

Philippine air transport infrastructure: State, issues, government strategies

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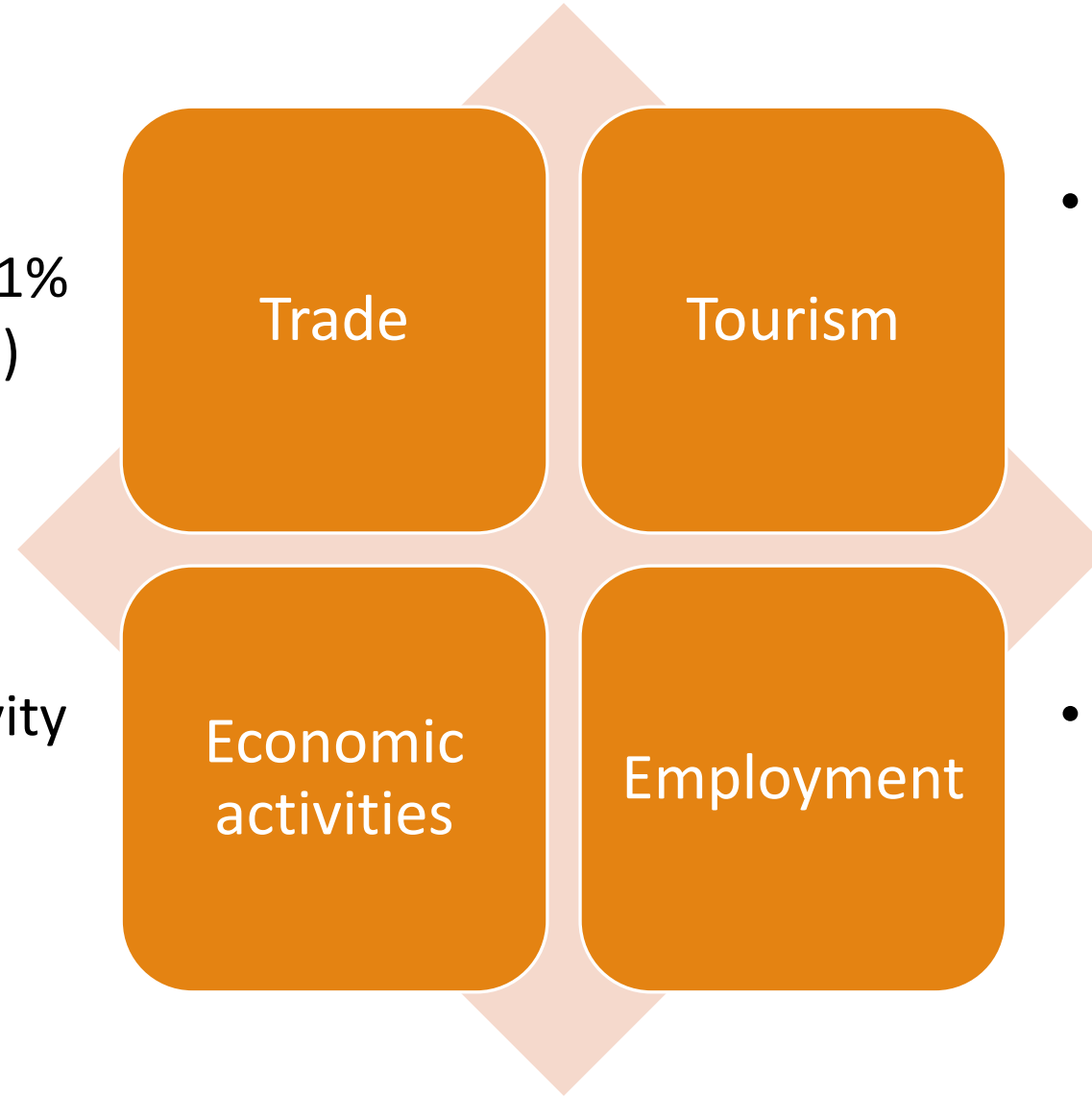
Philippine Institute for Development Studies

Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

How important is the aviation sector to the global economy?

- \$6.5 trillion of goods transported in 2019 (1% of international trade)

- Encourages productivity in many sectors such manufacturing, telecom, etc.



- 58% of international tourists travelled by air in 2019 (UNWTO)

