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Assessment of the Economic Impact of Cruise Tourism in Papua New Guinea & Solomon Islands

JUNE 2016



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This report was prepared by ICF Consulting Services Hong Kong Limited in association with TNS Australia and Seaport Group.

This study into the economic impact of cruise tourism in Papua New Guinea and Solomon Islands was commissioned by the Australian Department of Foreign Affairs and Trade, Carnival Australia and the International Finance Corporation, a member of the World Bank Group.

Conducted by ICF Consulting Services Hong Kong Ltd, the study utilizes the same methodology undertaken in a commissioned study in Vanuatu in 2014; and similar methodology to studies undertaken in Australia and the Caribbean on a regular basis.

Data for the study was provided by Carnival Australia.

About the Australian Aid Program

Australia's aid program promotes Australia's national interests by contributing to sustainable economic growth and poverty reduction. The aid program focuses on two development outcomes: supporting private sector development and strengthening human development. On 31 August 2015, Australia's Minister for Foreign Affairs launched the *Ministerial Statement on engaging the private sector in aid and development - Creating shared value through partnership* which invites businesses to work with the Australian Government to help solve our region's development challenges. The Strategy recognises the private sector as a driver of economic growth, incomes and jobs, and as a partner for government to achieve more effective and sustainable aid outcomes. For more information, visit www.dfat.gov.au.

About IFC

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IFC's work in the Pacific is guided by the Pacific Partnership, through which IFC works with the Australian and New Zealand governments to stimulate private sector investment and reduce poverty in the region. For more information, visit www.ifc.org.

About Carnival Australia

Carnival Australia was formed in July 2004 to meet the growing demand for cruising and the number of Carnival Corporation & plc cruise companies homeporting ships from Australia and New Zealand. Since then, Carnival Australia has led the rapid expansion of the industry, which has tripled in the past five years alone and now sees well over 700,000 Australians take a cruise holiday each year. Today, Carnival Australia represents three homeported brands in Australia – Carnival Cruise Lines, P&O Cruises and Princess Cruises – as well as another four international cruise brands that visit the region annually – Cunard Line, Holland America Line, P&O Cruises World Cruising and Seabourn. For more information, visit www.carnivalaustralia.com.



ECONOMIC IMPACT OF CRUISE TOURISM IN 2015 (AUD)



DIRECT
\$5,667,686

INDIRECT
\$208,478

PAPUA NEW GUINEA
\$5,876,164



DIRECT
\$600,201

INDIRECT
\$40,821

SOLOMON ISLANDS
\$641,022



\$94,461
DIRECT



\$46,169
DIRECT



Alotau \$47
DIRECT



Doini Is. \$11
DIRECT



Kiriwina \$9
DIRECT

■ TOURS ■ TRANSPORT ■ SOUVENIRS ■ RETAIL ■ FOOD & BEVERAGE ■ OTHER



Kitava \$7
DIRECT



Rabaul \$76
DIRECT



Honiara \$28
DIRECT

*FOR FIVE RESEARCHED PORTS IN PNG & ONE IN SI

Contents

GLOSSARY	2
EXECUTIVE SUMMARY	3
1 INTRODUCTION	23
2 DIRECT ECONOMIC IMPACT	28
3 INDIRECT ECONOMIC IMPACT	50
4 TOTAL ECONOMIC IMPACT	51
5 OPPORTUNITIES FOR INCREASING THE ECONOMIC IMPACTS	58
6 COST BENEFIT ANALYSIS	67
ANNEX 1 METHODOLOGY	88
ANNEX 2 QUANTITATIVE ANALYSIS OF PASSENGERS' SPENDING DRIVERS	91
ANNEX 3 COST STRUCTURES AND ASSUMPTIONS	92
ANNEX 4 ASSUMPTIONS FOR COST BENEFIT ANALYSIS	102

Glossary

AUD	Australian Dollar
BREA	Business Research and Economic Advisors
DFAT	Australian Department of Foreign Affairs and Trade
FTE	Full-time equivalent
IALA	International Association of Lighthouse Authorities
IFC	International Finance Corporation, a member of the World Bank Group
IMO SOLAS	International Maritime Organization Safety of Life at Sea
NMSA	National Maritime Safety Authority, Papua New Guinea
NSO	National Statistical Office, Papua New Guinea
PHAMA	Pacific Horticultural and Agricultural Market Access Program
PNG	Papua New Guinea
SCM	Standard cost model
SI	Solomon Islands
SIMSA	Solomon Islands Maritime Safety Administration
SINSO	Solomon Islands National Statistics Office
SIPA	Solomon Islands Port Authority
TPA	Papua New Guinea Tourism Promotion Authority
WHO	World Health Organization

Executive summary

In recent years cruising has become one of the fastest growing segments of the tourism industry. Globally, the Pacific Islands account for a small fraction of the cruise industry (around two per cent in 2015)¹, but expected growth in the coming years is high. Given their geographic proximity, Australia and New Zealand are the most important source markets for the region.

The Australian Department of Foreign Affairs and Trade (DFAT), the International Finance Corporation (IFC) and Carnival Australia have partnered in an effort to provide baseline data on the cruise sector's impact on the economies of Pacific Island Countries (PICs). Given the importance of tourism to the economies of many Pacific Islands and the growth of cruise tourism, there is an opportunity to support further strategic, targeted development of the sector to increase its positive impact on local economies.

The focus of this study is on the cruise tourism sector in Papua New Guinea (PNG) and Solomon Islands (SI). PNG received 136 cruise ship calls at various ports in 2015, (which is similar to 137 in 2007). However, whereas the average passenger capacity of cruise ships in 2007 was 347 passengers, in 2015 average passenger capacity was 705 passengers. This trend indicates an increase in large cruise ships in recent years. While SI received a lower number of cruises, it displayed an upward growth projection.

The study contributes to a wide body of evidence on the tourism sector in the Pacific Islands and builds on the strategies and initiative proposed to support growth. To enable comparison of results between parallel studies, this study has taken into account the methodological approach adopted in earlier studies, in particular the 2015 study on the cruise tourism sector in Vanuatu².

1 Cruise Line International Association (CLIA) 2014 Deployed Survey among 18 international brands shows 6 per cent of the global capacity was deployed in Australia/New Zealand and Pacific. CLIA 2014 Australia Cruise Industry Source Market Report shows 39 per cent of the Australian cruise market is in South Pacific.

2 Assessment of the Economic Impact of Cruise Ships to Vanuatu, International Finance Corporation, August 2014

KEY DEFINITIONS

Direct economic impact is the revenue government and businesses receive from cruise ship tourism in each country. This includes revenue from the expenditure of cruise passengers, crew members and cruise ship operators on goods, services, taxes and port fees. Data was gathered through passenger and crew surveys, provided by cruise operators (i.e. Carnival Australia).



Indirect economic impact is the revenue received by local businesses that supply goods and services to businesses benefiting from direct economic impact. It is the second round impact of cruise tourism. Data was collected through face-to-face interviews with businesses in six visited ports where questions were asked about their cost structure and main suppliers.



Total economic impact is the direct economic impact plus the indirect economic impact of each country. It is a measure of the total economic activity generated by cruise tourism. For the purpose of this study the final total economic impact is broken down by sector and by final beneficiary (i.e. government, private beneficiaries and leakage).

Added value is the contribution of total economic impact to GDP. It is calculated as a sum of wages and profits generated from cruise tourism.

Employment impact is the total economic impact on employment in the country. Calculations are based on the ratio of reported employment (full-time and part-time employment) to revenue by sector. This ratio is then multiplied by revenue from cruise tourism in each sector to estimate the final employment impact. The data was collected through face-to-face interviews with businesses in six visited ports by asking questions about their total revenues and the number of people they employ. For example, if the businesses noted they employ two workers and had AUD 20,000 of revenue in 2015, then AUD 10,000 of total economic impact from cruise tourism generates one job in this sector. Due to low business acumen some businesses could not provide full-time equivalent figures, so instead reported on the number of people that worked in the business on the day of the cruise. As a result we refer to employment impact as employment opportunities.

Throughout the study, monetary values are reported in Australian Dollars (AUD) unless otherwise stated.

Methodology

This study is based on primary quantitative and qualitative data gathered from the passengers and crew on two cruises in November 2015 and January 2016:

- **Cruise 1:** November 2015 - Pacific Dawn with 2020 passengers and 690 crew capacity visited five ports in PNG (Alotau, Kitava, Rabaul, Kiriwina and Doini Island)
- **Cruise 2:** January 2016 - Sea Princess with 2272 passengers and 875 crew capacity visited five ports in PNG (Alotau, Doini Island, Kiriwina, Kitava, and Rabaul), one port in SI (Honiara) and one port in Vanuatu (Port Villa)

The study also used interviews conducted with businesses serving the cruise tourism sector at the visited ports, as well as data provided by cruise companies handling cruise ships in PNG and SI. The methodology is closely aligned to the approaches adopted in earlier studies, in particular the 2014 study on the cruise tourism sector in Vanuatu³. The four core tasks completed as part of this study were:

- **Direct economic impact** analysis based on the expenditure data of 2,254 cruise passengers who completed a short survey at five PNG ports⁴ and one SI port⁵ and gathered administrative data
- **Indirect economic impact** analysis pertaining to the cost structure of business beneficiaries (and their suppliers) using information collected from face-to-face interviews with businesses, and the inputs of in-country experts
- A **list of opportunities to develop cruise tourism in PNG and SI** based on qualitative research (focus groups, face-to-face interviews) with passengers at surveyed ports and businesses, cruise lines, ship agents and in-country workshops with local stakeholders. Participants were asked to provide personal views on the current barriers and future opportunities to cruise tourism at particular ports, or in PNG and SI in general
- A **Cost Benefit Analysis (CBA)** of a shortlist of opportunities to help prioritise future actions to improve the impact of cruise tourism in the relevant economies

Economic impacts of cruise tourism expenditure

This summary presents two estimates of cruise tourism expenditure:

- **The economic impact on the researched ports** in PNG (Alotau, Rabaul, Kiriwina, Kitava and Doini Island) and SI (Honiara). These estimates are based on the data obtained from the two cruises and scaled up by the number of times cruise ships of similar size are scheduled to visit these ports in 2016
- **The economic impact on the whole of PNG and SI** accounts for the fact that mainly smaller cruise ships call at the researched ports and at other ports in PNG and SI. Assumptions were revised to reflect the lower port fees paid by smaller ships, the lower number of passengers per ship arriving in each port and the frequency of port calls. Extrapolation using cruise ship schedules for 2015 then took place to provide a first estimate of the total economic impact of cruise tourism on each country's economy

Unless otherwise stated, the impact reported is based on the economic impact of the researched ports. Insufficient data was available to estimate the country level impacts other than in aggregate.

3 Assessment of the Economic Impact of Cruise Ships to Vanuatu, International Finance Corporation, August 2014

4 Alotau, Rabaul, Kitava, Kiriwina, Doini Islands

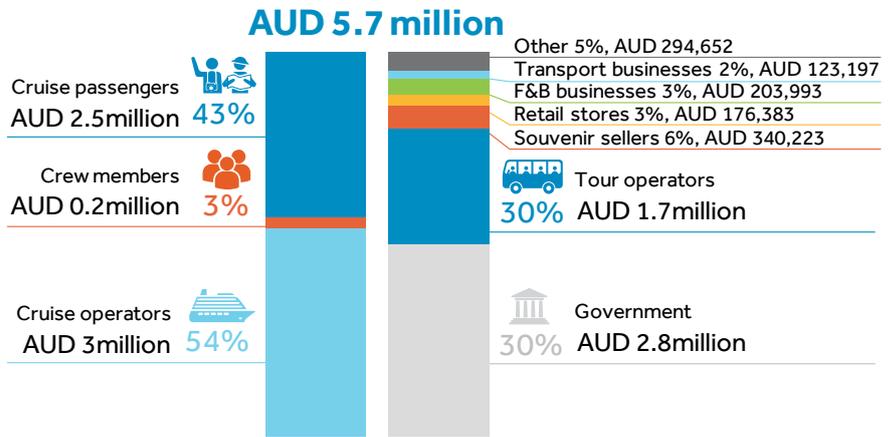
5 Honiara

PAPUA NEW GUINEA

(Alotau, Rabaul, Doini Island, Kitava and Kiriwina)

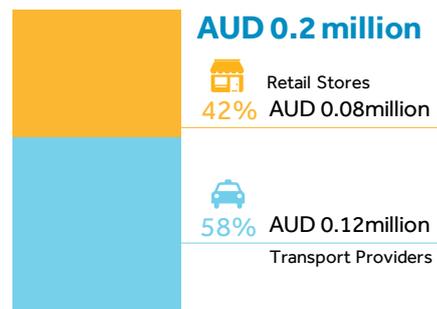
Direct economic impact

in 2015 was AUD 5.7 million at the five researched ports. Fifty-four per cent was generated from spending by cruise operators (mainly through port fees), 43 per cent was generated by passengers, and three per cent by crew members purchasing goods and services from local businesses. The majority (50 per cent) of this revenue went to the government through the collection of port fees and tour operators (30 per cent).



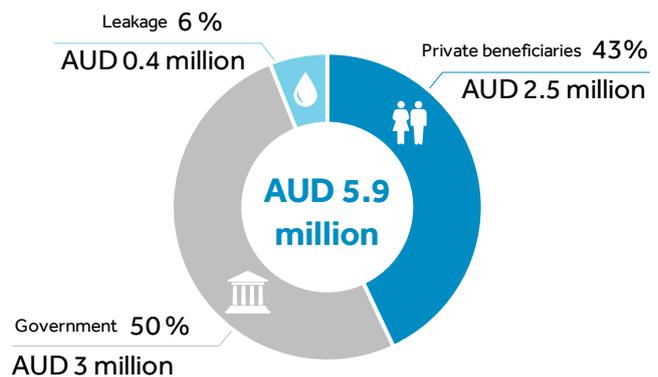
Indirect economic impact

The supply chain of local businesses serving cruise tourism is short as a high proportion of businesses operate in the informal economy. The main sources of indirect impacts are: tour operators purchasing transport services, food and beverage businesses and general retail stores purchasing their goods from local suppliers.



Total economic impact

is AUD 5.9 million. Forty-three per cent of the total economic impact of cruise tourism benefits private beneficiaries (i.e. local businesses, business owners and employees). The government receives 50 per cent of the total economic impact. Estimated leakage is six per cent (i.e. the money floats out of the economy through imports like fuel and profits which go to foreign business owners).



Added value of cruise tourism industry is AUD 1.1 million. In other words, cruise tourism industry in the researched ports contributed some 0.01 per cent to PNG's GDP in 2015.

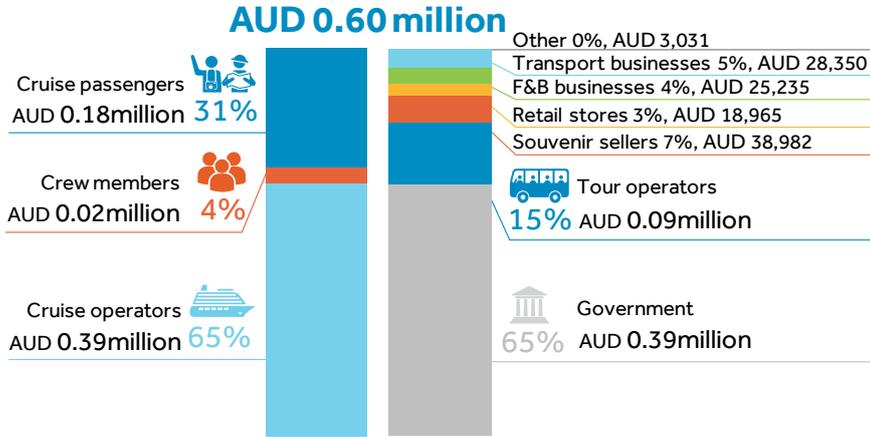
AUD 1.1 million
0.01% of GDP

TOTAL
ADDED
VALUE

Employment impact of cruise tourism is 203 jobs. These are both full-time and part-time jobs.

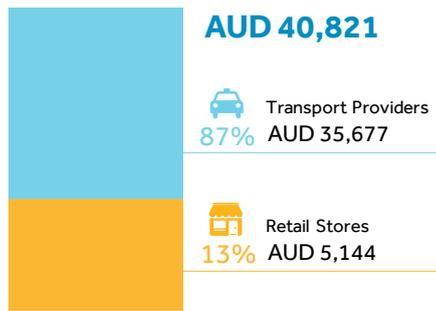


SOLOMON ISLANDS (Honiara)



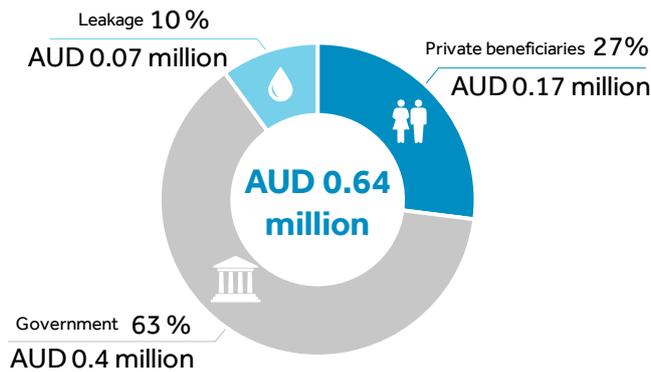
Direct economic impact

in 2015 was AUD 0.60 million in Honiara. Sixty-five per cent was generated from spending by cruise operators (mainly through port fees), 31 per cent was generated by passengers and four per cent by crew members purchasing goods and services from local businesses. The majority (65 per cent) of this revenue went to the government through the collection of port fees and tour operators (15 per cent).



Indirect economic impact

The supply chain of businesses serving cruise tourism is short as a high proportion of businesses operate in the informal economy. The main sources of indirect impacts are: tour operators purchasing transport services, food and beverage businesses and general retail stores purchasing goods from local suppliers.



Total economic impact

of cruise tourism calculated as direct plus indirect economic impact is AUD 0.64 million. Twenty-seven per cent of total economic impact of cruise tourism benefits private beneficiaries (i.e. local businesses and employees). The government receives 63 per cent of total economic impact. Estimated leakage is 10 per cent (i.e. the money flows out of the economy through imports like fuel and profits of foreign business owners)

AUD 89,639
0.01% of GDP

TOTAL
ADDED
VALUE

Added value of the cruise tourism industry is AUD 89,639. In other words, the cruise tourism industry in Honiara contributed some 0.01 per cent to Sl's GDP in 2015.

 **21 jobs**

Employment impact of cruise tourism is 21 jobs. These are both full-time and part-time jobs.

Direct economic impact

Papua New Guinea

In 2015, cruise companies, passengers and crew spent an estimated AUD 5.7 million in PNG across the five researched ports. Depending on the port, each cruise ship call contributed an average of between AUD 24,000 and AUD 159,000 to the local economy.

Extrapolating this figure to the entire country, the total direct economic impact of cruise tourism in PNG is estimated at approximately AUD 6.3 million⁶, with the researched ports receiving 89 per cent of the total.

The leading source of expenditure is generated through cruise companies (which account for 54 per cent of total expenditure) mainly through a variety of fees paid to ports, government agencies or communities. The remaining expenditure (43 per cent) comes from passengers mainly through tour purchases, with crew expenditure representing three per cent of the total.

