



ECA POLICY BRIEF

Resilience in the face of systemic crises: lessons from the coronavirus disease pandemic in Tunisia

Key messages

- The global economy has entered an era of great uncertainty, with an increased risk of cascading crises in the future resulting from a combination of climatic, health and human-caused events¹ with potentially disastrous socioeconomic consequences.
- The economy of Tunisia has been heavily affected by the coronavirus disease (COVID-19) pandemic, and the country is particularly vulnerable to climate change and its economic and social consequences.
- Tunisia, like all North African countries, must change its development model to integrate resilience to future shocks as a central pillar and design public policies based on a systemic approach to future risks.
- Recommendations for strengthening the resilience of the economy include:
 - Strengthen the capacity of the financial system to better respond to the needs of businesses, especially micro- and small enterprises.
 - Strengthen the development of digital technologies to better anchor them in the economy and take advantage of productivity gains.
 - Strengthen the capacity of the State to better deal with situations of market failure and public governance. In particular, this means that the State acts as the central link in a network consisting of different stakeholders (companies, civil society associations, research centres, etc.) involved in the financing and production of public services and in crisis management.
 - Rethink sectoral development by aligning policies with the objective of resilience to the main risks, in particular those related to climate change.

1. New normal: a world with systemic crises

The year 2022 provides an enlightening illustration of the changing nature of the crises that the world will increasingly face. The current economic crisis, including the threat of stagflation, is itself the result of the interweaving of several crises. First, there was the COVID-19 pandemic, which, within a few weeks, paralysed the global economy.² In Tunisia, gross domestic product (GDP) fell by 8.8 per cent in 2020, with an asymmetric impact of the pandemic on sectors. The value added of manufacturing sector fell by 9.3 per cent, with the exception of the agrifood industry,

² In 2020, the world's gross domestic product declined by 3.3 per cent (compared with an increase of 2.6 per cent in 2019), even though the major economies had implemented costly economic support programmes (for example, in 2020, the United States of America spent 11 per cent of its GDP on such programmes).

¹ Examples of human-caused events are armed conflicts and the restriction or halting of exports, as observed in some countries during the crisis in Ukraine.

which rose by 1.7 per cent. The decline reached 13.3 per cent in the market services sector, and the most significant contractions were recorded in the hotel industry (43.6 per cent) and transport and warehousing (28 per cent). On the social front, the unemployment rate increased from 15.1 per cent in 2020 to 16.2 per cent in the first quarter of 2022 (with 14.1 per cent for men and 20.9 per cent for women). In terms of poverty, the World Bank estimated that there was an increase in the poverty rate from 2.9 per cent of the population before the COVID-19 crisis to 7.4 per cent in 2020.³

In addition to short-term impacts on employment and production, there have also been long-term repercussions on health, education and investment. In Tunisia, total investment contracted by 22.6 per cent in 2020.⁴ In addition, the pandemic has had a heavy impact on public finances, with a budget deficit reaching 8.7 per cent of GDP in 2020⁵ and projected to be 7.9 per cent for 2022.⁶ The situation of public finances, coupled with political instability, has resulted in a deterioration of the country's financing conditions, which weighs on the economy's ability to rebound. The sovereign debt rating of Tunisia has been downgraded,⁷ and the country entered into a financing agreement with the International Monetary Fund for \$1.9 billion in October 2022. The country's financing difficulties have been exacerbated by the tightening of global financing conditions, with the main central banks raising rates to fight inflation. Furthermore, the slowdown of the global economy, in particular in the European Union, is also weighing on the recovery of growth in Tunisia. More than two and a half years after the onset of the pandemic, the economic consequences for world trade are still being felt through the disruption to supply chains.

