

EAST KIMBERLEY REGIONAL AIRPORT AIR FREIGHT ECONOMIC EVALUATION

Prepared for Shire of Wyndham East Kimberley
July 2020

CONTENTS

Executive Summary	3
Introduction	4
Air Freight Opportunity	5
Impact Evaluation	11
Cost Benefit Analysis	14
Appendix	17

EXECUTIVE SUMMARY

The Shire of Wyndham East Kimberley is advancing detailed planning for upgrades to the East Kimberley Regional Airport (EKRA) which will enable increased passenger and freight movements and improve accessibility to a wider range of tourism and agricultural markets.

This study estimated the expected economic impacts of the proposed upgrades to the East Kimberley Regional Airport on the agricultural sector. This report forms an addendum to the cost benefit analysis report prepared in 2018.

Based on an assessment of the potential air freight movements and capacity of local producers undertaken by the Shire of Wyndham East Kimberley, a range of air freight scenarios were developed.

For all scenarios, the direct and flow-on effects of increased export capacity are anticipated to be transformative for the region. In particular, increased exports are expected to lead to increased production and

employment. This increased agricultural production is estimated to support a net additional 105 roles by 2045.

The project will also support opportunities for increase value-add employment and economic activity. It will additionally improve employment diversity, business investment (as air freight opens new markets) and airline and airport revenue.

A revised cost benefit analysis was undertaken to capture the expected air freight benefits. The results reveal that the project is expected to generate significant net economic returns for the region, with the benefit cost ratio estimated at 5.5.



105

Net additional ongoing jobs by 2045



\$239 MILLION

Additional agricultural economic activity (net present value)



5.5

Revised benefit cost ratio

INTRODUCTION

Background

The Shire of Wyndham East Kimberley is undertaking detailed planning to upgrade the East Kimberley Regional Airport (EKRA).

EKRA has regular public transport (RPT) services to Broome, Darwin and Perth. These services are operated by Fokker 100 and Embraer 170 aircraft due to constraints on the ability to accommodate larger aircrafts.

The proposed upgrades include an expansion of the runway to support A320/B737 aircrafts. This is intended to improve the viability of additional RPT routes and lower the cost of airfares.

Larger aircrafts could also support significant increases in freight capacity and associated economic benefits. For instance, the B737 could provide a 122% increase in freight capacity compared to the Fokker 100 aircraft. There is also an opportunity to have a mix of lower passenger numbers with higher freight on modified aircraft utilized for regular services or potential for dedicated or purpose-built freighter aircraft to service the airport in the medium to longer term.

A cost benefit analysis undertaken by The Airport Group found that the project could deliver significant net economic benefits. The benefit cost ratio was estimated at between 1.8 and 3.3. The impact of the project on local agricultural production however was not quantified.

Study Purpose

Urbis was engaged to provide the Shire of Wyndham East Kimberley with an understanding of the expected benefits of the project on local agricultural production. In particular, the benefits of the capacity of the project to enable air freight of perishable goods produced in the region.

The study sought to measure:

- Potential air freight volumes by product type;
- Increased agricultural production (value and tonnage);
- Increased direct and indirect economic activity and employment; and
- The net present value of the expected air freight benefits.

This high level study should be read alongside the cost benefit analysis undertaken by The Airport Group.

Approach

This study included the following tasks.

- Air freight opportunities – assessment of the region's agricultural sector and the opportunities air freight could provide the region.
- Impact evaluation – identification and assessment of potential economic impacts.
- Cost benefit assessment – revised estimate of the total net economic benefits of the project.

The Shire of Wyndham East Kimberley provided important input regarding the potential air freight volumes and increased agricultural production.

01

AIR FREIGHT OPPORTUNITIES

AGRICULTURAL INDUSTRY

Industry Contribution

The Shire of Wyndham East Kimberley is home to a diverse and significant agricultural industry. The agricultural sector is supported by Lake Argyle which helps to ensure consistent supplies of water for agricultural uses.

