

## **Logistics transformation before and after the covid 19 pandemic in the Maghreb countries**

## **Transformation logistique avant et après la pandémie de covid 19 dans les pays du Maghreb**

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### Abstract

The paper analyzes the effects of the Covid-19 pandemic on Maghreb logistics, concentrating on prevention, pandemic-related interruptions, and adaptation strategies to increase the region's supply chain resilience.

During the Covid-19 pandemic, the Maghreb experienced logistical difficulties that had never been seen before, including as border closures, restricted international travel, and stringent containment efforts. However, the area was able to maintain some continuity in the supply chain because of appropriate planning and quick adaption strategies.

The importance of cooperation amongst Maghreb nations is also emphasized in the essay as a means of enhancing the robustness of regional logistics. Efforts like the development of a regional logistics corridor can enhance cooperation and save transportation costs.

In conclusion, the Covid-19 epidemic has brought attention to the importance of being well-prepared and adapting quickly in order to maintain the continuity of the supply chain in the Maghreb region. Maghreb logistics can be better prepared to tackle new challenges by putting in place efficient adaption mechanisms and enhancing regional cooperation.

**Keywords :** « logistics ; Maghreb ; Covid-19 ; adaptation ; resilience »

### Résumé

Cet article examine l'impact de la pandémie de Covid-19 sur la logistique au Maghreb, en se concentrant sur la préparation, la perturbation et l'adaptation pendant la pandémie pour renforcer la résilience de la chaîne d'approvisionnement dans la région. La logistique maghrébine fait face à des défis sans précédent pendant la pandémie de Covid-19, notamment la fermeture des frontières, la réduction du trafic international et des mesures de confinement strictes. Néanmoins, grâce à une bonne préparation et à des mesures d'adaptation rapides, la région a pu maintenir la continuité de la chaîne d'approvisionnement.

L'article souligne également l'importance de la coopération entre les pays du Maghreb pour renforcer la résilience logistique régionale. Des initiatives telles que la création de corridors logistiques régionaux peuvent aider à améliorer la coordination et à réduire les coûts de transport. Dans l'ensemble, la pandémie de Covid-19 a mis en évidence la nécessité d'une préparation adéquate et d'une adaptation rapide pour maintenir la continuité des chaînes d'approvisionnement dans la région du Maghreb. En mettant en œuvre des mesures d'adaptation efficaces et en renforçant la coopération régionale, Maghreb Logistics peut être mieux préparé pour relever les défis futurs.

**Mots clés :** « logistique ; Maghreb ; Covid-19 ; adaptation ; résilience »

## Introduction

Global supply chains and logistics have been significantly impacted by the Covid-19 epidemic. Even before the epidemic, logistics were evolving quickly due to growing digitalization, but the pandemic has dramatically expedited this change.

Before the pandemic, logistics were distinguished by an increased reliance on technology to streamline operations. Businesses were looking for innovative supply chain management systems to improve inventory management, production planning, and delivery management. But with the introduction of Covid-19, these procedures underwent fresh testing.

Businesses saw significant logistical difficulties during the epidemic as a result of travel restrictions, border closures, and supply chain disruptions. Businesses now rely on digital solutions to keep their operations running smoothly. Examples include setting up e-commerce platforms so that customers can place orders online and utilizing supply chain management software to watch inventory in real time.

The significance of adaptability and resilience in supply chains has also been underlined by the pandemic. Companies have had to develop strategies for fast adapting to shifting consumer needs and interruptions in suppliers. Businesses who had diversified their supply chains and used various delivery methods were better able to handle these difficulties.

Logistics will continue to develop following the pandemic to suit the shifting demands of consumers and businesses. With greater use of technology to streamline logistical procedures, digitalization will continue. In order to increase their resilience, businesses will also be more aware of potential dangers and work to diversify their supply chains.

Overall, the pandemic has sparked a shift in logistics. To address the enormous challenges of the epidemic, businesses have been compelled to innovate and adapt swiftly. In the years to come, logistics will continue to change as a result of this revolution.