The distribution of expenditure among ports differs. The majority of expenditure in PNG benefits Alotau (42 per cent) and Rabaul (41 per cent), as these are the entry ports and most developed for tourism. A summary of total expenditure with a breakdown by PNG ports is provided in Table ES1 and Figure ES1.

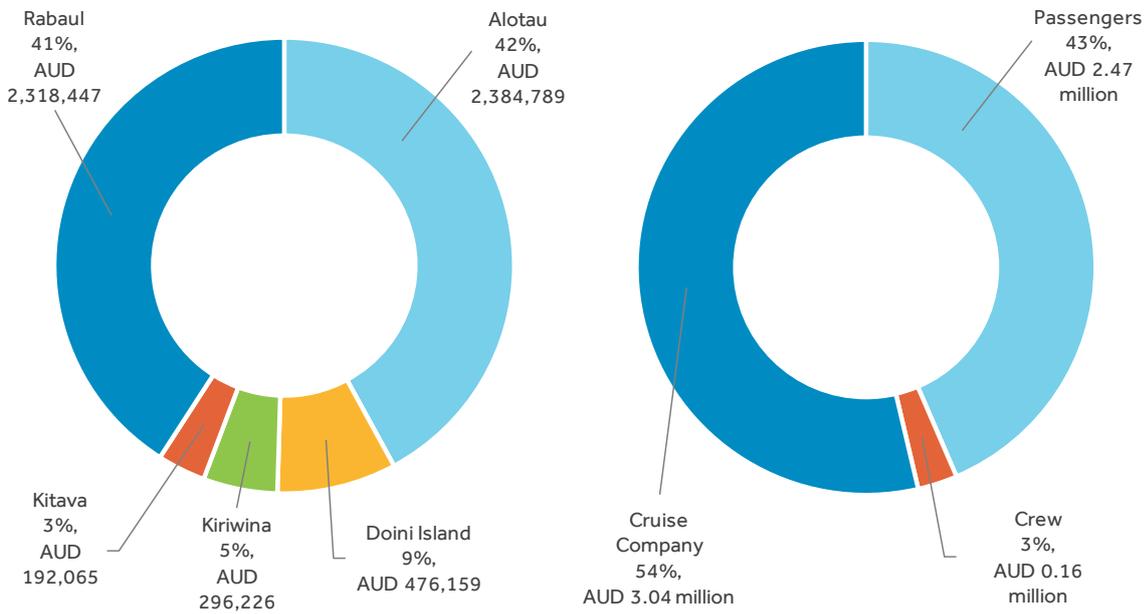
For the 2015 impact assessment in PNG, a total of 60 calls were assumed across the five researched ports. There were an additional 76 calls made at mainly smaller island destinations by cruise ships of a smaller average size (between 150 – 300 passengers). It is estimated that these additional calls contribute much less (11 per cent) to the total cruise tourism impact in PNG. On this basis, the five researched ports focussed on in this study are considered representative of total cruise tourism impact.

6 Extrapolation accounts for 76 ship calls made at other PNG ports to those researched. Passengers, crew and cruise line operators' expenditure were adjusted accordingly to account for a much smaller average vessel size (150 – 300 passengers).

Table ES1 Total estimated direct impact by PNG port 2015 (AUD)

PNG	Calls	Total Passenger Impact	Total Crew Impact	Total Cruise Line Impact	TOTAL Direct Impact	TOTAL AVERAGE Impact per call
Alotau	15	751,700	70,589	1,562,500	2,384,789	158,986
Doini Island	11	228,601	5,558	242,000	476,159	43,287
Kiriwina	10	171,116	5,110	120,000	296,226	29,623
Kitava	8	92,369	3,696	96,000	192,065	24,008
Rabaul	16	1,224,742	73,706	1,020,000	2,318,447	144,903
TOTAL 5 Researched Ports	60				5,667,686	94,461
TOTAL PNG (Extrapolated)	136				6,362,304	46,782

Figure ES1 Breakdown of direct impact by PNG port and source in 2015 (AUD)



Solomon Islands

The total direct economic impact to Honiara port in SI for 2015 is estimated at AUD 0.6 million with each cruise ship call contributing an average of AUD 46,169 to the Honiara economy.

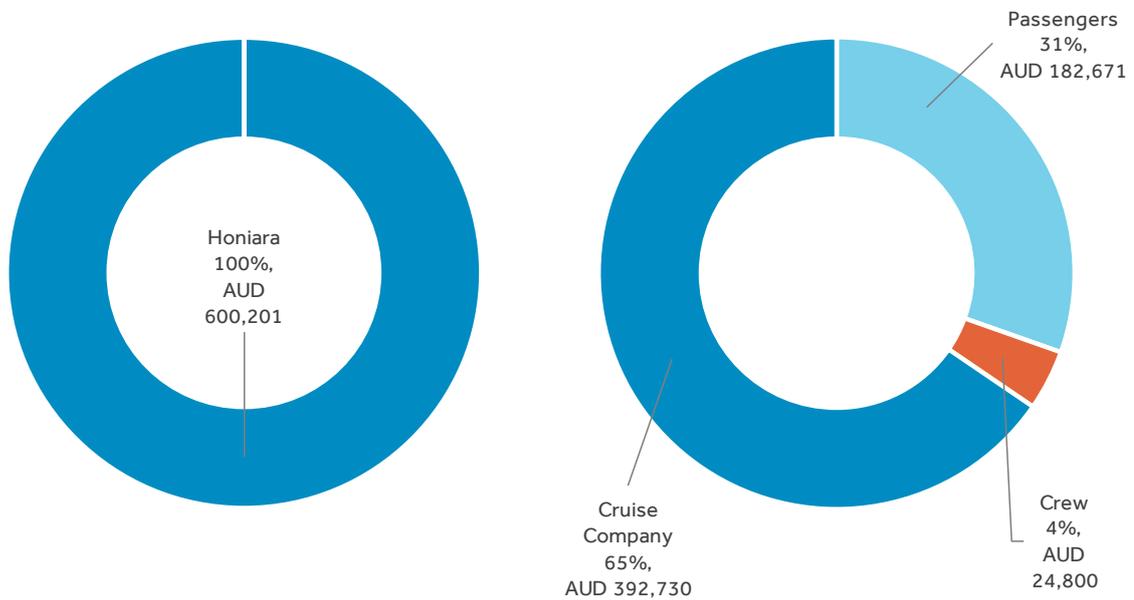
As in the case of PNG, when this data is extrapolated to account for the smaller cruise ships and other SI ports of call, the total direct economic impact of cruise tourism is estimated at AUD 0.9 million⁷.

The majority of expenditure comes from cruise companies (65 per cent of total expenditure). The remaining expenditure comes from passengers (31 per cent) and crew (four per cent). Table ES2 provides a summary of headline expenditure and Figure ES2 provided a breakdown of its source.

Table ES2 Total estimated direct impact by SI port 2015 (AUD)

SI	Calls	Total Passenger Impact	Total Crew Impact	Total Cruise Line Impact	TOTAL Direct Impact	TOTAL AVERAGE Impact per call
TOTAL 1 Researched Port (Honiara)	13	182,671	24,800	392,730	600,201	46,169
TOTAL SI	47				900,768	19,165

Figure ES2 Breakdown of direct impact by SI port and source in 2015 (AUD)



⁷ Extrapolation accounted for 47 calls at other SI destinations. Passenger, crew and cruise line operator expenditures were adjusted to account for a much smaller average vessel size (150 – 300 passengers).

Passenger expenditure

Depending on the port, average passenger expenditure is estimated between AUD 7 and AUD 76 per day in PNG. Average passenger expenditure is estimated at AUD 28 per day in Honiara, SI.

Passenger expenditure varies significantly due to large differences in spending opportunities (e.g. pre-booked tours through cruise companies are only available in Rabaul and Alotau), and other factors (such as the availability of ATMs, foreign currency exchange, shaded areas and toilets ashore), which make venturing ashore more attractive.

Figures ES3 and ES4 following provide a summary breakdown of expenditure by port and expenditure type for PNG and SI respectively.

Figure ES3 Average passenger expenditure by port and type⁸ in PNG (AUD)

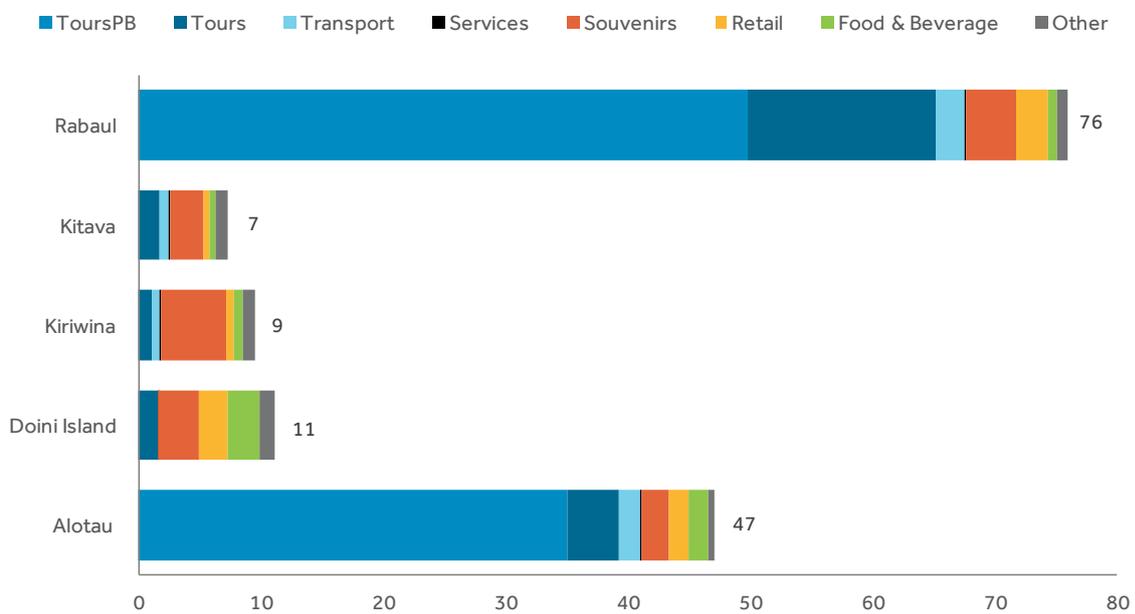
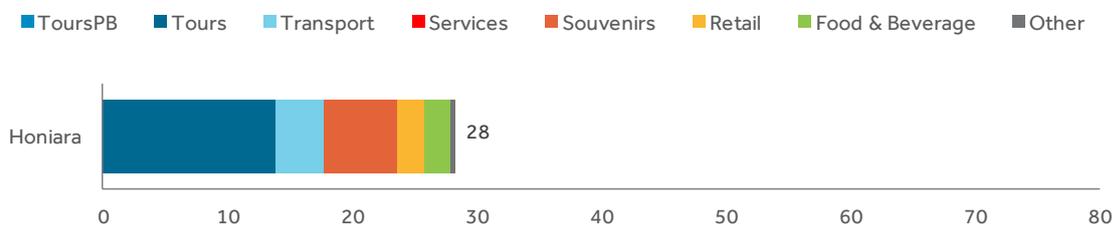


Figure ES4 Average passenger expenditure by port and type⁹ in SI (AUD)



8 Services include hair braiding and massage. Tour PB refers to Pre-Booked Tours which are arranged on-board the cruise ship by the cruise company in advance of port arrival. Tours refers to purchases made by individuals on arrival at the port with local operators.

9 Services include hair braiding and massage.

Key drivers of passengers spend:



Time passengers spend on shore: Studies across different countries consistently highlight that passengers who spend more time ashore also spend more.



Passengers' satisfaction with the variety of things to see and do: Passengers spend more if they think there are a greater variety of things to see and do. The majority of passengers that spent in PNG and SI would spend more on clothing, watches/jewellery and handicraft/souvenirs if more options were available.



Availability of pre-booked tours: Passengers who pre-booked tours¹⁰ spent significantly more (on average AUD 79 in PNG) than those who did not pre-book tours (on average AUD 21 in PNG). Relative to other goods and services currently available, pre-booked tours are the most costly (up to AUD 130), but many passengers purchase them (47 per cent of passengers in Alotau and 48 per cent of passengers in Rabaul). Passengers with pre-purchased tours spend less on transport and more on souvenirs.

Crew expenditure

Due to only a small number of survey responses from crew members, the estimates of crew expenditure are based on the Vanuatu 2014 study. Ports were classified into two groups: small ports (Doini Islands, Kiriwina and Kitava) and medium ports (Alotau, Rabaul and Honiara). Based on the Vanuatu 2014 findings, the analysis assumes that crew members spend an average of AUD 5 per day at small ports and AUD 28 per day at medium ports.



PNG and SI lack pull factors for crew members to go and spend ashore. Global studies¹¹ indicate that crew members go ashore to access low-cost communication services (i.e. internet and phone) as on-board alternatives are expensive, food and beverage at local restaurants and bars, entertainment/night clubs and transportation from the ship to these amenities. They also tend to spend on clothes and electronics. All these facilities/products are scarce or not available in PNG and SI.

¹⁰ Tours sold on board are compliant with cruise-line operating standards that meet or exceed minimum international standards for safety and insurance protection, as well as the level in quality as outlined by each cruise-line's brand position.

¹¹ Business Research & Economic Advisors (BREA) report 2014-2015

Cruise line expenditure

The majority of cruise company expenditure per port call relates to fees that directly flow to the government. These fees differ significantly by port.

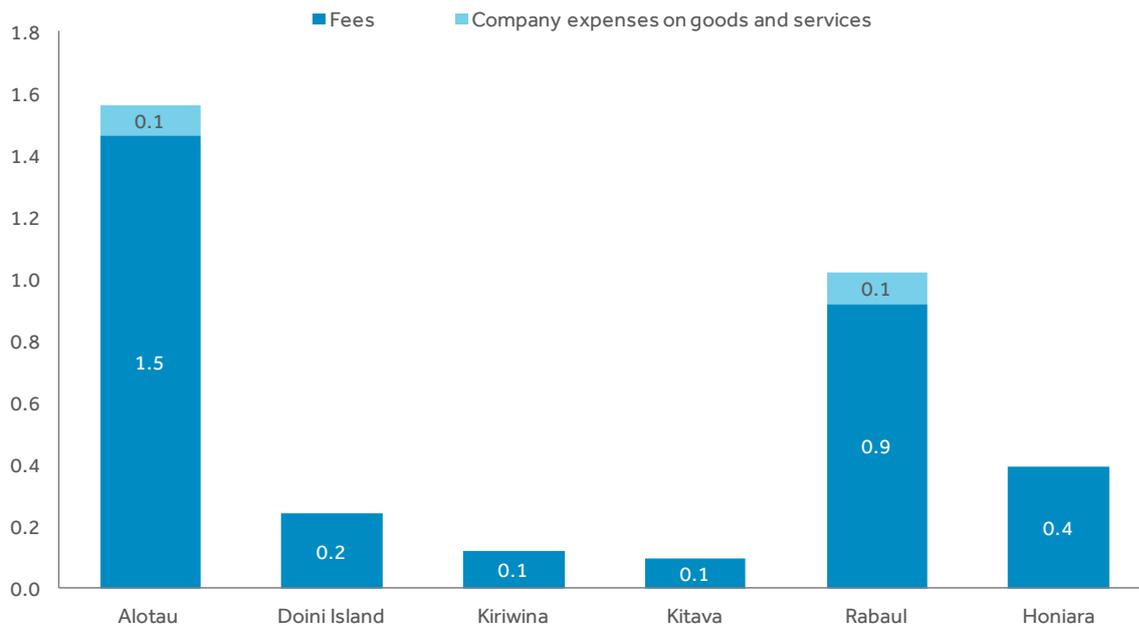
Port fees charged at the port of entry into the country (i.e. Alotau and Honiara) are higher, due to national customs and immigration fees paid. Port fees also differ by vessel size. For the five researched ports in PNG, the average size of a cruise ship per call was between 1,300 and 1,900 passengers, compared to 530 passengers in Honiara¹².

Other company expenses on goods and services include port agent fees and corporate operational expenditure.

Data for this assessment is based on internal estimates by Carnival Australia. Care was taken in using this data by triangulating with information gathered from stakeholders including ship agents in PNG and SI.

Estimated total cruise line expenditure by port in 2015 is provided in Figure ES5.

Figure ES5 Total cruise line expenditure by port and type in 2015 (million AUD)



12 To account for differences in average passenger capacity and vessel size, cruise line estimates on port fees paid were re-weighted for ports where average passenger capacity was <700 pax (i.e. Honiara). It was assumed port fee per passenger are twice as high for smaller vessels (<700 pax) if compared to bigger vessels. This assumption is based on the results of Anonymous Survey of Cruise Operators Expenses conducted by Seaports in 2014.

Indirect economic impact

Indirect economic impact in PNG is estimated at AUD 0.2 million in PNG and AUD 0.04 million in SI. Small indirect economic impact is a result of short supply chains and the structure of the economy.

Indirect economic impact is the revenue received by local businesses that supply goods and services to businesses directly benefiting from cruise tourism. It is the second round impact of cruise tourism and the size of this impact indicates how money multiplies in the economy.

The following are the two main reasons why the observed indirect impacts are low in both PNG and SI.

- A large proportion of businesses directly benefiting from cruise tourism operate in the informal subsistence economy of farming and fishing. Data from this informal economy is difficult to capture and has limited indirect impact as revenue is kept by the family producing the good or service. Direct income contributes directly to the household budget in such cases. This informal economic activity is much more pronounced in PNG and SI than in other tourist destinations and should be taken into account when interpreting this impact
- By definition, indirect impact excludes the portion of direct economic impact that goes to the government. Compared to other cruise tourist destinations (i.e. Vanuatu) the share of direct expenditure that goes to government is large

Total economic impact

The total economic impact of cruise tourism is calculated as direct plus indirect economic impact. Total economic impact in PNG is estimated at AUD 5.9 million. Total economic impact in SI is estimated at AUD 0.64 million.

Final beneficiaries of total economic impact are government and local private beneficiaries. Part of the impact leaks into the economy through imports (e.g. insurance, fuel costs, profit to foreign owners of businesses, employees).

Forty-three per cent (PNG) and twenty-seven per cent (SI) of total economic impact of cruise tourism benefits local private beneficiaries. Governments receive 51 per cent (PNG) and 63 per cent (SI) of expenditure. Estimated leakage is 6 per cent (PNG) and 10 per cent (SI).

The observed structure of total economic impact is a result of the following features of the cruise tourism industry:

- The impact on government is high because of a high share of collected port fees relative to other expenditure
- The impact on private beneficiaries is high as the expenditure from cruise industry predominantly flows into tours operators and handmade souvenir businesses. These sectors are labour intensive, locally owned and almost independent from imports
- The impact on private beneficiaries is further increased because a large share of the economy in each country is considered informal (i.e. businesses do not pay tax). It is assumed that the entire expenditure at Doini Island, Kiriwina and Kitava flows into such subsistence economies

The added value of cruise tourism to PNG's GDP is estimated at AUD 1.1 million or 0.01 per cent of GDP in 2015. The gross value added of cruise tourism to SI's GDP is estimated at AUD 0.09 million or 0.01 per cent of GDP in 2015.