The second crisis is that of climate change, with temperatures rising beyond the predictions of climate scientists.⁸ Several regions in the world have experienced power outages, water shortages and fires that have

destroyed thousands of hectares of forests. Extreme weather conditions have also had a strong impact on agricultural crop yields.⁹

Climate change is causing extreme events (droughts, floods, etc.) to occur more frequently and with greater magnitude, with significant consequences for food systems, habitat conditions and the biosphere. In addition, global warming increases health risks. Climate change is estimated to have exacerbated 58 per cent of the 375 infectious diseases listed in the Global Infectious Diseases and Epidemiology Network.¹⁰ According to reports of the Intergovernmental Panel on Climate Change, climate risks are becoming increasingly complex and difficult to manage and are affecting all regions and sectors. Thus, there is an increased risk of cascading crises occurring in the future, with a combination of climatic, health and human-caused events having potentially disastrous socioeconomic consequences.¹¹ Tunisia, like all countries in North Africa, is particularly vulnerable to climate change.¹²

The impact of these two crises on the supply of goods and on inflation (in particular of food prices) has been amplified by the third crisis, the conflict in Ukraine, the repercussions of which are also geopolitical.

The overlapping crises are undermining the ability of economies, especially those of developing countries, to rebound. While these economies had been weakened by the COVID-19 pandemic, causing a significant deterioration in public finances, the economic consequences of the extreme temperatures in 2022 and the crisis in Ukraine have brought the rebound in economic activity to a halt.¹³ Thus, in Tunisia, growth reached only 3.3 per cent in 2021, compared with, for example, 5.4 per cent in the eurozone.

3 Deeksha Kokas and others, "Impacts of COVID-19 on household welfare in Tunisia", Policy Research Working Paper, No. 9503 (Washington, D.C., World Bank, 2020).

4 Central Bank of Tunisia, *Le Mot du Gouverneur : Rapport Annuel 2021*. Available at www.bct.gov.tn/bct/siteprod/documents/RA_fr.pdf.

5 World Bank, Tunisia: *Bulletin de Conjoncture de l'Économie Tunisienne: Gérer la Crise en Temps d'Incertitudes* (Washington, D.C., 2022).

6 Tunisia, Ministry of Finance, "Synthèse des résultats des finances publiques (budget de l'Etat)". Available at www.finances.gov.tn/fr/les-indicateurs/synthese-des-resultats-des-finances-publiques-budget-de-letat.

7 As at 1 December 2022, Tunisia had a CCC+ rating by Fitch Ratings, which corresponds to a very high risk of default.

8 For example, the Arctic, considered to be a global climate thermometer, has warmed nearly four times faster than the global average over the past 40 years, not twice as fast, as models had previously projected.

9 In North Africa, it is estimated that the wheat crop was reduced by half in Morocco and by 20 per cent in Algeria in 2022.

10 McKenzie Prillaman, "Climate change is making hundreds of diseases much worse", *Nature*, 12 August 2022. Furthermore, with the encroachment of humans on the natural habitat of wild animals, the probability of a pandemic occurring is significantly increased.

11 To limit global warming to less than 2°C above pre-industrial levels, carbon dioxide emissions must be reduced by about 25 per cent between 2015 and 2030 in most scenarios of the Intergovernmental Panel on Climate Change and reach net zero by 2050. With an increase of more than 2°C, some areas of the world would become uninhabitable for humans.

12 See, for example, E. Ali and others, "Cross-chapter paper 4: Mediterranean region" in Intergovernmental Panel on Climate Change, *Climate Change 2022: Impacts, Adaptation and Vulnerability – Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, H.-O. Pörtner and others, eds. (Cambridge, United Kingdom, Cambridge University Press, 2022).

13 World Bank, "Sharp, long-lasting slowdown to hit developing countries hard", 10 January 2023.

The current crisis is therefore a symptom of profound changes that have occurred on a global scale and created great uncertainty for developing countries, including Tunisia, as to the conditions of their economic and social development. In this context, each country must assess its fragilities in order to take them into account when considering adaptation and resilience to future crises and shocks.

In the present policy brief, some policy recommendations are made for improving the resilience of the economy in Tunisia, based in particular on the results of a survey conducted among a sample of 1,000 companies in the country in December 2020 and on the work of the Economic Commission for Africa (ECA) on the fragility of the economies in the North African subregion.