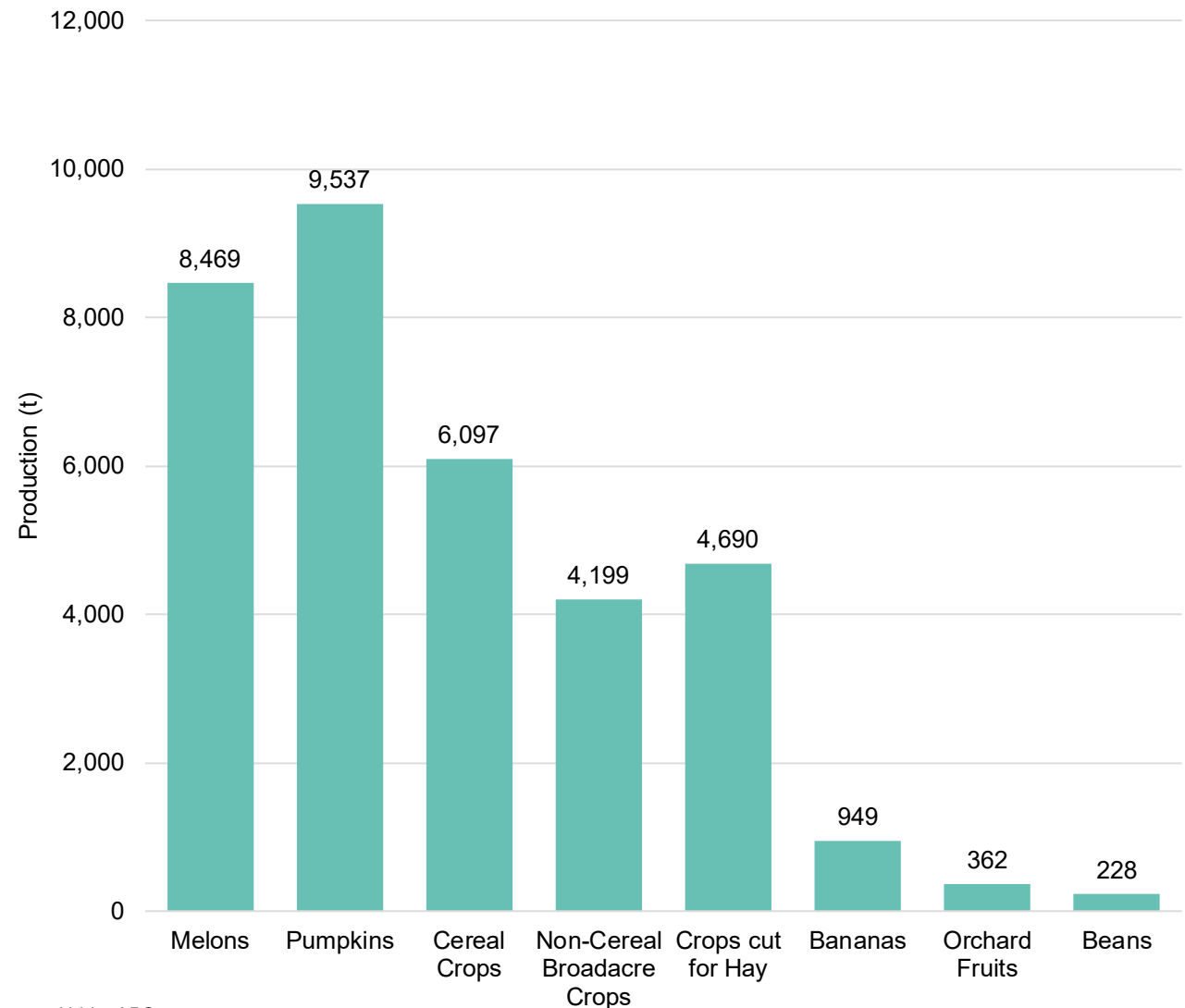
During 2015-16 (the latest year of detailed data), around 6,750 hectares of land was used to grow crops. Largely, this included perishable goods though there was also around 150,000 cattle.