Our research is driven by the following question : **What are the impacts of Covid-19 of logistics in the Maghreb and how can the region prepare to face new logistics challenges in the future ?**

An important effect of the Covid-19 outbreak on the world economy has been the interruption of supply and distribution networks. These disruptions also affected the Maghreb region, which saw considerable adjustments to its logistics both before and after the pandemic.

The logistical system in the Maghreb, which is heavily dependent on trade with Europe and Asia, has been made vulnerable by the health crisis. Understanding Covid-19's effects on logistics in the Maghreb and predicting future problems for the area are vital in this setting.

This issue consequently begs the question of how the region might foresee future logistical issues by enhancing its logistical capabilities and adjusting to the structural changes brought on by the epidemic. In this essay, we will examine how Covid-19 has affected logistics in the Maghreb and offer some suggestions for improving logistics flow management there. We will proceed as follows, followed by a comparative study of logistics in the Maghreb countries before, during and after the Covid 19 pandemic. We will also highlight the directives issued by the governments of the countries concerned and, finally, we will propose actions to be considered in the aftermath of the pandemic in order to improve the logistics performance of the Maghreb countries.

### **1. Littérature review : The transformation of pre- and post-covid 19 logistics in the Maghreb countries**

The COVID-19 Pandemic has had a substantial effect on logistical operations all across the world. This health crisis has not affected the countries of the Maghreb. This literary review focuses on the changes in logistics in the Maghreb countries before and during the pandemic.

Prior to the pandemic, the countries of the Maghreb saw steady economic growth, which boosted trade and logistical activities there. The logistical infrastructure, including the ports, airports, roads, and railroads, has improved. According to a study by the Organization for Cooperation and Economic Development (OCDE), the transportation and logistics sector accounts for around 10% of the region of the Maghreb's gross domestic product. (OCDE, 2019). The COVID-19 Pandemic has had a significant influence on logistical operations in Maghreb countries. The distribution and supply chains have been disrupted by travel restrictions, border closures, and the implementation of confinement measures. According to a study by the Tunisian Chamber of Commerce and Industry (CCIT), the pandemic has caused a 40% decrease in the number of commercial exchanges between Tunisia and the rest of the world. (CCIT, 2020).

As a result, the pandemic forced businesses to reconsider their logistics strategy. To keep their supply and distribution chains operating, businesses have to find alternative solutions. The development of logistical management has greatly benefited from information and communication technology. According to a study by the African Development Bank (BAD),

businesses have adopted digital solutions including online commerce, online supply chain management, and electronic payment platforms to overcome the challenges associated with pandemics. (BAD, 2021).

## **2. Comparative study of logistics in the Maghreb before, during and after COVID**

Globally and in the Maghreb, which consists of Morocco, Tunisia, and Algeria, the COVID-19 epidemic has had a huge influence on logistics. Before and after COVID, a comparison of logistics in the Maghreb might show the changes and difficulties in this industry.

The Maghreb was an area of economic expansion with promising prospects for logistics development before the epidemic. Governments in the area had started programs to upgrade the region's transportation and infrastructure, and businesses were investing in the modernization of their logistical operations.

The COVID-19 epidemic, however, drove the entire planet to its knees. Supply networks were disrupted by confinements and travel restrictions, as demand fluctuated and increased for some products while falling for others. Companies had to immediately adjust to the pandemic's new reality, putting security measures in place and modifying their logistics procedures to satisfy shifting consumer needs.

Despite these difficulties, the logistics in the Maghreb have responded to the pandemic's problems with resiliency and inventiveness. In order to enhance product traceability, optimize transport routes, and shorten transit times, businesses have used new technology. Additionally, governments have taken action to aid firms by providing tax breaks and streamlining customs procedures.

Overall, the COVID-19 epidemic has had a big impact on logistics in the Maghreb, but it has also shown how adaptable and resilient the industry is. Businesses and governments in the area had to adjust rapidly to the pandemic's new reality, but they also took use of the chance to innovate and enhance their logistical procedures.

