



**BANGALORE CHAMBER OF INDUSTRY AND COMMERCE**



**The Gateway to Karnataka -  
a New Second Airport for the  
Bengaluru Region**





**BANGALORE CHAMBER OF INDUSTRY AND COMMERCE**

**Why Karnataka needs a Second Airport in the  
Bengaluru - Mysuru Region**

The Bangalore Chamber of Industry and Commerce (BCIC) is the apex Chamber of Industry and Commerce representing large and medium industry in the State of Karnataka since 1976 with a membership strength of 788. BCIC plays an active and important role in promoting trade and investment in the State and has an excellent domestic and international network with MoUs with the leading Chambers of Commerce across the globe. The Chamber provides strong interface with the Governments in the formulation of sectoral and industrial policies.

The Chamber represents all segments of industry which includes Manufacturing, Aerospace Aviation, IT, Bio-tech, Pharma, Engineering, Garments, Food Processing, Steel and Services. The Chamber has been awarded the Gold Standard by NABET for adopting quality standards and is also affiliated at the national level with ASSOCHAM. (Website: [www.bcic.org.in](http://www.bcic.org.in))

# Approach to the study

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The goal of the study is to examine the demand drivers in Bengaluru and examine whether the city requires a second airport or not. This is done via exploring 3 key themes namely:

- The current airport and its challenges
- Is there a clear, defined and definite need for a second airport?
- If a second airport is built will it be feasible ?

The study includes extensive primary research coupled with ground-level intelligence and analysis

The goal of the final submission is to provide deep insights aimed at helping the stakeholder making an informed decision regarding a second airport in Bengaluru

Any airport project requires a comprehensive understanding of the location and catchment (define for the purposes of this report as the area which an airport will be able to service). An examination of Karnataka (and Bengaluru) thereby is essential and is the starting point of all analysis. Understanding in-depth the issues, opportunities and challenges the state presents can help determine the potential and feasibility for any airport project in the state.

The state of Karnataka is the 4<sup>th</sup> largest contributor to the India's gross domestic product (the top three being Maharashtra, Tamil Nadu and Gujarat). Over the next decade it is likely to overtake Tamil Nadu and Gujarat towards becoming one of the top 2 states in the country. Interestingly ~86% of the economic output for the state comes from the Bengaluru area.

Bengaluru is home to 33% of India's tech talent and 44% of migrants moving to Bengaluru have tech skills. It is the preferred R&D destination in India for ~50% of India's MNC's and also home to the most number of unique investors including 431 venture capital firms which are key to the innovation ecosystem. Finally, Bengaluru serves as the aerospace hub for the country

The aviation link is critical to Bengaluru's success as the primary advantage of air transport is convenience and speed. Aviation infrastructure encompasses all processes and physical parameters from arrival at the airport till departure to respective lodging and vice-versa. While Bengaluru has 3 operational airports only one is allowed to engage in commercial air-transport. This is due to an agreement signed with the current airport operator granting it a monopoly status.

Airport requirements for Bengaluru have to be assessed in terms of five broad parameters namely,

- Catchment - the airport catchment and demand potential
- Whether the airport capacity can keep up with demand
- Competitive dynamics and impact on affordability (towards inclusive growth)
- Access and connectivity - how connectivity links are emerging
- Alternate means - road and rail transport links and if they pose a threat including loss of traffic to other states

To start with we undertook a study of the current airport, the current traffic flows and ecosystem. This includes analysing passenger flows, cargo flows and the number of aircraft flying in and out (referred to as air-traffic movements). Simply examining growth, the Bengaluru airport has exhibited strong potential. Preliminary research indicates that Bengaluru is a high volume and mixed-yield market. Interestingly, all airlines in India have Bengaluru in the current and future network plans which then has positive revenue implications.

Starting with the geographic layout of the state we examined districts for the state. We also looked at macro-trends and indicators. While all the indicators are trending up-wards the demand also needs facilitation such as affordability, connectivity and supporting infrastructure. Our examination leads us to believe this will only be possible via a second airport for Bengaluru. This airport ideally should be located in the Southern area of the city, which will also enable that the benefits of connectivity drive additional growth. Failing this, the current airport will have an enhanced monopoly position which will lead to large portions of the population being forced to use the airport. Furthermore, a large segment of population will be forced onto alternative means of transport due to affordability.

Infrastructure in the Bengaluru area especially road, rail and metro infrastructure, is improving but there are nuances to the improvements. Road infrastructure has not kept pace with the growth in population and as a result the current infrastructure especially roadways are stretched. Local travel times are disproportionately high impacting productivity and output. Traffic jams during peak hours are common and journey times are unreliable. The current airports location to the North is working out for the time being, but as the traffic volumes grow the airport itself will become a key contributor to the traffic challenge. Without a second airport these challenges will get worse.

The case of a second airport seems to be compelling as most of the factors that would help make such a project profitable are favorable. And given ground-level challenges, it is imperative that a decision be taken quickly. Challenges include:

- Land and acquisition and development
- Environmental issues
- Road and rail connectivity
- Competing destinations
- Local issues

Finally, our analysis indicates that the location of the second airport would be ideal in the stretch between Bengaluru and Mysore based on the economic growth patterns, demographic splits and demand potential. This will also ensure that the benefits of connectivity drive additional growth in surrounding and proximate areas including Mysore, Hassan, Kogadu and Harohalli. With infrastructure being a key driver of industry and investment, a second airport will not only help decongest the city overall, but will help industry expand towards outlying areas of the city thereby fostering balanced growth.

This report highlights the opportunities with respect to a second airport for Bengaluru. This is presented sections as described below:

- [Bengaluru and its current airport](#)
- [Key demand drivers for air-traffic](#)
- [Bengaluru: airport traffic forecasts](#)
- [Examining the need for a 2<sup>nd</sup> airport](#)
- [Competition with other airports](#)
- [Local issues, insights and implications](#)
- [Conclusions and recommendations](#)



# Bengaluru and its current airport

# Bengaluru's current airport



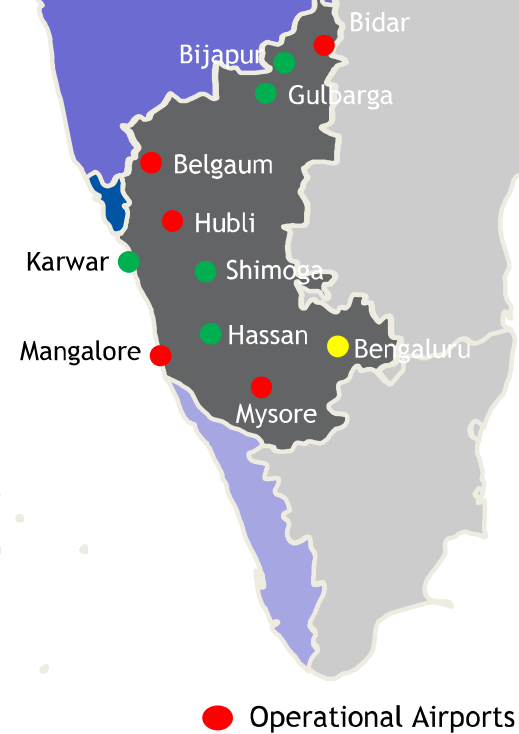
## Kempegowdainternational airport

Situated at	Devanahalli
Inaugurated in	2008
Passenger volumes*	33.7 million
Cargo volume*	379,400 tonnes
Air-transport movements*	234,200
Terminals	1+1**
Runways	2
Parallel runways	Yes
Longest Runway length (ft)	13,123

Source: Airports Authority of India,

\*data is for 2019; \*\*terminal 2 is under construction

# Bengaluru accounts for 92 % of the total airtraffic into the state



Karnataka has 6 operational commercial airports. Airports provide connectivity that is vital to key industries in the state including Information Technology, Food Processing, Textiles, Sericulture, Bio-Technology, Aerospace, Manufacturing and new age ventures

# Increasingly, air-connectivity is key to Bengaluru's growth story



Bengaluru - the state capital - has a population of over ten million and contributes USD 110 bn to India's GDP\*

Bengaluru's GDP is projected to grow at 8.5% till 2035\*\* making it one of the fastest growing cities globally

Air connectivity is key to this growth as the city has seen robust migration patterns. By some estimates >50% of Bengaluru's population is from out of the state

Rail and road connectivity is improving but travel times are still very high

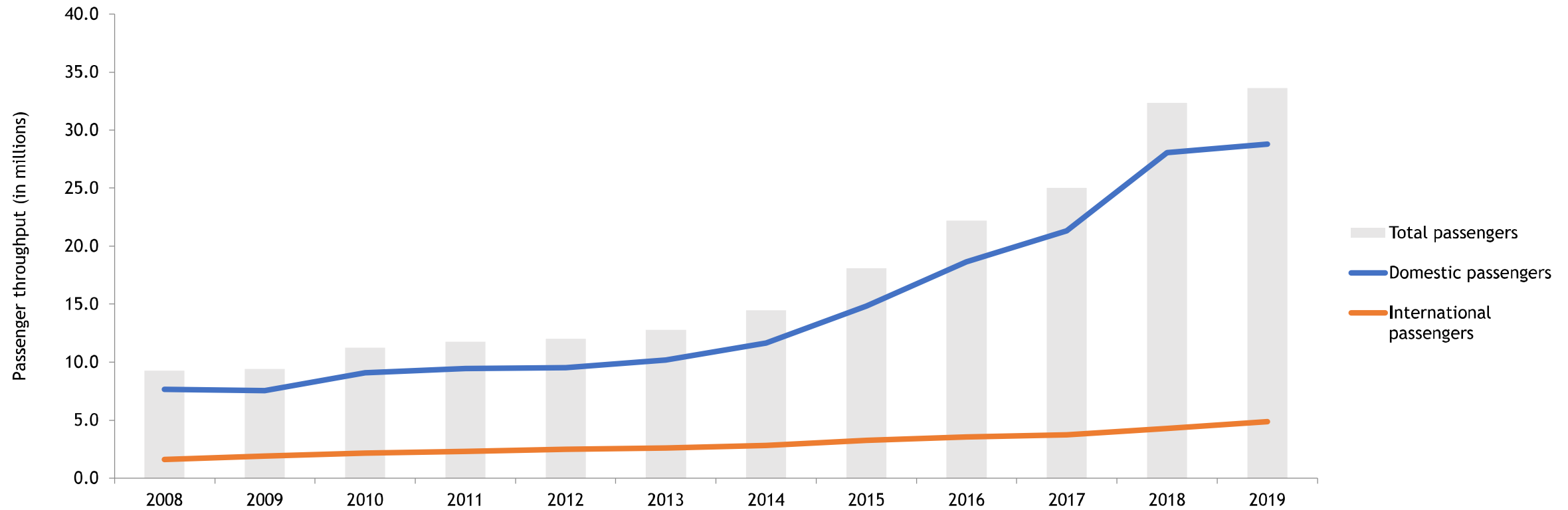
The current demographic has a clear bias towards air-travel as evidenced by the passenger volumes at Bengaluru's airport which have trebled from 9.9 million passengers in FY10 to 32.3 million in FY19

As the city grows as a preferred destination for investment, jobs, innovation, quality of life, education and as a place to settle, air-connectivity will continue to be critical to Bengaluru's growth story.