2. Lessons learned from the effects of the pandemic on businesses: the case of Tunisia

As mentioned above, in December 2020, ECA conducted a survey of 1,000 businesses to assess the impact of the

COVID-19 pandemic on business activity and operations. From this survey, some useful information emerged to inform public policies aimed at building greater resilience to similar crises. The first lesson is that the pandemic affected companies asymmetrically, in particular according to sector and size. Table 1 shows the changes in turnover and employment by industry. Turnover in agriculture, forestry and fishing fell by 9.5 per cent, in the manufacturing sector by 13.2 per cent and in services by 34.1 per cent.

Through the survey, it was found that the activity of micro- and small enterprises was more affected than that of larger enterprises (see table 2). However, in the agricultural and manufacturing sectors, the decline in the turnover of exporting companies was greater than that of non-exporting companies. Health-related restrictions, and in particular the closure of borders, had a significant impact on exporting companies. The situation was the opposite in services, for which exporting firms recorded a 10.6 per cent decline in turnover (see table 3), compared with 35.3 per cent for non-exporting firms.

Table 1: Changes in turnover and employment between 2019 and 2020 (Percentage)

Sector	Turnover	Employment
Agriculture, forestry and fishing	-9.5	-2.7
Food and beverage	+10.0	-
Textile, clothing, leather and footwear	-35.2	-12.9
Mechanical and electrical industries	-32.0	-2.7
Pharmaceutical and chemical	+10.2	-
Construction and civil engineering	-54.3	-53.7
Wholesale and retail trade	+0.1	-19.5
Hotels and restaurants	-56.4	-51.3
Transportation and warehousing	-44.8	-
Information and communications technology	+1.0	-
Financial and insurance activities	+2.4	-3.7
Real estate activities	-16.0	-18.8

Table 2: Change in turnover and employment by company size (Percentage)

Company size	Turnover	Employment
Micro-	-28	-31.1
Small	-21.5	-14.9
Medium	-19.5	-11.3
Large	+2.9	-1

Table 3: Change in turnover by sector and export status (Percentage)

	Agriculture	Industry	Services
Non-exporting	-5.8	-9.9	-35.3
Exporting	-15.3	-16.5	-10.6

The second lesson is that the asymmetric impact according to sector and size can be explained by the nature of the crisis and the constraints that companies have faced.¹⁴ Among the three North African countries in which the ECA survey was conducted (Algeria, Morocco and Tunisia), Tunisia is the country in which the impact of constraints on access to finance for business activity was the most significant. Table 4 presents the percentage of enterprises reporting financial constraints in 2019 and 2020. It shows that a larger proportion of enterprises reported being constrained in 2020. Table 5 presents the perception of financial constraints by enterprise size. Respondents from microenterprises reported perceiving the businesses to be significantly more constrained than those from other enterprises, with 86 per cent indicating that they were financially constrained in both 2019 and 2020.

The table in the annex shows that financing had a statistically significant impact on the decrease in turnover

in 2020. On average, the difference in turnover variation between financially constrained companies and others was 10 per cent.

The third lesson is related to the role played by digital technologies. At the height of the pandemic, digital technologies were useful in coping with the restrictions imposed by authorities. Online business has grown significantly, as has teleworking, around the world, although to different degrees depending on the level of digitalization of economies. In the case of Tunisia, the importance of digitalization seems to be recognized in a large number of sectors. Table 6 shows that financial and insurance activities (100 per cent), the textile industry (100 per cent), mechanical and electrical industries (97 per cent) and the food industry (94 per cent) are the sectors in which COVID-19 will have a significant impact on the importance of information and communications technology.

