COVID-19 Impact Assessment and Outlook on Global Logistics

UNICEF Supply Division

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1. Summary

- Air travel restrictions and airfreight market disruptions remain and continue to interrupt and delay the supply of essential health products (including vaccines amongst others) to many countries. Even though there is still no indication as to when the situation is expected to return to normal, UNICEF’s own statistics show that its number of weekly shipments and overall timelines in shipping supplies from readiness to departure have almost returned to pre-COVID levels.
- All existing contract airfreight rates had been suspended, with UNICEF registering rate increases by as much as 100-500 per cent per charter, while airlines sought financial support from governments. However, UNICEF has recently been receiving some rates from airlines, some for short durations, while others for the whole winter period, reflecting overall improvements since the 2nd quarter 2020.
- The decline in widebody aircraft capacity from passenger fleets has levelled off, but the belly capacity across all regions has yet to show signs of any recovery, despite small increases on some intra-Asia routes. Meanwhile global freighter capacity (dedicated planes for cargo) has increased and is currently 20 per cent higher than 2019 levels. However, the overall air freight capacity globally continues to be critical and is at approximately 30 per cent below the levels registered for same period in 2019.
- Routes to the African continent have been particularly badly hit, although there are signs that some airlines are beginning to resume partial services, but capacity is limited.
- Air freight transit times had increased during the year to about 3-6 days longer than previous standard transit times due to the reduced flight departures. However, these have been improving and are now only on average one day longer.
- The reduction in oil prices have not provide any relief or impact on airfreight rates given the existing tight airfreight capacity constraints, and that airlines generally set aviation fuel buying price months in advance.
- Ocean freight rates, while having stayed relatively firm during most of the year as lines exhibit a high degree of capacity management despite falling demand, rates are now increasing. Imbalances in container availability have been impacting container capacity globally, as space remains tight on all trade routes due to high amount of “blank sailings”. Extensive “blank sailings” implemented globally has led to fully booked vessels, which is a situation that will continue for the near future.
- A recent survey on seaports note that 28 per cent of ports are experiencing a decline in container vessel calls compared to normal conditions, compared to 41 per cent in April 2020. However, more than half of the ports report no changes compared to normal conditions and additional transit times of 1-2 weeks is expected.

2. Background

The COVID-19 pandemic continues to have a global impact on most freight operations, with a major impact on both passenger and airfreight. Many countries, regions and territories still maintain some imposed travel restrictions on international transport, primarily on passenger flights and cross border travel. These continue to affect all airfreight and logistics services, and have an impact on international supply chains, including those used by humanitarian and development programmes, notably in low- and middle-income countries (LICs and MICs).

The current situation will continue to develop over the near and immediate term, with travel restrictions possibly being lifted and applied depending on trend and prevalence of COVID-19, with international aviation being subjected to severe restrictions covering most countries (Figure 1).1

The International Civil Aviation Organization (ICAO), the specialized agency of the United Nations overseeing the planning and development of international air transport, provides the latest estimates of the impact COVID-19 is having on world

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1 The International Air Transport Association, COVID-19 Travel Regulations Map, IATA, Montreal, 23 October 2020.
scheduled passenger traffic as compared to the pre-COVID-19 baseline (business as usual, originally-planned traffic) for the full year of 2020 (January to December), available [here](#) They assess that for 2020 the airlines industry will be affected by:

- Overall reduction ranging from 51 per cent to 52 per cent of seats offered by airlines.
- Overall reduction of 2,894 to 2,981 million passengers, representing approximately USD 388 to 400 billion potential loss of gross passenger operating revenues of airlines.
- An overall reduction ranging from 59 per cent to 62 per cent of air passengers (both international and domestic).
- An estimated loss for airports of approximately 60 per cent of passenger traffic and 61 per cent airport revenues, or over USD 104.5 billion, compared to business as usual.
- A 54.7 per cent decline of revenue passenger kilometres (RPKs), both international and domestic.
- In terms of tourism, ICAO anticipates a decline in international tourism receipts of between USD 910 to 1,170 billion in 2020, compared to the USD 1.5 trillion generated in 2019, with 100 per cent of worldwide destinations having travel restrictions.
- In terms of trade, a fall of global merchandise trade volume by between 13 per cent and 32 per cent.
- In terms of the global economy, they project a -4.9 per cent to -5.2 per cent contraction in world gross domestic product (GDP) in 2020, far worse than during the 2008–09 financial crisis.

