

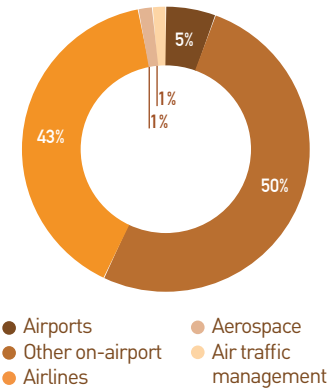


MIDDLE EAST¹⁶²

Air transport supports 2.4 million jobs and \$157.2 billion in GDP in the Middle East



Direct jobs generated by air transport in Middle East, 2014



173
million passengers

1,009,133
flights

555.2
billion RPKs

118
commercial airports

59
airlines

1,210
aircraft in service

14
air navigation service providers

78%
Average regional load factor

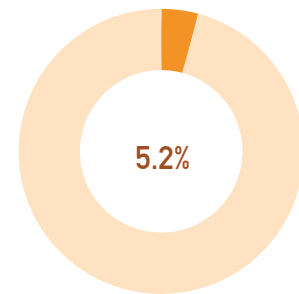
The air transport industry in the Middle East directly generated an estimated 430,000 jobs in 2014.

- » 181,000 of those people (43% of the total) were in jobs for airlines or handling agents (for example, flight crew, check-in staff, maintenance crew, reservations and head office staff).
- » Another 22,000 people (5% of the total) worked for airport operators (for example, in airport management, maintenance, security and operations).
- » 215,000 jobs (50%) were on-site in airports, at retail outlets, restaurants, hotels, etc.
- » A further 3,700 people (1%) were employed in the manufacture of civil aircraft (including systems, components, airframes and engines).
- » Air navigation service providers employed an additional 5,000 people (1%).

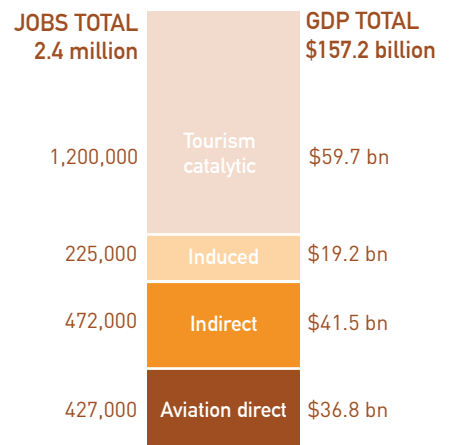
As well as this direct employment in the operations of the air transport sector itself, the sector's impact reaches further through the Middle Eastern economies. Including direct impacts, the effect of the sector's procurement of goods and services through its supply chain, and the benefits that arise when employees in the industry and its supply chain spend their wages in the local consumer economy, the air transport sector supported 1.1 million jobs and contributed \$97 billion to GDP in the Middle East in 2014.

In addition, the spending of foreign tourists – most of whom arrive by air – supported an estimated 1.2 million jobs and contributed \$60 billion to GDP in the region in 2014.

Middle East's share of global passenger traffic, 2014



Total jobs and GDP generated by air transport in Middle East, 2014



Projected annual growth rate for international traffic by region, 2014 - 2034¹⁴⁸

AFRICA		5.4%
ASIA-PACIFIC		5.1%
EUROPE	3.6%	
LATIN AMERICA & CARIBBEAN		4.7%
MIDDLE EAST		6.0%
NORTH AMERICA	2.7%	
APEC	3.9%	
EUROPEAN UNION	3.6%	
SMALL ISLANDS STATES		4.9%
DEVELOPING COUNTRIES		5.0%
OECD	3.5%	
WORLD		4.3%

In total, the industry supported 2.4 million jobs and made a \$157 billion contribution to GDP in the Middle East. This accounted for 4% of the jobs and 6% of the GDP supported by the air transport industry worldwide.

The past five years have seen marked growth in passenger traffic in the Middle East. The number of revenue passenger kilometres flown has increased by 86% between 2010 and 2014, or an average of 13% per year. The region's air travel expansion is expected to continue, albeit more modestly, at a rate of 6% per annum on average over the next two decades.

This increase will, in turn, drive growth in the economic output and jobs that are supported by the air transport industry in the region in the next 20 years. By 2034, Oxford Economics forecasts that the impact of air transport and the tourism it facilitates in the Middle East will have grown to support 5.2 million jobs (119% more than in 2014) and a \$489 billion contribution to GDP (a 211% increase).

The Middle East continues to consolidate its position as a hub region, connecting the European and Asia-Pacific markets.

Airlines from this region are some of the most ambitious in the world, with the likes of Emirates, Etihad and Qatar boasting modern

fleets. However, significant investment is still required in infrastructure, as well as political commitment to market liberalisation. Although the Middle East is home to some of the world's largest hub airports, with traffic expected to increase dramatically in the coming decades, capacity, both in the air and on the ground, urgently needs further addressing.

According to a 2015 assessment, the average flight in the region is currently delayed by 29 minutes (and this could reach 59 minutes by 2025 without action), due to air traffic control capacity and staffing issues. It also concludes that the benefits of proper investment in air traffic management could be over \$16 billion over the next ten years¹⁶³.



Fish 'n' fuel



The Masdar Institute of Science and Technology, alongside partners Boeing and Etihad Airways, has launched an innovative project to support the development of both sustainable alternative fuel and local aquaculture.

In March 2016, the facility officially opened in a two hectare site in Abu Dhabi's Masdar City. The system works by integrating the local aquaculture industry with saltwater-tolerant plants (salicornia and mangrove), from which the biofuel is made. The waste water from the fish farming operation is used to fertilise the crops, thus cleaning up the waste water by-products of the aquaculture operations.

While the production of sustainable alternative fuel is naturally good for the aviation industry, the connected benefit of the integrated system is the sustainable production of food for Abu Dhabi. Aquaculture in the United Arab Emirates is one of the world's fastest growing food sectors, currently growing at roughly 6% per annum. Producing seafood in this manner can greatly increase food security, something of value to all states, not just the UAE.

However, industrial fish farming on this level also has associated environmental costs, as contaminated water is often left to seep into the sea. With the Masdar system, these problems are avoided, as the plants extract the nutrients leaving behind clean water that does not cause contamination.

The fuel produced from the oil-rich seeds of the halophyte plants will be used to synthesise biojet fuel for use in aviation. While this facility is still fairly small-scale, the hope is that the concept will provide the basis for larger-scale operations in the future.