- Enhances business operations leading to more jobs and employment



**87.7 million jobs
worldwide**

**\$3.5 trillion global
GDP contribution**

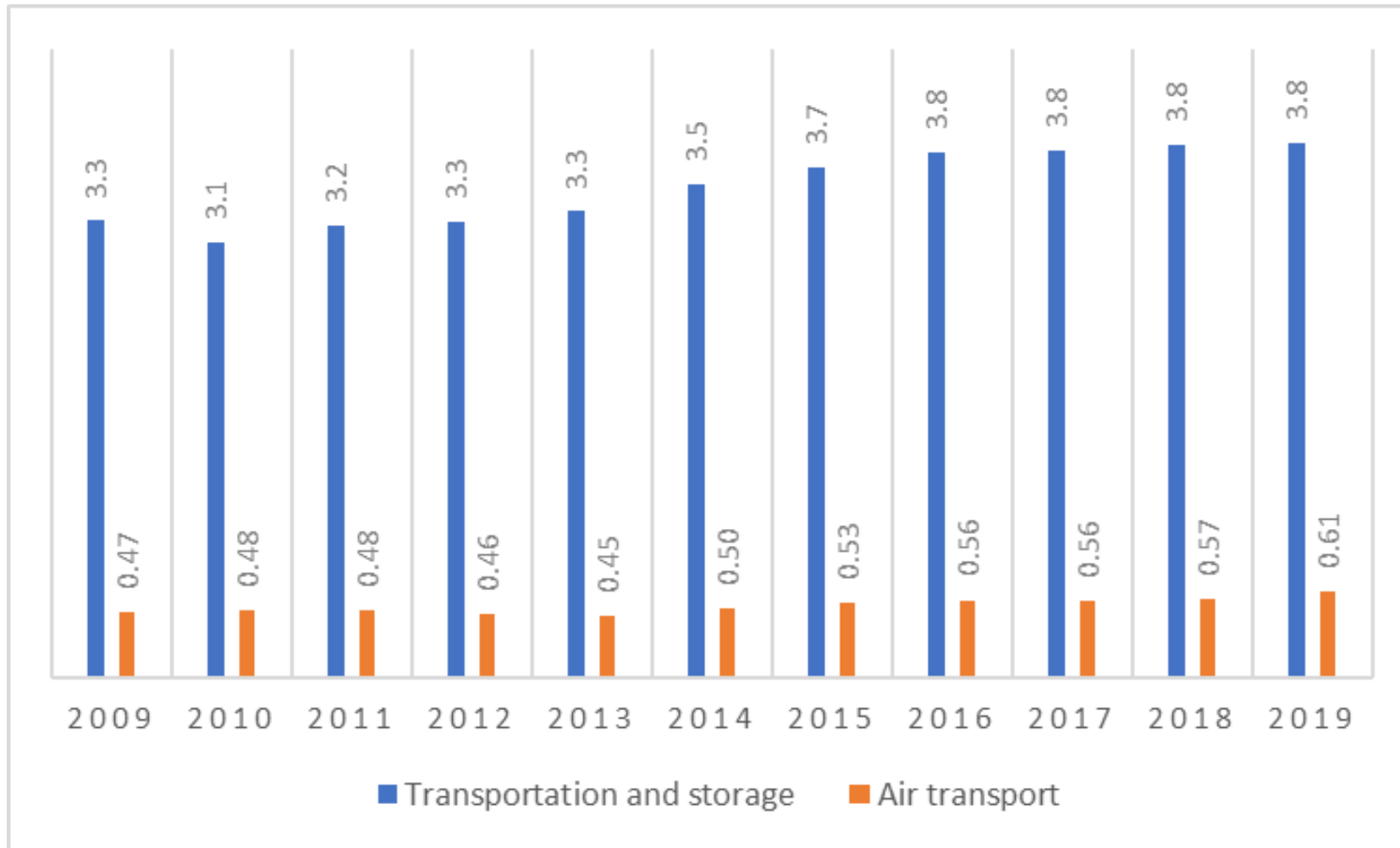
**4.5 billion
passengers in 2019**

**48,044 routes
served globally in
2019**

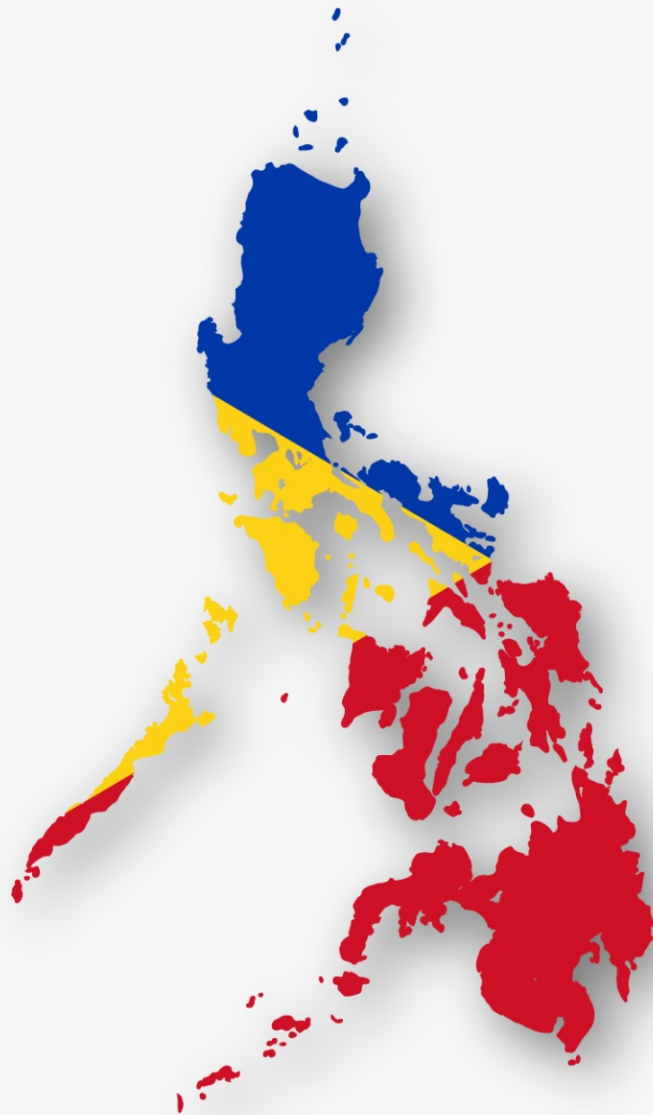
**1 aviation job =
\$117,000 in GVA**

What role does it play in the
Philippine economy?

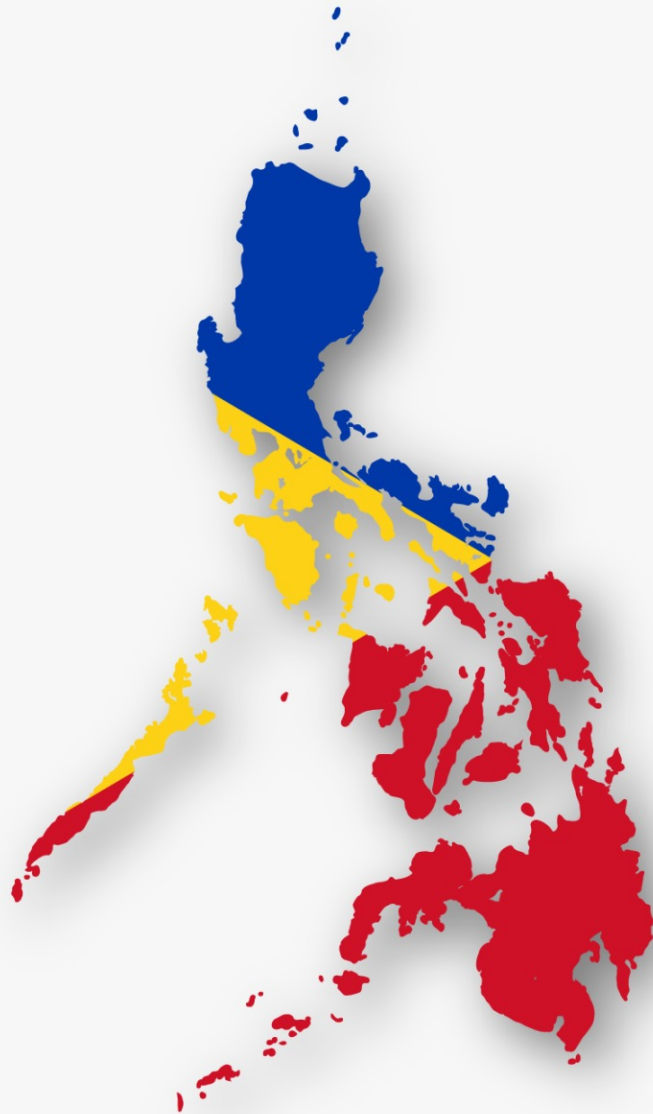
Percent share to Philippine Gross Domestic Product



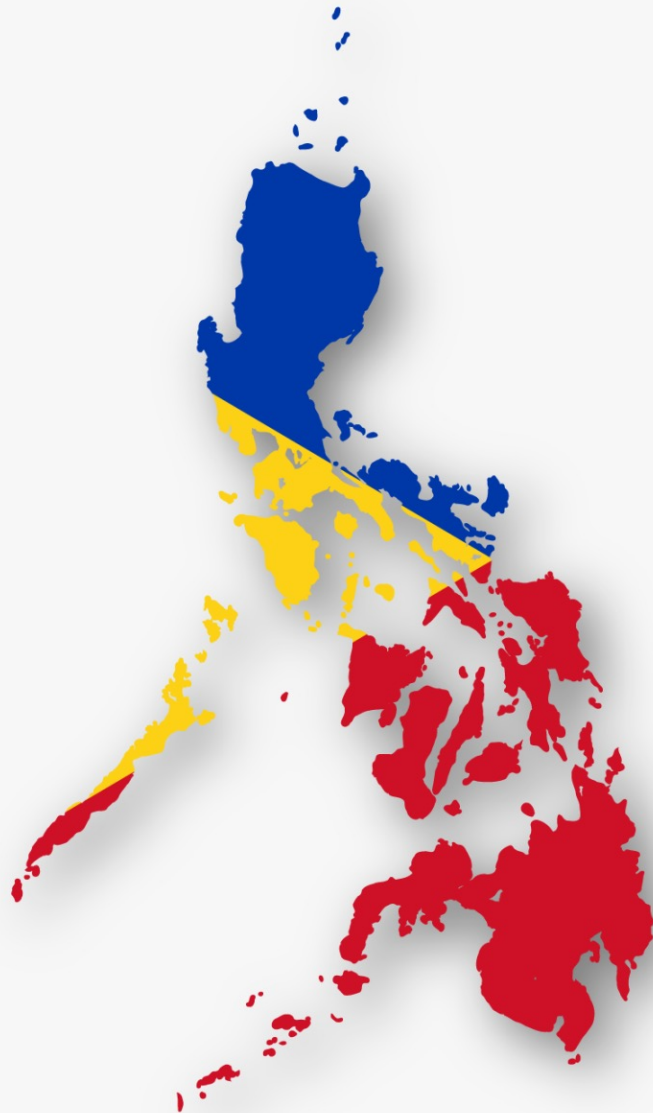
Source: Philippine Statistics Authority



- ❖ Leading facilitator of economic activities (first among many sectors in terms of backward linkages; Yu et al. 2019)
 - ✓ *Direct, positive effect*: construction, land transportation and other transportation sector, communication and storage, finance sector, and other private services sector
 - ✓ *Indirect, positive effect*: manufacturing and trade sector
 - ✓ *Indirect effect*: agriculture, fishery, and forestry; mining and quarrying; electricity gas and water sector; and tourist buses and cars sector.