Figure 1 The International Air Transport Association COVID-19 Travel Regulations Map - (October 2020)

For the 1st quarter 2021 (January - March)

- They anticipate an overall reduction of between 34 per cent to 47 per cent of seats offered by airlines.
- An overall reduction of 504 to 681 million passengers.
- And approximately USD 72 to 96 billion in potential loss of gross passenger operating revenues of airlines.

The International Air Transport Association downgraded its traffic forecast for Africa for 2020 to reflect a weaker-than-expected recovery. 2020 passenger numbers in Africa (to, from, and within) will only reach 30 per cent of its 2019 levels, which is down

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3 Revenue Passenger Kilometres (RPK) or Revenue Passenger Miles (RPM) is an airline industry metric that shows the number of kilometres travelled by paying passengers. It is calculated as the number of revenue passengers multiplied by the total distance travelled.
significantly from the 45 per cent that was projected in July 2020. In absolute numbers, Africa as a region is expected to see only around 45 million travellers in 2020, compared to the 155 million seen in 2019. In 2021, IATA anticipates demand to strengthen to 45 per cent of 2019 levels, to reach close to 70 million travellers for the region. This means more airlines are expected to fold without committed relief. Four airlines across Africa have ceased operations due to the impact of COVID-19 and two are in voluntary administration, with many more in serious financial distress. Without urgent financial relief more carriers and their employees are at risk, as is the wider African air transport industry, which supports 7.7 million jobs on the continent. Some governments have pledged a total of USD 311 million in direct financial support to air transport, with a further USD 30 billion promised by some financiers, including the African Development Bank (ADB), African Export Import Bank (AEIB), African Union (AU), and the International Monetary Fund (IMF) for air transport and tourism.

Figure 2 ICAO The Evolution of World Passenger Traffic 1945-2020 - (October 2020)

-59% to -62%
decline in world total passengers in 2020*

Source: ICAO

Figure 3 ICAO Passenger Travel and Capacity Recovery Trend (domestic passengers leading recovery) – (October 2020)

Even though the full actual impact of the effects of COVID-19 on the airline industry will depend on the duration and magnitude of the pandemic, the effects of the implemented containment measures; the ensuing economic conditions; and the degree of
consumer confidence in air travel; amongst others, IATA’s Tourism Economics Air Passenger Forecasts anticipate that it could take five years for passenger demand to return to pre-pandemic levels.

In order to get a full understanding of the current effects of COVID-19 on the world perspective, the Committee for the Coordination of Statistical Activities (CCSA), an international committee hosted by the United Nations Statistics Division (UNSD), provides a detailed analysis of what are unprecedented statistics showing data points and trends that are cause for concern. They include data showing a nine per cent year-on-year fall in global production and manufacturing output, nowcasting the value of global merchandise trade will fall by almost 27 per cent in the 2nd quarter 2020, the largest fall in global commodity prices on record (-20.4 per cent between February and March 2020). A loss of employment by almost 10.5 per cent in total working hours, which is the equivalent of 305 million full-time workers, school closures affecting some 1.6 billion students, and a crisis that will push an additional 40-60 million people into extreme poverty, impacting every region. Data released by Eurostat in July noted preliminary flash estimate for the second quarter of 2020 GDP to be down by 12.1 per cent in the euro area and by 11.9 per cent in the EU and anticipates -15.0 per cent and -14.4 per cent respectively compared with the second quarter of 2019.

3. Airfreight

Even though the decline in widebody freighter capacity from passenger fleets has levelled off, and the current capacity shows no sign of a full recovery in near future, the demand for the transport of air cargo has been much more robust than passenger air travel.