Table 4 : Perceived financial constraints by company size (Percentage of companies)

	Micro-	Small	Medium	Large	Total
No constraints	5.6	3.8	3.5	8.8	4.2
Constraints in 2019 and 2020	86.0	75.6	70.2	55.9	75.4
Constraints in 2020 only	8.4	20.4	25.9	32.4	20.0

Table 5: Perceived business constraints in 2019 and 2020 (Percentage of companies)

Constraint	2019	2020
Access to financing	75.9	95.5
Access to land	1.0	6.8
Formalities related to the creation of a company	0.1	0.2
Corruption	22.2	4.7
Crime (theft, vandalism)	41.6	28.5
Customs and foreign trade regulations	5.7	25.1
Connection to electricity	2.4	1.0
Training and qualifications of the personnel at the time of hiring	1.8	5.4
Labour legislation	67.6	67.5
Macroeconomic instability	33.5	43.2
Political instability	21.5	6.3
Unfair competition from the informal sector	17.3	14.8

¹⁴ Such constraints include operating constraints owing to health restrictions, but also other constraints revealed through the survey. In addition to access to finance, issues include labour laws (cited by 67.5 per cent of respondents), macroeconomic instability (43.2 per cent), crime (28.5 per cent), customs and foreign trade regulations (25.1 per cent) and unfair competition from the informal sector (14.1 per cent).

Table 6: Responses to the question on how the impact of the pandemic might have increased the importance of digital technologies for the businesses of respondents, by sector (Percentage of companies)

Sector	Company size			
	Micro	Small	Medium-sized	Large
Agriculture, forestry and fishing	90.2	–	3.9	5.9
Food and beverage industries	3.9	12.0	12.0	72.1
Textile, clothing, leather and footwear industries	–	–	2.6	97.4
Mechanical and electrical industries	1.4	1.4	2.1	95.0
Pharmaceutical and chemical industries	12.0	16.0	6.0	66.0
Construction and civil engineering	94.6	1.4	–	4.1
Wholesale and retail trade	22.2	9.9	7.4	60.5
Hotels and restaurants	43.2	3.7	–	53.1
Transportation and warehousing	100.0	–	–	–
Information and communications technology	–	–	–	100.0
Financial and insurance activities	–	–	–	100.0

These results are reinforced in the results to another question in the survey, in which respondents were asked to specify in which sectors public investment should be more focused. Information and communications technology received the most responses, being cited by 67 per cent of the respondents (see table 7). Health ranked second, with 20 per cent of responses. This reflects the two major concerns of firms at the height of the crisis: health, and the continuation of their business activity despite health restrictions.

The lessons learned from the COVID-19 pandemic, coupled with the effects of the two other crises that shook the world in 2022, are useful in identifying reforms that should be carried out to increase the resilience of the economy of Tunisia to future shocks.

Strengthening the resilience of the economy: public policy recommendations

Table 7: Priority areas for public spending (Percentage of respondents citing the field)

Area	Percentage
Transport and logistics	2
Energy	7
Environment	2
Education	2
Health	20
Information and communications technology	67

The COVID-19 crisis has affected all sectors of the economy, but the services sector in particular and especially hotels and restaurants. Faced with this situation, Tunisia, like the majority of countries worldwide, has put in place measures to support businesses, such as the rescheduling of payments of tax arrears and the temporary suspension of certain penalties. It has also targeted certain sectors that were specifically affected by the pandemic, such as hotels and restaurants, by subsidizing interest rates on investment loans.¹⁵

In the future, shocks of different natures and magnitudes can be expected, which may disproportionately affect one sector over another. Because the future is full of uncertainties, it is difficult to predict all types of shocks and to assign them probabilities of occurrence in order to identify and prioritize the public policies that should be implemented to deal with them. In the case of climate change, for example, the debate is focused on the challenges resulting from a warming of 2°C above pre-industrial levels, whereas there are other scenarios, with risks of cascading events,¹⁶ whose consequences would be even more dramatic on a human scale.

¹⁵ The 2021 law on the budget includes additional measures to support the businesses and sectors most affected by the pandemic, including tourism. These measures include an extension of the State guarantee system until the end of 2021, exemptions from paying income tax for 2021 and support for persons temporarily unemployed because of COVID-19.

¹⁶ See, for example, Luke Kemp and others, "Climate endgame: exploring catastrophic climate change scenarios", Proceedings of the National Academy of Sciences of the United States of America, vol. 119, No. 34 (August 2022).