- ❖ High-value industries are the main purchasers of air transport services (Llanto and Rodolfo 2020)
 - ✓ Wholesale and retail trade: 21.5% of industry spending
 - ✓ Telecom industries: 8.3% of total industry spending (InterVistas 2015)



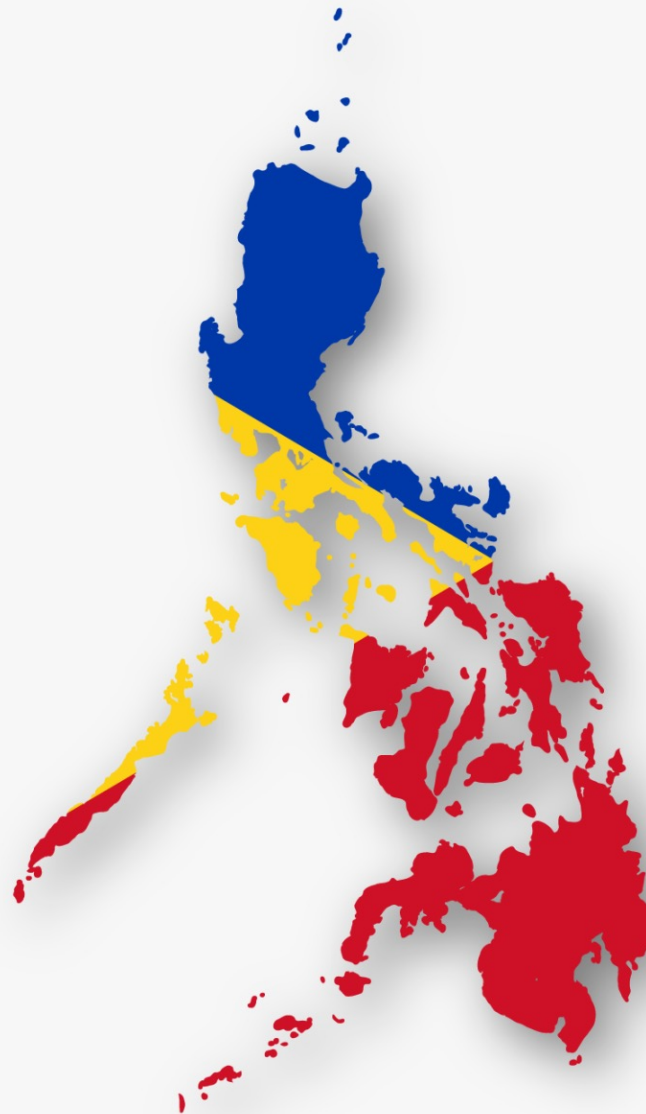
❖ Perhaps the most valuable contribution to Philippine economy is its role as the backbone of the tourism industry.

- 98% of tourists in 2019 arrived by air
- Tourism direct GVA: 12.8%
- Share of tourism employment: 13.6%
(based on PSA and DOT data)

1.2M jobs supported by air transport sector (direct, supply chain, employee spending, tourism)

Top 5 international tourist arrival:

- 1. Rep. of Korea**
- 2. People's Rep. of China**
- 3. United States**
- 4. Japan**
- 5. Australia**



\$10.4B contribution to Philippine economy (equivalent to 3.4% of GDP)

Facilitated:

- **\$7B foreign tourist expenditure**
- **\$78.8B in FDI**
- **\$95.8B in exports**

Top 5 busiest air cargo routes:

- 1. Hong Kong (SAR), China**
- 2. Rep. of Korea**
- 3. United Arab Emirates**
- 4. Chinese Taipei**
- 5. Japan**

What can we expect in the aviation sector in the coming years?

Projected growth

The Oxford Economics team forecasts 8.2 billion passengers in 2038, supporting 143 million jobs and \$6.3 trillion in economic activities (Aviation: Benefits Beyond Borders 2020).

Projected growth

Passenger growth between select developing and emerging regions 2011-2019

Intra-Asia	99%
Africa-Asia	67%
China-Africa	107%
Middle East-Asia	75%
Global	62%

Source: Oxford Economics

Projected growth

Global projection:

Region	Total passengers in 2018	Share of global passenger traffic (in %)	Projected annual growth rate for international traffic, 2018-2038
Africa	115M	2.5	3.4
Asia-Pacific	1.7B	37.0	4.2
Europe	1.2B	25.9	2.1
Latin America and Caribbean	356M	7.7	3.2
Middle East	192M	4.2	4.1
North America	1B	22.7	2.1
APEC	2.7B	59.0	3.3
European Union 27	903M	19.6	2.1
Small island states	40M	0.9	3.4
Developing countries	2B	43.4	3.8
OECD economies	2.5B	54.7	2.5
Least-developed countries	56M	1.2	3.8
Landlocked developing countries	51M	1.1	3.6

Source: Oxford Economics

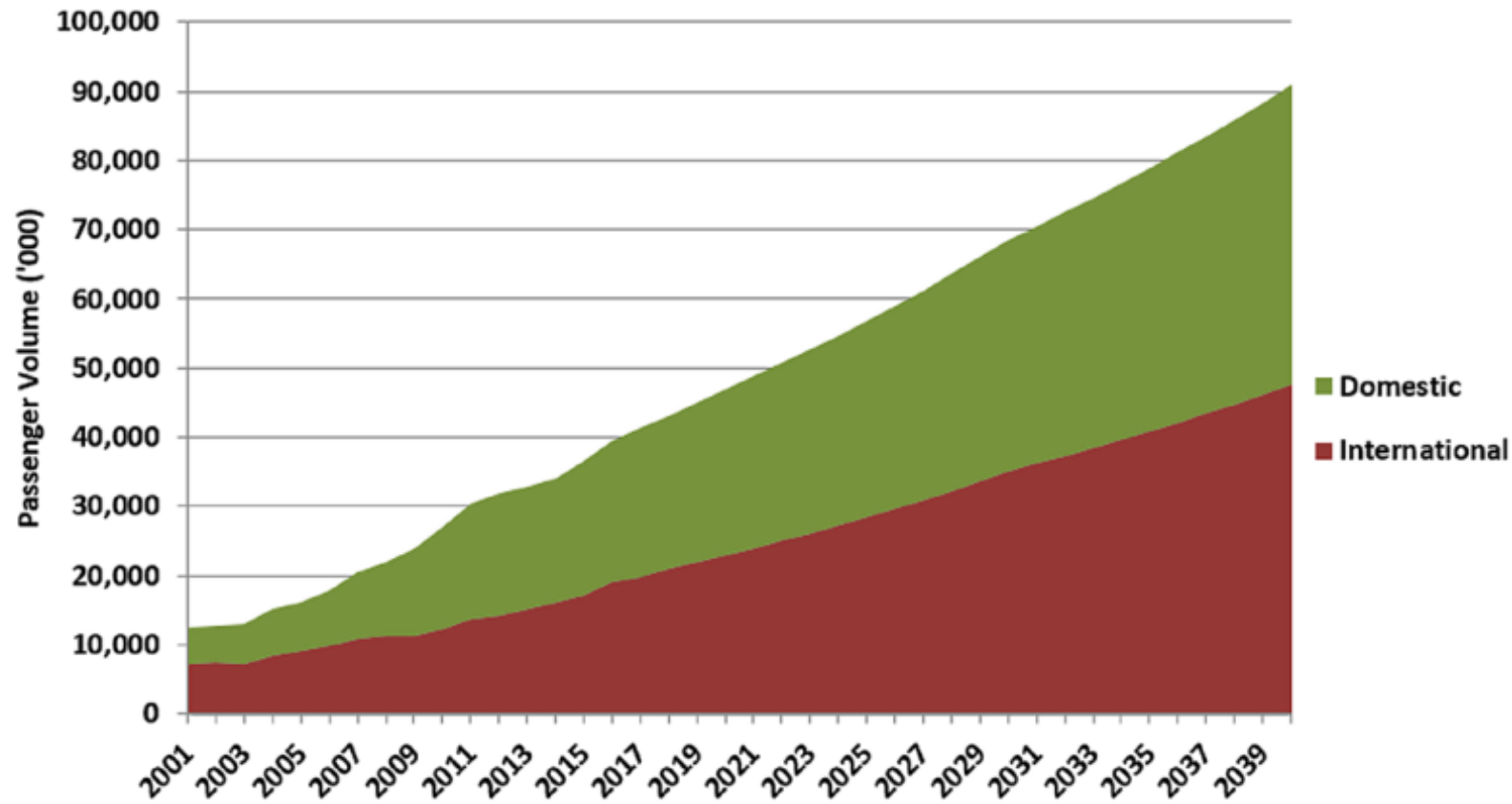
Projected growth

	Airlines	Airports	Passengers 2019 (millions)	Flights 2019	Forecast passengers (2027)
China	57	238	654.6	4,959,100	1.037B
Hong Kong SAR	6	1	36.6	178,100	80.3M
Chinese Taipei	6	12	36.6	248,000	79.7M
Indonesia	26	129	111.6	1,017,000	239.7M
Japan	23	79	152.2	1,140,700	216.6M
Malaysia	10	34	55.7	448,400	106.3M
Philippines	12	46	49.1	335,800	88.3M
Singapore	5	2	33.8	185,100	79.4M
South Korea	10	16	76.8	396,824	127.6M
Thailand	11	32	80.9	523,800	139.5M
United States	133	631	960.9	9,514,800	1.012B