\*<http://www.businessworld.in/article/Richest-Cities-Of-India/28-06-2017-121011/>

\*\* Oxford Economics

# Bengaluru has witnessed exponential air traffic growth

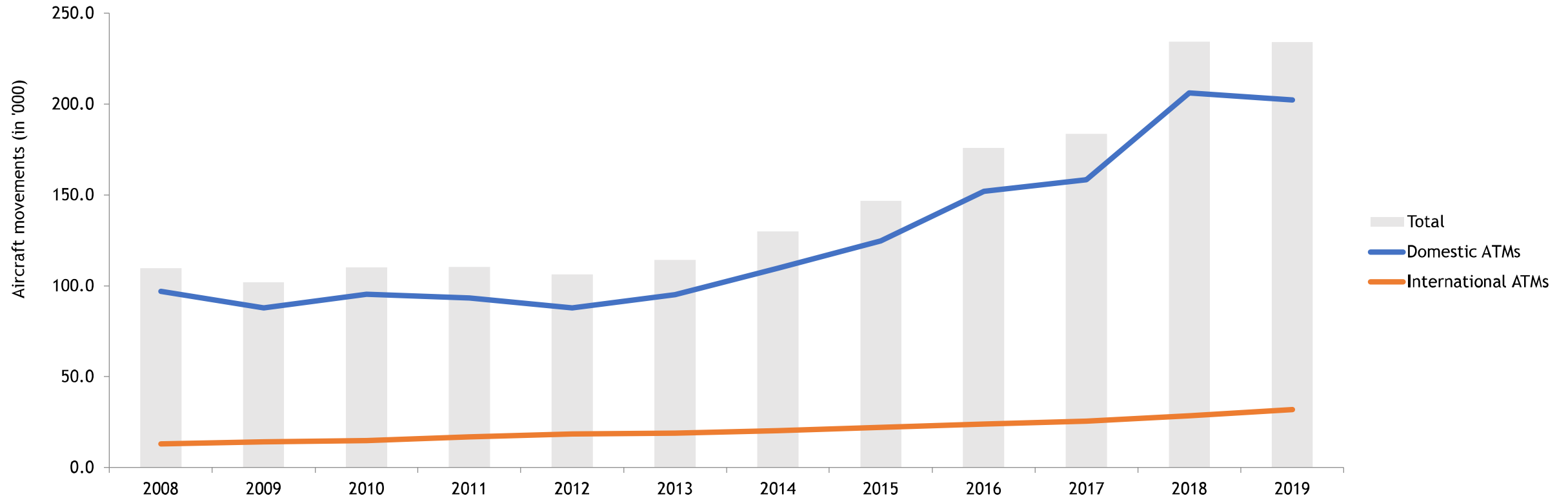


Bengaluru's air traffic has grown at a compounded annual rate of 11.3%

Domestic traffic grew at 11.7% during this period; International traffic grew at 9.6%

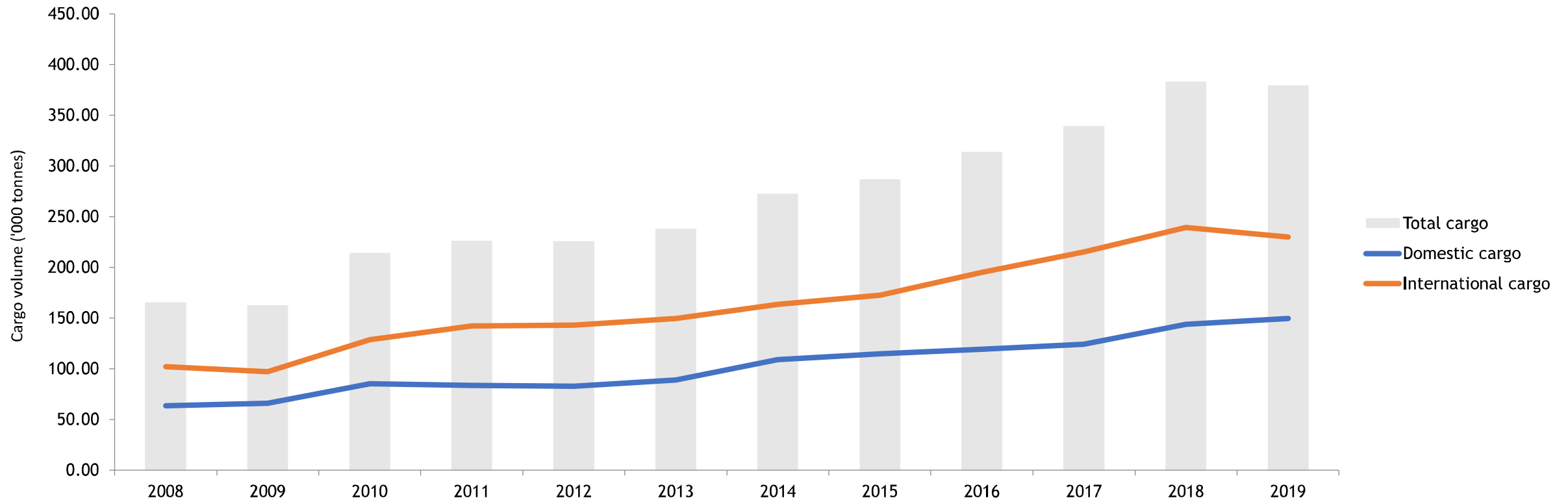
Forecasts called for this growth to continue and for Bengaluru to challenge Mumbai as the 2<sup>nd</sup> most important airport in the country

# Along with passengers the number of aircraft movements has grown



In addition to passenger traffic, ATMs or air transport movements (defined as one landing and one takeoff) have grown exponentially. Bengaluru's air transport movements have grown at a compounded annual rate of 6.5%. Domestic traffic grew at 6.3% during this period; International traffic grew at 7.8%. Simply put there are more airplanes coming in and out of Bengaluru airport. These aircraft require adequate airspace, runways and airside capacity.

# Cargo has also shown robust growth



## Bengaluru air-cargo volumes have also shown robust growth

From 2008 through 2019 the total cargo volumes have grown at a CAGR of 7.2%. This is both because of processes and intermodal connectivity. Airports compete intensely for the cargo volumes especially the international cargo volumes. As connectivity improves, and once the current airport starts to leverage its monopoly position towards pricing, there is a very real risk to industry in losing out volumes to competing airports such as Hyderabad or even Hosur (assuming commencement of commercial operations).

# With the current growth patterns, airport saturation is inevitable

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The growth requires adequate infrastructure planning including landside, access-planning, intermodal connectivity, airside and airspace. Currently the city of 12 million+ is served by one airport namely the Bangalore International Airport Limited (BIAL). The idea of the current airport being expanded to facilitate the growth does not hold. On a comprehensive capacity basis which incorporates airspace, airside, landside and terminal constraints, the airport will fully saturate between 2030-2032.

Saturation is actually a positive scenario for the airport as it enhances the airports monopoly power. However, for citizens of Bengaluru it means that costs will rise and benefits of connectivity will not accrue to all evenly.

The airport has continued to leverage its monopoly power towards higher charges. For instance, in the post-Covid scenario where demand is at an all time low, BIAL was the first to raise charges.



A person is seen from behind, rappelling down a dark, textured rock face. They are wearing a black t-shirt, blue jeans, and a climbing harness. Their arms are outstretched to the sides. A white rope is attached to their harness and extends upwards out of the frame. The background is a dark, craggy rock wall.

**Not planning ahead is an extremely risky proposition ...  
...for the city of Bengaluru and by extension for the state of Karnataka**

## **Key demand drivers for air-traffic**

# Key success factors for any airport project



Catchment Area	Demand Potential	Competition	Operational capability& costs	Corporate/ Environmental
Strategic importance	Demographics	Surface competitors	Efficiency	Corporate preference
Economic characteristics	Industries	Competing states	Airport capacity	Political support
Business environment	Existing fares	Technology	Airport charges	Government grants etc.

There is a matrix of factors that influences the success of any airport. These are broadly divided into five categories as highlighted in the table above

Demand is the most critical decision driver. Yet often the nature of demand is confused. In addition to yield for investors, the airport must offer substantial volumes and traffic stability. Yet this and other elements, most notably, operational capability and costs are often neglected and very little analysis is done on the same. The only way to deliver competitive costs is via competition.

# Karnataka has grown as an industrial hub...



Capital	Bengaluru
Geographical area (sq km)	191,791
Administrative districts (No)	30
Population density (persons per sq km)*	319
Total population (mn)*	61
Male population (mn)*	31
Female population (mn)*	30
Literacy rate (%)*	75.6
Average GSDP growth % FY12 to FY19 (current prices)	9.4%
Per capita income growth (FY12 to FY19)	8.0%
National Highway Lengths	4,396
Commercial airports	6

# The state leads on many parameters...



**Hub for knowledge based industry:** has established itself as a key location for the IT and engineering sectors. The state also leads in electronics, computer software and biotechnology.

**Science capital of India:** more than 100 research and development centres, and is a preferred destination for multi-national corporations with more than 650 such companies located there.