Employment impact

In PNG, cruise tourism generated an estimated 203 employment opportunities (0.6 per cent of working age population of the five researched ports). In SI, the industry generated 21 employment opportunities in Honiara (or 0.06 per cent of the working age population). Measured employment opportunities relate only to the private sector and exclude any impact by cruise tourism on employment in the public sector. Figure ES6 presents the estimated impact of cruise tourism on employment opportunities in PNG and SI by sector and by port.

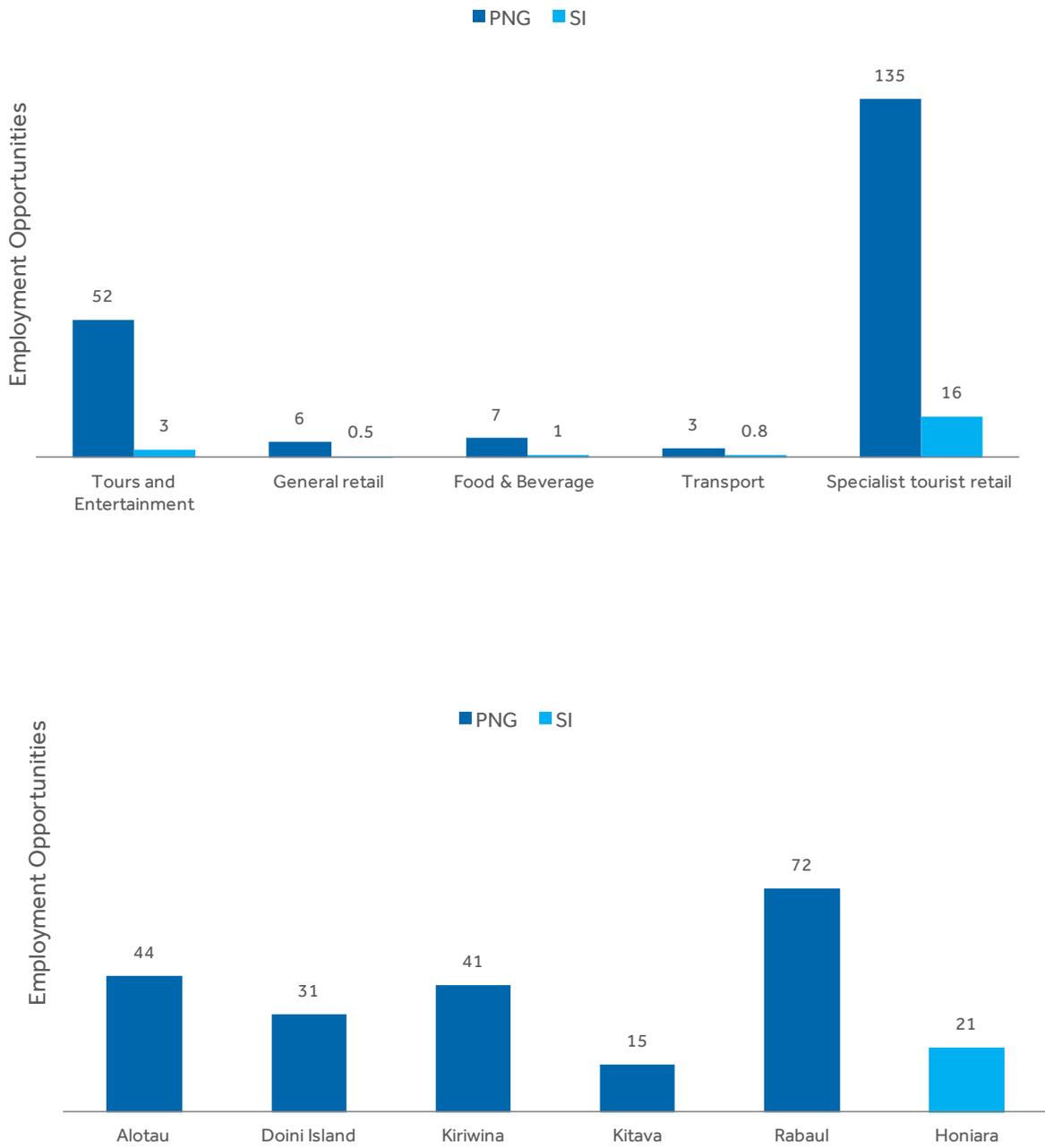
These figures do not indicate full-time equivalent (FTE) jobs only but the number of jobs (including a mixture of full-time and part-time/ad hoc employment depending on the sector) that cruise tourism generates. The estimates are calculated on a ratio of reported employment to revenue for each sector based on data obtained from interviews with businesses. For each sector, these numbers were used to estimate the employment ratios which were applied to the total direct and indirect economic impact for private beneficiaries. Due to the limited understanding of some business representatives interviewed, full-time equivalent figures for employment were not provided. Instead, the number of employees working in the business on the day of the cruise (e.g. the number of family members selling handicrafts) was reported. As a result, for the purpose of this study, employment impact is referred to as employment opportunities or jobs.

In line with the approach adopted in the Vanuatu 2014 study, the employment impact does not include employment resulting from fees paid by cruise operators at ports or other tax and duty collections. But given the significant size of this expenditure relative to other spend in PNG and SI some employment impact is likely to occur (i.e. in port and government administration).

The specialist tourist retail sector (selling handicrafts and souvenirs) benefits the most in terms of total employment opportunities despite the fact that this sector receives only about six per cent of total economic impact in both PNG and SI. Handicraft and souvenir businesses have many 'employees' and are mainly family run, but the intake from cruise tourism is low and not consistent because businesses only open when a cruise ship is in port. For instance, based on qualitative research there are many handicraft sellers at Kiriwina, but the majority of sellers are subsistence farmers. As a consequence, the number of full-time equivalent employment created by cruise tourism is currently low as cruise calls are infrequent and last for only a day. But the number of employment opportunities created is high since many people engage in the sector once the cruise ship arrives.

The lessons of Vanuatu and Fiji (as more developed tourism economies) illustrate the future potential for PNG and SI. Increasing the frequency of cruise calls and the numbers of passengers will encourage local businesses to establish permanent retail premises and employ of full-time staff. The Vanuatu study estimated full-time equivalent employment at 1,170 jobs. Similar numbers can be expected in PNG and SI given a similar number and frequency of cruise passengers. Many of these jobs would come from the services and amenities that are not yet available in PNG and SI, and/or new products such as organised tours.

Figure ES6 Impact on employment opportunities in PNG and SI by sector (above) and port (below)



Comparison of key indicators

Table ES3 below compares key indicators in the 2015 PNG, SI; 2014 Vanuatu study and the 2015 BREA study

Table ES3 Comparison of key indicators in the 2015 PNG, SI; 2014 Vanuatu study¹³ and 2015 BREA study¹⁴

Indicator	PNG	SI	Vanuatu ¹³	BREA 2015 ¹⁴
Number of researched ports	5	1	3	-
Number of calls at researched ports per year	60	13	201	-
Average number of passengers per call	1311 - 1927	530	~ 2081	-
Average number of crew per call	757	260	-	-
% of passengers going ashore	93% - 97%	94%	91% - 97%	94%
Average time spent ashore (hours)	3.4 - 4.3	3.7	-	4.4
Average passengers spend per call (AUD)	7 - 76	28	11 - 96	179
Average crew spend per call (AUD)	5-28	28	5 - 51	93
Total direct economic impact of cruise company per year (AUD million)	3.0	0.4	6.2	-
Average direct economic impact per call	94,461	46,169	164,000	-
Direct economic impact per year at researched ports (AUD million)	5.7	0.6	33	-
Indirect economic impact per year at researched ports (AUD million)	0.2	0.04	19	-
Total economic impact per year at researched ports (AUD million)	5.9	0.64	52	-
Benefit to private beneficiaries (% of total economic impact)	43%	27%	49%	-
Benefit to government (% of total economic impact)	51%	63%	11%	-
Leakage (% of total economic impact)	6%	10%	41%	-
Value added (AUD million)	1.1	0.09	8.4	-
Value added as a share of GDP	0.01%	0.01%	0.75%	-
Employment opportunities	203	21	3,250	-

¹³ Vanuatu figures are for 2013

¹⁴ Business Research & Economic Advisors (BREA) conducted several Economic Contribution of Cruise Tourism to the Destination Economies Studies, the latest was published in October 2015. The scope of the study concerns the Caribbean, Mexico and Central & South America

Summary of opportunities for improving the impact of cruise tourism

To support stakeholder efforts to improve the economic impact of cruise tourism in PNG and SI, 11 options (six for PNG and five for SI) comprising of groups of preferred actions were subjected to a cost-benefit analysis (CBA). The CBA validates the robustness of these options using the best available information and data from Carnival Australia, Seaports Group and other published sources. Where assumptions are made, they are set out in Section 6 of the study (and accompanying annexes).

To select the shortlist of the options, the Consultant firstly considered a long list of actions gathered from businesses, in-country workshops and consultations within DFAT, Carnival Australia and the Pacific Horticultural and Agricultural Market Access Program (PHAMA). These actions were then screened for feasibility, before being shortlisted as options that would benefit from synergies for the CBA.

The purpose of the CBA was to help identify priority options based on their anticipated benefit-cost ratio. A summary of the results is provided in Table ES4. The key findings are summarized below.

- **Providing an ATM or foreign exchange booth at/or near the wharf in Alotau** (the first port of call for many cruises) is found to have the highest benefit-cost ratio. In short, it was found that the Papua New Guinean Kina (PGK) is not a frequently available currency for tourists visiting PNG and many traders in PNG do not accept alternative currency (i.e. AUD). Without currency exchange facilities on the cruise ship, this resulted in many passengers being unable to make purchases when visiting PNG ports. The low fixed cost of providing this facility is easily offset by increased passenger expenditure for the 10 years assessed
- In the same vein, **improving information provided to passengers prior to disembarking in both PNG and SI** is estimated to have a large positive net impact. In-depth interviews with passengers indicated that they wanted to spend more, but lacked the opportunities and confidence to do so. It is a relatively low cost exercise to provide a three-minute quarantine video, update destination materials and provide a map of the ports to encourage cruise passengers to explore and better navigate attractions and amenities at each port visited. These actions also give passengers the confidence to purchase handicrafts, resulting in higher expenditure
- **Increasing cooperation and coordination between businesses, local communities, government and cruise operators** particularly in the development of future tours and excursion offers (which are the highest expenditure items for passengers), is also anticipated to generate significant net benefits. Businesses should be better prepared for cruise ship arrivals with an improved range of better-priced and coordinated products to offer passengers. Key to this option in PNG and SI is the establishment of a more formalised cruise committee in each port with assigned roles and responsibilities. For example, it is assumed these committees will take the lead in broadcasting the arrival of cruise vessels to local businesses, and submitting relevant and updated destination information to cruise operators to ensure information given to passengers is accurate and useful
- **Improving customs and immigration procedures in PNG** is expected to generate significant benefits as speedier and more efficient procedures allow passengers to spend more time ashore. Benefits are estimated proportional to the extra time spent ashore when more goods and services are to be purchased

- **Improving port amenities** (such as the provision of shaded areas and seating, sanitation blocks and litter bins) in many destinations is shown to have a significant net positive impact. The option makes the port area more attractive to passengers considering a trip ashore. When ashore, it also increases the time passengers are willing to spend in the port with a proportional increase in expenditure assumed in the analysis
- **Opening up cruise destinations, such as Gizo and Tavanipupu in SI**, requires significant upfront investments at high cost. For example, this includes jetties, upgrades to wharfs and hydrological surveys to be carried out before larger cruise ships can operate efficiently in these ports. However, over time the improvements will increase levels of expenditure due to a higher frequency of calls and numbers of passengers
- **The new wharf at Honiara** is already under construction and will provide net benefits within 25 years. However, the benefits to freight shipping operators from a new wharf are not quantified and are considered significant as they are the largest users of this infrastructure

In conclusion, the CBA highlights the importance of capacity building, improved communication and information options to facilitate higher cruise tourism expenditure. These options also contribute to supporting economic development through tourism where a limited formal economy currently exists in many smaller destinations. Often low cost to implement, these options ensure local communities, businesses and government realise the potential of cruise tourism for economic growth and employment. These options achieve the highest benefit-cost ratios.

Infrastructure investment is also important for the longer-term prospects of these cruise tourism economies. High in upfront costs, the benefits of these investments may seem low but they are essential prerequisites for future economic development. Without a new wharf in Honiara, or similar infrastructure at other destinations, cruise tourists will not visit these countries in the numbers expected, consequently reducing the economic impact of the sector.

Table ES4 Summary of the benefit-cost ratio of proposed opportunities to improve the impact of cruise tourism in PNG and SI¹⁵

Option	Details	Present Value (AUD million)		Net Present Value	Benefit-cost ratio
		Costs	Benefits		
Papua New Guinea					
Increase the provision of foreign exchange services	<ul style="list-style-type: none"> Providing foreign exchange booths near or at the wharf in Alotau 	0.03	1.9	1.87	57
Improve information to passengers	<ul style="list-style-type: none"> Provide quarantine videos and leaflets to passengers Update destination information provided by cruise operators to passengers Develop and provide maps of the port, city centre and areas of interest Inform passengers of the opportunity to make donations to locals 	0.1	3.2	3.1	27
Improve customs and immigration procedures	<ul style="list-style-type: none"> Pass legislative changes to enable the cruise operators to use non-proclaimed ports for clearance to plan itineraries more effectively and increase cruise frequency. This could be achieved by increasing the number of proclaimed entry/exit ports or using procedures (like other PICs) which allow the operator to bear the cost of using immigration services at non-proclaimed ports. Most of the costs associated with the new procedure (i.e. to fly customs officers to the non-declared port of entry) would be borne by cruise operators directly Improve passengers clearing processes in line with those used in other PICs. Currently the immigration process takes a long time (requiring crew to collect passport copies for all passengers) and reduces on-shore time for the passengers who must wait for their passports to be returned before disembarking 	0.1	0.9	0.8	13.8
Develop the product offering in PNG	<ul style="list-style-type: none"> Establish a more formalised cruise committee Develop tours and excursions on smaller islands (i.e. Kitava and Kiriwina) 	0.2	3.1	2.9	13.1
Upgrade port amenities in PNG	<ul style="list-style-type: none"> Construct a sanitation block near or at the wharf area in Kitava and Kiriwina Provide covered areas, including seating for passengers in Kitava and Kiriwina Clear signage to enable cruise passengers to navigate from the port area to leading attractions and points of interest in Alotau and Rabaul. Although amenities exist, passengers do not know where to go to reach them (i.e. currency exchange and banks) 	0.2	1.6	1.4	7.6

¹⁵ Costs and benefits of investments are estimated over 10 years. Costs and benefits of investment in Honiara's wharf is estimated over 25 years reflecting the longer life to asset and the fact that this investment is on-going.

Option	Details	Present Value (AUD million)		Net Present Value	Benefit-cost ratio
		Costs	Benefits		
Improve infrastructure to existing ports of call	<ul style="list-style-type: none"> • Kitava – extend a jetty to enable simultaneous disembarkation of two tenders for more efficient transportation of passengers to and from larger cruise ships • Alotau – provide fresh water supplies for cruise ships to World Health Organization (WHO) standards. As the first port of call for cruise ships from Australia, development of this capability is considered a priority for cruise development in the region • Madang – reinforce and extend the port berth to enable more regular and larger ships to dock in port. Based on the assessment of Seaports marine engineers, this would entail construction of two sinker blocks and upgrades to fenders. 	0.7	3.1	2.4	4.3
Solomon Islands					
Develop the product offering in Honiara	<ul style="list-style-type: none"> • Establish a more formalised cruise committee • Develop more tours and excursions 	0.1	1.58	1.47	15
Open new destinations in the SI cruise offer	<ul style="list-style-type: none"> • Open Gizo as a destination for large vessels. This will require: <ul style="list-style-type: none"> • A hydrographical study for the destination • Additional bollards/large cleats to be added adjacent the sloping concrete ferry wharf at Gizo to allow ship tenders to safely berth alongside • The red and white navigational beacon's and green starboard hand buoy as marked on official chart BA 1735 to be replaced to International Association of Lighthouse Authorities (IALA) standards at Gizo. This will assist ship tenders (lifesaving appliances) in making safe entrance/egress from the port area • Encouraging and supporting the Solomon Islands Maritime Safety Administration (SIMSA) to ensure the maintenance of navigational aids and an effective marine safety information (MSI) system as required by the International Maritime Organization Safety of Life at Sea (IMO SOLAS) convention • Open Tavanipupu as destination for large vessels. This will require: <ul style="list-style-type: none"> • Preliminary weather monitoring • Hydrological survey of reef entrance to Tavanipupu • Destination impact study • Landing facilities (i.e. jetty) • Beach shelters/huts 	1.5-2.6	4.5-12.7	3-10.1	1.7-8.6

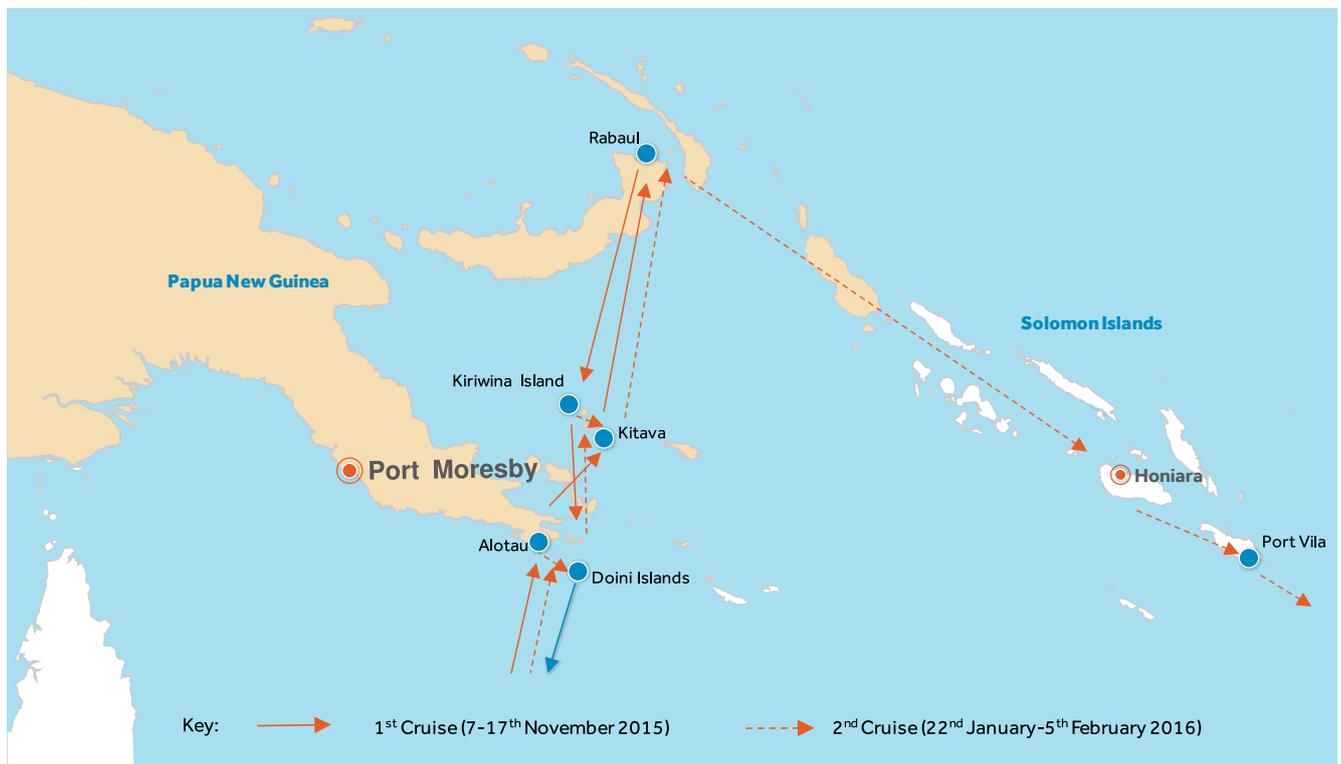
Option	Details	Present Value (AUD million)		Net Present Value	Benefit-cost ratio
		Costs	Benefits		
Improve information provided to passengers	<ul style="list-style-type: none"> • Provide quarantine videos and leaflets to passengers • Update destination information provided by cruise operators to passengers • Develop and provide maps of the port, city centre and areas of interest • Inform passengers of the opportunity to make donations 	0.1	0.7	0.6	6.7
Upgrade Honiara's port amenities	<ul style="list-style-type: none"> • Construct and maintain a sanitation block • Provide covered areas (including seating for passengers) considered important to provide shade and cover in times of inclement weather • Improve signage to enable cruise passengers to navigate from the port area to leading attractions and points of interest • Provide litter bins and port beautification actions to make the area more attractive for cruise passengers 	0.3	0.5	0.2	1.8
Upgrade Honiara's port infrastructure	<ul style="list-style-type: none"> • Construct a wharf capable of handling future cruise ships of up to 264m in length and current ships of 220m in length (already in construction) • Provide water supplies to WHO standards of 50 tonnes per hour 	48.5	49.3	0.7	1.02

1 Introduction

1.1 Approach and methodology

This study followed a data driven approach, including primary data collection from cruise operators, passengers, crew, and tourism related businesses in PNG and SI. This data was collected through surveys, focus groups and interviews on-board two separate cruises in November 2015 and January 2016. The ports of call on each cruise are summarised in Figure 1.1 below.