Source: Oxford Economics 2020

Projected growth

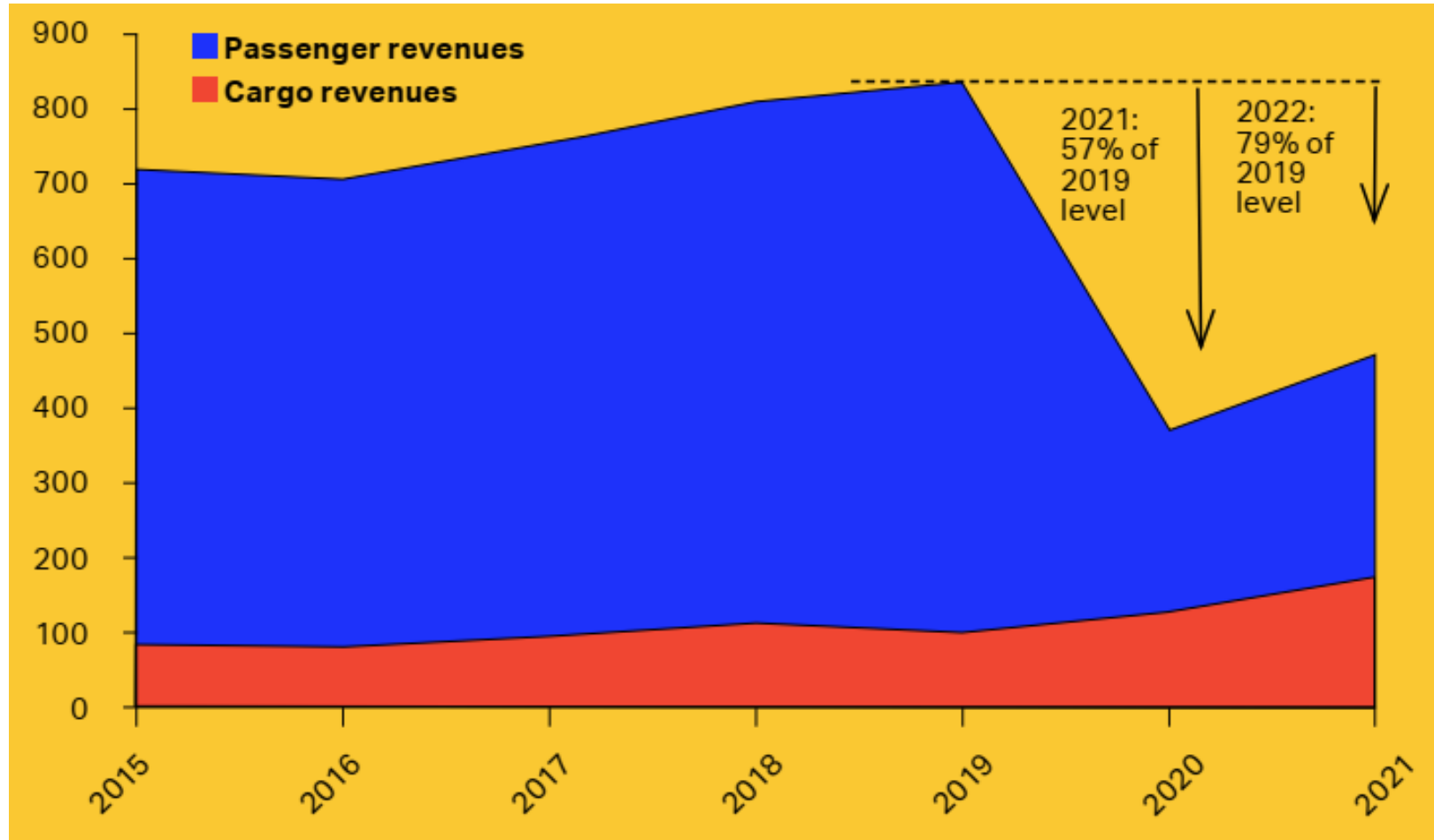
Projection for the Philippines (JICA forecast for NAIA):



Note: Figure as presented in Air Transport Infrastructure: A Policy Brief, Arangkada Policy Brief No. 6

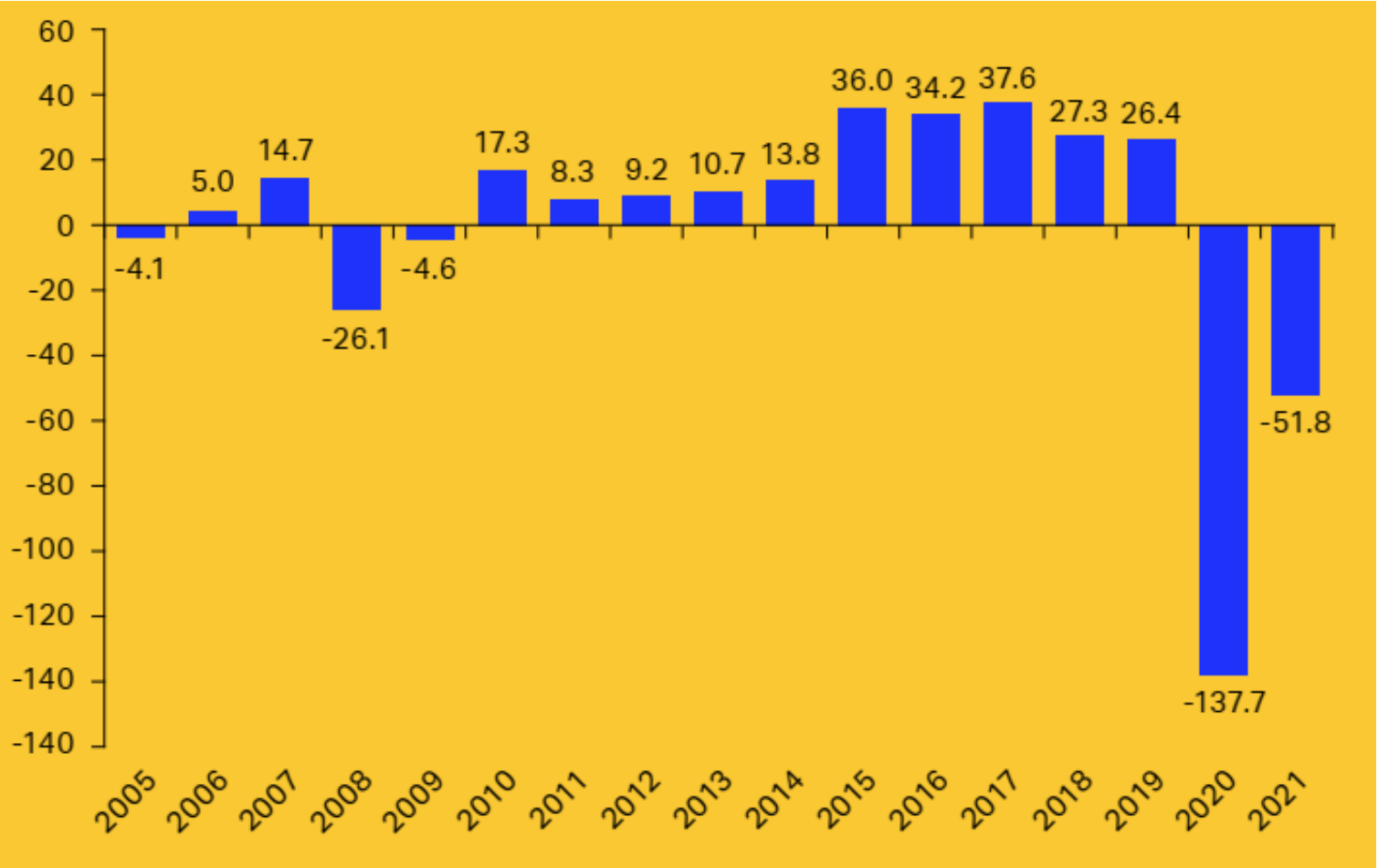
How did COVID-19 changed the scenario for the sector?