According to REMPLAN, there are 367 employees in the “Agriculture, Forestry & Fishing” industry in the Shire of Wyndham East Kimberley. The industry was estimated to generate \$186 million of economic activity per annum which makes it the largest sector in the Shire. The industry is also a large exporter, with an estimated \$142 million of produce exported on an annual basis.

The sector additionally supports employment in the supply chains. According to REMPLAN, there were approximately 238 jobs supported by the agricultural sector in other industries in the Shire of Wyndham East Kimberley.

In addition to the existing agricultural operations, there is significant potential to expand this sector. For instance, Project Sea Dragon is a planned project to farm Black Tiger Prawns that will be processed at a facility in Kununurra. At this stage produce is expected to be frozen for transport, but with the expansion of the regional airport it enables the transportation of higher value chilled produce to markets in Australia and overseas.

Agricultural Production, Shire of Wyndham East Kimberly, 2015-16



Source: Urbis, ABS

AIR FREIGHT INDUSTRY

Air Freight Overview

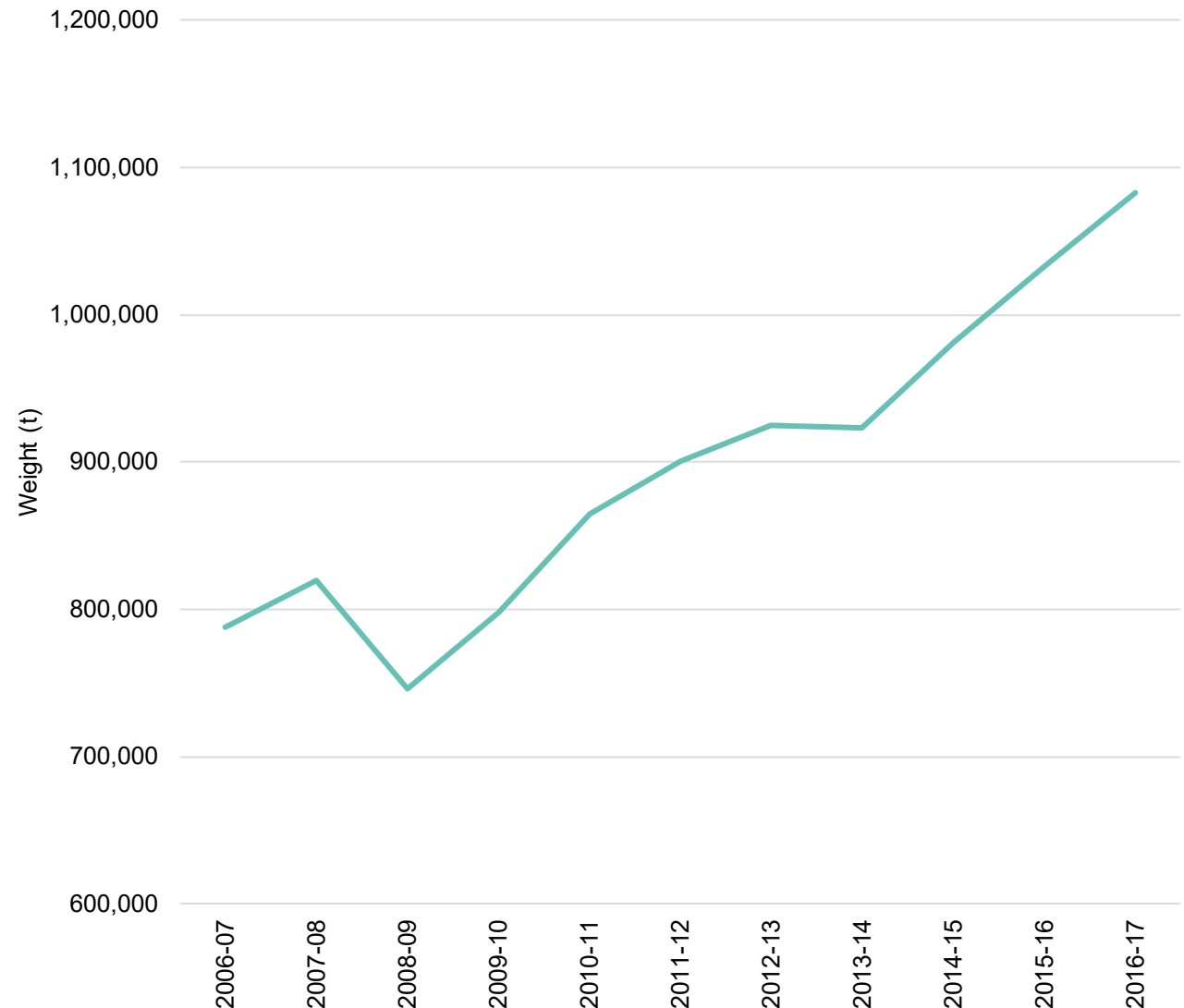
Air freight is a more desirable mode of transport for time-critical goods. This includes perishable goods such as fresh fruits, vegetables and chilled seafood / meat.