Figure 1.1 Data collection cruise itineraries and ports of call (November 2015 and January 2016)



The approach and methodology used for the economic impact assessment of the cruise tourism industry on the economies of PNG and SI is in line with the global cruise industry studies conducted by Business Research and Economic Advisors (BREA)¹⁶, as well as the previous Vanuatu 2014 study in assessing the following.

- **Direct economic impact** is the revenue the government and businesses receive from cruise ship tourism from the expenditure of cruise passengers, cruise crew members and cruise operators on goods, services, taxes and port fees in each country. Data was collected through passengers and crew surveys on board, as well as data provided by cruise operators (i.e. Carnival Australia)
- **Indirect impact** is the revenue received by suppliers of goods and services to businesses affected by direct impact. It is the second round impact of cruise tourism. The data was collected through face-to-face interviews with businesses in the six visited ports by asking questions about their cost structure and main suppliers

¹⁶ Business Research & Economic Advisors (BREA) conducted several Economic Contribution of Cruise Tourism to the Destination Economies studies, the latest was published in October 2015. The scope of the study concerns the Caribbean, Mexico and Central and South America.

- **Total economic impact** is the aggregation of direct and indirect economic impacts, and represents the total economic activity generated by cruise tourism in each country. In this study the final total economic impact is broken down by sector and by final beneficiary (i.e. government, private beneficiary or leakage). This study does not measure induced impacts which measures the additional impact from private beneficiaries through household expenditure by employees (direct and indirectly) employed by the tourism industry
- **Added value** is the contribution of total economic impact from cruise tourism to GDP. It is calculated as a sum of wages and profits generated by total impact
- **Employment Impact** is the total economic impact on employment in the country. It is calculated based on the ratio of reported employment (full-time and part-time employment) to revenue by sector. This ratio is then multiplied by revenue from cruise tourism in each sector to estimate the final employment impact. The data was collected through face-to-face interviews with businesses in each port by asking questions about their total revenues and the number of people they employ. For example, if the businesses noted they employ two workers and had AUD 20,000 of revenue in 2015, then AUD10,000 of total economic impact from cruise tourism generates one additional job in this sector. Due to the limited understanding of some business representatives interviewed, they could not provide full-time equivalent figures but rather reported the number of people that worked in the business on the day of the cruise. As a result we refer to employment impact as employment opportunities

Economic impact of cruise tourism expenditure

This study presents two estimates of cruise tourism expenditure:

- **The economic impact on the five researched ports** (Alotau, Rabaul, Kiriwina, Kitava and Doi Inidani Island) in PNG and one port in SI (Honiara). These estimates are based solely on the data obtained from the two cruises, scaling up by the number of times cruise ships of this size are scheduled to call in these ports in 2016
- **The economic impact on the whole country of PNG and SI** accounts for the fact that mainly smaller cruise ships call at ports other than the researched ports in PNG and SI. To do this, assumptions were revised to reflect the lower port fee paid by smaller ships, the lower number of passengers per ship arriving in each port and the frequency of calls to these other ports. Extrapolation on this basis provides a first estimate of the total economic impact of cruise tourism on each economy

Unless otherwise stated, the impacts reported are based on the economic impact on the researched ports. Insufficient data was available to estimate the country-wide impacts disaggregated by sector and port.

A total of 2,254 passenger responses were collected. The average passenger response rate was eight per cent per port (344 passengers per port), but passengers reported on average for 2.03 persons, in line with other studies. Compared to the Vanuatu 2014 study, sample sizes are smaller but this was expected due to the limited number of cruise ships surveyed (only two ships were surveyed) and the higher number of ports surveyed on each cruise ship (six ports). However, the achieved sample sizes are large enough to provide statistically robust results.

The survey was complemented with four focus groups and several in-depth interviews with passengers on-board to build an in-depth understanding of their spending behaviour and drivers.

In addition, 36 face-to-face interviews were conducted with businesses operating in the study ports. The aim of the interviews was to collect data on the basic cost structure, levels of employment and main suppliers of each business to compute the supply chain. Twenty-nine businesses were interviewed in PNG and seven businesses in Honiara, SI. Due to small sample size, data was analysed in aggregate and triangulated with secondary literature and in-country expert opinion before reaching robust conclusions.

Draft results of the economic impact assessment and underlying assumptions were presented and discussed at the in-country workshops in PNG and SI in March 2016.

The study is based on in-depth qualitative and quantitative research conducted at five ports in PNG and one port in SI



Alotau – with a population of approximately 12,000, Alotau is one of the larger urban ports in PNG and the capital of Milne Bay Province. Here, cruise passengers can pre-book the largest variety of tours combining war, history and culture tours. There is a good range of places available to purchase food and drinks.



Doini is a privately-owned island and resort with less than 100 inhabitants and a pleasant beach. Business activities include a restaurant serving food and drinks, and activities such as fishing, boat trips, kayaking, dancing and singing performances. There were no pre-booked or local tours available.



Kiriwina with a population of 37,000, this is one of the largest and most populated islands of the Trobriand Islands where natives live a self-sufficient lifestyle. It is renowned for wood carvings and snorkelling. Many handicraft vendors line up by the footpaths at the beach to sell their goods to cruise tourists. No pre-booked tours were available on board cruise ships but local guides can be hired for a walk to the village in exchange for a donation.



Kitava is a small tropical island with some 2,000 – 3,000 inhabitants. It is part of the Trobriand islands where the natives live a self-sufficient lifestyle. Cruise passengers can purchase a diverse range of goods including wood carvings, craft, shells, jewellery and coconuts. No tours were available to pre-purchase on the cruise ships. However, there are local tour guides offering Skull Cave visits and boat tours.



Rabaul is an urban port in East New Britain province with a population of approximately 8,000. It is popular for its volcanoes, scuba diving, snorkelling sites, World War II history and cultural life. A variety of businesses serve cruise passengers including local tour operators, souvenir and handicraft vendors, supermarkets and local markets. Tours were available either to pre-book on cruise ships or to purchase directly from local operators.



Honiara is the capital city of the Solomon Islands and has approximately 65,000 inhabitants. When large cruise ships arrive local businesses set up a craft and souvenir market at the wharf, offering a variety of handicrafts. Tours were not available to pre-book on cruise ships, but local operators were accessible at the wharf.

1.2 Limitation of this study

While every effort has been made to ensure that the sample of data collected is representative of the population, and that the methods used in collection and analysis are robust, there are a number of limitations to this study:

- **Estimation of induced impacts is beyond the scope of this study.** Induced impacts, defined as the impacts of expenditure from private beneficiaries of indirect cruise ship tourism spending, (i.e. household expenditure from employees of businesses that benefit from cruise tourism) have not been considered as part of this study. To do so, would require an understanding of how private beneficiaries spend the income they received from cruise ship tourism
- **The sample is based on data collected on two large cruise ships and smaller expeditionary cruise ships were not surveyed.** Data collection was undertaken on two large cruise ships visiting PNG and SI with the most comprehensive itineraries, during the months of November 2015 and January 2016. The cruise tourist population on-board both cruises is considered representative of the larger vessels visiting PNG and SI in 2015/2016. As the popularity of cruise tourism to PNG and SI continues to expand, the demographics of tourists and their spending patterns are likely to change. Therefore, the study only provides a snapshot of expenditure and its impact in 2015/2016. Although PNG and SI are also visited by a number of smaller cruise vessels and private yachts, surveying these passengers and crew was not within the scope of this study
- **Sample data for estimating the expenditure of crew members was low.** A survey of crew expenditure was undertaken on each cruise ship but the response rate from those who disembarked at each destination was very low. Several factors contributed to this outcome: (i) crew have limited time off from their duties while on-board and are reluctant to spend that time completing a questionnaire; (ii) very few crew members were found to leave the ship at each destination, other than at larger ports; and (iii) there is a high level of survey fatigue as most crew have encountered such surveys before on other cruise trips. In response, informal interviews were held between the researchers on-board and crew members to find out about their spending patterns and motivations for expenditure, which are included in our assessment. Nevertheless the amount of quantitative information obtained remains negligible. To account for such a small sample size, care has been taken by on-board researchers to validate the results by reviewing the estimated expenditure and ensuring it mirrors their general observations and experience of crew spending patterns. Secondly, the results have been compared to crew expenditure in other studies. As crew incomes and hours worked are similar across different cruises, it is reasonable to assume expenditure is similar
- **Employment impacts from cruise line spending at ports were not estimated as part of this study.** Due to the subsistence nature of the economy in many ports of call, full-time cruise tourism employment is limited. In addition, due to the limited business understanding of those interviewed, only the number of employees present on the day of the interview were provided. In the absence of secondary data on the structure of the supply chain and/or input-output tables for each sector, it was not possible to provide full-time equivalent (FTE) job numbers or detailed indirect employment impacts. As a result we refer to employment impact as employment opportunities

1.3 Comparison with/lessons from other studies

It is natural to compare the results of this study with similar studies conducted in other PICs or similar tourist island destinations in the Caribbean. However, care should be taken in comparing countries and their economies. As alluded to above, PNG and SI differ significantly from other PICs for the following reasons:

- PNG and to a lesser degree SI are highly undeveloped tourism destinations in terms of the number of cruise and other tourists they attract, the tourism infrastructure available to them (including road transport, cultural and retail destinations) and awareness of tourism as an important source of revenue among businesses. Numbers of visitors are increasing and improvements to infrastructure are being made, but it will take time to reach the numbers seen in similar Pacific and Caribbean tourist destinations
- Cruise ship tourism in PNG includes stops at otherwise hard to reach and largely unspoilt destinations. While this is ultimately the attraction of ports like Kiriwina, Kitava, and Doini Island, commercial business is limited. Many local people are employed in subsistence farming and fishing. Cruise tourism provides a supplementary source of cash income, in which products and services are sold to visiting tourists from no fixed premises or registered business. This informal economy is difficult to capture, and has limited indirect impact on the wider economy as revenue is kept by the family producing the good or service. Cash income contributes directly to the household budget in such cases. This informal economic activity is much more pronounced in PNG and SI than in other tourist destinations and should be taken into account when interpreting the expenditure findings. Namely the supply chains when assessing indirect impacts are very short, involving only one supplier, if any at all

Taking these differences into account, levels of passenger and crew spend are broadly aligned with the results seen in Vanuatu and elsewhere in the Pacific Islands. A change to the itinerary in the second cruise also enabled the expenditure surveys to be completed for Port Vila in Vanuatu. The results obtained from Port Vila confirmed broad alignment of the results of this study. Furthermore, the assumptions used have been tested with tourism representatives in each country and with the researchers who visited each port of call.

1.4 Structure of this study

The remainder of this study follows the logical sequence of impact assessments:

- **Section 2:** provides a quantification of the direct expenditure impacts
- **Section 3:** presents the quantification of indirect economic impacts including on employment and leakage from each country's economy
- **Section 4:** quantifies to total economic impact
- **Section 5:** identifies the barriers to and opportunities for further economic development from cruise tourism
- **Section 6:** presents the result of a CBA of potential options to improve the impacts of cruise tourism in PNG and SI

Technical Annexes are also provided supplementing the main study:

- **Annex 1:** Methodology
- **Annex 2:** Quantitative analysis of passengers' spending drivers
- **Annex 3:** Cost structures and assumptions
- **Annex 4:** Assumptions for the CBA

2 Direct economic impact

PNG summary

In total, cruise companies, passengers and crew spent AUD 5.7 million in PNG during 2015 across the five researched ports (Alotau, Rabaul, Kiriwina, Kitava and Doini Island). Depending on the port, each cruise ship call brought an average of between AUD 24,000 and AUD 159,000.

If this data is extrapolated, the total direct economic impact of cruise tourism in PNG is estimated at approximately AUD 6.3 million.

The major source of the expenditure is cruise companies (which account for 54 per cent of total expenditure) mainly through a variety of fees paid to ports, government agencies or communities. The remaining expenditure comes from passengers (43 per cent) mainly through purchases of tours. Crew expenditure accounts for only three per cent.

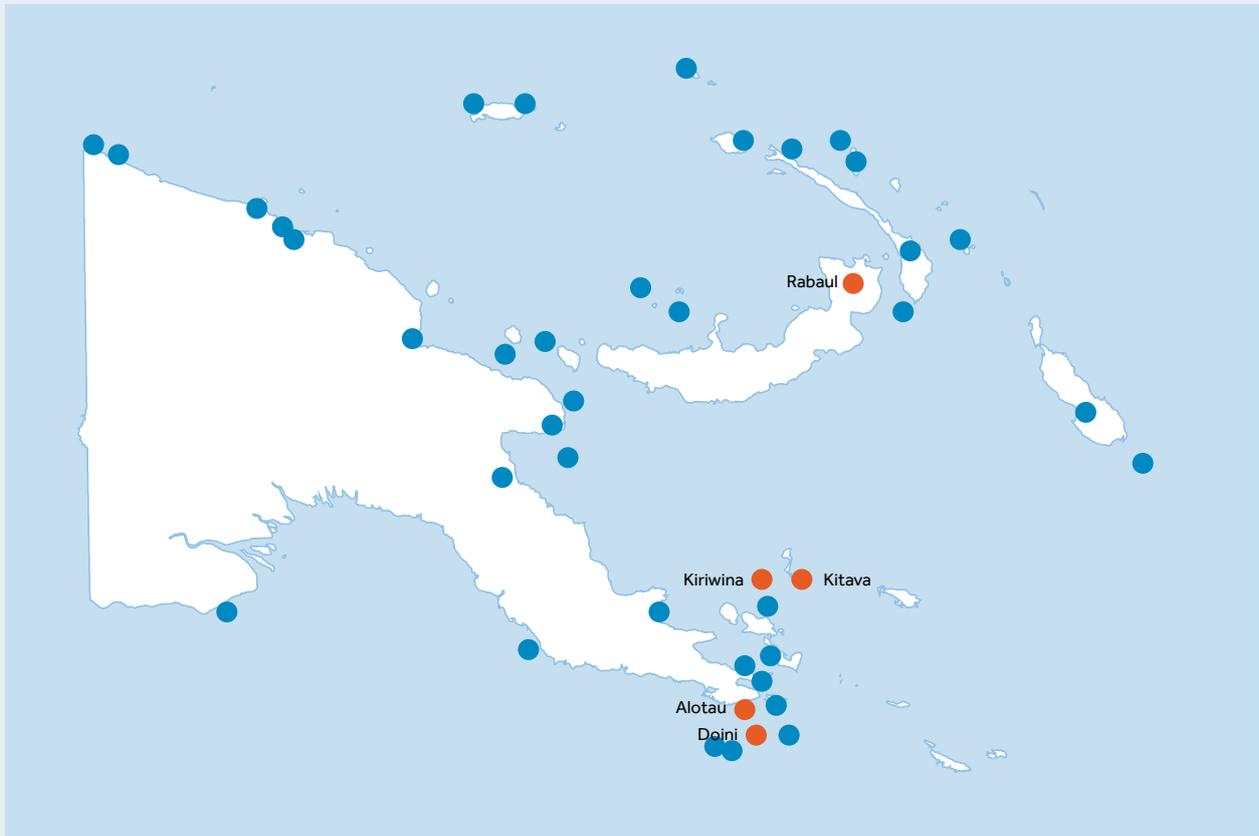
The distribution among ports differs. The majority of expenditure in PNG benefits Alotau (42 per cent) and Rabaul (41 per cent), as these are entry ports and are more developed ports. Total and breakdown of expenditure by port in PNG is provided in Table 2.1.

The impact assessment for PNG in 2015 assumed a total of 60 calls at the five researched ports. There were also an additional 76 calls at other mostly small island destinations with significantly smaller average vessel sizes (between 150 – 300 passengers). It is estimated that these additional calls bring a marginal share (11 per cent) to total cruise tourism impact in PNG. As a result, the five researched ports in this study provide a good insight.

Table 2.1 Total estimated direct spend per average port call – PNG 2015 (AUD)

PNG	Calls	Total Passenger Impact	Total Crew Impact	Total Cruise Line Impact	TOTAL Direct Impact	TOTAL AVERAGE Impact per call
Alotau	15	751,700	70,589	1,562,500	2,384,789	158,986
Doini Island	11	228,601	5,558	242,000	476,159	43,287
Kiriwina	10	171,116	5,110	120,000	296,226	29,623
Kitava	8	92,369	3,696	96,000	192,065	24,008
Rabaul	16	1,224,742	73,706	1,020,000	2,318,447	144,903
TOTAL 5 Researched Ports	60				5,667,686	94,461
TOTAL PNG (Extrapolated)	136				6,362,304	46,782

Figure 2.1 Location of cruise ship calls in PNG in 2015



Note: Blue dots mark PNG ports where cruise ships called in PNG in 2015. Red dots mark the ports of Alotau, Doini, Kiriwina, Kitava and Rabaul included in this study.

SI summary

The direct economic impact to the port of Honiara in SI in 2015 is estimated at AUD 0.6 million. On average each cruise ship call brought AUD 46,169 to Honiara.

If this data is extrapolated, the total direct economic impact of cruise tourism in SI is estimated at approximately AUD 0.9 million.