Global airline revenues, in Billion USD



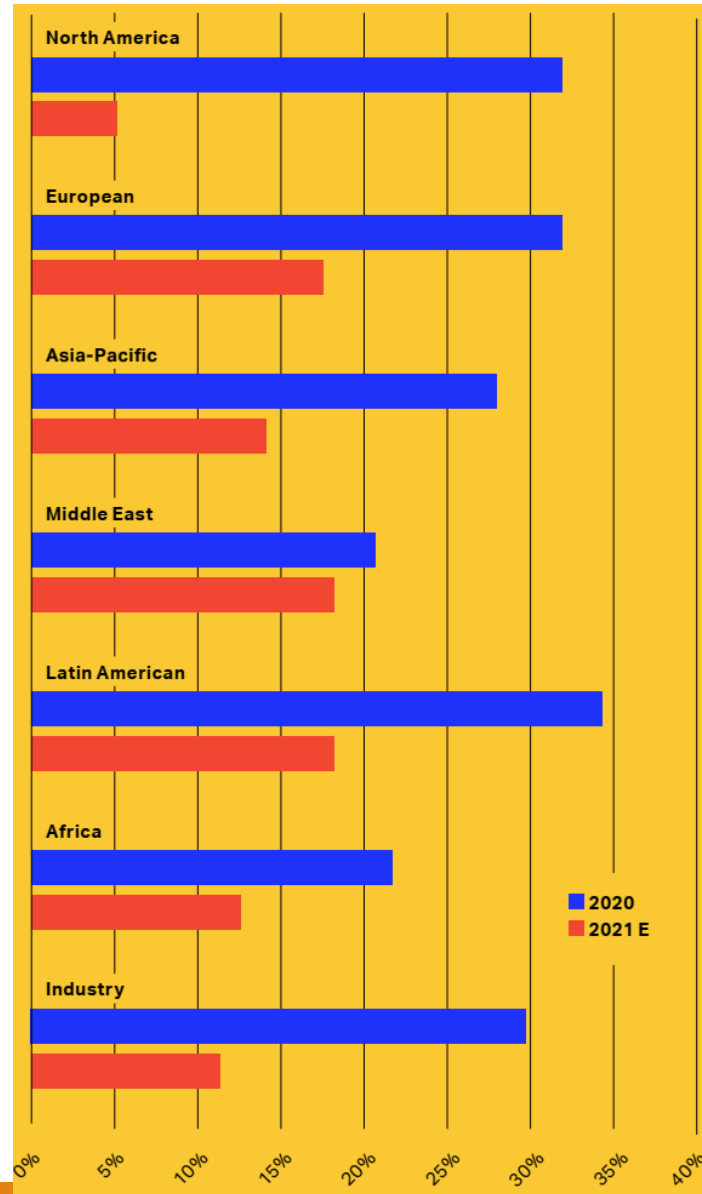
Note: Figure directly lifted from IATA annual review 2022

Net post tax profit in air transport industry, in Billion USD



Note: Figure directly lifted from IATA annual review 2022

Operating margin of airlines, by region (% revenue)



Note: Figure directly lifted from IATA annual review 2022

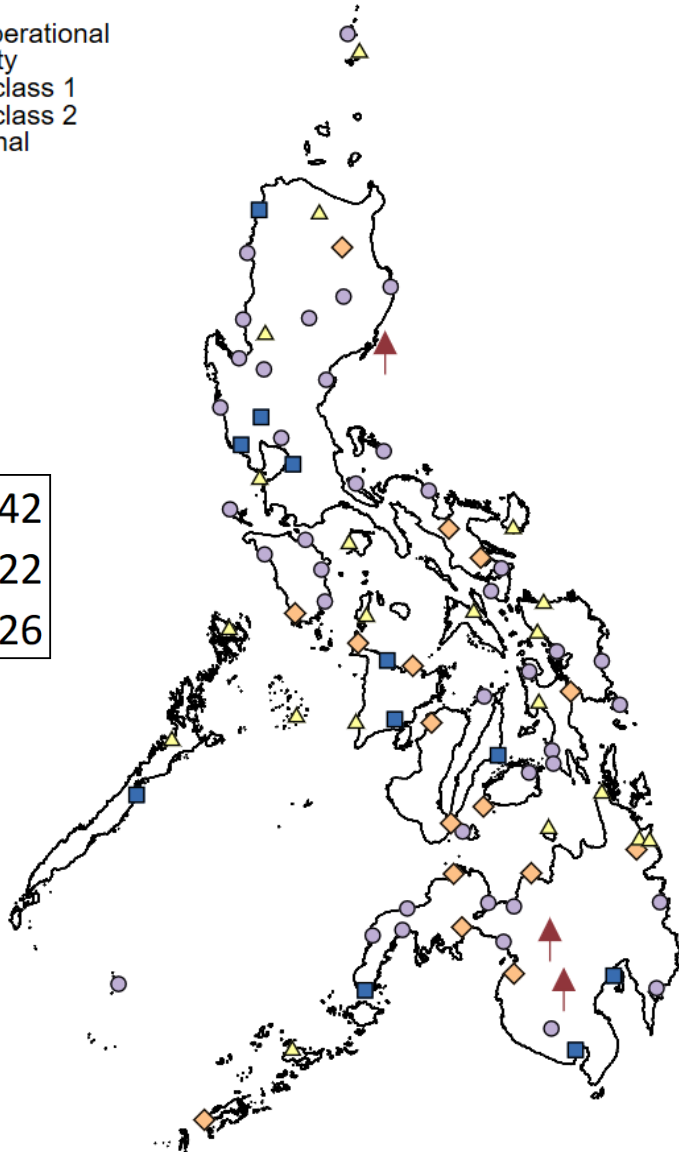
“By the end of 2023, most regions will be at –or exceeding –pre-pandemic levels of demand.”
Willie Walsh, Director General, International Air
Transport Association

What is the current state of the Philippines' air transport sector?

Supply and demand for air travel in PH

- ↑ Not yet operational
- Community
- ◇ Principal class 1
- △ Principal class 2
- International

Luzon	42
Visayas	22
Mindanao	26



National airports	90
International	8
Principal class 1	21
Principal class 2	20
Community	38
Not yet operational	3

International	Airport with border control facility used for international flights
Principal class 1	Airports used for domestic flights serving jet aircraft (ex. B737 and A320) that have atleast 100 passengers.
Principal class 2	Airports used for domestic flights serving propeller aircraft or jet aircraft small than in Principal class 1, which have below 100 but more than 19 passengers.
Community	Airports used for General aviation aircraft.

