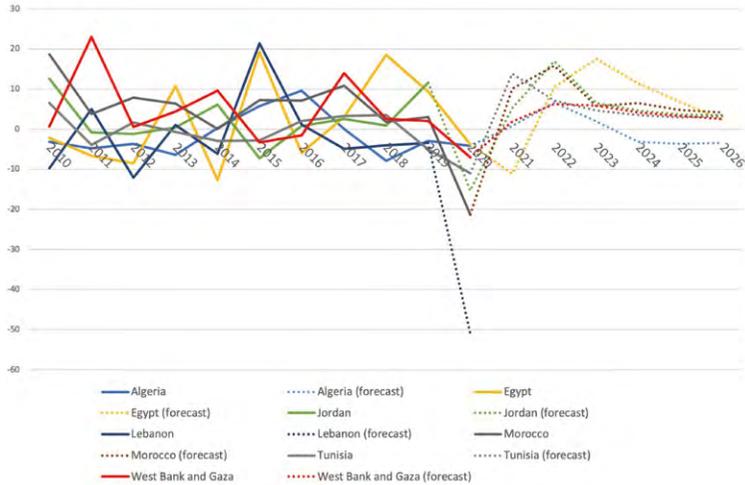
Note: Lebanon is excluded from this figure because the country is undergoing a financial crisis and the inflation rate jumped from below 5 to above 80 in 2020; thus, the forecast is not available.

Figure 23: Growth rate of imports (Percentage change of volume of imports, goods and services)



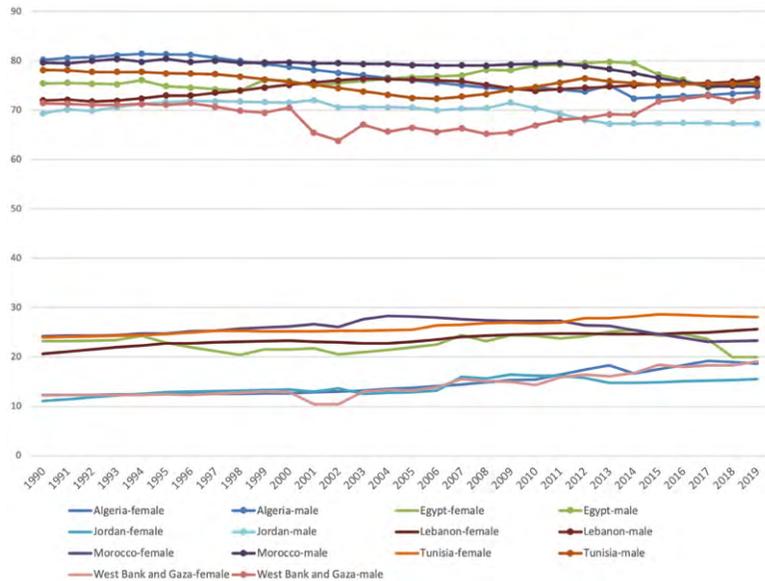
Source: The World Economic Outlook (WEO) database (October 2021 edition)

Figure 24: Growth rate of exports (Percentage change of volume of exports, goods and services)



Source: The World Economic Outlook (WEO) database (October 2021 edition)

Figure 25: Female vs. male labour force participation rate



Source: Labour force participation rate, female (% of female population aged 15–64) (modelled ILO estimate), The World Economic Outlook (WEO) database (October 2021 edition)

Appendix E: Cost of social security coverage

According to the ILO calculator, the average cost of universal social security coverage in the region is %7.6 of GDP. The following table details the cost for each country and is based on the type of support provided.

Table 7: Estimated cost of universal social security coverage as a percentage of GDP

Country	Cost as % of GDP of a child benefit of to all children (less than 15 years old) of %100 of the poverty line	Cost of a benefit of %100 of the poverty line to all orphans as % of GDP	Cost as % of GDP of a benefit of %100 of the poverty line to all persons aged 65 or above	Cost of unemployment support of %100 of the poverty line to one person per vulnerable household during 100 days as % of GDP	Cost of a benefit of %100 of the poverty line to all persons with severe disabilities as % of GDP	Cost of a benefit during 4 months of %100 of the poverty line to all mothers with newborns as % of GDP	Total
Egypt	%5.60	%0.00	%0.90	%0.30	%0.30	%0.20	%7.30
Jordan	%8.40	%0.00	%0.90	%0.20	%0.40	%0.20	%10.10
Lebanon	%6.30	%0.00	%2.10	%0.40	%0.50	%0.20	%9.50
Morocco	%3.70	%0.00	%0.80	%0.10	%0.30	%0.10	%5.00
Tunisia	%4.10	%0.00	%1.30	%0.10	%0.40	%0.10	%6.10
Average	%5.60	%0.00	%1.20	%0.20	%0.40	%0.10	%7.60