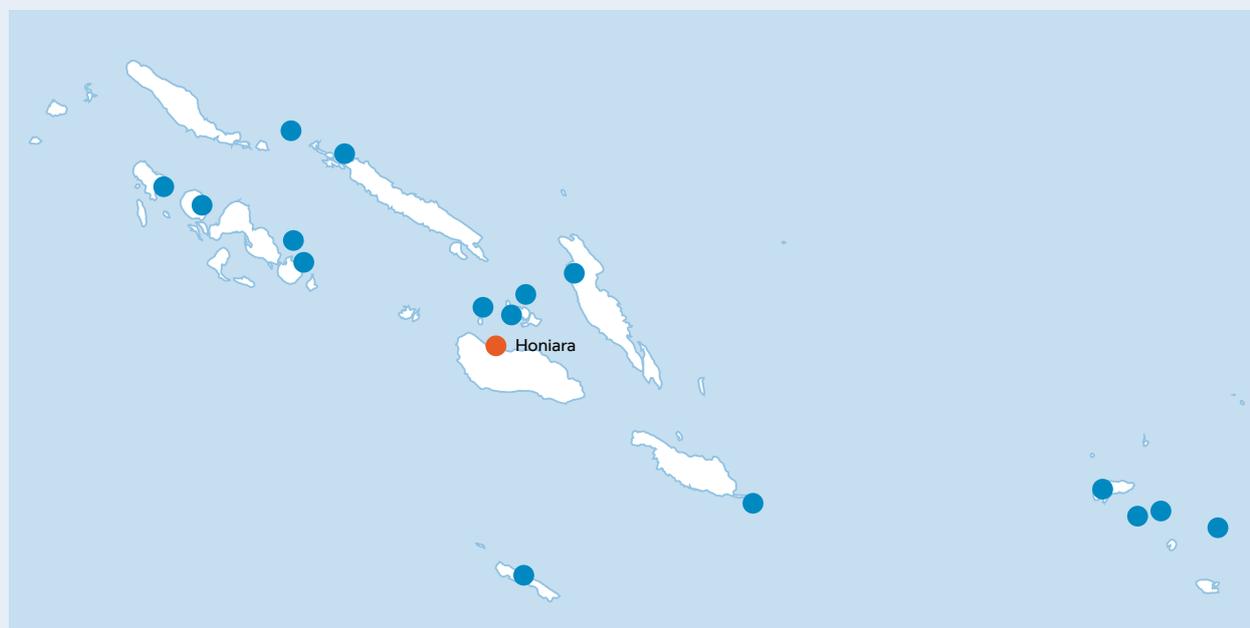
The majority of the expenditure comes from cruise companies (65 per cent of total expenditure) mainly through different fees paid to ports, government agencies or communities. The remaining expenditure comes from passengers (31 per cent) and crew (four per cent).

Table 2.2 Total estimated direct spend per port call – SI 2015 (AUD)

SI	Calls	Total Passenger Impact	Total Crew Impact	Total Cruise Line Impact	TOTAL Direct Impact	TOTAL AVERAGE Impact per call
TOTAL 1 Researched Port (Honiara)	13	182,671	24,800	392,730	600,201	46,169
TOTAL SI (extrapolation)	47				900,768	19,165

SI	Calls	Total Average Passenger Impact per call	Total Average Crew Impact per call	Total Average Cruise Line Impact per call	TOTAL AVERAGE Impact per call	TOTAL Direct Impact
TOTAL 1 Researched Port (Honiara)	13	14,052	1,908	30,210	46,169	600,201
TOTAL SI (extrapolation)	47				19,165	900,768

Figure 2.2 Location of cruise ship calls in SI in 2015



Note: Blue dots mark SI ports where cruise ships called in 2015. The red dot marks the port of Honiara, which was sampled in this study.

2.1 Cruise passenger expenditure

2.1.1 Headline expenditure

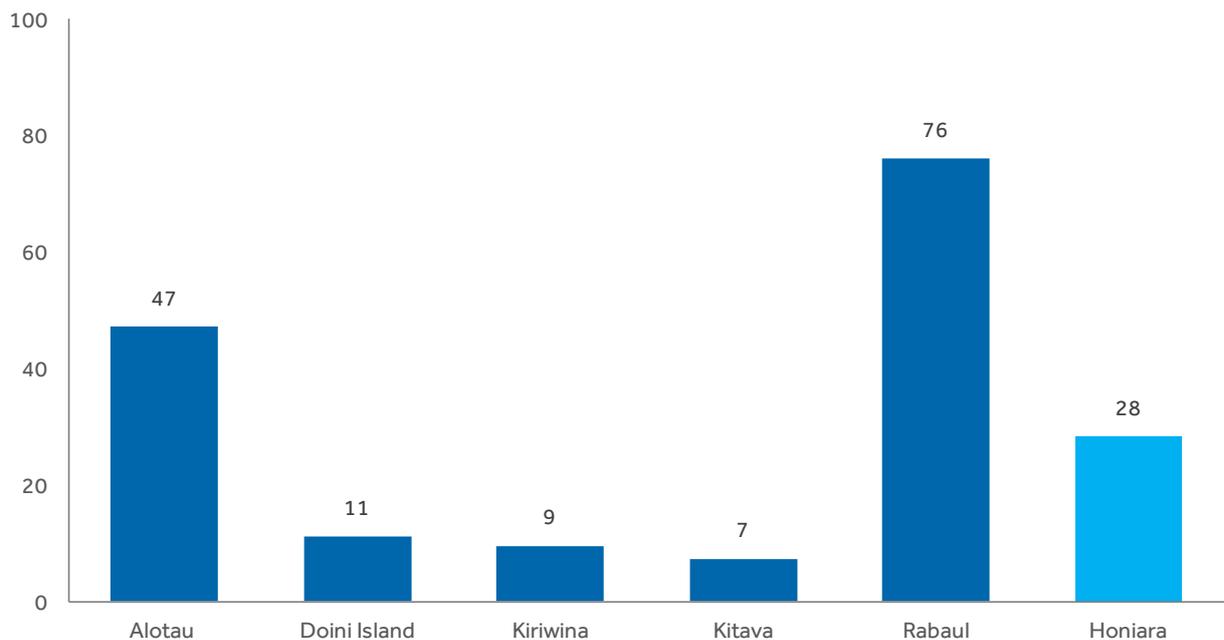
The aim of the passenger survey was to estimate the average onshore expenditure of cruise passengers at different ports of call in PNG and SI. This expenditure includes pre-booked tours, purchases of handicrafts and other products. The data obtained from the survey is used as the basis for direct impact modelling assumptions¹⁷.

Passengers' expenditures varies significantly among the surveyed ports due to differences in spending opportunities (e.g. the availability of pre-booked tours) and other factors such as the availability of ATMs, currency exchange services, shaded areas and toilets ashore.

On average, passengers spend AUD 76 per day in Rabaul, AUD 47 in Alotau and between AUD 7 and AUD 11 per day in smaller ports (i.e. Doini Island, Kiriwina or Kitava). In Honiara, passengers spend AUD 28 on average per day¹⁸.

The global average passenger spend is much higher, estimated in the region of AUD 179¹⁹. The Vanuatu 2014 Study estimated passengers spend AUD 96 in Port Vila, AUD 45 in Luganville, and AUD 11 in the Mystery Islands²⁰.

Figure 2.3 Average passenger expenditure by port (AUD)



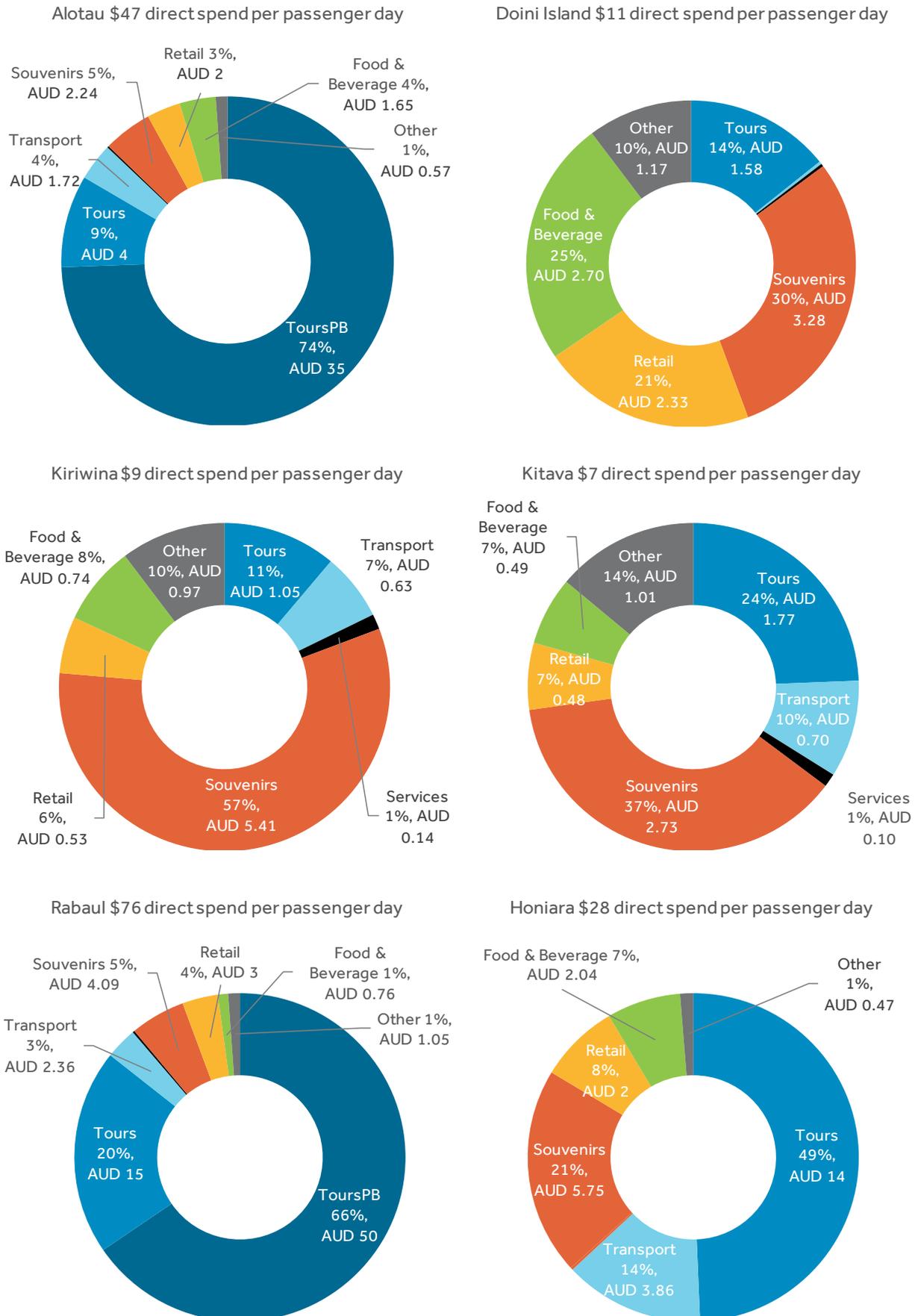
¹⁷ A large share of passengers pre-book tours if those are available (Alotau, Rabaul). Due to leakage through profits taken by intermediaries (cruise operators) it was assumed that 70 per cent of this spending effects the local economy.

¹⁸ It should be noted that the data for Honiara was gathered on a Sunday when some businesses were closed.

¹⁹ USD 128 based on BREA 2014 - 2015

²⁰ Assessment of the Economic Impact of Cruise Ships to Vanuatu, International Finance Corporation, August 2014

Figure 2.4 Breakdown of average passenger spend by port and sector (AUD)



Key findings



Qualitative research found passengers are often not expecting many services and don't particularly want them. Passengers are mostly interested in, and surprised by, the beautiful unspoilt locations, the friendliness of the locals and rich local cultural history.



There was a consensus among passengers interviewed that not much money is needed to have a great time at these locations. The main expectation from passengers is to be able to relax and enjoy these pristine places.



Quantitative analysis confirms that on average passengers spent little (AUD7 to AUD11) at small island destinations (Doini Island, Kitava, and Kiriwina).



Passengers' expenditure during the entire trip (in PNG) is lower or equal to what they expected to spend. Passengers expected to spend between AUD 150 and AUD 200 in total at the five visited ports (P&O amount suggested at money exchange points). Based on the quantitative analysis, average expenditure was AUD 150 per passenger across the five ports in PNG.



Passengers would like to contribute more to the local communities. Quantitative data shows that most passengers would spend more on entertainment, tours, clothing, watches/jewellery and handicrafts if more were available, or donations (both monetary and material).

Average passengers spent a significant amount (AUD 35 to AUD 50 on average) on pre-book tours to book on-board cruise ships



- Pre-book tours were not available on-board cruise ships to Honiara, Doini Island, Kitava and Kiriwina. Pre-booked of tours will be available on Carnival Australia cruises to Honiara from May 2016 onwards
- Discussions in focus groups highlighted that some passengers preferred to pre-book tours through cruise operators. Others would like to book directly with local tour operators based on the perception that those tours are cheaper with more money going straight to the community

The proportion of passengers going ashore is high. Survey results indicated that between 93 per cent (Kitava) and 97 per cent (Doini Islands) of passengers went ashore at the surveyed ports. This is consistent with the Vanuatu 2014 Study and the global average of 94 per cent²¹.

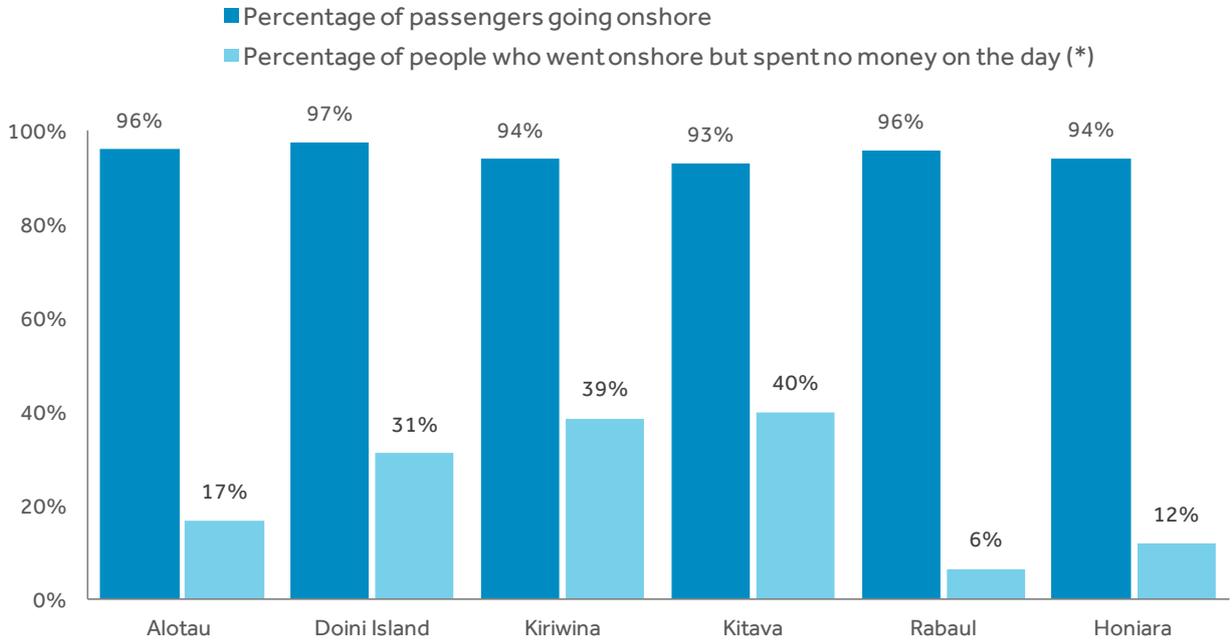
Once ashore, passengers spend between 3.4 and 4.3 hours (depending on the port) discovering destinations before returning to the cruise ship. Globally, the average number of hours ashore is 4.4 hours²².

Among the different ports, Kiriwina Island and Kitava attracted the lowest number of passengers. A large proportion (between 39 and 40 per cent) of passengers did not spend while ashore at these destinations. In contrast, Rabaul attracted a high amount of passengers ashore (96 per cent), and only six per cent of them chose not spend, with the average passenger returning to the cruise ship after 4.3 hours. A breakdown of passengers going ashore by port and their spending pattern is provided in Figure 2.5.

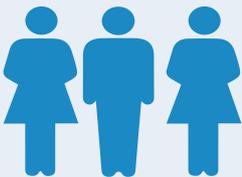
21 BRE 2014-2015

22 Ibid.

Figure 2.5 Proportion of passengers going ashore and not spending by port (AUD)



The proportion of passengers going ashore is high, but some passengers still prefer staying on board.



"[Honiara] Didn't go ashore because I don't like tenders and the journey looked quite long today"
Passenger

"Didn't go ashore, felt that there was no difference between Kitava and previous two ports [Kiriwina and Doini Island]" Passenger

Figure 2.6 below provides details on the observed average time spent ashore by port.

Figure 2.6 Detail of average passenger time spent ashore by port



The average time passengers spent ashore is lower than the global average. Qualitative research found this is partly due to: **heat, lack of basic facilities** and a **lack of food** that is perceived to be safe to consume. **Time spent on tours** also influences the time spent ashore. A prominent pattern observed by researchers was that after a few hours of a full-day stop spent ashore, many passengers return to the cruise ship for lunch and are unlikely to return, choosing to stay aboard the ship during the remainder of the day. On average passengers spent:

- **3.4 hours at Kiriwina:** Passengers returned to boat fast. Some felt overwhelmed by too many vendors, there was not enough shade, no places to sit and the beach was not pleasant. Passengers also mentioned locals "begging"
- **3.6 hours at Kitava:** Passengers preferred Kitava over Kiriwina and stayed ashore longer. It had nice seating areas and shade. Vendors and locals were less "pushy"
- **3.7 hours in Alotau:** Extreme heat and humidity prevented passengers from spending more hours ashore. Some passengers perceived Alotau as quite raw and dirty. Some rest areas were available for passengers but there was no clear signage so most passengers did not use this. Many passengers went on tours that lasted two hours
- **3.7 hours in Honiara:** The port was visited on a Sunday and many businesses were closed. There was a lack of facilities (toilets)
- **3.8 hours at Doini Island:** Resort bungalows were available for cruise passengers to use. There were appropriate facilities, shade, a restaurant with food and drinks available for passengers
- **4.3 hours in Rabaul:** Longer stay on-shore because most passengers went on volcano and WWII history tours that last between three-and-a-half to four hours

"[Kiriwina] Very picturesque but not really tourist friendly"

"There are not really many amenities in [Alotau] for people on cruises to go and get a cool drink where they can feel comfortable. If that was available I would have spent longer... We saw International Hotel but it wasn't inviting, with security fencing, didn't feel you were welcome"

"I would have liked to get out of town [Honiara] today but found it very limited in terms of transportation. I got off at 9:30 and all the tours were sold out, would have liked to take an extended tour for 6.5 hours"

2.1.2 Drivers of expenditure

This section identifies potential drivers of passengers’ on shore expenditure (average spend). The following potential drivers were explored through quantitative analysis (passenger surveys) by calculating correlation coefficients: household income, passengers’ satisfaction levels, availability of options and whether or not passengers pre-purchased tours.

The factors outlined below indicate a strong correlation to mean spend, but this does not establish certainty that the factors identified cause more spending. The analysis was conducted separately for PNG and SI where possible. Due to the small sample size, availability of options and pre-purchased tours were explored in aggregate.

Three key drivers of passengers spend²³



Time passengers spend on shore: Survey results across different countries consistently indicate that passengers who spend more time ashore also spend more on local products and services.