It is necessary to better understand the major risks that Tunisia could face and to rethink the development of sectors to strengthen the resilience of the economy to those risks. Resilience is defined here as the ability to prepare for and overcome shocks and crises.

3. Strengthen the capacity of the financial system to better meet the needs of businesses

The resilience of companies depends on their ability to finance their activities. The ECA survey showed that access to finance was the main constraint perceived by respondents, especially in 2020, and that small firms were more financially vulnerable to the COVID-19 crisis.

In many industrialized countries, government intervention to maintain the cash flow of companies has been crucial to their survival. However, the efficiency of such policies depends on the level of development of the financial system. The more developed it is, the better it is able to respond to the financing problems of companies, in all their diversity. Here again, Tunisia is one of the countries with the best performance in North Africa,¹⁷ but significant progress still needs to be made.

Many factors contribute to the financing constraints faced by companies in Tunisia, including:

- a. Unfavourable characteristics of micro-, small and medium-sized enterprises, such as their lack of transparency, the unavailability of an accessible credit history, blurred lines between business and owner finances, and administrative costs;
- b. Banking practices related to: the micro-, small, and medium-sized enterprises sector, such as high collateral requirements; weak financial infrastructure (including creditor rights and collateral infrastructure); the nature of the banking sector, with limited competition and a high concentration of assets in a few banks;¹⁸ and underdeveloped equity markets and alternative sources of financing.

Facilitating access to finance may become essential to mitigating the effects of high levels of uncertainty. Adjusting to new market conditions requires firms to have the ability to invest and innovate. Public policies

¹⁷ ECA, North Africa and the Challenges of the COVID-19 Era (Addis Ababa, 2021).

¹⁸ In 2019, 90 per cent of banking assets were concentrated in the country's top three banks.

to facilitate access to finance for businesses, especially micro-, small and medium-sized enterprises, are numerous and diverse and include the following:

- a. Capacity-building in financial literacy for the private sector;
- b. Strengthening the capacity of the banking sector to better respond to the financing needs and specificities of micro-, small and medium-sized enterprises;
- c. Reforming the financial infrastructure to make it stronger, promote competition in the financial sector and foster the development of digital finance.

Strengthen the development of digital technologies

The COVID-19 crisis has demonstrated the importance of digital technologies in the management of health crises and in the adaptation of society, in all its dimensions, to the constraints they pose. Digital technologies can also be useful in adapting to climate change, for example for the collection and analysis of a large amount of information in real time for the optimal use of resources (water, energy, etc.)¹⁹ and for the maintenance of infrastructure.²⁰

Although Tunisia is among the most advanced countries in North Africa in terms of digitalization,²¹ much remains to be done to anchor these new technologies more deeply in the economy and in society and to transform them into a vector of development. Compared with the situation in other emerging economies, there is room for improvement in network readiness²² and Internet development, which require more public investment in digital infrastructure.

Another important dimension is digital skills, the development of which is essential in order to take advantage of the economic opportunities offered by digital technologies. The adoption of these technologies would enhance the skills of workers, including those with low levels of education, thus boosting productivity in all sectors and job creation. However, in Tunisia, there is a digital divide within the population, insofar as digital technologies benefit workers with more skills, as well as between regions. Moreover, there is great room for improvement in the use of digital technologies in the economy, as they

¹⁹ In agriculture, for example, for irrigation or for evaluating the needs of plants or the state of the soil.

²⁰ For example, road infrastructure is challenged by intense heatwaves.
²¹ ECA, North Africa and the Challenges of the COVID-19 Era (Addis Ababa, 2021).

²² Network readiness measures the propensity of countries to exploit the opportunities offered by information and communications technology.

seem to contribute less to productivity in Tunisia than in other countries. Accelerating the diffusion and more efficient adoption of digital technologies is essential for the economy of Tunisia.