Prior the COVID-19 pandemic, airlines transported over 52 million metric tons of goods a year, representing more than 35 per cent of global trade by value. Even though less than one per cent of world trade by volume, it nevertheless represented USD 6.8 trillion worth of goods a year, or put another way, USD 18.6 billion worth a day, which included approximately 62,500 metric tons of humanitarian aid by air per year.

5 The Committee for the Coordination of Statistical Activities (CCSA), is a body comprised of international and supranational organizations with a mandate that includes to ensure international official statistics are provided in accordance with common standards, platforms and methodologies to ensure the provision of high-quality official statistics.


7 Eurostat, GDP Down by 12.1% in the Euro Area and by 11.9% in the EU, Eurostat, Luxembourg, July 2020.

8 The International Air Transport Association, The Value of Air Cargo Makes it Happen, IATA, Montreal, 2020.
Many airports remain globally closed to, or have restricted passenger traffic, but are still open to airfreight cargo, diplomatic missions, and humanitarian flights by arrangement. UNICEF estimates that approximately 75-80 per cent of all airfreight globally was shipped using passenger flights.

As such, airline cancellations and the grounding of planes due to the restrictions on passenger movements has dramatically reduced the freight carrying capacity of these airlines, creating an initial shortfall of approximately 70-90 per cent of global capacity. IATA published analysis showing that airlines anticipated expending up to USD 61 billion of their cash reserves during the second quarter ending 30th June 2020, while posting a quarterly net loss of USD 39 billion, which has resulted in many airlines having to seek financial support from governments. The airlines in Europe for example have sought EUR 12.8 billion in government support since the start of the coronavirus pandemic, while at the same time, many airlines have sought to use their passenger flights as charter planes to carry freight.

UNICEF has noted that the global dedicated freighter capacity (planes only used for the transport of cargo) has increased and is currently 30 per cent higher than year on year levels from 2019, and that global air freight capacity, even though still critical, is now approximately 30 per cent the level for the same period in 2019, while there has also been some small increases in intra-Asia passenger routes. Global widebody belly capacity is down 70 per cent from 2019. One of the key challenges is the severe shortage of air cargo capacity, with freighter utilization high, and widebody passenger aircraft slow to return. In addition, there are challenges related to staff availability, closed air space, airport restrictions, crew restrictions, costly and inefficient processes for ad hoc operations, and operational risk associated with non-traditional operations.

Source: IATA

Note: ACTKs, air cargo tonne-kilometres

Capacity has since the summer been increasing across most transport lanes. Transpacific capacity has grown largely because of personal protective equipment (PPE) shipments carried on passenger planes (passenger flights converted to carry cargo). Week-on-week widebody belly increases were largest on Asia Pacific and North America routes (71 per cent), Intra-Europe routes (74 per cent) and Latin America-North America routes (68 per cent); and for cargo planes on the Latin America-North America route (27 per cent).

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One of the consequences resulting from the drastic closure of retail outlets under lockdown and social distancing measures in many affected countries was that it resulted in a 25-30 per cent increase in demand for e-commerce deliveries as populations and businesses turn to online shopping and ordering, requiring in many instances shipments using airfreight.\textsuperscript{11}

In terms of cost, many airlines had suspended their existing contract rates, and confirmed all rates locally on an ad-hoc basis. The rates have increased substantially and rapidly as the demand for aircraft charters has been high, with UNICEF registering rate increases by as much as 100-500 per cent per charter. However, recently UNICEF has been receiving rates from airlines, some are for short durations, while others are for the whole winter period, reflecting some overall improvements since the 2\textsuperscript{nd} quarter 2020. The lower oil prices noted over the summer and comparatively to the beginning of the year, at one stage even going into negative territory at USD -37.6 a barrel,\textsuperscript{12} have not had any relief on flight pricing levels. Not only because of current airfreight capacity constraints, but also because airlines generally set the purchase price of aviation fuel months in advance.