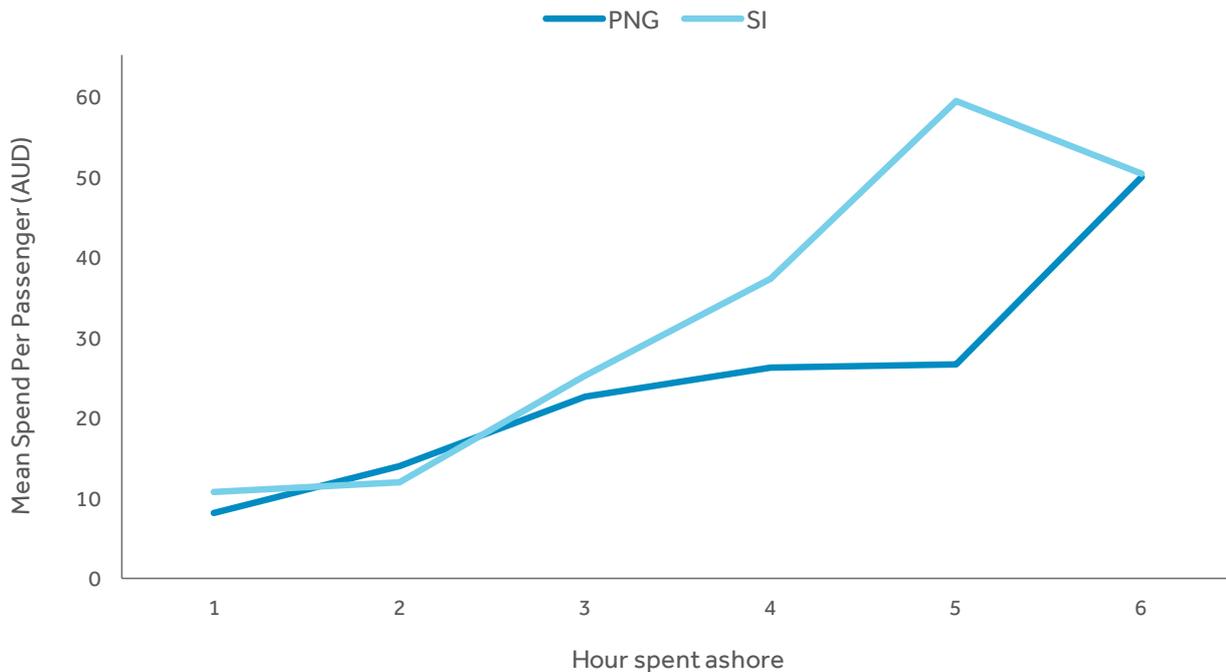


Passengers’ satisfaction with the variety of things to see and do: Passengers spend more if they think there are a greater variety of things to see and do. Independent of the country, the majority of passengers that spent in PNG and SI would spend more on clothing, watches, jewellery, handicrafts and souvenirs if more options were available.



Availability of pre-booked tours: Passengers who pre-booked tours spent significantly more (on average AUD 79) than those who did not pre-book tours (on average AUD 21). When available, many passengers purchased pre-booked tours (47 per cent of passengers in Alotau and 48 per cent of passengers in Rabaul).

Figure 2.7 Mean spend by time spent ashore (hours)



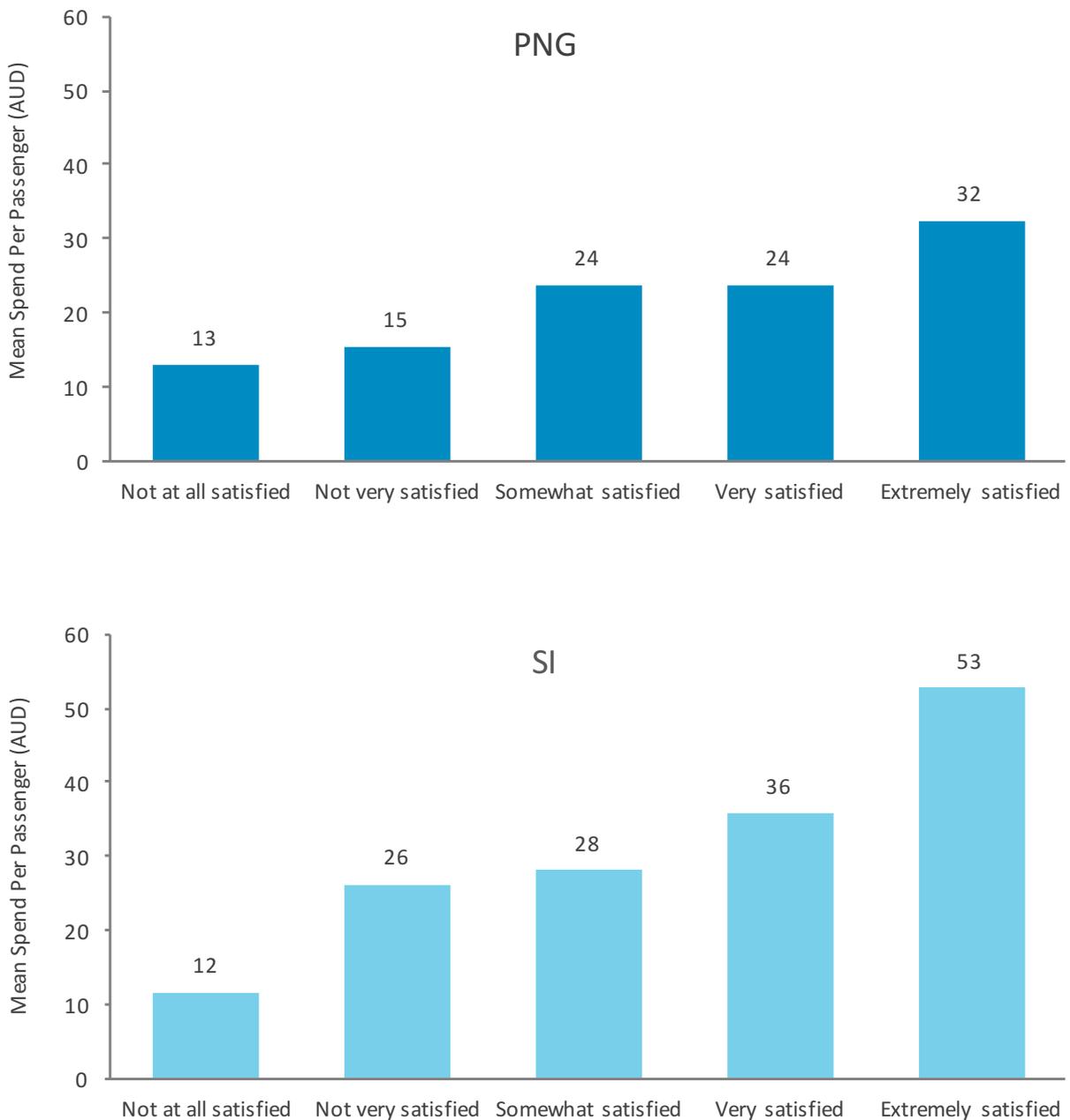
Number of respondents: 2061

23 Comparative table of correlations is included in Annex 2.

There was a positive correlation between mean spend and time ashore of up to six hours for PNG and five hours for SI. The downward trend in expenditure after five hours in SI illustrates the need for more things to do. We know from qualitative findings that many passengers were prepared to spend more, hence the positive correlation.

In terms of satisfaction, there is a strong positive correlation between “variety of things to see and do” and total spend in both PNG and SI. On average, passengers who were not at all satisfied with the variety of things to see and do spent only AUD 13 and those who were extremely satisfied spent AUD 34.

Figure 2.8 Mean spend per passenger by satisfaction with variety of things to see and do



Number of respondents: 2061



More than half of passengers were ‘very’ or ‘extremely satisfied’ with the current variety of things to see and do at most ports – especially at Doini Island, Kitava and Rabaul (see Figure 2.9).

- **Doini Island** rates the highest. It offers fishing, boat trips, self-guided walks around the Island and kayaking. There are many different groups performing cultural dances and songs, but less availability of crafts. Some passengers pointed out it felt more commercial, less authentic and more in line with other Pacific Islands
- **Kitava** is liked for being authentic, untouched and un-touristy. Passengers can purchase handicrafts, join tours with local tour guides to the lookout at the top of the hill, King Cameron’s Grave and Skull Caves, take a raft-boat to a deserted island and purchase food and drinks (coconut) from stalls
- In **Rabaul** many passengers go on tours (volcanoes and WWII history), the selection of handicrafts is good and includes local products as well as commercial “made in China” products

Figure 2.9 Share of passengers who were ‘very’ or ‘extremely satisfied’ with the current variety of things to see and do by port in PNG



Number of respondents: 1811

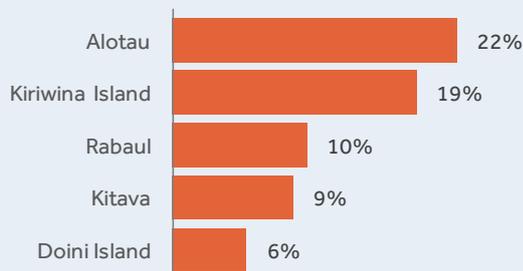
- In **Honiara**, 55% of the passengers very ‘very’ or ‘extremely’ satisfied with the variety of things to see and do.



Around one-fifth of passengers were 'not very' or 'not at all' satisfied with the variety of things to see and do in Alotau, Honiara and Kiriwina Island (see Figure 2.10).

- The main town of **Alotau** is about 30 minutes walk from the port and (especially those on tours) rarely make it into the town centre. Tourist offers close to the port are limited, there is no information desk or local tour operators at the port and signage is poor. Alotau has a good range of places available for food and drinks, however souvenirs and woodcarvings are less obvious to buy. Tourists can purchase a variety of tours such as Ahoima traditional cultural experiences (e.g. meet my family, Alotau history tour, the Battle of Milne Bay tour and traditional cooking classes)
- **Kiriwina Island** has the highest number of local people servicing cruise tourists. It is renowned for the wood carvings and spectacular snorkelling. But passengers commented there is not enough variety of handicrafts and some passengers were concerned that crafts are imported. There were local tour guides available for village tours, but passengers were not aware of this offer. Passengers also expressed concerns for animals with locals encouraging passengers to pay for photos with parrots and turtles

Figure 2.10 Share of passengers who were 'not very' or 'not at all' satisfied with the current variety of things to see and do by port in PNG



Number of respondents: 1811

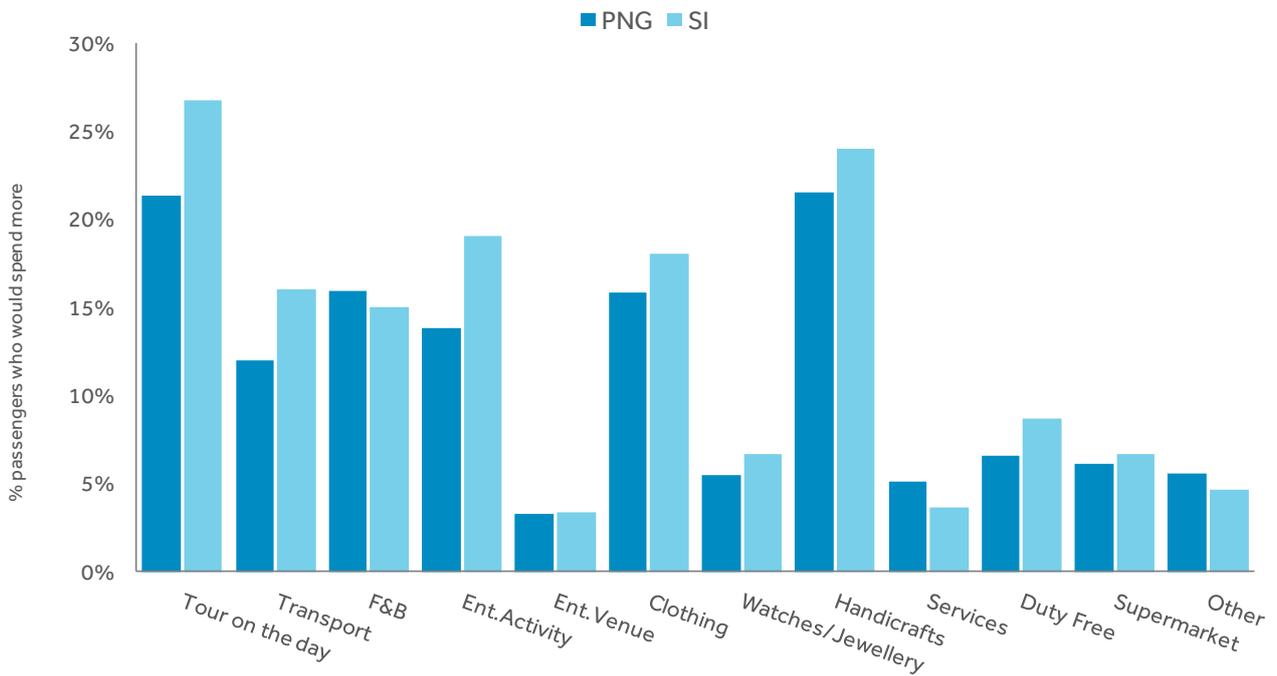
- **In Honiara**, 19% of the passengers were 'not very' or 'not at all' satisfied with the variety of things to see and do.

Cruise passengers were asked whether they would spend more if more options were available. More than 50 per cent of passengers who spent would have spent more on entertainment activities, clothing, watches/jewellery and handicrafts, if more were available.

Passengers who did not spend would most likely spend more on tours on the day (40 per cent), followed by handicrafts (30 per cent) and clothing (28 per cent), suggesting a gap in the market for these areas in particular.

Responses were similar at ports of PNG and SI ports, but passengers in SI are more likely to spend more on most items (if more options were available).

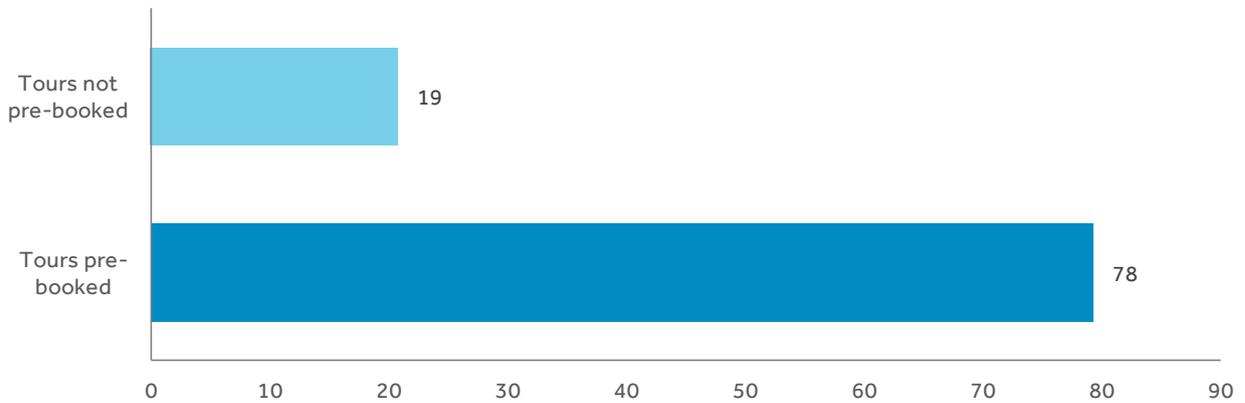
Figure 2.11 Percentage of passengers who would have spent more by country



Number of respondents: 2061

Passengers who pre-booked tours spent significantly more than those that did not pre-book tours.

Figure 2.12 Spend for passengers who booked/did not book tours in PNG (AUD)



Number of respondents: 1497

Passengers who pre-booked tours spent less on transportation, more in retail and handicrafts, but much the same on food and beverage.

Collected passengers data does not allow for detailed analysis of spending patterns based on passengers' demographics. Consistent with studies by BREa and the Vanuatu 2014 study, one survey per cabin was collected and one passenger was asked to report spending on behalf of all cabin/family members. Based on such data individual expenditure by gender or age cannot be identified.

Ninety-one per cent of passengers responding to the survey hold permanent residence in Australia. The sample sizes of passengers from other countries (e.g. UK, US and Canada) are too small for statistical spending comparison based on country of origin (because calculated differences are not statistically significant).

2.2 Cruise crew expenditure

The number of collected survey responses from crew was insufficient to conduct quantitative expenditure analysis. To estimate the total direct economic impact of cruise crew expenditure, several assumptions were made for based on the Vanuatu 2014 study and qualitative insights gathered during research on two cruise ships visiting PNG and SI in November 2015 and January 2016.

For the purpose of analysis, ports are classified into two sizes:

- 1. Small ports** include Doini Island, Kiriwina and Kitava. It is assumed that the size and type of expenditure compares to that of Mystery Island in Vanuatu
- 2. Medium Ports** include Alotau, Rabaul and Honiara. It is assumed that the size and type of expenditure compares to Luganville in Vanuatu. Crews did not spend on duty free and entertainment activities in PNG and SI, as there are no such businesses operating (or they do not attract crew members) in these localities

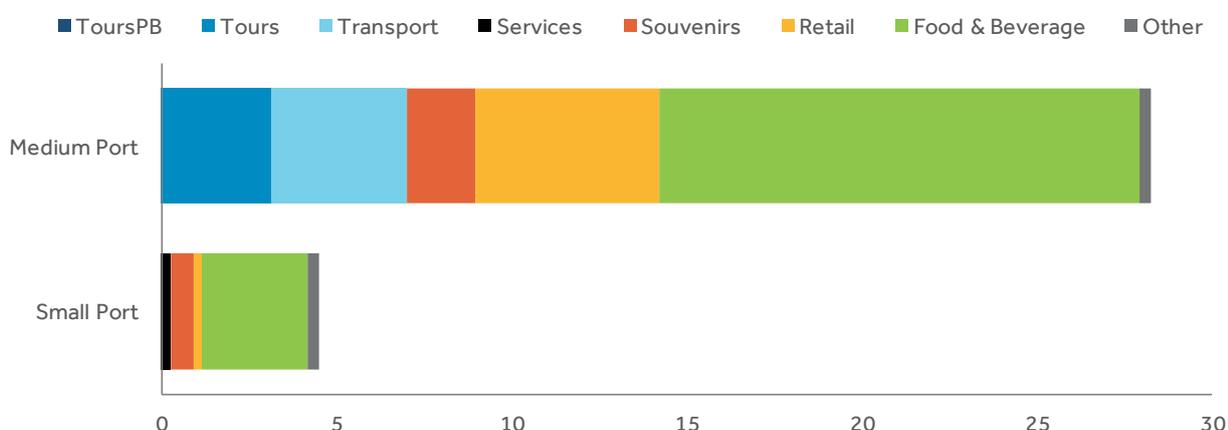
Assumed share of crew going ashore is 13 per cent for small ports and 26 per cent for medium ports. In comparison, the global average is 39 per cent²⁴ (Table 2.3).

The analysis assumes that on average crew members spend AUD 5 per day at small ports and AUD 28 per day at medium ports in PNG and SI from the Vanuatu study. As the wages of crew do not differ significantly between Vanuatu and PNG/SI cruises, we consider this a sensible assumption given the absence of primary data on which to base the analysis. The main expenditure is in food and beverage, retail (i.e. supermarkets) and transports. In comparison, global average crew expenditure at port per day is AUD 93²⁵.