### **2.1. Logistics in the Maghreb before COVID 19**

Five nations make up the Maghreb: Morocco, Algeria, Libya, Mauritania, and Tunisia. But we'll only look at three nations. (Morocco, Algeria and Tunisia).

Prior to the COVID-19 epidemic, the logistics industry in the Maghreb had seen rapid expansion. The nations of the Maghreb, particularly Morocco, Algeria, and Tunisia, have all

made efforts to strengthen their logistical networks in order to support the region's economic and commercial growth.

**Morocco** : The country has built up a somewhat robust logistical system. The nation has a number of contemporary ports on the Atlantic and Mediterranean coasts, as well as an advanced road and rail system. One of the biggest airports in Africa, Casablanca offers direct flights to a number of foreign cities.

**Algeria** : Despite having a sizable area, Algeria lacks a well-developed logistical infrastructure. Although the nation boasts a vast rail and road network, it is not always in good condition. There aren't many foreign direct flights, which limits air travel. The construction of new ports and the renovation of Algiers International Airport are only two of the modernization initiatives the Algerian government has started.

**Tunisia** : The country's rail and road networks are highly developed. As part of its efforts to modernize its logistical infrastructure, the nation has built a new port at Enfidha. The airport in Tunis is likewise very developed and offers direct flights to many international locations. Political upheaval has, however, recently afflicted the nation and had an effect on commerce and economic activities.

However, despite these encouraging advances, the logistics industry in the Maghreb still had to contend with tough obstacles including the convoluted customs procedures, the lack of coordination between the many forms of transportation, and the subpar infrastructure for land transportation. Indeed, due to infrastructural improvements and efforts to enhance coordination between various types of transportation, logistics in the Maghreb had significantly grown before the COVID-19 pandemic. For the logistics industry in the area to realize its full potential, obstacles still needed to be overcome. As a result, logistics differ in each of these nations based on their infrastructure and level of economic growth.

Overall, there have been efforts to strengthen coordination and collaboration amongst the Maghreb countries with relation to intra-Maghreb logistics. The region's transport ministers agreed to remove administrative obstacles and upgrade transportation infrastructure in order to promote road travel between the nations in 2018.

Political difficulties between the nations, particularly between Algeria and Morocco, have thwarted these efforts. Additionally, trade and logistics in the area have been negatively impacted by the COVID-19 outbreak.

## **2.2. Logistics in the Maghreb in the midst of the pandemic**

The logistics in the Maghreb have been significantly impacted by the covid-19 outbreak. Moving products became challenging as a result of the closure of the borders and the implementation of travel restrictions. To safeguard the security of their employees, businesses also had to make adjustments to health regulations. As with the rest of the world, the pandemic had a substantial impact on logistics during COVID-19 in the Maghreb. The supply chain saw major interruptions as a result of containment measures, border closures, and travel restrictions, particularly in the transit of commodities.

The Maghreb nations implemented precautions at the start of the epidemic to stop the virus's spread, which led to border closures and travel restrictions. Trade was impacted by these policies, especially for items that were in transit. Governments have nevertheless collaborated with industry to develop strategies for sustaining logistical operations. The flow of commodities has been maintained through actions like utilizing technology to increase supply chain visibility, route optimization, and collaboration with local authorities.

In addition, because of the pandemic's heightened demand for necessities like personal protective gear, medical supplies, and other necessities, logistics firms are under even more pressure to continue providing high levels of service.

### **2.2.1. The management of logistics by Maghreb governments**

The logistics in the Maghreb have been significantly impacted by the COVID-19 outbreak. Governments have been forced to implement policies that protect worker health while ensuring the continuation of supply chains and service delivery. Governments have taken action to ensure the health and safety of logistics employees, such as by providing PPE and instituting workplace sanitation procedures.

Additionally, steps have been done to make cross-border trade easier, such as the creation of green corridors to hasten the movement of commodities across borders. For instance, steps have been taken to make it easier to access the appropriate transit documents, so promoting cross-border trade.