As a result of the continued limited air freight capacity, and the increased demand for shipping cargo, air freight transit times had increased by about 3-6 days longer than previous standard transit times due to the reduced number of flight departures, as well as there being less frequent flights, but which have since improved. A substantial portion of UNICEF’s critical supplies pre- the COVID-19 pandemic was shipped via airfreight using the cargo carrying capacity of passenger flights. The limitations to airfreight presented UNICEF with one of its single biggest challenge to its operations. UNICEF’s own statistics show that its number of shipments on weekly basis, and its overall timelines in shipping supplies from readiness to departure are almost at pre-COVID levels.

Currently, many industries continue with production, and China has gained control of their outbreak. However, may parts of the world are still trying to cope with the impact of the pandemic, concerns over a continued worsening situation, and the economic outlook, which include the restrictions on air travel and their impact on shipping and airfreight. Airfreight space is still extremely limited due to continued capacity suspension, and so long transit times are inevitable. However, the belly capacity from China is increasing and freighter capacity is showing large week-to-week gains. The Boeing 777, Boeing 787, and Airbus 330 are the aircrafts deployed most for passenger freighters (planes used for cargo).

Figure 4 COVID-19 Temporary Country Export Measures - October 2020

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\caption{COVID-19 Temporary Country Export Measures - October 2020}
\end{figure}

Source: ITC

\textsuperscript{11} The International Air Transport Association, \textit{IATA / UPU Warn of Air Capacity Shortage}, IATA, Montreal, 4 May 2020.
\textsuperscript{12} Oil Price, \textit{Oil Prices}, Oil Price, November 2020.
The International Trade Centre tracks all COVID-19 temporary trade measures enacted by government authorities in relation to the COVID-19 pandemic globally, in which many regions are seeing a second or third wave. It seeks to improve transparency in international trade and market access. Many of the temporary trade measures seek to regulate or restrict the export or liberalize the import of vital medical supplies and other essential products. Due the extraordinary situation, it is an area that can be subject to rapid development. The ITC provides a global daily update of enacted COVID-19 trade measures (Figure 4, previous page), accessible here. It provides a global map overview of current enacted measures, as well as a section providing status updates and a detailed overview of measures by country. Affected products include PPEs such as masks, gloves, pharmaceuticals, hand sanitizer, food, and certain other products.

The European Union (EU) had applied a European Commission Implementing Regulation (EU) 2020/402, restricting the export of PPEs to outside of Europe without the export authorization from the manufacturing Member State, which effectively suspends the export of all COVID-19 hospital supplies and equipment to outside of the EU, which ceased to apply on May 26th, 2020.

The United States (US), Federal Emergency Management Agency (FEMA) had applied at the beginning of April measures to restrict the export of PPEs through until August 10, 2020. The US federal register published an extension of the Temporary Final Rule from August 2020 to the end of December 2020, as well as some modifications.

Even though flight restrictions to and from China remain in effect, and China has started to normalize, with UNICEF having seen an easing on their demand for PPE products, freeing up supply for use in other countries, China imposed export restrictions at the end of March for medical products related to COVID-19, with effect in April, specifically for COVID-19 detection reagents, medical masks, medical protective clothing, ventilators, and infrared thermometers.

Even though Africa is the region currently by far less affected by the pandemic, this situation may change, as it is also heavily affected by the consequences of airline restrictions, especially inter-regional logistics travel inside Africa, in addition to the social and economic consequences as a result of mitigation measures. Africa has a limited capacity to cope with the shock, and many African nations are currently facing a surge of COVID-19 cases, with less than one intensive care bed and one ventilator per 100,000 people. WHO has warned that Africa, home to 1.3 billion people, could become the next epicentre of the pandemic, and face a severe shortage of tests, personnel, and oxygen supplies. Whereas Africa has responded rapidly to contain the pandemic, across the continent it has only carried out 685 tests per million people, compared to Europe, which has carried out nearly 23,000 tests per million people. Africa is the region currently only having an estimated five per cent (one million cases) of the 22 million currently reported, which with the low levels of testing make it impossible to know the true scale of infection, which the United Nations Economic Commission for Africa (UNECA) estimates could reach nearly 123 million cases this year, causing 300,000 deaths, in which Africa may lose half of its GDP.