Source: ILO calculator (January 2022): <https://www.social-protection.org/gimi/SPFCalcuReport.action>



REFERENCES

References

- A3M Global Monitoring (2021). 'COVID-19 pandemic – Tunisia'. <https://global-monitoring.com/page/events/epidemic-0002033.opYWG7G2jfCj.html?lang=en> accessed 5 December 2021.
- Abdul-Wahab Kayyali (2021). 'The Arab World's Trust in Government and the Perils of Generalization'. Arab Barometer. 23 June 2021, <https://www.arabbarometer.org/2020/06/the-arab-worlds-trust-in-government-and-the-perils-of-generalization/> accessed 26 December 2021.
- AfDB Group (2020). 'African Development Bank approves \$27.33 million to ramp up the African Union's COVID-19 Response Initiative', African Development Bank Group press release, 9 September 2020, <https://www.afdb.org/en/news-and-events/press-releases/african-development-bank-approves-2733-million-ramp-african-unions-covid-19-response-initiative-37795>, accessed 29 December 2021.
- Africa News (2021). 'Egypt Begins its COVID-19 Vaccination Campaign with China's Sinopharm', 25 January 2021, <https://www.africanews.com/2021/01/25/egypt-begins-its-covid-19-vaccination-campaign-with-china-s-sinopharm/> accessed 26 November 2021.
- Al Azzawi, S. (2021, April). Lives Versus Livelihoods: Who Can Work from Home in MENA? ERF Working Paper No. 1471 April 2021. The Economic Research Forum (ERF). https://www.researchgate.net/profile/Shireen-Alazzawi/publication/351195940_Lives_Versus_Livelihoods_Who_Can_Work_from_Home_in_MENA/links/608b3865458515d315e6b584/Lives-Versus-Livelihoods-Who-Can-Work-from-Home-in-MENA.pdf
- Saeed, Ashraf Al, and Zeina El Khalil. 2021. "Lebanon Sinking Top 3.?"
- The World Bank.
- Al-Atrush, S. (2021). Vaccine Diplomacy in the Mediterranean: The Contest for Influence. Konrad Adenauer Stiftung, Mediterranean Dialogue Series No. 36, February 2021 <https://www.kas.de/en/web/poldimed/single-title/-/content/vaccine-diplomacy-in-the-mediterranean-the-contest-for-influence>
- Al-Junaidi, L. (2021). 'Country approved both Pfizer-BioNTech and China's Sinopharm coronavirus vaccines. Anadolu Agency 13 January 2021, <https://www.aa.com.tr/en/latest-on-coronavirus-outbreak/jordan-begins-covid-19-vaccine-rollout/2108497> accessed 26 November 2021.
- Alarabiya News (2021). 'Morocco's health minister defends mandatory COVID-19 vaccine pass', 26 October 2021, <https://english.alarabiya.net/coronavirus/2021/10/26/Morocco-s-health-minister-defends-mandatory-COVID-19-vaccine-pass> accessed 26 November 2021.
- Algérie Presse Service (2020). 'Covid-19: les prix des tests et analyses de dépistage du virus plafonnés' 10 December 2020, <https://www.aps.dz/sante-science-technologie/114036-covid-19-les-prix-des-tests-et-analyses-de-depistage-du-virus-plafonnes> accessed 10 December 2021.
- Algérie Presse Service (2021). 'Covid-19: Health situation in Algeria is stable', 14 May 2021 <https://www.aps.dz/en/health-science-technologie/39297-covid-19-health-situation-in-algeria-is-stable> accessed 26 November 2021.