### **2.2.2. Logistical solutions proposed by governments at the covid 19**

Globally, particularly in the Maghreb nations, the COVID-19 epidemic has had a profound impact on logistics management. Due to border closures, containment measures, and rising demand for basic goods, governments in the region faced additional logistical issues.



### **1) The Moroccan government**

The Moroccan government has taken a number of steps to guarantee that logistics operations would continue throughout the COVID-19 outbreak. The Moroccan government has suggested the following logistics-related examples:

- a. The creation of a logistics watch committee: The logistics watch committee was created to oversee the management and coordination of logistics flows for health requirements in the fight against pandemic spread.
- b. Reorganization of freight transportation: Steps were taken to maintain the flow of freight and supply stores with food and other essentials. Transport businesses are now permitted to operate as usual while adhering to hygienic regulations.
- c. Requisition of some stocks : To prevent shortages, the government has requisitioned some supplies of basic necessities.
- d. Strengthening storage capacity: In order to prevent congestion and guarantee the continuity of the supply chain, steps have been taken to improve the storage capacity of goods warehouses.
- e. Deployment of the army: The Moroccan army is on the ground to help with the distribution of necessities in remote places.
- f. Local production : To address national demands, the government has promoted local manufacturing of necessities like masks and hydro-alcoholic gels.
- g. The launch of the "Jibi" online shopping platform : The government established the "Jibi" online shopping portal, which enables individuals to order things online and have them delivered to their homes, to facilitate the provision of food and essential commodities during the confinement. During the COVID-19 epidemic, these methods guaranteed the continuation of logistics operations in Morocco.

### **2) The Algerian government**

The Algerian government has implemented a number of measures in reaction to the Covid-19 outbreak to secure the continuity of the supply chain and guarantee the provision of essential commodities for the populace. Some of the actions that have been taken include the following:

- a. Maintaining the movement of goods: To maintain the chain of logistics, the Algerian government permitted the flow of goods. Trucks transporting necessities were excluded from traffic regulations and allowed to move freely on the nation's roads.



- b. Establishment of a supply chain monitoring committee: To keep an eye on the supply of necessities and verify that there are enough supplies to meet demand, a supply chain monitoring committee has been formed.
- c. Strengthening sanitary measures in workplaces: To safeguard employees and stop the virus from spreading, sanitary measures have been implemented in warehouses, workplaces, and retail spaces.
- d. Adaptation of delivery methods: The pandemic forced logistics companies to adjust to new circumstances. In order to reduce travel and interpersonal contact, home deliveries were preferred.
- e. Mobilisation of additional resources: The Algerian government has gathered more resources to fortify the supply chain. Improvements to storage and transportation infrastructure have been undertaken. These actions assisted in ensuring the supply of necessities and preventing shortages in Algeria during the Covid-19 outbreak.

### **3) The Tunisian government**

The Tunisian government has implemented a number of measures in response to the COVID-19 outbreak to maintain logistics operations and minimize supply chain disruption. The Tunisian government has suggested the following logistical options, among others:

- a. Facilitation of transport operations: The Tunisian government has made it possible for items to move freely and has put policies in place to make it easier to transit necessities like food, medicine, and medical equipment.
- b. Increased storage capacity: To allow for a 14-day quarantine of imported goods to stop the virus from spreading, the Tunisian government doubled the storage capacity of warehouses.
- c. Use of technology: The use of technology to increase the effectiveness of the supply chain has been promoted by the Tunisian government. It has implemented tracking and tracing systems to keep tabs on the movement of goods and has made use of mobile applications to streamline communication between various supply chain participants.
- d. Financial support to businesses : The Tunisian government has given companies financial assistance so they can continue running their logistical operations. It has implemented measures to assist businesses in recovering from the financial losses brought on by the COVID-19 pandemic. For the duration of the COVID-19 epidemic, the Tunisian government has implemented a number of steps to guarantee the continuity of logistics operations and minimize supply chain disruptions.