Air freight has trended upward strongly over the past decade and part of this increase is attributable to more air freight for perishable goods.

Air freight has a positive long-term outlook, with the Bureau of Infrastructure, Transport and Regional Economics forecasting that total domestic air freight volumes will increase by approximately 17% to 393 million tonne kilometres by 2039-40.

Forecasts are particularly positive for perishable goods. For instance, air freight of vegetable products is forecast to increase 1.6% (by weight) on an annual basis.

International Air Freight by Weight (Imports & Exports), Australia, 2006-07 to 2016-17



Source: Urbis, BITRE

AIR FREIGHT OPPORTUNITIES

Air Freight Opportunities

The Wyndham East Kimberly region has a long growing season and is capable of supplying markets on a year-round basis. The region would be able to service Asian, European, UK and American markets during their off-seasons; allowing produce to command premium prices.

The region would also benefit from improved opportunities to access domestic markets and complement southern seasonal production.

According to liaison undertaken by the Shire, there are key opportunities for a number of agricultural goods.

- **Melons / Pumpkins:** Currently only 10% of melon and pumpkin production is produced for international markets. Growers have indicated that current requests for international exports have been logistically challenging however future air freight would allow farmers to take on these requests and potentially double production.
- **Mangoes:** Production of mangoes currently requires high transport costs and has high levels of wastage when transporting produce by road or sea. Availability of air freight however would facilitate the processing of seconds and thirds into high-value produce that can be exported to Asian markets within 24 hours of harvest. This lower wastage and much quicker transit time would encourage additional production and attract growers from Katherine utilising the Kununurra freight hub.
- **Tropical Fruits / Asian Greens / Herbs:** Farmers in the region have expressed a desire to diversify their produce range should a freight hub

materialise. Produce being considered includes tropical fruits that are highly sought after in China, Asia, and the Middle East. This would encourage the construction of shade houses, green houses and hydroponic growing technology to produce Asian greens and herbs and flowers all year round.

- **Seafoods:** Seafarms' Project Sea Dragon is considerably advanced in developing its on-land aquaculture project. At the initial stage, the project is expected to harvest up to 40 tonnes of prawns daily commencing around Q4 2022. At full production the harvest is expected to be up to 500 tonnes per day. A freight hub at Kununurra will enable the project reach its full production sooner than planned, with export of chilled prawns. At the initial stage of completion – first harvest expected around Q4 2022 – the project could have exports of chilled prawns of around 30 tonnes per week before increasing to 280 tonnes per week of chilled prawns.
- **Beef:** There is interest in the establishment of a boutique abattoir for the processing of chilled beef for the export market. The production of cattle feed from cotton seeds is expected to significantly increase cattle numbers in the East Kimberley, thereby facilitating chilled beef exports.