**Innovation:** home to several new ventures. Preferred destination for start-ups and venture capital

**Education:** Knowledge capital of India

**Food processing** leading producer of crops and also responsible for 70% of the Indian coffee production

**Pharmaceuticals and biotech:** 35% of biotech expo

**Auto-manufacturing:** large plants by seven manufacturers

**Electronics** strong electronics ecosystem including Research and Development and chip manufacturing

**Aerospace** home to Hindustan Aeronautics and the Indian Space Research Organization (ISRO)

# The economic indicators continue to trend upwards...



Economic Indicators	FY 12	FY13	FY14	FY15	FY16	FY17	FY18	FY19
GSDP <sup>1</sup> at constant prices (INR bn)	6060.48	6,430.74	7,045.07	7484.67	8313.68	9,422.60	10,377.29	11366.34
(% Growth)	base	6.1%	9.6%	6.2%	11.1%	13.3%	10.1%	9.5%
Per Capital Income (INR)	90269	94382	101864	105703	116819	131260	142943	154809
(% Growth)	base	4.6%	7.9%	3.8%	10.5%	12.4%	8.9%	8.3%

At current prices, the Gross State Domestic Product (GSDP) of Karnataka was US\$97.1 billion in FY12.

Between FY12 and FY19, the average annual GSDP growth was 9.4%. This growth was mainly driven by the service and manufacturing sectors.

At a CAGR of 17.4%, the services sector has been the fastest growing, outpacing primary industries and manufacturing. The growth has been driven by Information Technology, services, SMEs, real estate, finance, & new ventures.

The average per capita GSDP increased by 8% between FY12 and FY19.

# Districts of Karnataka (1 of 2)



District	Population (% of total state)	District-wise Economic Profile - Composition			Distance from Bangalore	Per Capita GSDP ( Rs. '000)
		Agriculture %	Industry %	Services %		
Bagalkot	3.2%	33.29	21.91	44.81	491	44.0
Belgaum	8.0%	27.04	27.40	45.56	526	47.3
Bellary	4.2%	39.60	21.06	39.35	283	85.9
Bidar	2.8%	25.50	23.08	51.42	665	35.7
Bijapur	3.7%	37.95	20.56	41.49	542	43.6
Bangalore Urban	1.7%	1.32	33.08	65.60	0	175.2
Bangalore Rural	16.1%	16.91	36.81	46.28	41	107.9
Kolar	2.6%	20.03	30.49	49.48	70	50.7
Mandya	3.0%	35.07	23.29	41.63	139	38.0
Tumkur	4.5%	30.81	26.65	42.54	92	47.3
Ramnagara	1.8%	17.81	18.92	63.27	87	67.8
Chikballapur	2.1%	32.51	19.43	48.06	34	36.2
Mysore	5.0%	16.43	27.99	55.58	183	64.7
Chamraj Nagar	1.7%	36.63	18.64	44.72	215	34.8
Chickmagalur	1.9%	40.00	13.78	46.21	265	57.6

Combined share of Industry & Services: **72.4%**

For the 30 districts highlighted, on average agriculture contributes 27.6% to the district income, industry 22%, and services 49%

Services constitute the largest sector in all but one district in Karnataka.

Districts within 150km of Bangalore have relatively small agricultural sectors as might be expected.

Bangalore Urban has by far the highest per capita GSDP, followed by Bangalore Rural.

Districts such as Dharwad, Dakshina Kannada, Udupi, Mysore and Gulbarga also have strong service and industrial bases.

# Districts of Karnataka (2 of 2)



District	Population (% of total state)	District-wise Economic Profile - Composition		Sector	Distance from Bangalore	Per Capita GSDP ( Rs. '000)
		Agriculture %	Industry %	Services %		
Chitradurga	2.8%	38.35	15.60	46.05	222	49.2
Dakshina Kannada	3.5%	11.80	24.63	63.57	321	92.6
Davanagere	3.3%	32.65	18.54	48.82	283	47.2
Dharwad	3.1%	10.78	25.64	63.58	452	77.5
Gadag	1.8%	26.11	21.13	52.76	484	43.2
Gulbarga	4.3%	23.83	23.25	52.92	550	41.5
Hassan	3.0%	35.56	17.58	46.86	205	50.9
Haveri	0.3%	31.20	20.16	48.65	356	36.2
Kodagu	0.9%	45.48	11.23	43.29	288	92.8
Koppal	2.3%	30.67	27.05	42.28	381	43.8
Raichur	3.2%	30.83	22.47	46.70	389	38.9
Shimoga	2.9%	28.94	23.78	47.28	299	54.5
Udupi	2.0%	19.43	29.17	51.40	425	75.0
Uttara Kannada	2.4%	24.68	23.62	51.71	441	52.7
Yadgir	2.0%	27.17	18.90	53.93	469	31.7

Combined share of Industry & Services: 72.4%



# Connectivity plays a vital role in realizing investments in projects...



Projects Approved by KUM <sup>1</sup>	Number of Approved Projects	Proposed Investment (INR bn)	Estimated Employment ('000)
FY 2006-07	937	1,035.70	1,394.60
FY 2007-08	835	1,707.90	2,345.50
FY 2008-09	360	1,104.50	546.50
FY 2009-10	469	2,963.00	400.90
FY 2010-11	625	1,940.60	690.70
FY 2011-12	596	3,951.60	230.66
FY 2012-13	775	14,246.47	1,299.80
FY 2013-14	255	4,229.10	171.30
FY 2014-15	108	5,414.40	56.20
FY 2015-16	280	9,337.40	251.20
FY 2016-17	147	3,379.20	156.20
FY 2017-18	351	5,265.50	271.98
FY 2018-19	161	1,650.60	140.34
FY 2019-20 (upto Nov 19)	30	188.50	21.70
<b>Total</b>	<b>5,929</b>	<b>56,414.47</b>	<b>7,977.58</b>

**Connectivity and affordability of travel across segments will be critical to the projects in the state**

Notes: 1) 'Karnataka Udyog Mitra' is a government of Karnataka agency, responsible for speedy clearance of industrial projects

# Connectivity also integral to foreign direct investment...



FDI in the State and India (US \$ mn)	Karnataka	Pan-India	Karnataka FDI (as % to India)
2007-08	1581	23,901.00	6.6%
2008-09	2026	27,331.00	7.4%
2009-10	1029	25,834.00	4.0%
2010-11	1332	19,427.00	6.9%
2011-12	1533	35,121.00	4.4%
2012-13	1023	22,424.00	4.6%
2013-14	1892	24,299.00	7.8%
2014-15	3444	30,931.00	11.1%
2015-16	4121	40,001.00	10.3%
2016-17	2132	43,478.00	4.9%
2017-18	8575	44,857.00	19.1%
2018-19	6721	44,366.00	15.1%
2019-20 (upto Sep '19)	4649	26,096.00	17.8%
<b>Total (FY 08 to Sep'19)</b>	<b>40058</b>	<b>408,066.00</b>	<b>9.8%</b>

**Connectivity is critical to facilitating foreign direct investment**

# Connectivity is critical to an increasing demand for talent...



Name	Courses	Avg no of students
IIM-B	Management	1200
IISc	Scientific Research	3900
NLSIU	Law	500
JNCASR	Scientific Research	400
NIMHANS	Medical	450
NIFT	Design	350
UASB	Agricultural Research	800
NCBS	Scientific Research	350
Indian Institute of Astrophysics	Scientific Research	300
Raman Research Institute	Scientific Research	300
NID	Design	450
IIIT-B	Information Technology	250
ISI	Statistics Research	
ICTS	Scientific Research	100
Jain University	UG/PG/PHD	8000
Christ University	UG/PG/PHD	2500
BMCRI	Medical	350
PES University	UG/PG/PHD	3000
SJMC	Management	750
Birla Inst of Fundamental Research	Scientific Research	450
XIME	Management	450
IIBS	Management	500
St. Joseph	UG/PG/PHD	250
IFIM	Management	300

Connectivity is integral to continuously attract skilled talent critical to Bengaluru's economy

# Bengaluru contributes ~86% of Karnataka's economic output

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Bengaluru is integral to the success of Karnataka

The city is home to 33% of India's tech talent

44% of migrants moving to Bengaluru have tech skills as opposed to 12% for Delhi and 11% for Mumbai

It is the preferred research, development and innovation destination in India for ~50% of India's MNC's


It is home to the most number of unique investors including 431 venture capital firms which are key to the innovation ecosystem

Bengaluru serves as the aerospace, bio-tech and new venture hub for the country

The confluence of talent, capital & connectivity = key for Bengaluru. This is enabled by air-connectivity

At the same time, decongesting Bengaluru and ensuring that the surrounding areas also benefit from the confluence of factors is critical for not only the city but also the entire state.