The global flight restrictions between the Americas and Europe also impact Africa as there a substantial number of trans-shipments that go via Europe. The reductions in European air travel also reduce air travel between Europe and Africa, and routes to Africa have been particularly affected over the past months, as they are served by a fewer number of airlines compared to Asia and the Americas. However, some airlines, notably KLM and Air France have started to slowly resume partial services. Ethiopian and Turkish Airlines are also operating air cargo freighters only and have a limited capacity.

In 2019, UNICEF shipped an estimated 2.43 billion doses of vaccines using airfreight, valued at approximately USD 1.65 billion, representing an estimated 35 per cent of the total global production volume for those vaccines, which UNICEF

13 The International Trade Centre (ITC) is a multilateral agency that has a joint mandate with the World Trade Organization (WTO) and the United Nations (UN) through the United Nations Conference on Trade and Development (UNCTD).
17 The United States Federal Register, Prioritization and Allocation of Certain Scarce and Critical Health and Medical Resources for Domestic Use, US Federal Register, 8 August 2020.
estimates to be at approximately 6.8 billion doses a year. Given the severe restrictions on flight availability, airport closures, and cargo restrictions in countries and transport hubs, UNICEF has had to undertake additional measures and efforts to prioritize urgent shipments. To date for 2020, UNICEF has shipped approximately 1.8 billion doses.

UNICEF is working closely with the Pan American Health Organization (PAHO), a major buyer of vaccines and other essential medicines for Latin American countries, WHO, and other partners, to outline the impact these restrictive measures taken by countries can have for countries, and the risks there are, to access essential medicines including diagnostics.

UNICEF continues to work closely with its freight forwarders and airline partners to identify reliable options to transport shipments and the use of regular airfreight commercial flights (when possible) as well as alternative solutions such as charter flights.

4. Sea Freight

Most seaports globally are still operating, even though with some restrictions on the disembarkation of crew members. The International Association of Ports and Harbours (IAPH) and the World Ports Sustainability Programme (WPSP) undertake half year surveys on seaport operations. The most recent one was undertaken in September 2020, comparing the situation to prior normal conditions and their earlier survey conducted in April 2020. It noted that 28 per cent of ports are experiencing a decline in container vessel calls compared to normal conditions, compared to it being 41 per cent in April 2020. Forty-one per cent of ports are experiencing a decline in other cargo vessels compared to normal conditions, which remains the same as in April 2020, whereas sixty-six per cent of ports report a decline in passenger vessel port calls compared to normal conditions, which is a slight improvement compared to 77 per cent of ports reporting the decline in April 2020.

Lines have exhibit a high degree of capacity management, and more than half of the seaports reported there to be no change in cargo vessels compared to what they considered to be normal conditions. However, rates are now increasing, as the imbalances in container availability is now having an impact on the container capacity globally, with container shortages affecting most shipping carriers. Many have introduced an “Emergency Imbalance Surcharge” on sea exports from many European ports, and some carriers have also implemented a booking cancellation and amendment fee to avoid ‘ghost’ bookings, dissuading forwarders from over-securing space that is eventually not required. “Ghost” bookings are when freight forwarders make tentative block bookings on carriers over-anticipating requirements that do not always materialize into confirmed bookings, and which reduces the space available for actual confirmed bookings.

“Blank sailing” programmes (when vessels skip one or more ports along a planned route or cancel the entire voyage) have been implemented by almost all carriers to and from China due to the reduction in available export volumes. This reduced freight space and available containers (especially for refrigerated, “reefer”, containers) in all countries trading with China, and has led to fully booked vessels, which is a situation that will continue over the next few weeks.

Space remains tight on all trade routes due to the high amount of blank sailings, with an additional transit time of 1-2 weeks to be expected. Some carriers have also been taking advantage of the current low cost of fuel to reroute their voyages around the Cape of Good Hope (South Africa), as container lines can save up to USD 700,000 per voyage by avoiding charges through the Suez Canal. The French carrier CMA CGM has to date been the only carrier to use the longer route on the westbound head haul route from Asia to northern Europe, others would be following suit, particularly for back haul voyages. Head haul freight markets are created when there is an imbalance in a lane where the demand for the lane by shippers is greater than the supply of freight capacity provided by freight providers.