The establishment of a freight hub at the EKRA will provide considerable opportunities to link Kununurra to other current and future freight centres such as Cairns and Busselton (with the later freight link included in its freight viability study and successful Commonwealth Government funding submission). This will significantly shore up supply chains to guarantee supply.

Freight Opportunities Summary



INCREASED AND DIVERSIFIED AGRICULTURAL PRODUCTION



HIGHER VALUE EXPORTS AND VALUE-ADD IN THE SUPPLY CHAIN



INCREASED TRAVEL TIME TO REDUCE WASTAGE AND EXPAND SEASONS

EMPLOYMENT OPPORTUNITIES

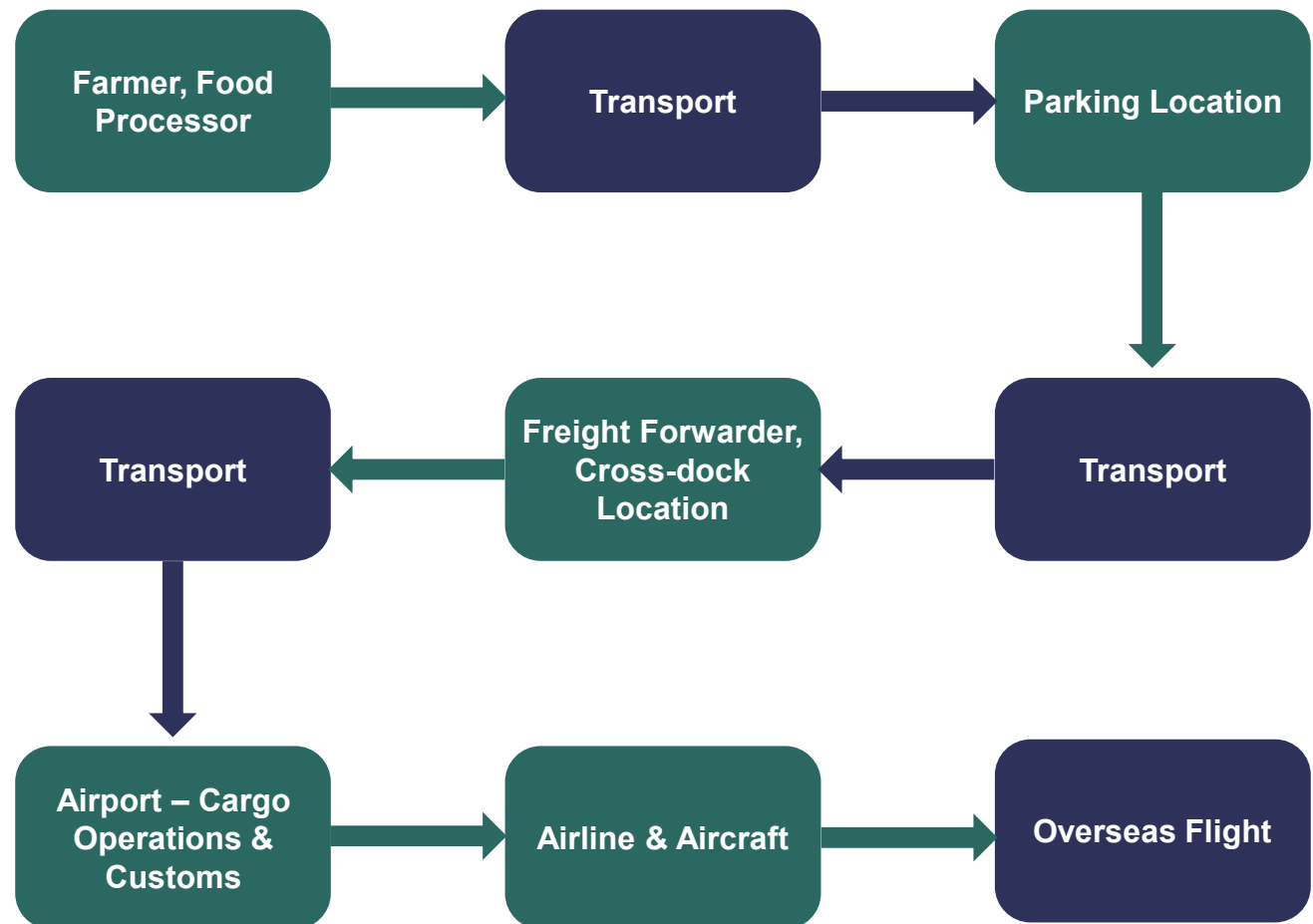
Air Freight Employment Opportunities

Increased air freight capabilities at EKRA will support a diverse range of ongoing employment opportunities in the agricultural sector in addition to the aviation and logistics industries.

Due to the more complex nature of the supply chain for air freight, the employment opportunities generated are diverse and require a larger variety of skillsets. The main occupations supported include:

- Aeroplane pilot
- Air traffic controller (when control tower justified)
- Air transport manager
- Aircraft maintenance engineer
- Airport security
- Despatching and receiving clerk
- Fleet manager
- Freight handler
- ICT support specialists
- Import-export clerk
- Machine operator
- Machine driver
- Miscellaneous administration worker
- Systems administrator
- Systems engineer
- Transport manager
- Transport engineer
- Transport operations inspector
- Truck drivers offsider

Air Freight Supply Chain Summary



AIR FREIGHT SCENARIO

Air Freight Scenario Summary

Based primarily on liaison and analysis undertaken by the Shire of Wyndham East Kimberley, three scenarios were identified to understand the potential impact of air freight opportunities enabled by the project. This level of air freight is expected to be accommodated by a combination of cargo-only carriers, integrated carriers (e.g. Toll, DLH) and RPT services.

In the short term, there is expected to be air freight volumes equivalent to 6,500 tonnes per annum. This could increase to 34,500 tonnes per annum over the long term.

The three scenarios identified are summarised below.