**A second airport - strategically located - makes this possible**

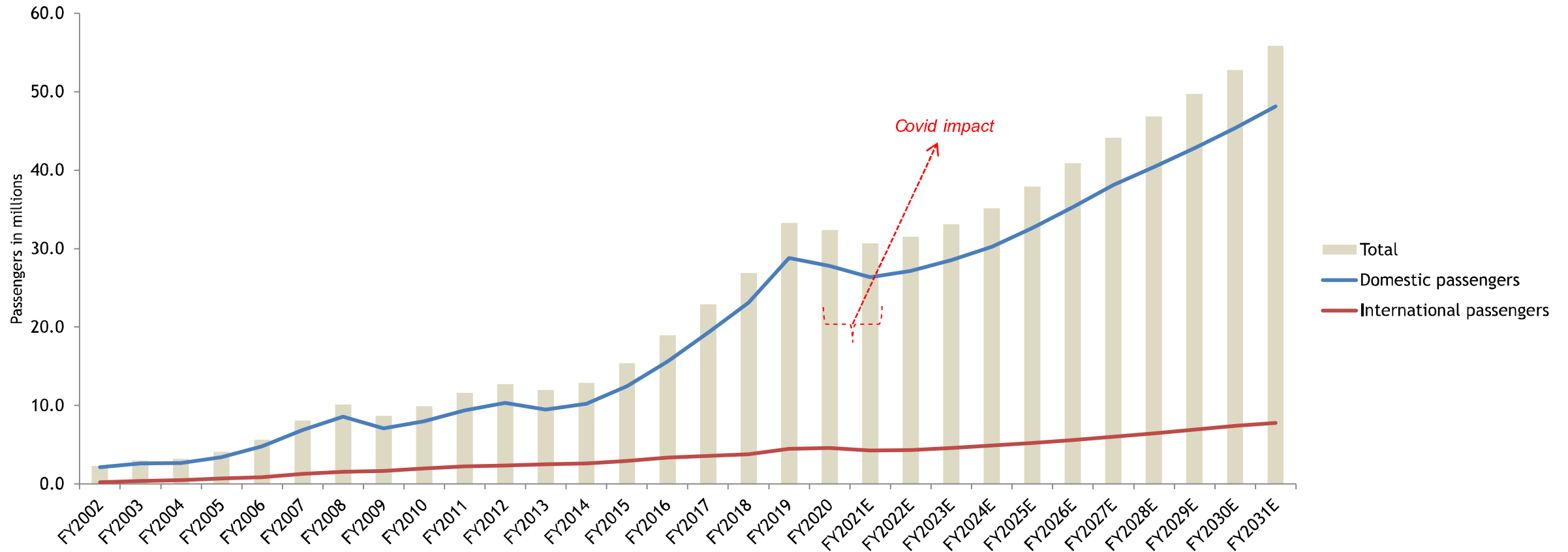


**Bengaluru is critical to Karnataka's success thus ensuring decongestion and sustainable expansion is critical to both the city and by extension to the state**



## **Bengaluru: airport traffic forecasts**

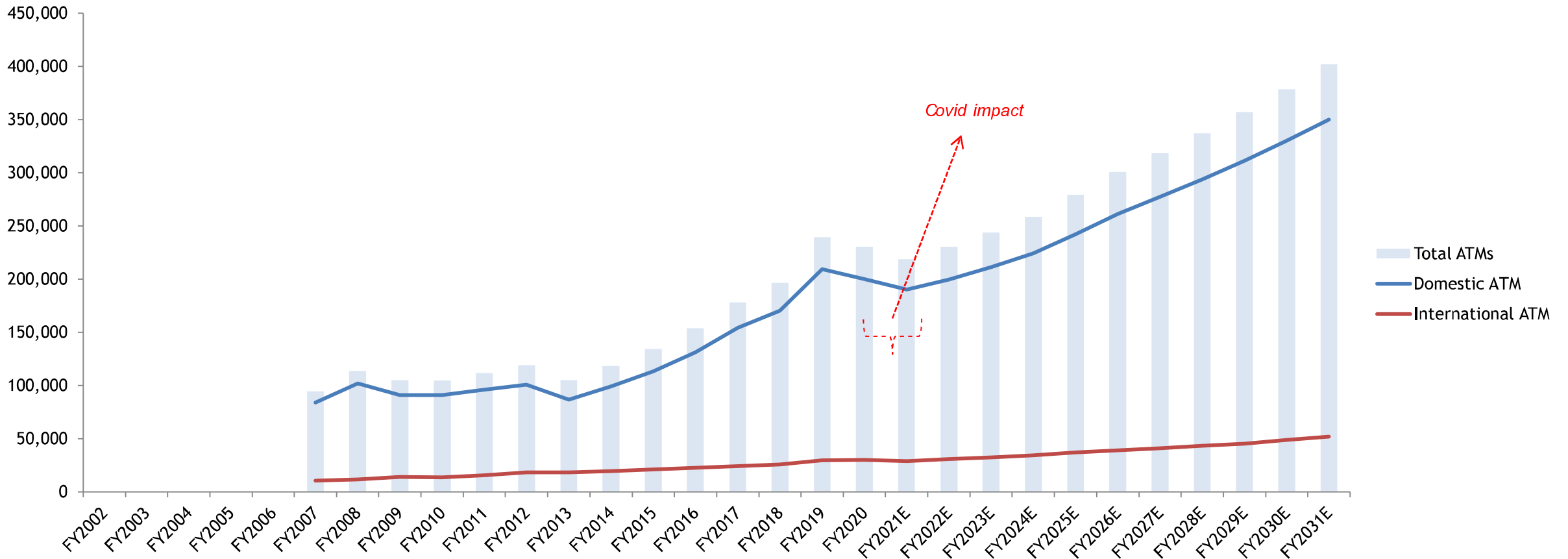
# Bengaluru has witnessed exponential airtraffic growth....



Bengaluru's air traffic has grown at a compounded annual rate of 8.3% over the last 18 years  
 Passenger volumes quadrupled during the period of FY02 to FY10 and then trebled from FY10 to FY20  
 Even adjusting for Covid impact, Bengaluru's passenger volumes will double again by the next decade

Source: Proprietary forecasts (AT -TV), base case scenario

# The number of aircraft flying has also increased exponentially....



The number of air-traffic movements (counted as one-takeoff and one departure) have also increased exponentially  
 Further, there is a trend towards smaller aircraft types due to operating economics and increased aircraft ranges  
 With a dual runway system, the airport by its own estimates will saturate by 2030

Source: Proprietary forecasts (AT -TV), base-case scenario



# Airports routinely play with nomenclature to confuse stakeholders....



## 3.4 Existing Business Scenario – traffic growth and capital expansion

The Master Plan envisages the Kempegowda International Airport to have two runways and an ultimate capacity of 55 million passengers. This calls for expansion of facilities from time to time in line with the traffic growth and Master Plan.

- Single runway in mixed mode operation (capacity is approx. 45 ATMs per hour and 263,000 ATMs per annum)
- Dual runway in segregated mode operation (arrivals on one runway and departures on the other - capacity is approx. 81 ATMs per hour and 465,000 ATMs per annum)
- Dual runway in a mixed mode operation (capacity is approx. 90 ATMs per hour and 575,000 ATMs per annum)

AMC's / CMC's. We are on single runway operationalized in May 2008 and faster ageing of the runway due to higher ATMs has resulted in increased frequency of maintenance of runway & taxiway thereby increases in O&M costs.

What matters for airports and passengers alike is peak-hour capacity

Because, schedules and frequency are key determinants of demand. These are a consequence of peak hour capacity

Using annual capacity figures means airport is assuming the same volume of flights at 3AM as at 8AM (inherently flawed logic)

Current airport plans are being based on annual capacity figures

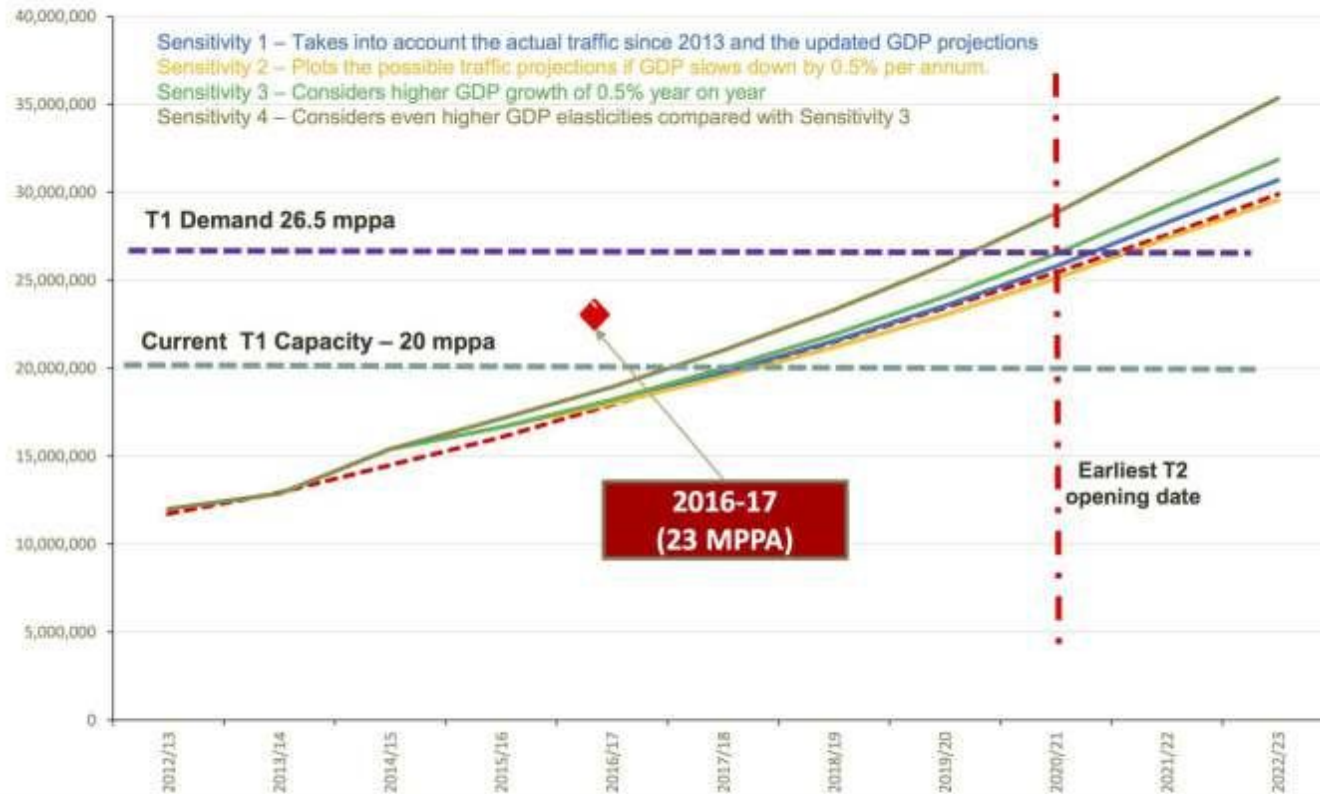
# Bengaluru airport's peak hour capacity will saturate much earlier than 2030