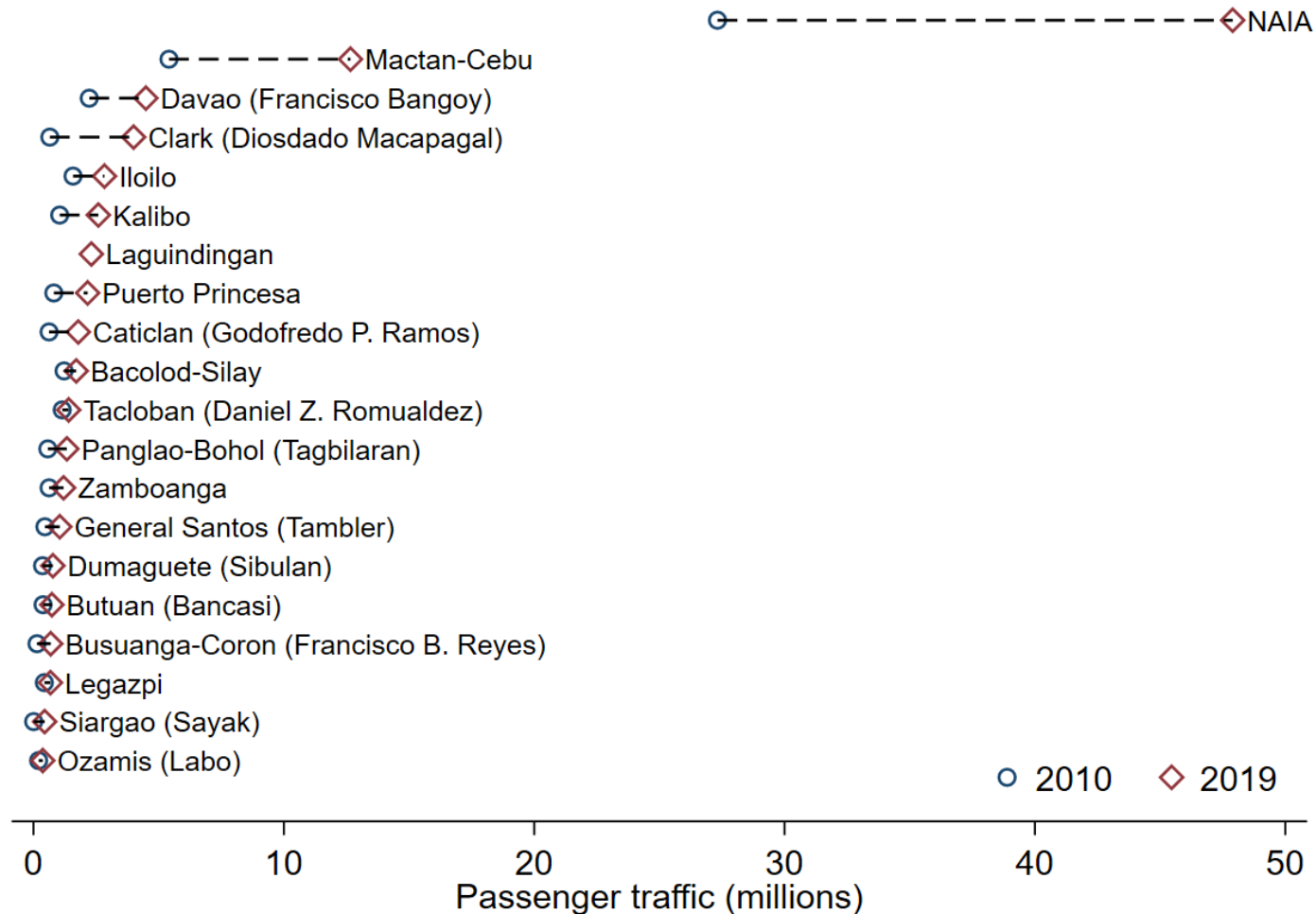
Supply and demand for air travel in PH

Table 1. Airports by Classification, by Location – as of May 2019

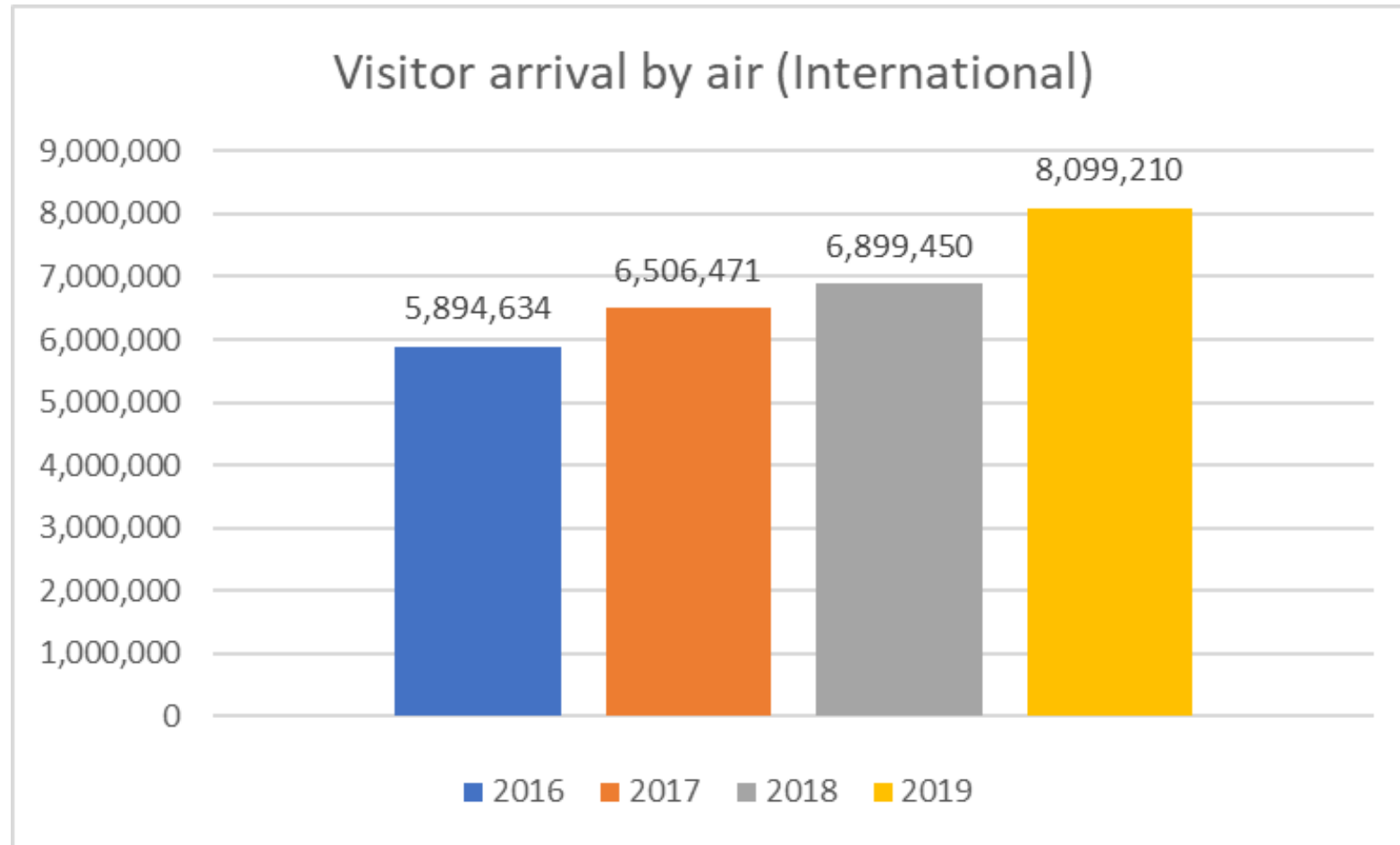
International	Principal Class 1	Principal Class 2	Community	
Clark - Authority	Butuan	Antique	Alabat	Jomalig
Davao	Cagayan	Baguio	Allah Valley	Lingayen
General Santos	Cotabato	Basco	Bagabag	Lubang
Iloilo	Dipolog	Busuanga	Baler	Maasin
Kalibo	Dumaguete	Calbayog	Bantayan	Malabang
Laoag	Laguindingan	Camiguin	Bulan	Mamburao
Mactan, Cebu - Authority	Legazpi	Catarman	Biliran	Mati
NAIA - Authority	Naga	Caticlan	Bislig	Ozamis
Puerto Princesa	Pagadian	Cuyo	Borongan	Palanan
Subic - Authority	Roxas	Jolo	Cagaya de Sulu	Plaridel
Zamboanga	San Jose	Marinduque	Calapan	Pinamalayan
	Silay	Masbate	Catbalogan	Rosales
	Tacloban	Ormoc	Cauayan	San Fernando - BCDA-PPMC
		Romblon	Daet	Siocon
		Sanga-Sanga	Hilongos	Siquijor
		Siargao	Iba	Sorsogon
		Surigao	Ipil	Ubay
		Tandag	Iligan	Vigan
		Virac	Itbayat	Wao (operational)
			Liloy	Wasig

Supply and demand for air travel in PH

Figure 1. Top 20 airports based on passengers



Supply and demand for air travel in PH



Source: PSA, DOT

Supply and demand for air travel in PH

Air arrivals, by port of entry, 2019

Total arrivals	8,099,210	(% share)
Manila	5,087,896	61.59
Cebu	1,683,945	20.38
Kalibo	772,501	9.35
Clark	436,235	5.28
Palawan	66,665	0.81
Davao	36,662	0.44
Bohol	11,367	0.14
Iloilo	3,939	0.05