- **Low:** Volumes gradually increase over the assessment period to 8,500 tonnes per annum, with freight largely facilitated by RPT services.
- **Base Case:** Volumes increase by approximately 4% per annum to 15,000 tonnes by 2045. This could be accommodated by one cargo plane per week during peak freight periods and within RPT services.
- **High:** Volumes increase by approximately 9% per annum with volumes largely supported by 2-3 cargo planes per week.

These scenarios were adopted for the subsequent economic analysis.

Expected Air Freight by Product (volumes / week in tonnes), EKRA

Product	Short Term	Long Term	Harvest Season
Mangoes	224	469	Oct-Dec
Prawns	30	280	All Year
Other Seafood	0	35	All Year
Melons / Pumpkins	70	280	May-Oct
Asian Greens / Herbs	10.5	35	All Year
Chilled Beef	0	70	All Year
Other (e.g. tropical fruits)	0	35	-
Total	334.5	1,204	

Source: Urbis, SWEK

Air Freight Scenarios (average volumes per annum in tonnes), EKRA

Scenario	2025	2035	2045
Low	6,500	7,500	8,500
Base Case	6,500	10,000	15,000
High	6,500	20,000	34,500

Source: Urbis, SWEK

02

IMPACT EVALUATION



AGRICULTURAL ACTIVITY

Assessment Findings

The air freight export scenarios are expected to lead to additional economic activity in the agricultural sector.

Based on the local value of the identified export products (i.e. excluding marketing and transport costs), the air freight exports are equivalent to \$38 million in 2025 and \$108 million by 2045 for the base case.

There is considerable uncertainty as to how much of the air freight capability will drive additional production compared to a shift in the mode of transport from sea and land freight. For the purposes of this high-level assessment, a range of scenarios were adopted and this included a base case assumption that 30% of air freight exports are additional production.

Based on above, the air freight capability is expected to support approximately \$11.4 million of additional agricultural production by 2025 before increasing to \$32.5 million by 2045.

Air Freight Scenarios (value of exports per annum, \$ millions), EKRA

Scenario	2025	2035	2045
Low	\$38	\$44	\$50
Base Case	\$38	\$65	\$108
High	\$38	\$144	\$297

Source: Urbis, ABS

* Constant 2020 dollar terms.