- o For any airport it is peak-hour capacity that matters. This continues to be limited by airspace, runways and airside capacity followed by terminal and landside capacity
- o For business travellers ideal capacity is one where they can do day-trips
- o For holiday travellers peak hour capacity means the ability to get to destinations in time for hotel check-ins and return to the city in time to join work the next day (thereby maximizing holidays)
- o For students, ideal capacity includes flying out as soon as vacation begins and returning just in time for the next semester
- o For the international travellers, ideal capacity means flying out and/or returning to the city in a manner that optimizes time (mid-day flights or mid-day arrivals simply do not work)
- o Note: Bengaluru's airport already has higher door-to-door times given its location away from the city (this disproportionately impacts passengers in the Southern and Western parts of the city)

# A comprehensive capacity plan is required...

## Terminal Development Strategy Short Term



Airports are focused on terminal capacity because it entails construction and airports are guaranteed a return of equity on majority of these costs

Consequently, 55% - 70% of total project cost is spent on building terminals

However, the capacity of an airport is measured as a whole. That is:

Airside capacity +  
Terminal capacity +  
Landside capacity

**Total capacity**

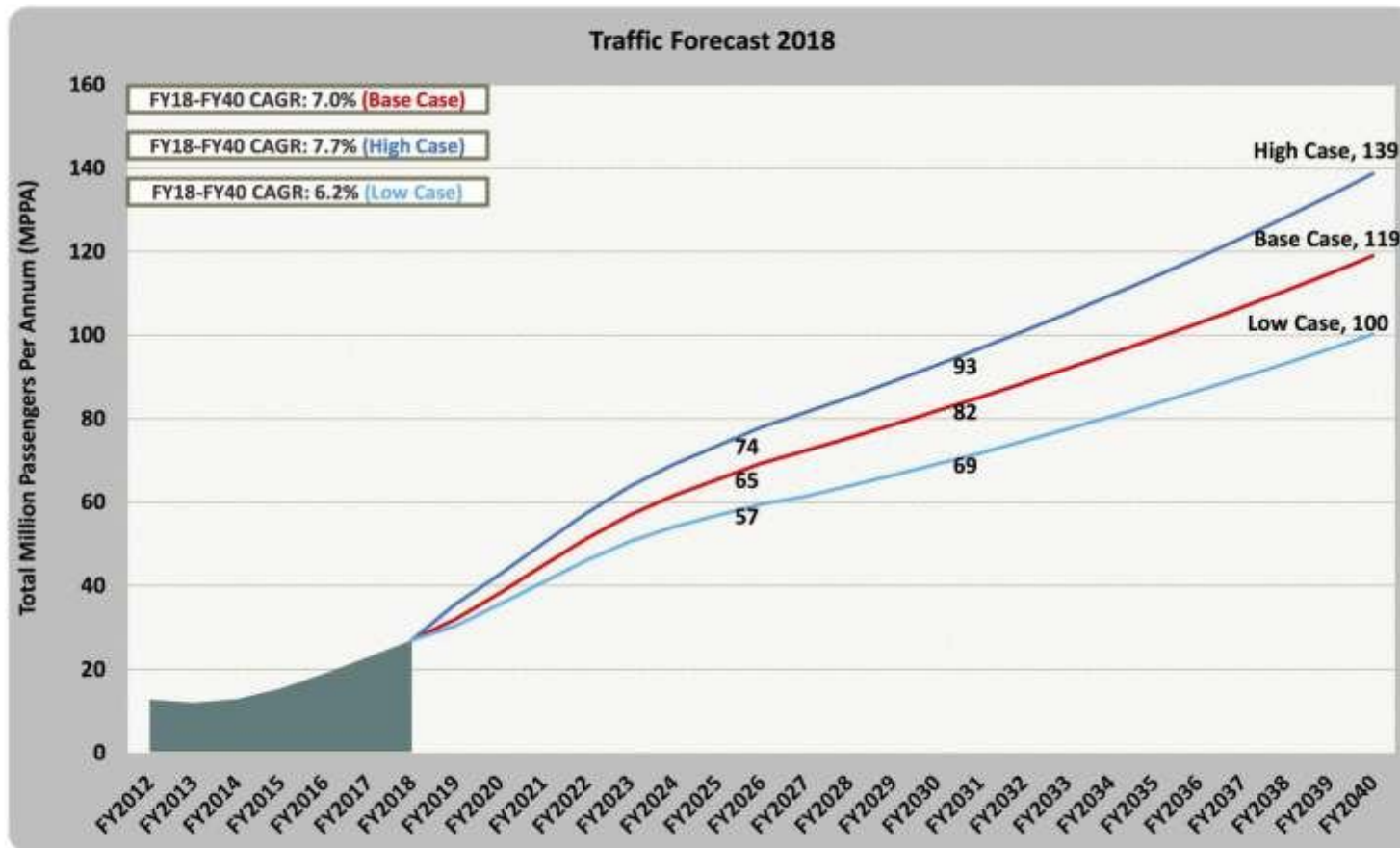
There is an urgent need for interim capacity enhancement to meet the imminent short term demand as Terminal 2 will only be available in 2021 based on the design and construction timelines.

# Saturation is forecast even by the existing airport's own assessment



## Forecast Review

Traffic Development – Forecast Update 2018



Passenger traffic forecast is only one part of the equation

Alongside, aircraft are getting smaller and point-to-point traffic is increasing which warrants additional runway and airside capacity

That is, airlines will fly more aircraft to more destinations and this requires a comprehensive capacity overhaul

BIAL will be fully constrained by 2030

The time for planning a second airport is NOW

# The impact of saturation of peak capacity....



- o As peak hour capacity saturates, airlines engage in price discrimination thereby impacting affordability. This carries disproportionate impact for Small and Medium Scale enterprises
- o Business travellers are forced to either pay higher fares and/or do overnight trips - which impacts their travel expenses
- o For holiday travellers the impact is felt in distorted schedules where several destinations become unviable simply because there are minimal schedules that are aligned at an attractive price-point
- o For the international travellers, peak capacity saturation means cheaper flights are available at non-standard times - which in turn impacts productivity
- o Saturation of peak capacity for business and leisure travellers alike = **HIGHER COSTS**

# Saturation scenarios: a holistic view must be taken



## Runway capacity

The capacity of the airport is capped by the capacity of the runways. Peak hour capacity is what is required (because attractive schedules require the ability to land and take-off during times that are enabling to passengers)

## Airside saturation

Capacity of the airport impacted by the inability to park aircraft on the airside (as is the case with Mumbai). Especially challenging as airlines move to smaller aircraft but higher frequencies

## Terminal saturation

Usually not a challenge. However, gets disproportionate focus as is linked to Capex where the airport is guaranteed returns (charged to the passenger)

## Landside saturation

Already witnessed including extremely long wait-times from the taxi to entering the airport. Will grow to be a challenge without a second airport as all vehicles will use the same access road to the airport

## Airspace saturation

Inability for the airspace to accommodate the volume of Airtraffic. Has to be factored in to the overall capacity plans but often finds no mention. Especially critical for Bengaluru, given its co-location with HAL airfield and Yelahnika AirForce station (including restricted airspace)

# The current airport will saturate prior to 2030



## Examining the need for a 2nd airport



# Bengaluru catchment area analysis



## Population, Households and Income Distribution, Bengaluru

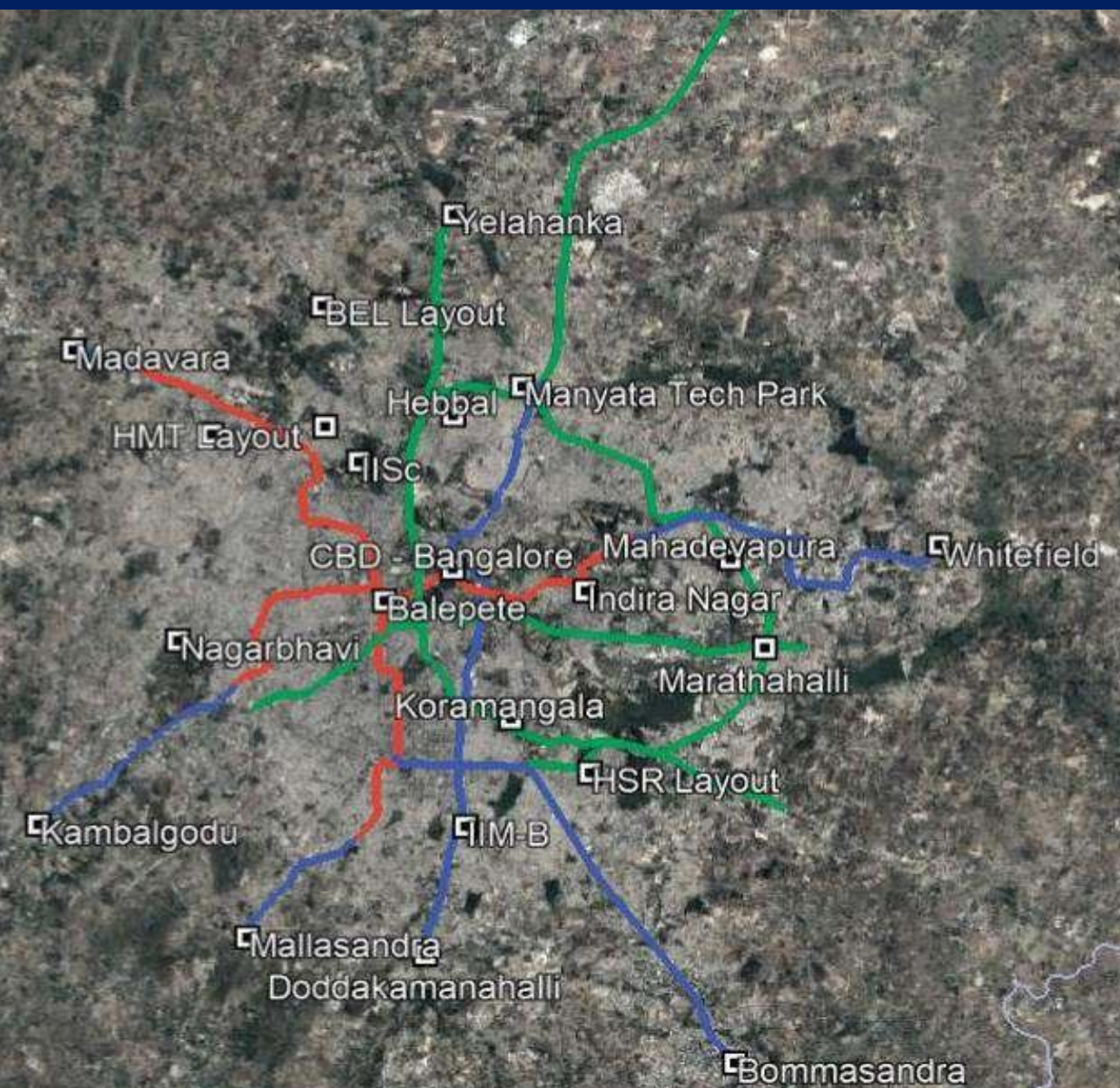
Urban population	8,687,000
% of Urban population in households earning > INR 5,00,001	30.00%
% of Urban population in household earning > INR 20,00,000	7.00%

The Bengaluru airport catchment area comprises of Bengaluru Urban, Bengaluru Rural, parts of Kolar, Tumkur, Mandya and Mysore.