Source: Department of Tourism

Supply and demand for air travel in PH

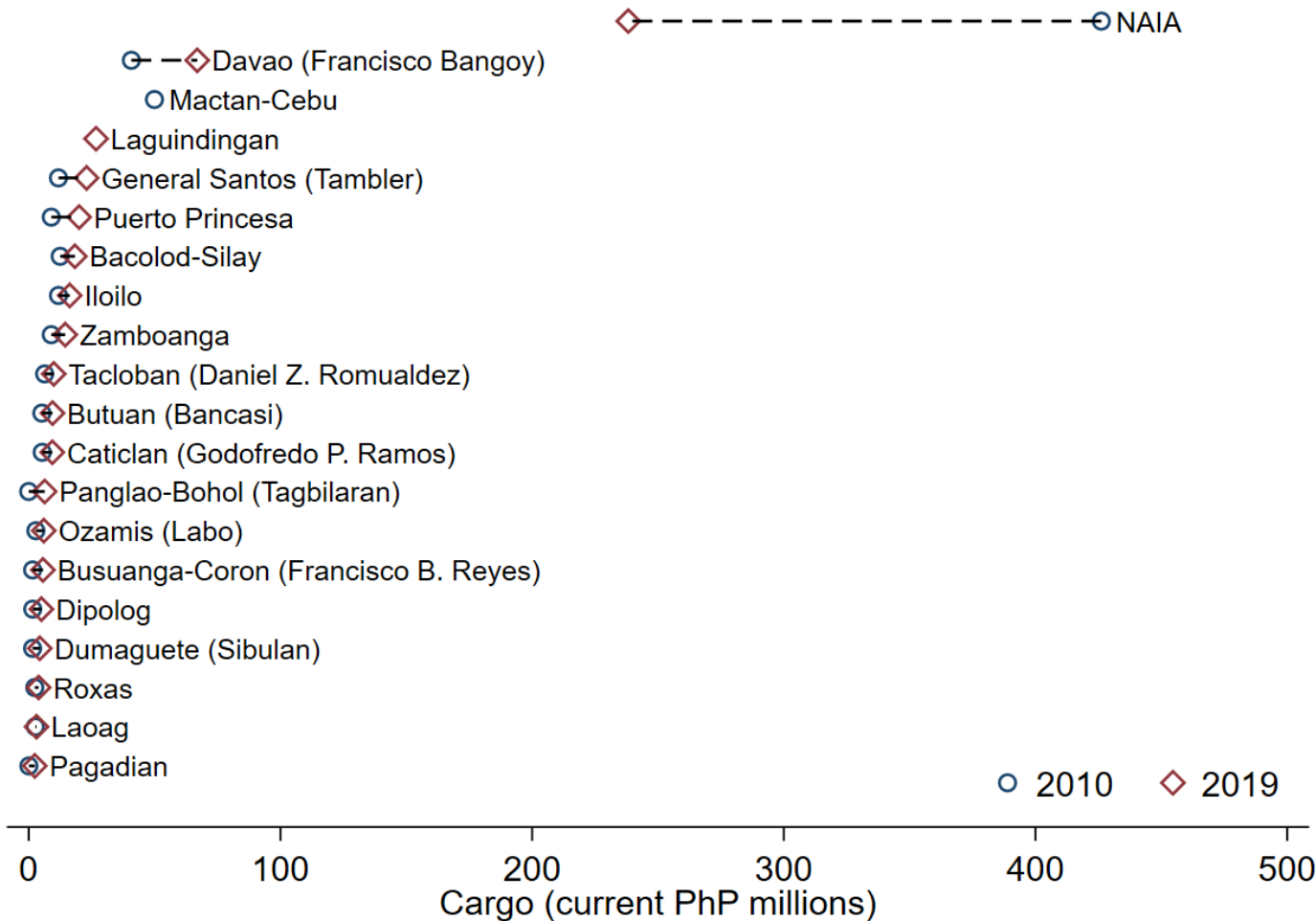
Top 10 visitor arrivals via air, 2018 (by country of residence)

Continent	Country	No. of visitors	% share
East Asia	Korea	1,585,784	23.0
East Asia	China	1,135,077	16.5
America	U.S.A.	1,025,429	14.9
East Asia	Japan	629,969	9.1
Oceania	Australia	277,142	4.0
East Asia	Taiwan	234,998	3.4
North America	Canada	223,854	3.2
Northern Europe	United Kingdom	195,865	2.8
Asia (ASEAN)	Singapore	171,514	2.5
Asia (ASEAN)	Malaysia	140,407	2.0
East Asia	Hong Kong	111,433	1.6
Total visitor arrivals by air		6,899,450	

Source: Department of Tourism

Supply and demand for air travel in PH

Figure 2. Top 20 airports based on cargo



What can we do to prepare?

Address prevailing issues and challenges in the sector:

- 1) Capacity
- 2) Technical capability
- 3) Quality
- 4) Institutional environment

Prevailing issues and challenges

1) Capacity

- Aircraft congestion in NAIA –demand for airport facilities (terminal and runway) is way more than its current capacity.

The configuration of NAIA's runway and taxiway limits the type of aircraft that can be accommodated. NAIA's intersecting runways leads to congestion of aircraft (flights must be planned to maximize arrivals; arrivals are prioritized over departure). There is also a lack of rapid exit taxiways, which affects runway occupancy time. (Rodolfo 2017)

Prevailing issues and challenges

1) Capacity

- Aircraft congestion in NAIA

Commercial planes, cargo planes, general aviation, and military planes compete for slots in NAIA's runway. General aviation occupies runway longer because they have smaller engines. (Rodolfo 2017)

Prevailing issues and challenges

1) Capacity

- Aircraft congestion in NAIA

In a 2011 study, JICA noted that most flight in NAIA is scheduled between 0700 to 1600, causing the congestion. In response, the government limited the number of arriving and departing flight to 40 per hour.

Prevailing issues and challenges

1) Capacity

- Passenger congestion in NAIA

NAIA serves as the main gateway for passengers. In 2016, it accommodated a total of 39.6 million passengers, way beyond its maximum capacity of 35 million passengers on an annual basis (Yu et al. 2019).

Prevailing issues and challenges

2) Technical capability

Domestic flights are mostly scheduled during the day due to lack of night-rating and instrument landing facilities of most provincial airports. (Rodolfo 2017)

**Note: As of 2020, there are 22 night-rated airports. Six other airports (Cauayan, Dipolog, Bicol (New Legazpi), Pagadian, San Jose (Mindoro)) are scheduled for night-rating based on the DOTr website.*

Prevailing issues and challenges

2) Technical capability

IATA (2016) noted that utilization of runways in Philippine airports is sub-optimized due to the following factors: air traffic management issues; vectors and delays; lack of radar; non-standard air traffic control procedures; poor en-route communications; safety concerns for ground operations.

Prevailing issues and challenges

3) Quality

	Airlines	Airports	Passengers 2019 (millions)	Flights 2019	Aviation infrastructure score	Connectivity ranking	Airport accessibility
China	57	238	654.6	4,959,100	4.3	5=[207]	73%
Hong Kong SAR	6	1	36.6	178,100	5.6	11[197]	100%
Chinese Taipei	6	12	36.6	248,000	3.9	28=[169]	N/A
Indonesia	26	129	111.6	1,017,000	3.9	34=[158]	79%
Japan	23	79	152.2	1,140,700	4.8	12=[195]	99%
Malaysia	10	34	55.7	448,400	4.6	28=[169]	98%
Philippines	12	46	49.1	335,800	3.2	27=[170]	94%
Singapore	5	2	33.8	185,100	5.5	12=[195]	100%
South Korea	10	16	76.8	396,824	4.6	9[200]	100%
Thailand	11	32	80.9	523,800	4.6	16=[189]	88%
United States	133	631	960.9	9,514,800	5.9	1[218]	96%

Source: Oxford Economics 2020

Variable	Definition
Airlines	commercial airlines based in the country
Airports	commercial airports in the country
Passengers 2019	number of passengers departing airports in the country (does not include connecting passengers)
Aviation infrastructure score	1–7 score from the World Economic Forum Travel and Tourism Competitiveness Report 2019, based on the quality of the aviation infrastructure, using indicators such as available seat kilometres, the number of departures, airport density and the number of operating airlines, as well as the quality of air transport infrastructure for domestic and international flights. Higher is better.
Connectivity ranking	ICAO Air Transport Bureau 2018 analysis ranking each country based on the number of countries and territories that can be easily reached from it by air, with the actual number of countries or territories that can be reached directly or with one stop in square brackets ([])
Airport accessibility	ICAO iStars Database percentage of a country's population within 100 kilometres of either an international airport or of a domestic airport with at least one regular to an international airport, the global average for all countries being 74.41%.

Prevailing issues and challenges

3) Quality

	Variable definition	Score	Reference score	Note
Passengers facilitation score	considers the ease of moving around the globe and government's goal in facilitating the process	4.4	10	Asia-Pacific: 4.7
Visa requirements score	10 = no visa required for visitors from all source markets; 0 = traditional visa required	4.7	10	
Cost competitiveness score	based on ticket taxes, airport charges and VAT; 10 = low cost, 0 = high cost	7.9	10	
Air Trade Facilitation Index (ATFI)	captures how a country facilitates cargo through its customs and borders processes and regulations	7.6	10	54th out of 124 countries
eFreight Friendliness Index (EFFI)	assesses the performance of 136 economies, considering the actual penetration of electronic transactions and documents in air cargo shipments	0.03	10	61th out of 135 countries
Enabling Trade Index (ETI)	assesses the performance of 136 economies on domestic and international market access by looking at border administration, transport and digital infra, transport services and operating environment.	4.1	7	82nd out of 136 countries

Source: Aviation Benefits Beyond Borders 2018

Prevailing issues and challenges

4) Institutional environment

Rodolfo (2017) raises the need for: (1) coherence and convergence among government agencies responsible for airport development and their implementation; (2) separate regulatory and developmental functions.