- Algérie Presse Service (2021b). 'Covid-19: Algeria is logistically ready for vaccination operation' 6 January 2021, <https://www.aps.dz/en/health-science-technology/37420-covid-19-algeria-is-logistically-ready-for-vaccination-operation> accessed 26 November 2021.
- Arab Barometer (2021a). 'Vaccine Hesitancy in MENA'. 9 July 2021, <https://www.arabbarometer.org/2021/07/vaccine-hesitancy-in-mena/> accessed 26 December 2021.
- Arab Barometer (2021b). Arab Barometer VI Tunisia Country Report. Duration: July 2020 - April 2021. https://www.arabbarometer.org/surveys/covid-19-survey/#country_reports, accessed 26 December 2021.
- Arab Barometer (2021c). Arab Barometer VI Lebanon Country Report. Duration: July 2020 - April 2021. https://www.arabbarometer.org/surveys/covid-19-survey/#country_reports, accessed 26 December 2021.
- Arab Barometer (2021d). Arab Barometer VI Morocco Country Report. Duration: July 2020 - April 2021. https://www.arabbarometer.org/surveys/covid-19-survey/#country_reports, accessed 26 December 2021.
- Arab News (2020). 'Lebanon implements COVID-19 health pass', 2 August 2021, <https://www.arabnews.com/node/1903986/middle-east> accessed 26 November 2021.
- Assaad, R. and Krafft, C. (2016, April). Labor market dynamics and youth unemployment in the Middle East and North Africa: Evidence from Egypt, Jordan and Tunisia. In Economic Research Forum Working Paper Series (Vol. 993, pp. 1-27). The Economic Research Forum (ERF).
- AU and Africa CDC News (2021). 'AMSP opens COVID-19 vaccines pre-orders for 55 African Union Member States', 19 January 2021, <https://africacdc.org/news-item/amsp-opens-covid-19-vaccines-pre-orders-for-55-african-union-member-states/> accessed 26 November 2021.
- Ayadi, R. and Challita, S. (2020). Lebanon, A Case of a Compounded Crisis: A TRIS Path for the Phoenix to Re-Emerge from the Ashes. EMEA Policy Paper, <https://euromed-economists.org/download/lebanon-a-case-of-a-compounded-crisis-a-tris-path-for-the-phoenix-to-re-emerge-from-the-ashes/>
- Ayadi, R. (2020a). Time for a decisive coordinated response to a costly global COVID-19 systemic crisis: toward a resilient global system. EMEA Policy Paper, April 2020.
- Ayadi, R. (2020b). Proposal of a global resilience three-pillar framework to face external shocks: the case of COVID-19 pandemic. EMEA Policy Paper, December 2020.
- Ayadi, R. and Ronco, S. (2020). How Resilient are the Healthcare Systems in the Mediterranean? Cases of Algeria, Jordan, Morocco, Palestine and Tunisia. Konrad Adenauer Stiftung with EMEA and EMNES, December 2020.
- Ayadi, R. and Ronco, S. (2021). Education and Training Policies in Response to COVID-19, Preparing for the Recovery. A Focus on Arab Mediterranean Countries. EMEA-EMNES Study, in collaboration with the European Training Foundation (ETF), May 2021.