In general, governments in the Maghreb region have tried to secure the continuity of delivery services and supply chains while safeguarding the health of logistics personnel. Cross-border trade has been made easier and supply chain coordination has been improved thanks to measures that have been put in place. Although the epidemic affected Maghreb logistics in the end, businesses and governments collaborated to develop solutions to keep the flow of crucial products intact.

### **2.3. Logistics in the Maghreb post COVID 19**

Global supply lines have been severely disrupted by COVID-19, and the Maghreb is not exempt. Transport and logistical activities were affected by travel restrictions, border closures, and containment measures. Additionally, the reduction in demand for goods as a result of disruptions in global trade flows has a detrimental effect on logistics firms.

Since 1994, the border has been closed between Morocco and Algeria, which has already hampered trade between the two nations in the Maghreb region. However, the pandemic has made intra-Maghreb trade more challenging, stressing the need to improve economic ties among the countries in the area.

The effects of the pandemic have had a significant influence on the logistics industry in the Maghreb region. Due to the disruption of freight transportation, businesses are experiencing delays and increased prices. Congestion in the ports caused delays in the handling of containers and freight. As containment measures restricted access to their facilities, businesses also experienced issues with storage and handling.

### **3. Futurs prospects for Maghreb logistics**

Due to a number of factors, including the region's favorable geographic location, the expansion of regional and international trade, and the advancement of digital technology, the Maghreb logistics sector has significant potential to grow in the upcoming years. The following are some potential futures for Maghreb logistics:

1. Development of special economic zones : The establishment of special economic zones can support increased trade, investment, and logistical growth in the area.
2. Growth in transport infrastructure : Maghreb logistics must be strengthened by the modernization and extension of transportation infrastructure, such as ports, airports, railways, and highways.

3. Digitisation of logistics: The efficiency and transparency of Maghreb logistics can be increased through the use of digital technologies such as the Internet of Things, data analytics, blockchain, and artificial intelligence.
4. Strengthening regional cooperation: In order to address cross-border logistical challenges, increase regional competitiveness, and promote economic growth, Maghreb countries should work together more.
5. Promotion of e-commerce: The growth of e-commerce may aid in boosting trade in the area, which may also encourage the growth of Maghreb logistics.

These future possibilities for Maghrebian logistics are not all-inclusive, but they can offer ways to raise the sector's effectiveness and competitiveness.

The COVID-19 epidemic has indeed brought attention to the necessity for better cooperation and efficient planning for logistics and transportation operations. In addition, governments and businesses can put plans in place like the development of a regional logistics corridor to increase coordination and lower transportation costs.

A regional logistics corridor, by the way, is a transport and logistics network that connects regions and nations. Roads, railroads, ports, airports, warehouses, and distribution facilities can all be included. A regional logistics corridor's primary goal is to make it easier for people to transport goods and services around the area, which can increase the effectiveness, safety, and sustainability of logistics operations. Therefore, after COVID-19, the establishment of a regional logistics corridor can aid in enhancing cooperation and lowering transportation costs, specifically:

1. Reducing transit times and transport costs, The establishment of a regional logistics corridor can reduce transit times and transport costs by optimising routes and avoiding bottlenecks. By having well-connected roads and transport infrastructure, it allows for better planning of routes and the most appropriate means of transport for delivery.
2. Better coordination between the different actors in the logistics chain The creation of a regional logistics corridor can foster better coordination between the different actors in the logistics chain, including transport companies, warehouses and distribution centres. By having clear visibility of goods in transit and their location, it allows companies to adjust their plans in real time and improve efficiency.
3. Improving the safety and sustainability of logistics operations. The creation of a regional logistics corridor can also improve the safety and sustainability of logistics operations by reducing the number of vehicles on the roads and optimising the use of existing

infrastructure. It also reduces the environmental impact of logistics operations by minimising greenhouse gas emissions.