As the city grows and as connectivity improves the catchment area will also expand. Mysore is coming up as an alternate city to Bengaluru and significant number of Mysore’s IT companies are expanding to the North of Mysore. The stretch along Bengaluru to Mysore has become densely populated but is forced to go North due to the current airport location.

Kempegowda Airport

# Metro connectivity is interlinking several parts of the city



**Legend**

- Phase 1
- Phase 2
- Phase 3

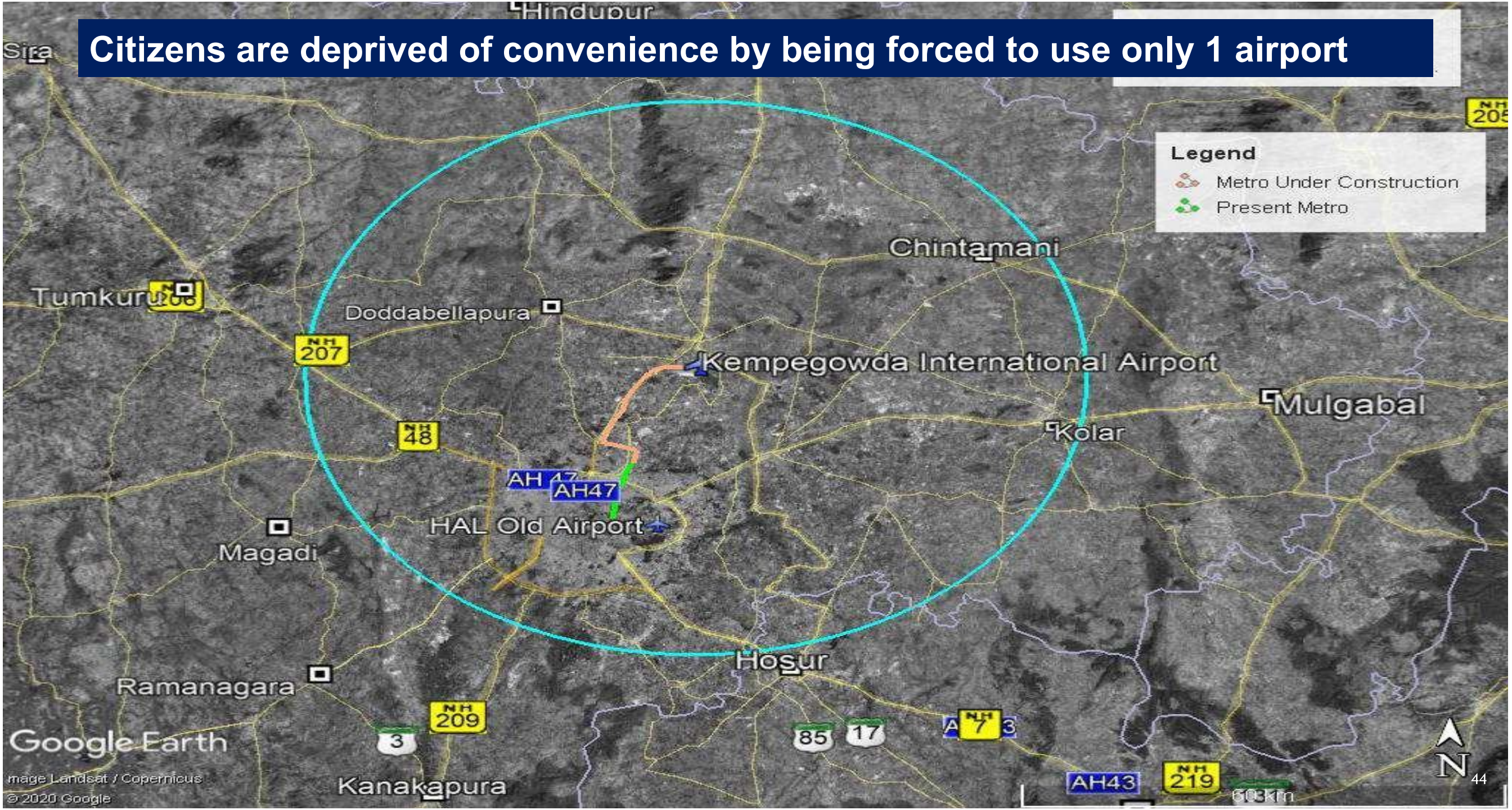
The citizens are forced to go North to access the airport

### Districts

- Red - North Bengaluru
- Green - West Bengaluru
- Blue - South Bengaluru
- Yellow - East Bengaluru
- White - Central Bengaluru



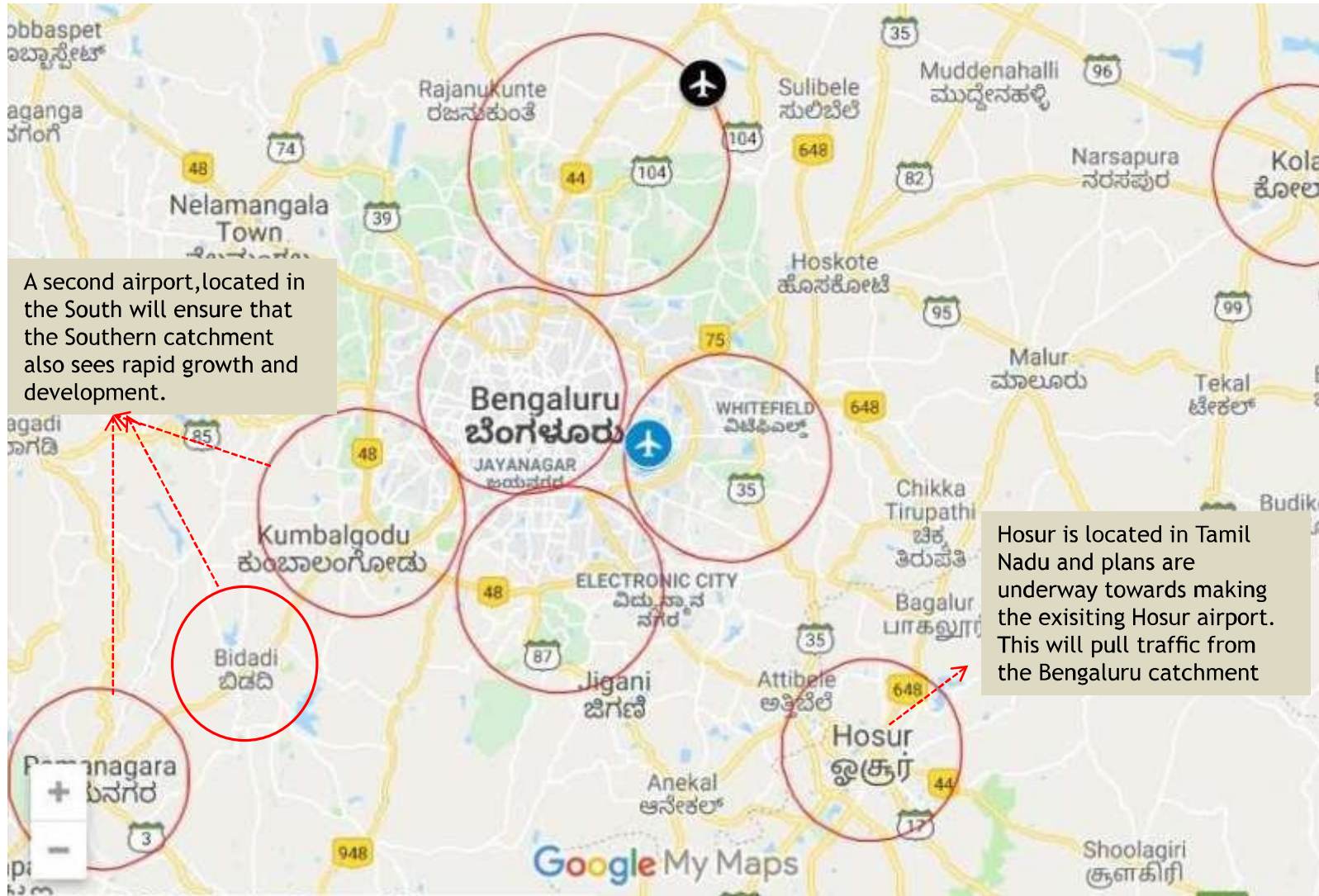
# Citizens are deprived of convenience by being forced to use only 1 airport



**Legend**

- Metro Under Construction
- Present Metro

# With only one airport, benefits don't accrue evenly



The Bangalore International Airport (marked in black) is located to the North of the city

The benefits from the airport have and will accrue disproportionately over the years

Further, while HAL airfield (marked in blue) is available, due to the agreement it signed with BIAL airport, it is CLOSED to commercial traffic

A second airport is not only critical to break the monopoly but is required for the continued growth of the city, decongestion and inclusive development

## Competition with other airports

# States are leveraging air-connectivity towards competitiveness



Connectivity drives growth and an impact to connectivity will impact business. States are now leveraging connectivity towards competitiveness. Whether it is Kerala that recently completed the Kannur airport and now has 4 international airports, or Maharashtra that has a total of 9 airports with commercial services or Gujarat that now has 11 commercial airports, states are integrating airport development into overall masterplans. Most recently, Uttar Pradesh has commissioned Jewar airport and already the state is witnessing an increased interest in investment. Tamil Nadu is also actively exploring ways of upgrading Hosur airport which already has sizeable operations related to Maintenance Repair and Overhaul (MRO) of aircraft. Interestingly, this airport once commercialized will pull traffic from the Bengaluru catchment.