- Ayadi, R., Abdullah Ali, S., Alshyab, N., Barnieh, S. K., Belarbi, Y., Challita, S., El Mekkaoui, N., Konya, K., Mouelhi, R. B., Ramadan, R., Sandri, S., Shaban, M., Ronco, S., and Zaki, C. (2020). COVID-19 in the Mediterranean and Africa. Diagnosis, Policy Responses, Preliminary Assessment and Way Forward. EMEA and EMNES Study, April 2020.
- Ayadi, R., Barci, G., and Ronco, S. (2020). Covid-19 Policy Assessment Monitor in the Mediterranean and Africa. March-September 2020. EMEA Study, September 2020.
- BBC (2020). 'Covid vaccines: Will drug companies make bumper profits?', 18 December 2020, <https://www.bbc.com/news/business-55170756> accessed 10 December 2021.
- Behsudi, A. (2020). Wish you were here: Tourism-dependent economies are among those harmed the most by the pandemic. <https://www.imf.org/external/pubs/ft/fandd/2020/12/pdf/impact-of-the-pandemic-on-tourism-behsudi.pdf>
- CGTN (2021). 'Algeria inaugurates production of Sinovac COVID-19 vaccines', 30 September 2021, <https://news.cgtn.com/news/2021-09-30/Algeria-inaugurates-production-of-Sinovac-COVID-19-vaccines-13YgNdhO6Ag/index.html> accessed 26 November 2021.
- Chetail, V. (2020). COVID-19 and human rights of migrants: more protection for the benefit of all. IOM Policy Brief, 1-11.
- Connor, A., Hariharan, H., Carson, S., Sanders, K. C., Vosburg, K. B., and Sabot, O. (2021). Access To COVID-19 Testing In Low- And Middle-Income Countries, is still critical to achieving health equity. Health Affairs, 27 October 2021, <https://www.healthaffairs.org/doi/10.1377/forefront.20211026.483412/full/> accessed 2 December 2021.
- Decode (2021). Decoding the economics of COVID-19: in the know: A monthly economic update, December 2021.
- Dunne, C. W. (2020). 'Authoritarianism and the Middle East in the Time of COVID-19'. Arab Center Washington DC, 2 April 2020, <https://arabcenterdc.org/resource/authoritarianism-and-the-middle-east-in-the-time-of-covid-19/> accessed 29 December 2021.
- ElAshmawy, N., Muhab, N., and Osman, A. (2020). Improving female labor force participation in MENA, <https://id-bnc-idrc.dspacedirect.org/bitstream/handle/10625/59738/7b171b48-5f18-4310-8c6a-4e41cb1624bc.pdf?sequence=1>
- ESCWA (2021). The impact of COVID-19 on migrants and refugees in the Arab region, <https://reliefweb.int/sites/reliefweb.int/files/resources/impact-covid-19-migrants-refugees-arab-region-policy-brief-english.pdf>
- France 24 (2021). 'Tunisia struggles to cope with surge in Covid-19 cases. Issued 15 July 2021, <https://www.france24.com/en/africa/20210715-tunisia-struggles-to-cope-with-surge-in-covid-19-cases> accessed 5 December 2021.
- GardaWorld (2021a). 'Algeria: Authorities plan to lift COVID-19-related nightly 23:00-05:00 curfew as of Oct. 20 /update 18', 19 October 2021, <https://www.garda.com/crisis24/news-alerts/536261/algeria-authorities-plan-to-lift-covid-19-related-nightly-2300-0500-curfew-as-of-oct-20-update-18> accessed 26 November 2021.

- GardaWorld (2021b). 'Morocco: Authorities introduce vaccine pass to access public buildings and businesses as of Oct. 26 /update 75', 26 October 2021, <https://www.garda.com/crisis24/news-alerts/538731/morocco-authorities-introduce-vaccine-pass-to-access-public-buildings-and-businesses-as-of-oct-26-update-75> accessed 26 November 2021.
- GardaWorld (2021c). 'Lebanon: Authorities plan to impose new entry measures for travelers from Dec. 15 to combat COVID-19 /update 61', 9 December 2021, <https://www.garda.com/crisis24/news-alerts/553961/lebanon-authorities-plan-to-impose-new-entry-measures-for-travelers-from-dec-15-to-combat-covid-19-update-61> accessed 26 November 2021.
- Gatti, R., Lederman, D., Fan, R. Y., Hatefi, A., Nguyen, H., Sautmann, A., Sax, J. M., and Wood, C. A. (2021). Overconfident: How Economic and Health Fault Lines Left the Middle East and North Africa Ill-Prepared to Face COVID-19 Middle East and North Africa Economic Update (October), Washington, DC: World Bank. doi: 10.1596/978-1-4648-1798-4.
- Gentilini, U., Almenfi, M., Orton, I., and Dale, P. (2020). Social Protection and Jobs Responses to COVID-19 (No. 33635). The World Bank. Updated on 14 May 2021, <https://openknowledge.worldbank.org/handle/10986/33635>
- Gherzi Egypt (2020). Impact of COVID-19 on the global market and local industry of textile, https://www.intracen.org/uploadedFiles/intracenorg/Content/Redesign/Projects/GTEX/ImpactofCovidonTCindustry_Egypt_eng.pdf
- GHI (2021). COVID-19 Arab Monitor (COV-AM). Global Health Institute at the American University of Beirut. <https://ghi.aub.edu.lb/cov-am/> accessed between November and December 2021.
- GSoD In Focus (2021). Taking Stock of Regional Democratic Trends in Africa and the Middle East Before and During the COVID-19 Pandemic. The Global State of Democracy in Focus. Special Brief, January 2021, <https://www.idea.int/sites/default/files/publications/regional-democratic-trends-Africa-Middle-East-before-and-during-COVID-19.pdf>
- Hamdi, R. (2021). 'Algeria's health system is on the brink of implosion, as coronavirus wave hits. The African Report, 4 August 2021, <https://www.theafricareport.com/114474/algerias-health-system-is-on-the-brink-of-implosion-as-coronavirus-wave-hits/> accessed 10 December 2021.
- Hartman, T. K., Stocks, T. V., McKay, R., Gibson-Miller, J., Levita, L., Martinez, A. P., and Bentall, R. P. (2021). The authoritarian dynamic during the COVID-19 pandemic: Effects on nationalism and anti-immigrant sentiment. *Social Psychological and Personality Science*, 1948550620978023.
- Hoogeveen, J. G. and Lopez-Acevedo, G., eds. (2021). Distributional Impacts of COVID-19 in the Middle East and North Africa Region. MENA Development Report. Washington, DC: World Bank. doi:10.1596/978-1-4648-1776-2. License: Creative Commons Attribution CC BY 3.0 IGO
- Human Rights Watch (2021a). 'Egypt: Emergency Provisions Made Permanent', 5 November 2021, <https://www.hrw.org/news/2021/11/05/egypt-emergency-provisions-made-permanent> accessed 26 November 2021.