Currently PNG and SI lack pull factors for crew members to go and spend ashore. Based on global studies²⁶, crew members go ashore to access cheap communication services (because internet and phone, on-board connection is expensive), food and beverage at restaurant and bars, entertainment/night clubs and transportation to these facilities. They also tend to spend on clothes and electronics. All of these facilities and products are scarce or not available in PNG and SI.

Figure 2.13 Crew expenditure breakdown by type of expenditure and port size (AUD)²⁷



24 BREA 2014-2015

25 USD 67 Ibid.

26 Ibid.

27 Based on Vanuatu 2014 data

Table 2.3 Detailed breakdown of passenger expenditure for Alotau, Rabaul and Honiara

ITEM	ALOTAU			RABAUL			HONIARA		
	Average spend per passenger who spent on that item (AUD)	Share of all onshore visits	Weighted average spend per passenger (AUD)	Average spend per passenger who spent on that item (AUD)	Share of all onshore visits	Weighted average spend per passenger (AUD)	Average spend per passenger who spent on that item (AUD)	Share of all onshore visits	Weighted average spend per passenger (AUD)
Tours PB	71	49%	35	98	51%	50	35	18%	6
Tours	19	22%	4	43	36%	15	18	42%	8
Transport	7	23%	1.72	19	13%	2.36	14	27%	3.86
Services	9	1%	0.07	13	1%	0.15	5	1%	0.07
Souvenirs	11	21%	2.24	11	37%	4.09	14	42%	5.75
Retail	7	22%	2	9	29%	3	9	24%	2
Food & Beverage	7	25%	1.65	6	14%	0.76	8	24%	2.04
Other	6	9%	0.5	7	12%	0.9	5	7%	0.4
TOTAL			47.18			76.26			28.12

2.3 Direct expenditure by cruise companies

The majority of cruise company expenditure relates to fees that directly flow to the government of each country.

Data for this assessment is based on estimates by Carnival Australia, shipping and logistics companies working in PNG and SI, as well as additional stakeholders.

Total direct expenditure by cruise companies in PNG in 2015 is estimated at AUD 1.6 million in Alotau and AUD 1.0 million in Rabaul. Expenditure at smaller island destinations is estimated between AUD 0.1 million in Kitava and AUD 0.2 million in Doini Island. Total direct expenditure of cruise companies in Honiara in 2015 is estimated at AUD 0.4 million.

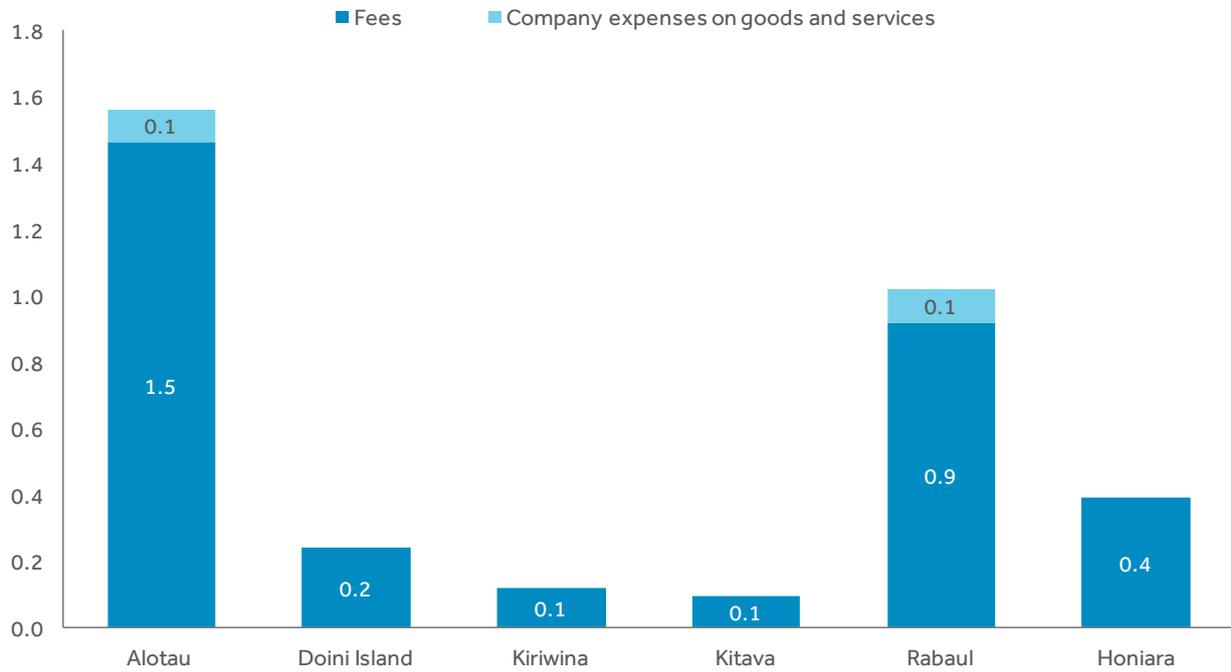
Fees paid by cruise companies at larger ports include a range of charges by government departments, port authorities, and shipping and logistics companies including customs and immigration fees, quarantine fees, port fees etc. It was assumed that customs and immigration fees and other national fees such as those charged by the National Maritime Safety Authority (NMSA) in PNG are charged at the first port of entry (i.e. Alotau and Honiara). Fees at smaller island destinations are negotiated and flow directly to the community.

Based on a comparative example of fees paid by one large cruise ship at different ports, port fees, agency fees and quarantine fees are comparable between the three larger ports (Alotau, Rabaul and Honiara). However, fees paid for customs, immigration and the NMSA are much higher in PNG compared to SI. Together these fees account for 58 per cent of total fees paid in PNG (Alotau and Rabaul ports), compared to nine per cent at the SI port of Honiara (see Figure 2.15).

Other direct expenditure by the cruise company relates to expenses on goods and services. This includes corporate expenditure for operations (e.g. travel, accommodation and professional advisory fees). These company expenditures were allocated evenly between Alotau and Rabaul based on the number of calls in 2015.

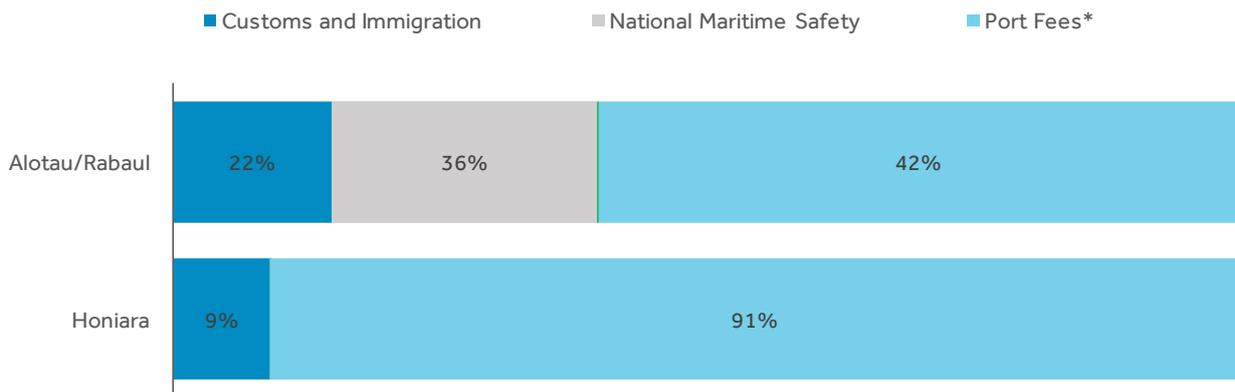
Procurement of other goods is mostly centrally managed from home ports, and there are currently no locally-sourced products in PNG or SI for larger vessels. A port agent in Honiara noted that smaller vessels sometimes purchase provisions from the port (e.g. eggs) and smaller vessels also pay for garbage disposal. It has not been possible to quantify this extra expenditure in this study.

Figure 2.14 Estimated total cruise company expenditures in 2015 by port (AUD million)



Source: Carnival Australia and PNG and SI cruise agents, internal data

Figure 2.15 Comparative breakdown of fees paid by a large cruise ship (2,000 pax) at larger ports in PNG and SI



Note: *Port fees include anchorage, pilotage, International Ship and Port Facility Security (ISPS) code, berthage, berth reservation, mooring gang service, agency fee and professional service tax.

Source: Internal data from PNG and SI cruise agents.

Port fee challenges in PNG



Lack of coordination and a need to adopt international practices: Some stakeholders noted there is a level of confusion between various authorities collecting fees from visiting ships in PNG. Reportedly, each authority has a different method of charging fees, overtime, ad diem allowances, policies related to boarding vessels in designated and undesignated ports etc. One shipping agent noted that PNG needs to conform with internationally accepted practices related to manifests, documentation and methods of charging vessels that are consistent with other destinations.



High fees: Based on data gathered, fees charged in PNG are significantly higher than those in SI. Some stakeholders and cruise ship operators noted recent high fees charges by NMSA might result in some cruise ships bypassing PNG in the future. Based on their calculations this especially applies to small (50-100 passengers) exhibition cruises that visit PNG once a year. Ports in the Pacific region and around the world are under sustained pressure to keep costs to a minimum, specifically for cruise ships if tourist destinations are to remain competitive. However, a vast body of literature recommends port fees should be set at a level that covers the expenses and investment needed to build and maintain a port as well as the local infrastructure to accommodate cruise passengers²⁸.



Legislation and customs rules: According to current legislation, the first port of entry for cruise ships in PNG must be a declared port (e.g. Alotau, Rabaul, and Port Moresby). By law cruise ships need to stop first at one of the declared ports before going to other destinations. However, other PICs (e.g. Fiji, and SI) allow cruise ships to enter the country also through undeclared ports (an example of undeclared port in PNG is Conflict Island). This opens up more possibilities for cruise operators to better tailor their itineraries.

28 See for instance Brida, JG & Zapata, S (2010) Cruise tourism: economic, socio-cultural and environmental impacts.

2.4 Direct economic impact by industry

The majority of direct economic impact benefited the public sector (i.e. government), and the tours and entertainment services industry (i.e. tour operators). Breakdown by sector is provided in Table 2.4.

Table 2.4 Direct economic impact by industry (AUD)

Economic Impact	Industry	PNG	SI
Direct Economic Impact	Tours	1,688,738	92,909
	Transport	123,197	28,350
	Souvenirs (including handicrafts and artworks)	340,223	38,982
	Food and beverage (restaurants and bars)	203,993	25,235
	Retail stores (supermarket, general store item)	176,383	18,965
	Other	294,652	3,031
	Government	2,840,500	392,730
TOTAL Direct Economic Impact		5,667,686	600,201

2.5 Total Direct Impact by Port in PNG in 2015

Figure 2.16 Direct economic impact in Rabaul

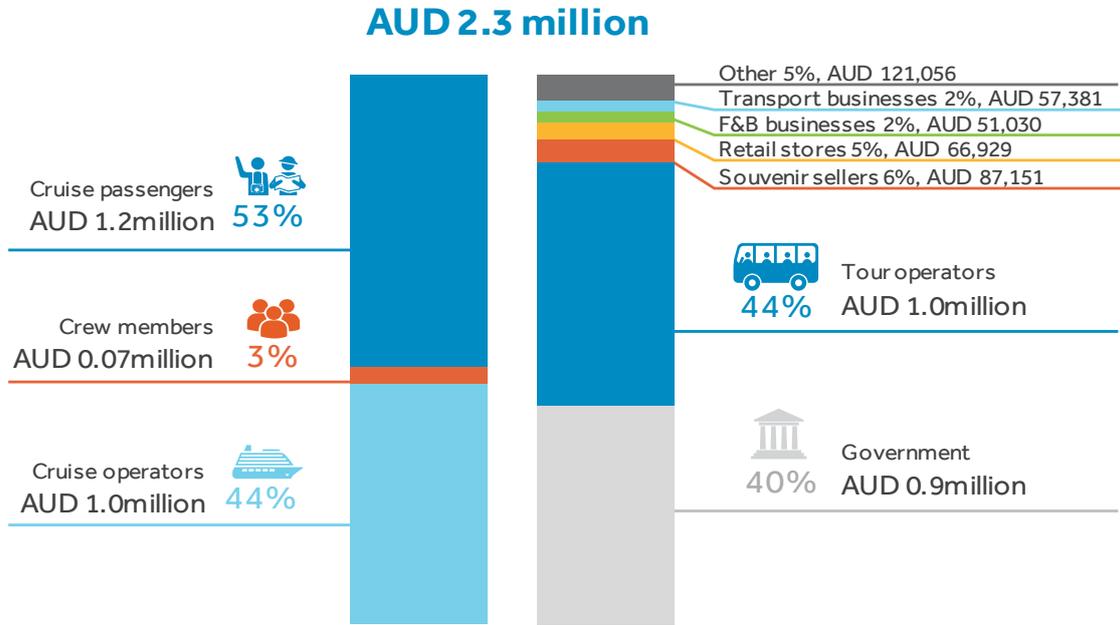


Figure 2.17 Direct economic impact in Alotau

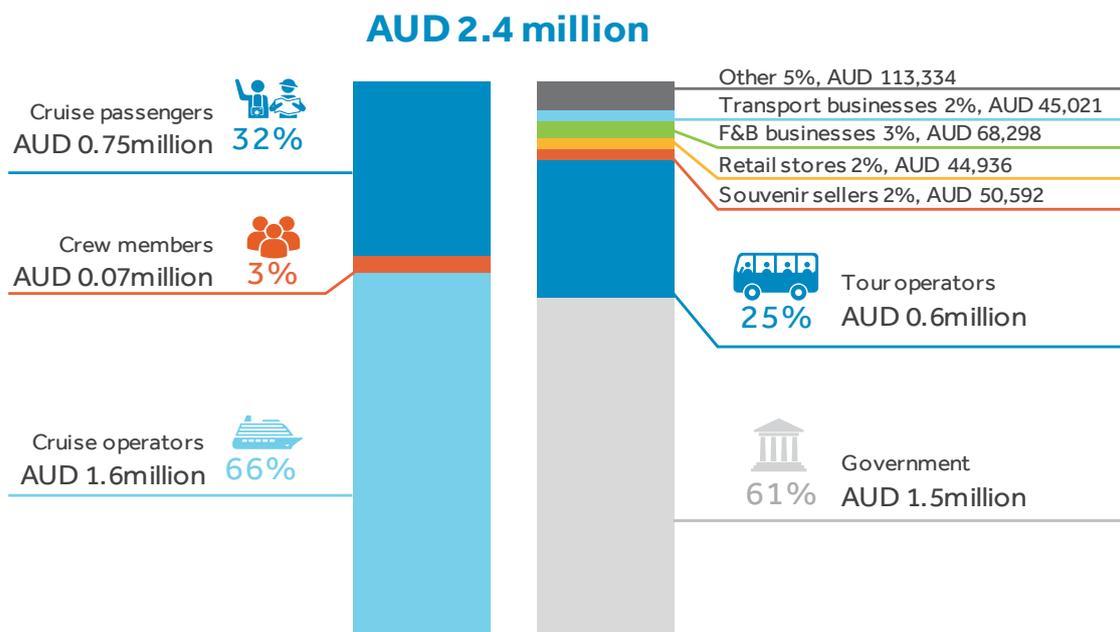


Figure 2.18 Direct economic impact in Kiriwina

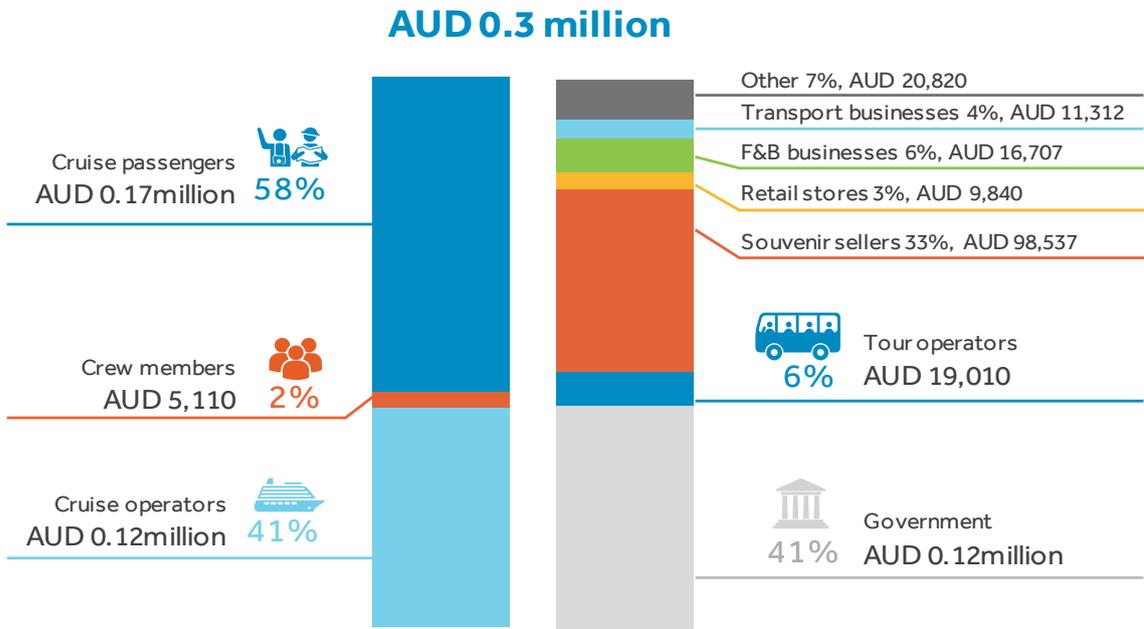
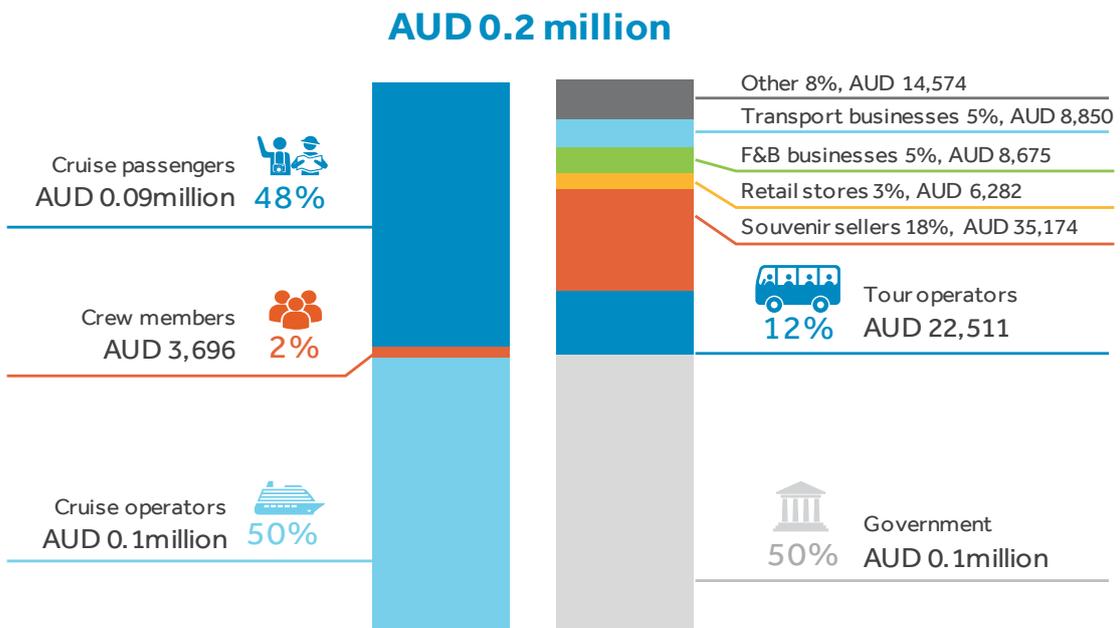


Figure 2.19 Direct economic impact in Kitava



3 Indirect Economic Impact

Indirect economic impact in PNG is estimated at AUD 0.2 million and AUD 0.04 million in SI. Small indirect economic impacts are the result of short supply chains in the local tourism economy and the structure of the overall economy (see Table 3.1).