^ Average value per tonne increases for base case and high scenario due to increase in exports of higher value goods.

Additional Agricultural Activity (per annum, \$ millions), Base Case Freight Scenario

Uplift Factor	2025	2035	2045
10%	\$3.8	\$6.5	\$10.8
30% (base case)	\$11.4	\$19.6	\$32.5
50%	\$19.0	\$32.6	\$54.2

Source: Urbis, ABS

* Constant 2020 dollar terms.

EMPLOYMENT

Assessment Findings

The increased air freight and associated agricultural production will create a range of ongoing employment opportunities.

Employment generated through increased agriculture and aquaculture production will include professions such as labourers, greenhouse technicians, boomspray operator, farm assistants, feedlot workers and yard and farm managers. Logistics employment opportunities will spread beyond airport boundaries and include integrated carriers, air freight forwarders, air freight truckers and ground handlers. Moreover, the project could encourage a range of value-add opportunities that will support packaging and manufacturing employment.

Based on published employment to revenue ratios for the agriculture industry in the region, increased production and exports are expected to directly support an average of 22 additional ongoing roles by 2025 before increasing to 64 roles by 2045 (as per base case scenario).

Indirectly, the project will also support upstream and downstream industries. The supply chain employment impact for the base case scenario is expected to be equivalent to 15 and 41 additional ongoing jobs by 2025 and 2045, respectively.

Net Additional Agriculture Sector Employment, Base Case Freight Scenario

Uplift Factor	2025	2035	2045
10%	7.4	12.8	21.3
30% (base case)	22.3	38.4	63.8
50%	37.2	64.1	106.3

Source: Urbis, ABS

* Estimates are total jobs (i.e. part-time and full-time)

Net Additional Employment, Base Case Freight Scenario

	2025	2035	2045
Agriculture Sector Employment	22.3	38.4	63.8
Indirect (Supply Chain) Employment	14.5	25.0	41.4
Total Employment	36.9	63.4	105.2

Source: Urbis, ABS

* Estimates are total jobs (i.e. part-time and full-time)

03

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COST BENEFIT ANALYSIS

ASSESSMENT APPROACH

Key Insights

A Cost Benefit Analysis (CBA) is the most commonly used and most comprehensive of the economic evaluation techniques. It compares the monetised benefits and costs of a project to determine the desirability of a project.

This study uses a net benefit approach. This only analyses the incremental, or additional, benefits and costs that can be estimated with a degree of accuracy. This approach is considered to be the most appropriate to assess the net economic benefits that accrue from the project as it enables direct comparisons with alternative proposals.

The steps in CBA include:

- Identify the quantifiable benefits that can be monetised;
- Calculate the value (in monetary terms) of the quantified incremental benefits in net present value (NPV) terms using the discount rate;
- Calculate a revised cost benefit ratio based on the above findings and the previous cost benefit assessment published by The Airport Group; and
- Undertake scenario testing.

Assessment Assumptions

Assumption	Description
Discount Rate	Discounting is the reverse of compounding (adding) interest. It reduces the monetary value of future costs and benefits back to a common time dimension – the base date (i.e. 2020). Discounting satisfies the view that people prefer immediate benefits over future benefits (social time preference) and it also enables the opportunity cost to be reflected. To align with the analysis undertaken by The Airport Group, a discount rate of 5% was adopted.
Timeframe	The benefits have been identified on an annual basis over a set period and calculated in net present value terms at the defined discount rate. For this study, a 30-year timeframe was assessed as this represents the notional life span of the improvements before significant future investment is required.

ASSESSMENT RESULTS

Key Insights

The CBA results show that the project provides significant ongoing benefits. The benefits associated with the expanded passenger services and freight services were estimated to be equivalent to \$435 million (in net present value terms).

The scenario analysis demonstrates that the benefits are likely to be significant under all scenarios.