The following actions could be taken to diffuse digital technologies:

- a. Improve training in new digital technologies, including for children and students in school, with a curriculum that places greater emphasis on digital skills, and for school drop-outs and continuing education for workers;
- b. Transform the education system, since the dissemination of digital skills is linked with the more general transformation of the training system and because the asymmetric nature of the COVID-19 shock, in terms of both the magnitude and duration of the impacts, necessitates the reallocation of factors of production, in particular labour, between activities, making it essential to build a training system that allows for: (i) the rapid retraining of workers so that they acquire digital skills, (ii) the rapid retraining of workers so that they acquire other new skills needed to operate in the digital economy, and (iii) providing society as a whole with the new skills that it will need as part of a transition to a more climate-resilient economy.

Strengthen the capacity of the State to better address situations of market failure and public governance

The market can quickly fail in the face of extreme events, such as a pandemic or a major climate shock. In such a situation, the intervention of the State is critical, which raises the question of its capacities.²³ In order to strengthen the State's capacity for action, several lines of reform may be envisaged:

- a. View the State as the central link in a network composed of different stakeholders (companies, civil society associations, research centres, etc.) involved in the financing and production of public services and in crisis management;
- b. Promote a network of solidarity²⁴ that temporarily abstracts from pure market mechanisms, which can be

useful in, for example, setting prices,²⁵ avoiding breaks in links between customers and suppliers, between companies and banks or investors, and between companies and workers;

- c. Promote the creation of a resilient enterprise base that produces basic goods and services for the population, with emergency plans that allow the State to intervene in order to identify and strengthen the links in the manufacturing system, which can increase the resilience of the system as a whole;
- d. Develop skills and strengthen resources for the identification and management of risks to ensure that they are taken into account in public policies, which will require a major training effort for public decision makers at all levels and the adoption of a governance system that allows climate and health risks to be integrated into public policies in a systemic way (because these risks have an impact on all areas of public policy);
- e. Strengthen the efficiency of public spending, as the State has a central role in crisis situations, which means that its capacity to act also depends on the state of public finances.

According to the International Monetary Fund, public debt had reached 79.9 per cent of GDP at the end of 2021.²⁶ In view of this situation and given the budgetary efforts that the State will have to make in order to transform the economy, it is necessary to contain the public deficit and to increase the efficiency of expenditure. Indeed, the budget deficit was reduced in 2021, owing, in particular, to an increase in resources, but the wage bill, fuel subsidies and debt service payments weigh heavily on the balance of public finances. On the expenditure side, Tunisia, like all North African countries, suffers from institutional inefficiencies that translate into inefficient public spending.²⁷ Naturally, the current crises, which are affecting the whole world, do not create a favourable context, but the country

as a whole, in particular through the construction of an information system that allows the State to better target and determine the appropriate scope for its actions, to coordinate the actions of the various stakeholders, and to better direct their production and innovation efforts. These actions should make it possible for the State to better assess the capacity of the economy to respond.

²⁵ For example, for some goods, the State could intervene to set prices to allow access to the good at a reasonable level to avoid speculation.

²⁶ "General government gross debt: percentage of GDP". IMF Data-Mapper. Available at www.imf.org/external/datamapper/GGXWDG_NGDP@WEO/TUN?zoom=TUN&highlight=TUN. Accessed on 4 May 2023. At the end of 2021, external debt represented 62.8 per cent of total public debt.

²⁷ ECA, North Africa and the Challenges of the COVID-19 Era.

²³ State capacity may be defined as the State's ability to carry out public policies to achieve given objectives. It affects the quality of the State's governance and its ability to raise resources, among other things.

²⁴ Networking, with the more active participation of the various stakeholders, should make it possible to build the greater capacity of society

must find a way to control its public finances by seeking greater efficiency in public spending and by directing public investments in such a way as to create the basis and conditions for sustainable development. Reforms (as indicated above) must be undertaken in parallel to allow the country to plan for the future.

Rethink sectoral development: examples of the hotel and restaurant and construction sectors

At the sectoral level, policies can be developed by integrating a resilience objective. To illustrate this, two examples can be considered, namely, those of the hotel and restaurant²⁸ and construction sectors.