Masterplans require extensive planning and forecasting and given the challenges of dealing with complex political, economic, social, technological, legal and social dynamics, these initiatives should be planned as soon as possible.

Planning ahead is also important to facilitate investment. Infrastructure has been a key driver of investment growth and an airport helps align stakeholders to deliver infrastructure against pre-determined timelines. Cities have seen an accelerated schedule in highway and metro-rail development that integrate with airport plans.

The key cities in competing states are already planning for a second airport...

# Key cities are already moving towards second airports



Airport	Second airport	Notes
DELHI	Jewar airport - in Uttar Pradesh	With this airport Delhi technically has 3 airports catering for Demand as the Hindon Airbase is also open to commercial flights
MUMBAI	Navi Mumbai airport - underway.	The airport leverages the fact that the Northern part of the city is experiencing high growth rates. The failure to plan for a second airport has impacted Mumbai adversely
KOLKATA	Extreme challenges with land identification (and acquisition) for a second airport	The challenges with land acquisition should be seen as a forewarning to plan ahead
CHENNAI	2 sites identified. Consultants to be appointed. Completion date in 5 - 7 years	The challenges with land acquisition should be seen as a forewarning to plan ahead
PUNE	Site identified in Purandar	Pune witnessing traffic loss to road as several select to drive to Mumbai to take a flight due to limited connectivity driven by airport constraints
AHMEDABAD	Dholera airport:target completion date of 2022	Dholera is being developed as a aerospace hub and may pose a challenge to cities such as Bengaluru
GOA	New airport at Mopa	Key tourism driver and ensures that benefits of connectivity also accrue to the North



# Given the investment required, airports have to be planned ahead



Airport	Initial project cost (INR crores)
Delhi	12,857
Mumbai	10,015
Bengaluru	1,930 (+1,500 phased expansion)
Hyderabad	2,487
Navi Mumbai	16,704
Jewar (Noida)	15,754

# An impact to air-connectivity means an impact to business

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Business growth is inevitably related to connectivity. This has already been witnessed in cities like Delhi and Mumbai. In Delhi the National Capital Region (NCR) has seen disproportionate growth in Gurugram which is in proximity to the airport. Similar growth has not been seen in areas such as Noida which earlier had the same level of development including proximity to a Special Economic Zone. The new airport in Jewar is an attempt to correct this imbalance.

Other cities such as Mumbai are further proof of declining business given airport saturation. At the present time, Mumbai airport is fully saturated and cannot accommodate any new flights. Thus it resorts to strong-arm tactics impacting connectivity. Bengaluru must pay attention to these case-studies especially the impact to business - which has happened because of inadequate planning for connectivity.

For Bengaluru, the airport's location to the North has resulted areas in close proximity witnessing growth on jobs, output and real-estate while Southern areas especially the Mysore - Channapatna - Hassan belt has lagged. This imbalance must be considered and a second airport can help correct this.

With land acquisition becoming increasingly complex and time consuming and extensive legal hurdles that are put up, the planning horizon for a second airport has to start years in advance. With only 8 years before the current airport saturates, stakeholders must act swiftly towards realizing a second commercial airport.

## **Local issues, insights and implications**

# Failure to plan at this step can have very negative consequences

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Airports are economic multipliers. The very presence of an airport leads to growth in the immediate area. It follows that that airport saturation if not addressed will be detrimental to growth. Further, it is evident that the airport is clearly benefits residents of certain parts of the city while making for “uneasy-connectivity” for other parts. When layered with hotel capacity growth and other numbers like housing, safety and spending - there is a clear and visible impact. Finally, real estate prices and rental yields are also directly impacted due to the proximity of an airport.

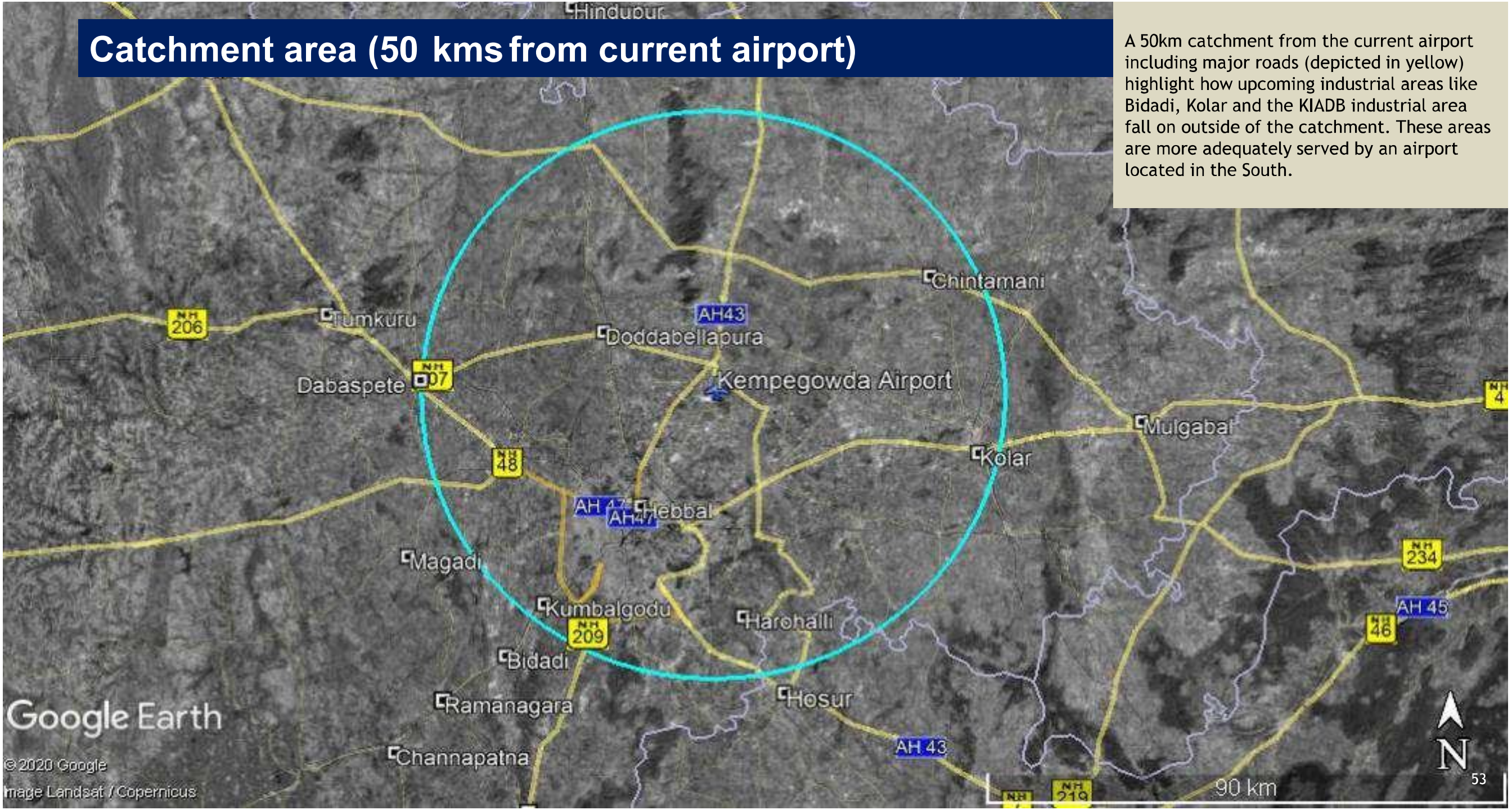
Bengaluru’s catchment covers Chikaballapura to the North, Hosur to the South, Ramanagara to the Southwest and everything in between. A total population in excess of 12 million+ and growing. Served by only one airport. Ironically, the government agreed to close HAL airport to commercial operation thereby limiting competition and impacting passenger convenience. Repeated representations to the government and to the airport to reopen HAL airfield or at the very-least enable HAL airfield to be listed as a diversion airport have not yielded any results.

The current Kempegowda airport will saturate by 2030 and a second airport is impreative. To achieve the government’s goal of de-congesting Bengaluru, and develop industry in the Mysuru and Hassan areas, the airport should be ideally located somewhere around the towns of Ramanagara and Channapatna.

The risk of inaction is a risk of sacrificing the city’s growth and by extension the output of Karnataka.

# Catchment area (50 kms from current airport)

A 50km catchment from the current airport including major roads (depicted in yellow) highlight how upcoming industrial areas like Bidadi, Kolar and the KIADB industrial area fall on outside of the catchment. These areas are more adequately served by an airport located in the South.