- Human Rights Watch (2021b). 'Jordan: State of Emergency Declared Government Promises to Respect Rights in COVID-19 Response', 20 March 2020, <https://www.hrw.org/news/2020/03/20/jordan-state-emergency-declared> accessed 26 November 2021.
- IMF (2021). Regional Economic Outlook: Arising from the Pandemic: Building Forward Better. Middle East and Central Asia. April 2021.
- Karamouzian, M. and Madani, N. (2020). COVID-19 response in the Middle East and North Africa: challenges and paths forward. *The Lancet Global Health*, Vol. 8, No. 7, e886-e887.
- Kayed, M. (2021). '2021 state budget focuses on health sector, social protection – Al-Ississ'. *The Jordan Times*, 1 December 2020, https://www.jordantimes.com/news/local/2021-state-budget-focuses-health-sector-social-protection-%E2%80%94-al-ississ?_cf_chl_managed_tk_=pmd_RDMnHHcamjk4AFkuBFdlBASS0aEHQnIM.UKOfdc.Zg-1634313025-0-gqNtZGzNAzujcnBsZQql accessed 5 December 2021.
- Klouche-Djedid, S. N., Shah, J., Khodor, M., Eddine, S., Kacimi, O., Islam, S. M. S., and Aiashe, H. (2021). Algeria's response to COVID-19: an ongoing journey. Elsevier Public Health Emergency Collection. Published online 8 February 2021. doi:10.1016/S2213-2600(21)00083-7.
- KPMG (2021). Global Mobility COVID-19 Global Tracker, <https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/05/Interactive-GMS-Covid-Tracker.pdf> accessed 2 December 2021.
- Labrar, S., Maarouf, A., and Zouiri, L. (2021). Moroccan industry in the covid-19 era: the case of the automotive sector. HAL, <https://hal.archives-ouvertes.fr/hal-03407388/document>
- Malpani, R. and Maitland, A. (2021). 'Dose of Reality: How rich countries and pharmaceutical corporations are breaking their vaccine promises'. *The People's Vaccine*. Briefing Note, 21 October 2021, <https://app.box.com/s/hk2ezb71vf0sla719jx34v0ehs0l22os> accessed 15 December 2021.
- MEDIAS24 (2021). '16 Nouveaux Centres Hospitaliers Programmés pour 2022', 9 November 2021 <https://medias24.com/2021/11/09/16-nouveaux-centres-hospitaliers-programmes-pour-2022/> accessed 5 December 2021.
- Mériéau, E. (2020). COVID-19, Authoritarianism Vs. Democracy: What the Epidemic Reveals about the Orientalism of our Categories of Thought. Sciences Po Center for International Studies, 28 August 2020, <https://www.sciencespo.fr/cei/en/content/covid-19-authoritarianism-vs-democracy-what-epidemic-reveals-about-orientalism-our-categorie>
- Ministère de la Santé du Maroc (2021) 'Le Maroc acquiert le premier lot du vaccin contre le virus de la Covid-19', 25 January 2021, <https://www.sante.gov.ma/pages/actualites.aspx?IDActu=431> accessed 10 January 2022.
- Ministère de la Santé du Maroc (2021) 'Le Ministère de la Santé organise une rencontre nationale sur la gestion des ressources humaines dans le secteur de la Santé', 25 June 2021, <https://www.sante.gov.ma/pages/actualites.aspx?IDActu=437> accessed 5 December 2021.
- Nhaili, S. (2021). 'La campagne de vaccination a coûté jusqu'ici plus de 2 milliards de DH à l'Etat'. *Le Matin*, 19 July 2021, <https://lematin.ma/express/2021/campagne-vaccination-coute-jusqu-plus-2-milliards-dh-letat/361743.html> accessed 5 December 2021.