Revised Cost Benefit Assessment Results (\$ millions)

Scenario	Low	Medium (base case)	High
Total Economic Costs	\$77.2	\$79.1	\$80.8
<i>Passenger Service Benefits</i>	\$138.6	\$195.8	\$267.6
<i>Freight Service Benefits</i>	\$159.6	\$239.0	\$495.9
Total Economic Benefits	\$298.2	\$434.8	\$763.5
Benefit Cost Ratio	3.9	5.5	9.4

Source: Urbis

* Costs and benefits are presented in net present values

Air Freight Impact Results (\$ millions)

Scenario / Uplift Factor	Low	Base Case	High
10%	\$53.2	\$79.7	\$165.3
30%	\$159.6	\$239.0	\$495.9
50%	\$266.0	\$398.4	\$826.5

Source: Urbis

* Costs and benefits are presented in net present values

APPENDIX



GLOSSARY OF TERMS

Benefit Cost Ratios are indicators to determine whether the benefits of a project exceed the costs. A value greater than 1 implies there are net benefits.

Direct Impacts are the initial round of economic output, employment and household income generated by an economic activity.

Discount Rates represent the view that people prefer immediate benefits over future benefits and additionally enable for opportunity costs to be reflected when making judgements about the value of a project.

Economic Output is a measure of the gross revenue of goods and services produced by commercial organisations and gross expenditure by government agencies.

Indirect Impacts are the sum of production-induced effects and consumption-induced effects. Production-induced effects (Type I) are additional output, employment and household income resulting from re-spending by firms that receive payments from the sale of services to firms undertaking production. Consumption-induced effects (Type II) are additional output, employment and household income resulting from re-spending by households that receive income from employment in direct and indirect activities. This analysis only estimates Type I indirect impacts.

Induced Impacts are the expected outcomes of a project versus the business of usual approach whereby the project is not implemented.

Net Present Value is the sum of the present value of benefits and costs over a period of time using a prescribed discount rate.

COVID-19 AND THE POTENTIAL IMPACT ON DATA INFORMATION

The data and information that informs and supports our opinions, estimates, surveys, forecasts, projections, conclusion, judgments, assumptions and recommendations contained in this report (Report Content) are predominantly generated over long periods, and is reflective of the circumstances applying in the past. Significant economic, health and other local and world events can, however, take a period of time for the market to absorb and to be reflected in such data and information. In many instances a change in market thinking and actual market conditions as at the date of this report may not be reflected in the data and information used to support the Report Content.

The recent international outbreak of the Novel Coronavirus (COVID-19), which the World Health Organisation declared a global health emergency in January 2020 and pandemic on 11 March 2020, is causing a material impact on the Australian and world economies and increased uncertainty in both local and global market conditions.

The effects (both directly and indirectly) of the COVID-19 Outbreak on the Australian real estate market and business operations is currently unknown and it is difficult to predict the quantum of the impact it will have more broadly on the Australian economy and how long that impact will last. As at March 2020, the COVID-19 Outbreak is materially impacting global travel, trade and near-term economic growth expectations. Some business sectors, such as the retail, hotel and tourism sectors, are already reporting material impacts on trading performance now and potentially into the future. For example, Shopping Centre operators are reporting material reductions in foot traffic numbers, particularly in centres that ordinarily experience a high proportion of international visitors.

The Report Content and the data and information that informs and supports it is current as at the date of this report and (unless otherwise specifically stated in the Report) necessarily assumes that, as at the date of this report, the COVID-19 Outbreak has not materially impacted the Australian economy, the asset(s) and any associated business operations to which the report relates and the Report Content. However, it is not possible to ascertain with certainty at this time how the market and the Australian economy more broadly will respond to this unprecedented event. It is possible that the market conditions applying to the asset(s) and any associated business operations to which the report relates and the business sector to which they belong could be (or has been) materially impacted by the COVID-19 Outbreak within a short space of time and that it will have a lasting impact. Clearly, the COVID-19 Outbreak is an important risk factor you must carefully consider when relying on the report and the Report Content.

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