4. Finally, the creation of a regional logistics corridor can help build supply chain resilience by allowing for better planning and coordination in the event of an emergency. Companies can then be better prepared to deal with unforeseen events such as labour shortages, strikes or supply chain disruptions.

#### **4. Actions to be considered after the pandemic in the Maghreb**

Maghreb logistics will need to be more adaptable and flexible in the post-Covid environment to handle uncertainty and sudden changes. The COVID-19 epidemic has, in fact, had a major effect on logistics throughout the world, notably in the Maghreb region of North Africa. However, it also emphasized how crucial logistics are to maintaining economic activity and meeting people's demands.

However, the following measures need to be taken into account in order to develop logistics in the Maghreb after COVID-19.

- Strengthen transport infrastructure : The region's transport infrastructure needs to be improved to meet the needs of businesses and consumers. This includes upgrading roads, ports, airports, railways and waterways.
- Use technology: Information and communication technologies (ICT) should be used to improve the efficiency and transparency of logistics. This includes using traceability and real-time tracking systems to monitor shipments, using the Internet of Things (IoT) to monitor the supply chain, and using artificial intelligence (AI) to optimise logistics operations.
- Invest in training : Training for logistics workers needs to be improved to meet the needs of businesses and consumers. This includes training on international quality and safety standards, training on information and communication technologies (ICT), and training in supply chain management.
- Trade facilitation: Tariff and non-tariff barriers need to be reduced to facilitate trade between countries in the region. This includes simplifying customs procedures, reducing import and export fees, and establishing special economic zones.
- Encourage collaboration between logistics actors: Increased collaboration between logistics companies, public authorities and professional organisations is essential to develop logistics in the post-COVID-19 Maghreb. This may include the establishment

of collaborative platforms to share best practices and experiences, and the establishment of professional organisations to represent the interests of the logistics industry.

In order to optimize their logistics processes, businesses will need to invest in technology like automated warehouses or real-time products tracking systems. In order to respond to changes in demand, businesses will also need to be more adaptable with their supply chains, diversifying their sources of supply and looking for alternatives. By making these changes, the Maghreb might boost its competitiveness, increase its ability to withstand upcoming crises, and support regional economic development.

## **Conclusion**

In this essay, we've seen how the pandemic affected the Maghreb region logistically. We have also seen that the Maghreb countries have been able to quickly respond to the crisis by putting in place health measures and looking for alternate methods to maintain their supply chains. However, the crisis has also shown how crucial logistics are to the smooth operation of economies.

However, this crisis has also highlighted some logistical limitations in these countries, such as their excessive reliance on imports, the need to improve their infrastructure and transportation-related skills, and the requirement to diversify their supply sources.

Therefore, to improve the situation, the governments of the Maghreb should implement policies and initiatives to upgrade transportation and communication infrastructure, improve stock management, and strengthen the capabilities of logistics companies. Additionally, the countries in the region might cooperate to develop integrated logistical solutions and build efficient transportation corridors between them.

Nevertheless, the prospects for the future are encouraging. The pandemic has highlighted the value of resilience in supply chains, and the countries of the Maghreb have realized the need to improve their ability to handle circumstances like these in the future.

However, there are still several unanswered problems, including as the long-term effects of the pandemic on international trade, the resilience of supply chains, and the numerization of logistics in the area. The main contributions of this research also include highlighting the logistical challenges and opportunities faced by businesses operating in the Maghreb countries and emphasizing the value of cooperation among various actors in bolstering the resilience of supply chains.

On a managerial level, businesses operating in the Maghreb region must be prepared to quickly adjust to changes in the economic and sanitary environment and have flexible strategies in place to address upcoming challenges. In order to increase their logistical capacity, they must also invest in the necessary infrastructure and skill sets.

Finally, it is critical that governments support the automation and numerization of logistics in order to lower costs, enhance traçability, and boost productivity. In an increasingly globalized world, logistics is a critical function for boosting business competitiveness. The governments of the Maghreb may support regional economic growth and citizens' quality of life by making investments in cutting-edge, effective logistics systems.

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