- NTI, Johns Hopkins Response School of Public Health, EIU (2019). GHS Index, Global Health Security Index. Building Collective Action and Accountability.
- Weldali, M. (2021). 'Sanad application draws mixed public reactions', 19 October 2021, <https://www.jordantimes.com/news/local/sanad-application-draws-mixed-public-reactions> accessed 26 November 2021.
- Portal National de la Santé en Tunisie (2021). 'Plan de Préparation et de Riposte au Risque d'introduction et de dissémination du « SARS-CoV-2 » en Tunisie', <http://www.santetunisie.rns.tn/images/strategie-vaccination-covid-19.pdf> accessed 5 December 2021.
- Portal National de la Santé en Tunisie (2021). 'Stratégie vaccinale contre la COVID-19 en Tunisie', <http://www.santetunisie.rns.tn/images/strategie-vaccination-covid-19.pdf> accessed 5 December 2021.
- Ramadan, R. (2021). Potential impact of COVID-19 on poverty and food insecurity in the Arab region. RBAS working paper series, UNDP.
- Reuters (2021). 'Egypt begins COVID-19 vaccination drive with frontline medical staff', 24 January 2021, <https://www.reuters.com/article/us-health-coronavirus-egypt-vaccines-idUSKBN29TOLD> accessed 26 November 2021.
- Reuters (2021). 'Egypt to produce up to 80 mln Sinovac vaccine doses annually- minister', 8 April 2021, <https://www.reuters.com/world/middle-east/egypt-produce-up-60-mln-sinovac-vaccine-doses-annually-minister-2021-04-08/> accessed 26 November 2021.
- Reuters (2021). 'Egypt's President Sisi ends state of emergency for the first time in years', 26 October 2021, <https://www.reuters.com/world/middle-east/egypts-president-sisi-ends-state-emergency-first-time-years-2021-10-25/> accessed 25 November 2021.
- Reuters (2021). 'Lebanon restricts cafes, beaches to the vaccinated or COVID tested', 30 July 2021 <https://www.reuters.com/world/middle-east/lebanon-restricts-cafes-beaches-vaccinated-or-covid-tested-2021-07-30/> accessed 26 November 2021.
- Reuters (2021). 'Palestinians begin coronavirus vaccination campaign', 2 February 2021, <https://www.reuters.com/article/us-health-coronavirus-palestinians-vacci-idUSKBN2A22JE> accessed 5 January 2022.
- Sharma, R. R., Chawla, S., and Karam, C. M. (2021). Global gender gap index: world economic forum perspective. In Handbook on Diversity and Inclusion Indices. Edward Elgar Publishing, <https://www.weforum.org/reports/global-gender-gap-report-2021>
- Thomson, S. and Ip, E. C. COVID-19 emergency measures and the impending authoritarian pandemic. *Journal of Law and the Biosciences*, Vol. 7, Iss. 1, January-June 2020, Isaa064, <https://doi.org/10.1093/jlb/ljaa064>