Google Earth

© 2020 Google  
Image Landsat / Copernicus

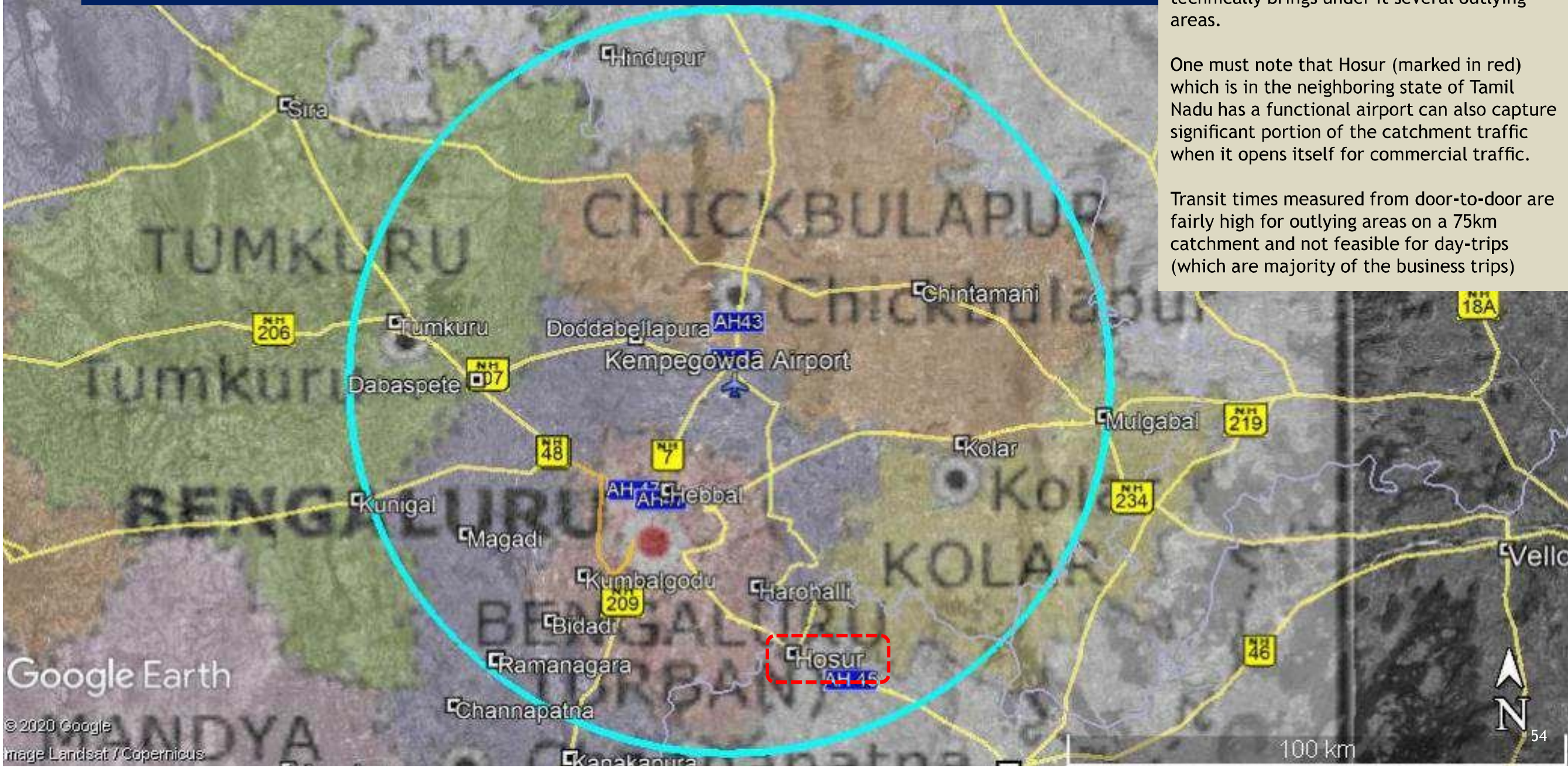


## Catchment area (75kms from current airport)

A 75km catchment from the current airport including major roads (depicted in yellow) technically brings under it several outlying areas.

One must note that Hosur (marked in red) which is in the neighboring state of Tamil Nadu has a functional airport can also capture significant portion of the catchment traffic when it opens itself for commercial traffic.

Transit times measured from door-to-door are fairly high for outlying areas on a 75km catchment and not feasible for day-trips (which are majority of the business trips)



# Bengaluru's growth demands connectivity



As Bengaluru has grown certain patterns have emerged. An analysis of income levels shows a concentration of wealth in the Southern and Eastern parts of the city. The Northern and Western parts of the city are now experiencing growth.

The city has grown faster than the supporting infrastructure and this is clearly reflected in traffic trends and water woes that the citizens have to face. There are lessons to be learnt from this and planning infrastructure in a timely manner should be a priority item.

Interestingly, Bengaluru is now home to industries where connectivity is a critical success factor. As the city has grown clusters have emerged. These include:

IT cluster: predominant in the Southern part of the city

Aerospace cluster: towards the Northern part of the city close to the current airport

Bio-technology clusters: towards the Eastern part of the city

Manufacturing clusters: via industrial parks on the outskirts of the city

MSME cluster: spread out through the city and outskirts with ~100,000 registered MSMEs in Bengaluru

# A second airport is a MUST

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To continue the growth trend, a second airport is a MUST for the citizens of Bengaluru:

- o The current airport will completely run out of comprehensive capacity\* by 2030
- o A second airport will foster competition, connectivity and affordability
- o A second airport ensures inclusive development including the Southern and SouthWestern region of Bengaluru that has seen significant growth (along the Bengaluru - Mysore highway)



# Risks also mitigated via a second airport



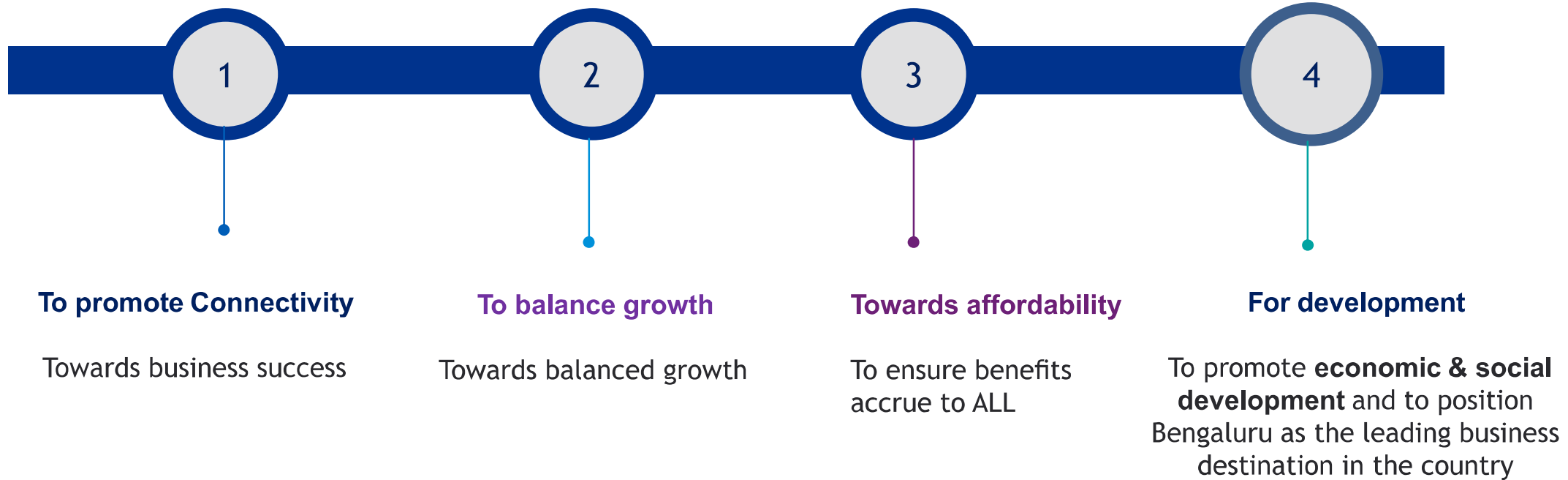
Risk	Mitigation
<b>Monopoly risk</b>	Without a second airport, the current airport will simply continue to leverage its monopoly position towards higher charges Unwarranted Capex will continue - all of it funded by charges levied on the passenger
<b>Development risk</b>	A new airport helps distribute the growth evenly and ensures that ceteris paribus real-estate prices don't see wild fluctuations between areas
<b>Consumer choice risk</b>	Without a second airport, airfares are bound to rise once BIAL saturates This may lead to the exclusion of the most price sensitive segments of demand If fares are elevated for sustained periods, it impacts talent and labour flow into the city
<b>Equity IRR risk</b>	A failure to plan right away means a equity IRR risk as regulatory, legal and financing challenges are all compressed Currently, with adequate planning investors can focus on lower initial investment, higher returns The current government has also allocated significant funds for airports which may be targeted
<b>Financing risk</b>	The financing climate is such that project costs < 10,000 crores are encouraged. This amount is entirely adequate to build an airport however, airport costs are inflated simply because of the flawed airport development model A second airport by virtue of competing limits the associated financing risk

## **Conclusion and recommendations**

# Recommendations



The state and the city should push for a second airport in Bengaluru immediately



**We should not give up and we should not allow the problem to defeat us**

**-- President A.P.J Abdul Kalam**



The information and analyses contained in this document have been prepared independently for the exclusive use of Bangalore Chamber of Industry and Commerce.

This document contains “forward-looking statements”. Forward-looking statements may include the words “may”, “will”, “plans”, “estimates”, “anticipates”, “believes”, “expects”, “intends” and similar expressions. These statements are made on the basis of current information available and assumptions derived from market research and data. As such, these forward-looking statements are subject to numerous factors, risks, and uncertainties that could cause actual outcomes and results to be materially different from those projected or assumed in the statements.

Overall, this report is a preliminary study focused on presenting a view of Bengaluru’s current airport and demand drivers to assess the impact on the city and businesses and examine whether the current airport will be able to cater to demand. Information has been gathered both via primary and secondary sources including datasets sourced via private and public sources. This coupled with “on-ground” insights driven by the consultants experience in the India market. All efforts have been made to ensure that these are fair representations, including testing the robustness of insights via interaction with various stakeholders, regulatory filings, and research.

- Airports Authority of India: <https://www.aai.aero/>
- Economic survey of Karnataka: [http://karenvis.nic.in/Content/EconomicSurveyKarnataka\\_8184.aspx](http://karenvis.nic.in/Content/EconomicSurveyKarnataka_8184.aspx)
- Census 2011: <https://censusindia.gov.in/2011-common/censusdata2011.html>
- Airport Economic Regulatory Authority: <http://aera.gov.in/upload/uploadfiles/files/pn/Annex1ofCP5.pdf>
- Directorate General of Civil Aviation: <https://dgca.gov.in/digigov-portal/>
- BIAL Prefeasibility report: <https://bit.ly/3g4UFCX>
- NITI Ayog: <https://niti.gov.in/state-statistics>
- EBIZ Karnataka: <https://kum.karnataka.gov.in/>
- Knight Frank Wealth report: <https://bit.ly/38axYdU>
- CBRE Exploring the Future report: <https://bit.ly/3eSKote>
- Primary research
- Bengaluru Innovation report 2019
- Various filings by Bengaluru International Airport
- Stakeholder consultations by Bengaluru International Airport

**For questions please contact BCIC**



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