5. Road Freight

Most borders are closed to the movement of passengers but generally remain open to essential road-freight in the interests of the supply chain and the necessity of re-stocking.

6. Rail Freight

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23 International Association of Ports and Harbours, *IAPH-WPSP Port Economic Impact Barometer*, Sustainable World Ports, Tokyo, 16 April 2020.
UNICEF has very little exposure to rail freight cargo, only marginally in Asia, and crossing the Kazakhstan-China border, and is currently of little concern to UNICEF.

7. UNICEF’s Response

- The COVID-19 pandemic has had a major impact on global logistics. In part, due to reduced airfreight capacity, but also reduced workforces at airports, ports, and warehouses, which has and will increasingly hindered operations. Logistics services are also impacted by decisions of local authorities to shut down logistics infrastructure, enforce movement restriction or put in place additional requirements.
- In order to mitigate the risk to transport operations, UNICEF has taken preventive measures by decentralising some of its critical stocks. In addition to their hubs in Dubai and Panama, UNICEF has moved supplies to UNICEF’s West and Central African regional office in Accra, Ghana. Emergency kits and other essential relief supplies are currently being shipped to Dubai and Accra. Similar arrangement is being organized for the East and Southern Africa region.
- To overcome unprecedented vaccine logistics challenges, UNICEF worked with partners and businesses to increase access to flight capacity. Land-transit options are also being used where possible. As a result, the number of vaccine shipments delivered weekly has recovered to almost pre-COVID standards and the use of innovative freight solutions has helped reduce the backlog of shipments accumulated through March and April.\(^{24}\)
- In anticipation and preparation of receiving and managing COVID-19 vaccines as well as other related commodities including safe injection equipment, PPEs, and diagnostics, UNICEF has been working with international logistics stakeholders to develop guidance to help supply chains to get prepared to ensure countries are able fight the COVID-19 pandemic. It includes a logistics preparedness strategy and the development of a global logistics operational plan.\(^{25}\)

8. Other Aspects and Links to Information

- IAPH: The International Association of Ports and Harbours, the global trade association for seaports worldwide: [https://www.iaphworldports.org/](https://www.iaphworldports.org/)
- IASC: The Inter-Agency Standing Committee, an inter-agency forum of UN and non-UN humanitarian partners to strengthen humanitarian assistance and delivery. The Logistics Cluster is their coordination mechanism: [https://logcluster.org/COVID-19](https://logcluster.org/COVID-19)
- IATA: The International Air Transport Association, a trade association of the world's airlines founded in 1945 setting technical and commercial standards for airlines: [https://www.iata.org/](https://www.iata.org/)
- IATA information on travel restrictions, economic impact, financial stability of airlines, can be found: [https://www.iata.org/en/pressroom/](https://www.iata.org/en/pressroom/)
- ICAO: The International Civil Aviation Organization, a UN specialized agency overseeing international air navigation transport: [http://www.icao.org/](http://www.icao.org/)
- ICAO provides the current status of all world airports: [https://www.icao.int/safety/Pages/COVID-19-Airport-Status.aspx](https://www.icao.int/safety/Pages/COVID-19-Airport-Status.aspx)
- ICAO source for aviation-specific guidelines: [https://www.icao.int/Security/COVID-19/Pages/default.aspx](https://www.icao.int/Security/COVID-19/Pages/default.aspx)
- IMO: The International Maritime Organization, a UN specialised agency responsible for regulating shipping: [https://www.imo.org/](https://www.imo.org/)
- IMO shares information related to COVID-19: [http://www.imo.org/en/MediaCentre/HotTopics/Pages/Coronavirus.aspx](http://www.imo.org/en/MediaCentre/HotTopics/Pages/Coronavirus.aspx)

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Other UNICEF information notes can be found at: https://www.unicef.org/supply/market-notes-and-updates

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