- The Arab Weekly (2021). 'King Mohammed VI launches COVID vaccine initiative for Morocco, rest of Africa', 6 July 2021, <https://theArabweekly.com/king-mohammed-vi-launches-covid-vaccine-initiative-morocco-rest-africa> accessed 5 December 2021.
- Travkina, E. and Sacco, P. L. (2020). Culture shock: COVID-19 and the cultural and creative sectors. OECD.
- UN Women (2020a). Rapid assessment: The effects of COVID-19 on violence against women and gendered social norms – A snapshot from nine countries in the Arab states preliminary.
- UN Women (2020b). Addressing the economic fallout of COVID-19: pathways and policy options for a gender-responsive recovery. Policy Brief No. 15, <https://cieg.unam.mx/covid-genero/pdf/reflexiones/organismos-internacionales/22addressing-economic-fallout-covid19.pdf>
- UN Women (2020c). Violence Against Women and Girls: The Shadow Pandemic, <https://www.unwomen.org/en/news/stories/2020/4/statement-ed-phumzile-violence-against-women-during-pandemic>
- UN Women (2020d). Tunisian women in the face of COVID-19: during and after confinement. Policy Brief (May– June 2020), <https://arabstates.unwomen.org/en/digital-library/publications/2020/07/policy-brief-tunisian-women-in-the-face-of-covid19>
- UNHCR (2021). 'COVID-19 Vaccine. All you need to know about the National Vaccination Campaign in Jordan!', <https://help.unhcr.org/jordan/en/frequently-asked-questions-unhcr/covid-19-vaccine/> accessed 5 December 2021.
- UNICEF Press Releases (2021). 'COVAX updates participants on delivery delays for vaccines from Serum Institute of India (SII) and AstraZeneca', 25 March 2021, <https://www.unicef.org/press-releases/covax-updates-participants-delivery-delays-vaccines-serum-institute-india-sii-and> accessed 5 November 2021.
- University of Oxford (2021). 'Global Dashboard on Vaccine Equity Launched, Featuring Data from COVID-19 Tracker', 22 July 2021, <https://www.bsg.ox.ac.uk/news/global-dashboard-vaccine-equity-launched-featuring-data-covid-19-tracker> accessed 26 November 2021.
- Van Hoek, R. and Dobrzykowski, D. (2021). Towards more balanced sourcing strategies—are supply chain risks caused by the COVID-19 pandemic driving reshoring considerations?. *Supply Chain Management: An International Journal*.
- WHO News (2021). 'Classification of Omicron (B.1.1.529): SARS-CoV-2 Variant of Concern', 26 November 2021, [https://www.who.int/news/item/26-11-2021-classification-of-omicron-\(b.1.1.529\)-sars-cov-2-variant-of-concern](https://www.who.int/news/item/26-11-2021-classification-of-omicron-(b.1.1.529)-sars-cov-2-variant-of-concern) accessed 2 December 2021.
- Woertz, E. and Yellinek, R (2021). 'Vaccine diplomacy in the MENA region'. Middle East Institute. April 2021, <https://www.mei.edu/publications/vaccine-diplomacy-mena-region> accessed 15 December 2020.
- World Bank (2021). Assessing Country Readiness for Covid-19 Vaccines. First insight from the assessment rollout. March 2021, <https://documents1.worldbank.org/curated/en/467291615997445437/pdf/Assessing-Country-Readiness-for-COVID-19-Vaccines-First-Insights-from-the-Assessment-Rollout.pdf>

- World Bank (2021a). Overconfident: How Economic and Health Fault Lines Left the Middle East and North Africa Ill-Prepared to Face COVID-19.
- World Bank (2021b). MENA Crisis Tracker – 11/15/2021. Office of the Chief Economist, Middle East and North Africa. The World Bank. The editor for the October 18th, 2021, edition is Christina A. Wood, Senior Economist, Office of the Chief Economist for MENA. Excellent data assistance provided by Rana Lotfi.
- World Bank (2021c). MENA Crisis Tracker – 06/12/2021. Office of the Chief Economist, Middle East and North Africa. The World Bank. The editor for this edition is Christina A. Wood, Senior Economist, Office of the Chief Economist for MENA. Excellent data assistance provided by Rana Lotfi.
- World Bank. (2018). Mashreq 2.0: Digital Transformation for Inclusive Growth and Jobs. World Bank.
- World Bank. (2020). Egypt Economic Monitor, November 2020: From Crisis to Economic Transformation—Unlocking Egypt’s Productivity and Job-Creation Potential. World Bank.
- World Health Organization. (2020). WHO policy brief: the economic and social impact of COVID-19 in the Eastern Mediterranean Region (No. WHO-EM/HEC/050/E). World Health Organization. Regional Office for the Eastern Mediterranean.
- Xinhua Net (2020). ‘Moroccan foundation launches large-scale production of COVID-19 testing kits’, 22 September 2020, <http://www.xinhuanet.com/english/20211015/C99FC98544400001B88F17CC10336330/c.html> accessed 10 December 2021
- Xu, Z., Elomri, A., Kerbache, L., and El Omri, A. (2020). Impacts of COVID-19 on global supply chains: facts and perspectives. *IEEE Engineering Management Review*, Vol. 48, No.3, pp. 153-166.



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