The hotel and restaurant sector is not immune to the effects of a new pandemic. Moreover, mass tourism, with its consequences for the environment and natural resources (such as water), is not compatible with sustainable development in Tunisia. Therefore, it is important to rethink the hotel and restaurant sector, in particular to make it more resilient in the face of a new health or climate challenge, and to limit its environmental impact.²⁹

The construction sector has been strongly affected by the pandemic, coming in third in terms of decline in value added (behind the hotel and restaurant sector and textile sector). It is also a sector that can be a strong driving force within the framework of a policy of economic recovery. However, any policy to revive the construction sector

must take into account the consequences of COVID-19 and climate change.

In the context of the construction sector, the Government of Tunisia should:

- a. Develop policies to strengthen the resilience of public infrastructure and adapt housing and other buildings, especially for better energy efficiency, in order to cope with climate change and the extreme events it is already causing;
- b. Launch an ambitious infrastructure adaptation programme that relies more on public-private partnerships and includes support and incentives to both businesses and households for the construction of new – and the renovation of existing – energy-efficient housing, and provide support for innovation, among other things.

Include Tunisia in a “space of solidarity”

Finally, a country cannot, in isolation, cope with all the types of shocks that might occur, as the COVID-19 crisis has clearly shown. Resilience must be thought of on a more collective level, by building stronger ties with those that have the resources and production infrastructure that are sufficiently complementary to create a type of insurance against shocks.

²⁸ In 2019, the hotel and restaurant sector accounted for 9.4 per cent of total employment and 14.2 per cent of GDP.

²⁹ It is likely that, in the long term, with the rise in temperatures, drought will become a real barrier to tourism in Tunisia. Ecotourism is thus one of the ways in which the sector can be more in line with sustainable development.

Annex Change in turnover of companies in Tunisia between 2019 and 2020

	Change in turnover					
	(1)		(2)		(3)	
Financial constraints	-0.11c	(0.02)	-0.10c	(0.02)	-0.10c	(0.02)
Temporary stop of business operations in 2020	-0.20c	(0.02)	-0.21c	(0.02)	-0.19b	(0.02)
Normal operation at the end of 2020	0.31c	(0.02)	0.29c	(0.02)	0.30c	(0.02)
Export share in 2019	-0.5a	(0.03)	-0.06b	(0.03)	-0.08c	(0.03)
Prospects for change of activity	-0.10c	(0.02)	-0.09b	(0.02)	-0.09c	(0.02)
Capital held by the State	0.04	(0.03)	0.04	(0.03)	0.04	(0.03)
Foreign-owned capital	-0.00	(0.03)	0.02	(0.03)	0.02	(0.03)
Corruption			0.02	(0.04)	0.02	(0.04)
Crime			0.02	(0.02)	0.02	(0.02)
Customs and foreign trade regulations			0.07c	(0.02)	0.06c	(0.02)
Labour legislation			-0.01	(0.01)	-0.02	(0.01)
Political instability			-0.12c	(0.03)	-0.10c	(0.03)
Macroeconomic instability			0.05c	(0.02)	0.05c	(0.02)
Unfair competition from the informal sector			0.07c	(0.02)	0.07c	(0.02)
Age of the company					0.00	0.00
Company size					0.02b	(0.01)
Gender					-0.02	(0.03)
University					0.05c	(0.02)
Public limited company					0.03	(0.02)
Limited liability company					0.07c	(0.02)
Respondent: financial director					-0.01	(0.02)
Respondent: management					-0.03	(0.02)
Constant	-0.13c	(0.02)	-0.17c	(0.04)	-0.29c	(0.06)
Observations	997		997		989	
Pseudo R2	0.6614		0.6873		0.7022	

Source: ECA calculations using data from the ECA survey.

Note: Columns (1), (2) and (3) contain the results of an ordinary least squares regression, with pooled standard errors shown in brackets.

a $p < 0.05$.

b $p < 0.01$.

c $p < 0.001$.