Prevailing issues and challenges

4) Institutional environment

- A 2009 study of the World Bank highlighted the need for an integrated system for planning, budgeting, building and operating transport infrastructure in the Philippines.
- The ADB (2009) study likewise noted that movement within the country usually requires the utilization of more than one mode of transport; however, coordination among agencies responsible for transport infrastructure is generally very limited.

Prevailing issues and challenges

4) Institutional environment

- Lack of coordination happens not only between government agencies, but also even within departments themselves (Rodolfo 2017).

Ex: Bacolod-Silay and Laguindingan airports were completed but with inadequate road access to/from airport and from city/towns. Laguindingan airport when it opened in 2013 did not have proper navigational aids (installed later in 2014).

Prevailing issues and challenges

4) Institutional environment

- Funding for operation and maintenance of transport infrastructure is usually not included in the budget (Rodolfo 2017).

Prevailing issues and challenges

4) Institutional environment

- Independent airport authorities find it difficult to improve or procure airport facilities and equipment even if they have the budget for it because CAAP has the mandate based on RA 9497 (Rodolfo 2017).

Prevailing issues and challenges

4) Institutional environment

- The CAAP has conflicting responsibilities as regulator, operator and investigator. The DOTR and CAAP also have overlapping functions related to planning, budgeting, programming and implementation of airport policies. (Rodolfo 2017).

What has been done?

Government plan, strategies

The “Build, Build, Build” program was able to increase infrastructure to more than 5 percent of GDP in 2018 (double the average spending over the past 5 decades). The challenges brought by the COVID-19 pandemic however, reduced the fiscal space initially allotted for the portfolio of investments. The government meanwhile, used the BBB as an instrument to bounce back from the pandemic.

Government plan, strategies

To accelerate infra development:

- 1) Revisit the BBB program, prioritize IFPs with high economic impact considering project readiness, implementation capacity of line agencies, job-generation potential and risk level of private sector.
- 2) Pursue PPP in infrastructure development -bank on the private sector to fully or partially finance infra projects and utilize their efficiency in project delivery and management. The government on the other hand, will work on enhancing the regulatory framework for PPP to enhance the implementation of projects and programs (amend NEDA Joint Venture guidelines).

Philippine Development Plan 2023-2028

- Challenges

“Air traffic congestion is likely to persist, if not worsen, without the needed investments in developing, upgrading and improving airports. Airport capacities in 2022 will be inadequate to cater to domestic and international aviation demand, which is expected to recover by 2025. Aggravating the congestion in many domestic airports is their lack of night landing capabilities. Meanwhile, the expansion of some existing airports may not be technically and/or financially feasible.”

Philippine Development Plan 2023-2028

- Strategies for the air transport sector

To address future demand:

- Improve existing airports
- Develop new ones

To improve safety standards:

- Upgrade existing airports including development of access roads

For future expansion and upgrade options:

- Develop new airports outside of urban areas

Philippine Development Plan 2023-2028

- Strategies for the air transport sector

To address congestion:

- Pursue night rating of airports

To improve services:

- Adopt a certain level of standards for all airports

To support tourism:

- Gateway airports will be developed and connected to feeder airports

Philippine Development Plan 2023-2028

INDICATOR	BASELINE (YEAR)	TARGETS							MEANS OF VERIFICATION	RESPONSIBLE AGENCY/ INTER-AGENCY BODY
		2023	2024	2025	2026	2027	2028	EOP		
Passengers transported via air and sea increased (number of passengers, cumulative)	35.72 million (2021)	158.54	166.47	174.79	183.53	192.71	202.34	202.34	Agency reports	DOTr, Civil Aviation Authority of the Philippines (CAAP), MIAA, Mactan Cebu International Airport Authority (MCIAA), Clark International Airport Corporation (CIAC), Davao International Airport Authority (DIAA), Philippine Ports Authority (PPA), Cebu Port Authority (CPA)
Cargo transported via air and sea increased (international and domestic) (metric ton, cumulative)	470.30 million (2021)	1,302	1,400	1,470	1,570	1,700	1,850	1,850	Agency reports	DOTr, CAAP, MIAA, MCIAA, CIAC, DIAA, PPA, CPA, Subic Bay Metropolitan Authority, economic zones

Source: Philippine Development Plan 2023-2028

Government plan, strategies

Airport Infrastructure Flagship Projects

Year	Flagship Projects	Airports
2017	75	6
2018	75	7
2019	75	6
2020	104	12
2021	119	13
2022	-	-
2023	194	14

Source: NEDA

Revised List of Infrastructure Flagship Projects (IFPs)

As of March 31, 2023

Note: The projects marked * below were part of previous lists of IFPs approved in 2017, 2019, and 2020, and are not considered in this list because they have already been completed. All projects completed before the next revision are no longer included in the current list.

No.	Project Title	Implementing Agency	Funding Source
<u>Ongoing/Approved for Implementation</u>			
10	New Manila International Airport (Bulacan international Airport)	DOTr	PPP
<u>With Approval/Approved for Implementation</u>			
98	New Dumaguete Airport Development Project (Bacong International Airport)	DOTr	ODA
<u>Ongoing Project Preparation</u>			
106	New Zamboanga Airport	DOTr	GAA
109	Naga Airport Development Project	DOTr	GAA
117	Busuanga Airport Development Project	DOTr	GAA
118	Bukidnon Airport Development Project	DOTr	GAA
119	Antique Airport Development Project	DOTr	GAA
120	Laoag International Airport Development Project	DOTr	PPP
121	Tacloban Airport Development Project	DOTr	GAA
143	Ninoy Aquino International Airport PPP Project	DOTr	PPP
<u>Pre-project Preparation</u>			
153	Air Traffic Services - Air Navigational Services (ATS-ANS) Project	DOTr	PPP
162	New Siargao (Sayak) Airport	DOTr	ODA
163	Southern Palawan (Brooke's Point) Airport Development Project	DOTr	GAA
165	New Masbate Airport Development Project	DOTr	GAA

Source: NEDA

Policy developments

Government infrastructure policies, as of 8 April 2023

Policy	Description	Bill Reference	Note	Implemented
Philippine Airports Authority	The bill seeks to create the Philippine Airports Authority which will handle the regulation and operation of airports. The planned devolution aims to delegate the operating powers of the CAAP as well as abolish the authorities managing international airports, namely the Manila International Airport Authority, Clark International Airport Corporation, Subic Bay Metropolitan Department Airport Department, and the Mactan-Cebu International Airport Authority.	SB 1073 (s. 2022)	Pending in the Committee (9/6/2022)	
CAAP Development and Modernization Fund Act of 2023	The bill seeks to provide additional Development and Modernization Fund to CAAP for their consistent upgrade of its standards, systems and procedures prescribed for civil aviation and related functions to comply with the International Civil Aviation Organization and other international aviation standards.	SB 1646 (s. 2023)	Pending in the Committee (1/23/2023)	

Policy developments

Amending R.A. NO. 9497 (Civil Aviation Authority Act of 2008)	The bill seeks to address the deficiencies in the supervision and management of the Philippine civil aviation industry and to strengthen CAAP as an agency. Significant amendments in the bill include: increasing the term of the director general to 7 years, exemption of CAAP from the salary standardization law, and enhanced fiscal autonomy.	SB 1654 (s. 2023)	Pending in the Committee (1/23/2023)	
Mactan-Cebu International Airport Authority (MCIAA) charter amendments	The bill aims to provide the City Government of Lapu-Lapu City with an additional representative from the private sector in the MCIAA Board of Directors. This is to ensure that the MCIAA's programs and plans are in line with and complementary to those of the city.	SB 2030 (s. 2023)	Pending in the Committee (3/22/2023)	
Open Skies Policy EO No. 29, s. 2011	Liberalizes international airports other than the Ninoy Aquino International Airport by allowing more foreign carriers to fly and bring in more tourists. Included are: Clark, Cebu, Davao, Iloilo. NAIA not included because of congestion.			March 14, 2011

What can we do to improve further

-
- ❖ Maintain the commitment to allot 5-6% of GDP to infrastructure spending
 - ❖ Continue government's awareness about the issues and challenges faced by the air transport sector
 - ❖ Use more appropriate indicators to guide policymakers in their goal to improve the performance of the sector
 - ❖ Fast-track government processes and make it more attractive for private sector to partner with government in providing for the infrastructure needs of the country

Overall, the government is on the right path in improving our air transport infrastructure –it recognizes the needs of the sector. However, time is a crucial element that must be considered (rising air travel demand is faster than our policy response).

❖ Good thing: The COVID-19 pandemic bought us time