Table 3.1 Indirect economic impact by industry (AUD)

Economic Impact	Industry	PNG	SI
Indirect Economic Impact	Transport services	120,276	35,677
	General retail (supermarket, general store item)	88,202	5,144
TOTAL Indirect Economic Impact		208,478	40,821

Indirect economic impact is the revenue received by local businesses that supply goods and services to businesses directly benefiting from cruise tourism. It is the second round impact of cruise tourism and the size of this impact indicates how money multiplies in the economy. By definition, indirect impact excludes the portion of direct economic impact that goes to the government.

Indirect economic impact was calculated by simulating the supply chain of the five main industries benefiting from cruise tourism in SI and PNG. In summary, the following was observed:

- **Tour and entertainment services:** The main local suppliers of tour operators are transport service providers (i.e. providing mini buses)
- **Transport services:** Transport services mainly rely on imported goods (imports of fuel and vehicle) and have limited indirect impacts
- **Specialist tourist retail such as handicrafts, souvenirs and artwork:** The majority of businesses in this sector operate in the informal economy. Data from this informal economy is difficult to capture and has limited indirect impacts as revenue is kept by the family producing the good or service
- **General retail such as supermarkets:** The main local suppliers of general retail industry (such as supermarkets) are larger local general retailers
- **Food & beverage services:** The main local suppliers of food and beverage services are local general retail industry (i.e. supermarkets)

4 Total Economic Impact

4.1 Summary

Total economic impact in PNG is estimated at AUD 5.9 million. Total economic impact in SI is estimated at AUD 0.64 million. The majority of this impact (97 per cent in PNG and 94 per cent in SI) comes from direct impact.

Final beneficiaries of total economic impact are government and local private beneficiaries. Part of the impact leaks from the economy through imports (i.e. insurance, fuel costs and profits to foreign owners of businesses).

Forty-three per cent (PNG) and twenty-seven per cent (SI) of the total economic impact of cruise tourism benefits local private beneficiaries. Governments receive 51 per cent (PNG) and 63 per cent (SI) of expenditure. Estimated leakage is six per cent (PNG) and 10 per cent (SI).

The observed structure of total economic impact is a result of the following features of the cruise tourism industry:

- Impact on the government is high because of a high share of collected port fees relative to other expenditure
- Impact on private beneficiaries is high since the expenditure from the cruise industry predominantly flows into tours operators and handmade souvenir businesses. These sectors are labour intensive, locally owned and almost independent from imports
- Impact on private beneficiaries is further increased because a large share of the economy in each country is considered informal (i.e. businesses do not pay tax). It is assumed that the entire expenditure at Doimi Island, Kiriwina and Kitava flows into such subsistence economies

Added value impact of cruise tourism to PNG's GDP is estimated at AUD 1.1 million or 0.01 per cent of GDP in 2015. Value add of cruise tourism to SI's GDP is estimated at AUD 0.09 million or 0.01 per cent of GDP in 2015.

Table 4.1 Total economic impact by industry (AUD)

Economic Impact	Industry	PNG	SI
Direct Economic Impact	Tours and entertainment services	1,688,738	92,909
	Transport services	123,197	28,350
	Specialist tourist retail services (handicrafts, souvenirs and artwork)	340,223	38,982
	Food and beverage industry (restaurants and bars)	203,993	25,235
	General retail (supermarket, general store item)	176,383	18,965
	Other*	294,652	3,031
	Public sector (i.e. government)	2,840,500	392,730
Indirect Economic Impact	Transport Services	120,276	35,677
	General retail (supermarket, general store item)	88,202	5,144
TOTAL Economic Impact		5,876,164	641,022

Note: Other includes services such as hair braiding and donations from passengers.

4.1.1 Differences between researched ports

The islands of Kitava and Kiriwina differ significantly from the rest of the ports surveyed due to the fact that these ports have limited services and no infrastructure. The islands function as subsistence economies and the inhabitants are farmers. Cruise companies pay the anchorage fee, which directly benefits the community. Family-owned businesses selling goods and services operate on an ad-hoc basis when cruise ships arrive. The revenue from sales to cruise passengers complements subsistence farming and has not yet developed as an alternative source of close to full-time employment.

The impact assessment assumes that revenues received from cruise ships are used entirely by local private beneficiaries (for family consumption). There is no supply chain, no taxes paid (i.e. no government revenue), and there is no leakage from the economy as all materials are locally-sourced through farming (e.g. wood, vegetables).

The ports of Alotau, Rabaul and Honiara are characterised by a larger business presence. The impact of direct expenditure in these ports was calculated by simulating the flow of the money in the economy through the value chain (including secondary effects). This section reports key findings per industry. A detail account of assumed cost structure per industry and country is provided in Annex 3.

4.1.2 Tours and entertainment services

Tours and entertainment services in Alotau, Rabaul and Honiara range from war and colonial history tours (e.g. Milne Bay Tour, Kokopo War Museum), to cultural tours, cultural performances and cooking classes. The operators were separated into two groups:

- **Registered tour operators** serve passengers who pre-booked tours through cruise companies or online. There are also registered tour operators offering services ashore at the wharfs. Those operators pay related taxes, insurance and other fees. Tours can be pre-booked through cruise companies for Alotau and Rabaul. In Honiara pre-booked tours are only available online through other operators
- **Unregistered tour operators** also serve passengers while ashore. They do not pay related taxes, insurance and other fees. For example, in Rabaul tour operators need to pay a fee of 200PGK per person per day to access the port area and need to comply with local insurance regulation to offer services at the wharf. As a result, only two local tour operators gained access to the port area but many other businesses are crowded outside the main port gates. Reportedly, some of these tour guides are officially unemployed and offer tours to earn extra income. It is assumed that 40 per cent of tours ashore is purchased from unregistered operators

Private beneficiaries receive a high share of direct expenditure because the revenue is mainly used to hire local tour guides and local transport providers.

Table 4.2 Key findings of the economic impact analysis of tours and entertainment services

	Alotau	Rabaul	Honiara
Share of direct expenditure on pre-booked tours	26%	36%	10%
Share of direct expenditure on tours ashore	5%	16%	13%
Beneficiary of expenditure (% flow from every dollar spent)	PNG		SI
Private beneficiaries	87%		88%
Government	6%		3%
Leakage	7%		9%

4.1.3 Transport Services

Transport services are limited to mini buses and taxis operating at wharfs to transport passengers into towns or on tours. These services are mainly hired by tour operators and accounted for in secondary impact.

This sector has a high leakage rates due to dependency on fuel imports with the cost of fuel accounting for a large proportion of costs to businesses (see Table 4.3).

Table 4.3 Key findings of economic impact analysis of transport services

	Alotau	Rabaul	Honiara
Share of direct expenditure on transport services	2%	3%	7%
Beneficiary of expenditure (% flow from every dollar spent)	PNG		SI
Private beneficiaries	40%		38%
Government	9%		5%
Leakage	51%		57%

4.1.4 Specialist tourist retail services (handicrafts, souvenirs and artwork)

The majority of handicrafts sold are handmade and locally produced (e.g. wood carvings, baskets and drums etc.). Vendors are often unemployed and/or have other jobs and set up ad-hoc stalls when cruise ships arrive. It was assumed that 80 per cent of business in this sector are not registered and do not pay taxes, social security and other related fees.

In Honiara, businesses set up a craft and souvenir market at the wharf offering a variety of products. Some craft stalls are supported by local industry groups (such as the Solomon Islands Women in Business Association, which provides stalls for free). Imported souvenirs (e.g. t-shirts and caps) are only available in Rabaul.

The sector has a high distributional effect since 99 per cent of the money spent on special tourist retail, benefits private beneficiaries (see Table 4.4).

Table 4.4 Key findings of the economic impact analysis of specialist tourist retail services

	Alotau	Rabaul	Honiara
Share of direct expenditure on specialist tourist retail services	3%	4%	10%
Beneficiary of expenditure (% flow from every dollar spent)	PNG		SI
Private beneficiaries	99%		99%
Government	0%		0%
Leakage	0%		1%

4.1.5 Food and beverage service industry (restaurants and bars)

Qualitative research suggests most passengers are not particularly interested in purchasing food and drinks ashore as they are provided on-board. Many passengers are also deterred from eating locally produced food because of food safety concerns.

Restaurant and bars such as the Honiara Yacht Club and Rapopo Plantation Resort in Rabaul, mainly serve local guests and other tourists. The reported intake from cruise tourists is below 10 per cent.

It is estimated that a relatively high share of expenditure from the food and beverage sector flows to private beneficiaries, mainly because businesses buy the majority of goods at local supermarkets and markets. The main source of leakage (estimated at around 50 per cent of profits) is due to foreign business ownership.

Table 4.5 Key findings of economic impact analysis of food and beverage service industry

	Alotau	Rabaul	Honiara
Share of direct expenditure on food and beverage	4%	3%	6%
Beneficiary of expenditure (% flow from every dollar spent)	PNG		SI
Private beneficiaries	91%		71%
Government	2%		3%
Leakage	7%		26%

4.1.6 General retail (supermarket and general store items)

The majority of products sold in the general retail sectors are imported. Businesses in this sector are largely foreign-owned (i.e. predominantly Chinese, Filipino or Australian). It is assumed that 80 per cent of profits leak offshore and hence the estimated leakage is high (between 35 per cent and 48 per cent depending on the country).

Table 4.6 Key findings of economic impact analysis of general retail industry

	Alotau	Rabaul	Honiara
Share of direct expenditure on general retail	2%	3%	5%
Beneficiary of expenditure (% flow from every dollar spent)	PNG		SI
Private beneficiaries	53%		37%
Government	12%		16%
Leakage	35%		48%

4.2 Leakage and the informal economy

Studies estimate leakage in PICs is high due to the limited production of the economies and dependency on imports (e.g. 41 per cent in Vanuatu, 60 per cent in Fiji). However, in PNG and SI the direct impact of the cruise industry is predominantly in the tours and entertainment and specialist tourist retail services (souvenirs) industries. These industries are labour intensive, have low leakage due to the high share of locally owned businesses, and a minor share of imports in business costs (i.e. most of the souvenirs are produced locally and fuel and vehicles are the main imports across the supply chain of the tour industry).

The informal economy as a share of the total economy is considered high. Based on official statistics 75 and 85 per cent of employment in PNG and SI respectively comes from subsistence agriculture. Based on research observation, most businesses operating in the tour and entertainment and specialist tourist retail service industries are informal (i.e. do not pay tax).

4.3 Employment impact

Estimates of the impact of the cruise tourism sector on local employment are based on reported employment-to-turnover ratios obtained during interviews with businesses. The majority of employment generated through cruise tourism is on a part-time basis, often complementing subsistence farming (which employs 75 per cent of the population in SI and 85 per cent in PNG)²⁹. This is particularly relevant in the smaller islands of Kiriwina and Kitava and is also a dominant factor in certain sectors such as specialist tourist retail sector (handicrafts, souvenirs, and artwork).

The reported impacts are not based on full time equivalent (FTE) employment but rather indicate the number of employment opportunities (a mixture of full-time and part-time jobs depending on the sector) that cruise tourism generates (see Table 4.7).

It is estimated that in 2015, 203 jobs in five ports were created in PNG as a result of cruise tourism. This equates to jobs for 0.6 per cent of the working age population at these ports – of which 200 jobs were generated directly and three indirectly. Most jobs were created in Rabaul (72), followed by Alotau (44) and Kiriwina (41).

In 2015, cruise ship tourism generated 21 jobs in Honiara representing 0.06 per cent of working age population. Twenty jobs were created directly and one indirectly.

The specialist tourist retail sector (i.e. handicrafts and souvenirs) benefits most in terms of total employment opportunities. This is despite the fact that this sector receives about only six per cent of total direct and indirect impact in both PNG and SI. Handicraft and souvenir business have many 'employees' and are mainly family run but the intake from cruise tourism is low and inconsistent because businesses only operate when cruise ships arrive. For instance, based on qualitative research there are many handicraft sellers at Kiriwina, however the majority of sellers are subsistence farmers. Hence, the employment opportunity generated from cruise tourism seems large in number but only lasts for the day when the cruise ship arrives and there were only 10 cruise ship visits to Kiriwina in 2015.

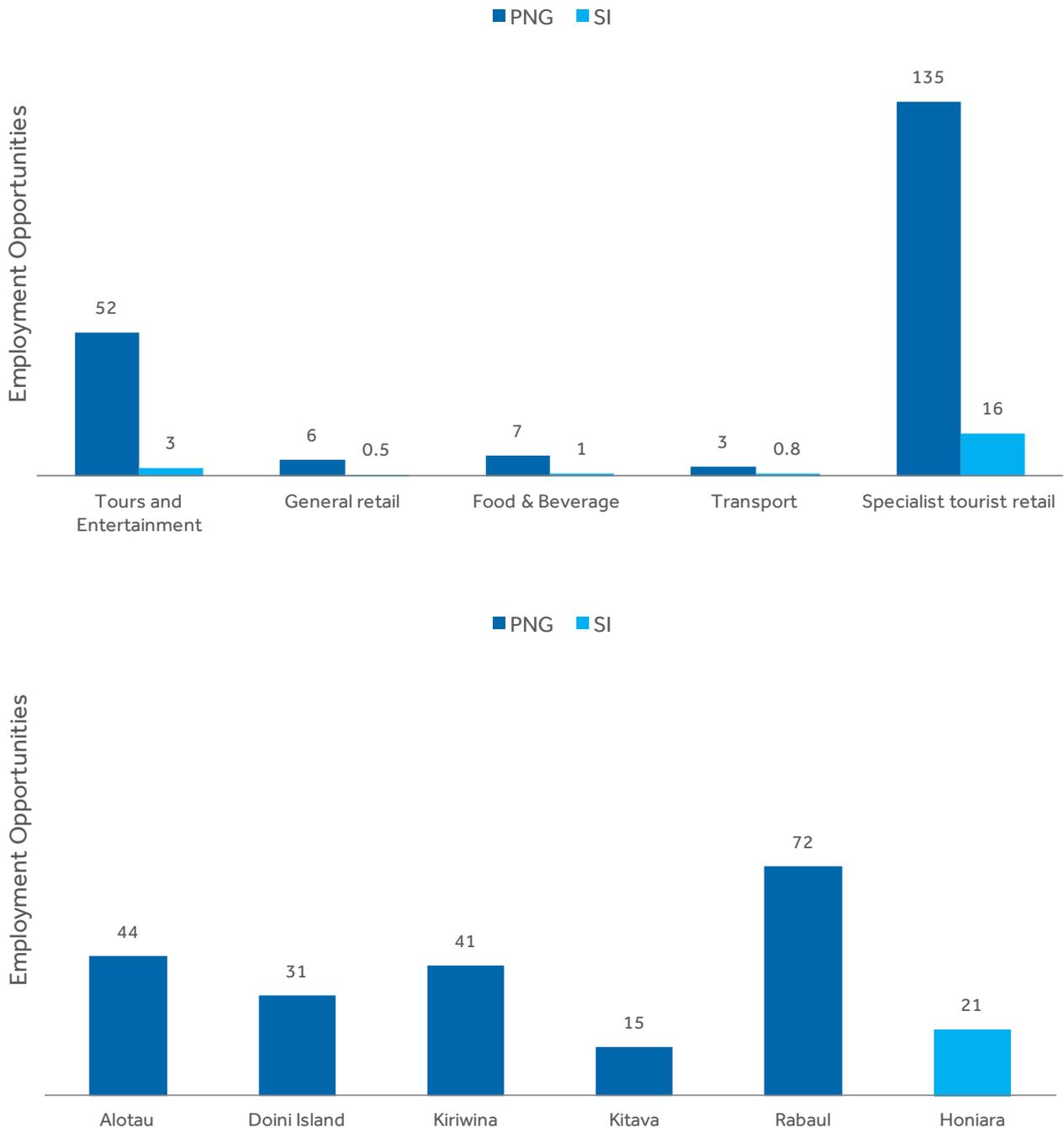
In line with the approach adopted in the Vanuatu 2014 study, the employment impact does not include employment resulting from government revenues derived from fees paid by cruise operators or other tax and duty collections.

Table 4.7 Average number of employment opportunities per AUD 10,000 of revenue per sector and estimated employment impact in PNG and SI 2015

Sector	Average number of jobs per AUD10,000	PNG employment impact	SI employment impact
Tours and entertainment services	0.31	52	3
General retail (supermarket, general store items)	0.21	6	0.5
Food and beverage services (restaurants and bars)	0.34	7	1
Transport (taxi/bus/ground transportation)	0.13	4	0.8
Specialist tourist retail (handicrafts, souvenirs, artwork)	5.10	135	16
TOTAL		203	21
% of working age population		0.6%	0.06%

29 World Bank Indicators (2013)

Figure 4.1 Total employment opportunities by country and sector (above) and by port (below)



The method adopted to calculate employment impacts in the previous Vanuatu 2014 study and BREAs studies differ marginally from the approach adopted in this study. In these studies the employment impact was estimated by using the average full-time salaries for employees in each sector. The Vanuatu study additionally assumed that more than 33 per cent of employment is part-time to derive estimate of employment opportunities. This study does not make use of full-time salaries for employees in each sector due to the lack of available data for PNG and SI, and the high share of sectors operating in the informal economy. As a result, the employment impact estimates are based on a ratio of reported employment-to- turnover data obtained during interviews with businesses.

5 Opportunities for increasing the economic impacts of cruise tourism in Papua New Guinea and Solomon Islands

This section considers the opportunities that exist to increase the economic benefits of cruise tourism in PNG and SI. It also assesses the barriers to greater cruise tourism impact and explores the potential for further growth of the sector in these countries.

5.1 Barriers to the economic impact of cruise tourism

Summary of key barriers to the economic impact of cruise tourism

Research conducted through business interviews, in-depth cruise passenger interviews, and in-country workshops identified the following key challenges and barriers to increasing the economic impact of cruise tourism in PNG and SI.

- Basic port infrastructure is inadequate, limiting efficient access for larger cruise ships, specifically in Honiara (where a new wharf is now under construction), and in Kitava (where a new jetty is required to enable disembarkation of two tenders simultaneously) and Alotau (where new fresh water supplies are required, as per industry standard)
- Destinations lacked basic facilities to attract cruise tourists ashore and encourage longer visits, with increase expenditure. This includes a lack of adequate sanitation facilities, shaded areas, seating and litter bins in most destinations, specifically in the port area
- A tourism industry is not established in some destinations and efforts are required to support businesses in developing their offer. Businesses need to work collaboratively with government, other businesses and cruise line operators to be prepared for the influx of tourists and maximise their economic impact. This issue is common, to varying degrees, across all ports
- Businesses lack commercial awareness and there is disconnect between cruise operators, local businesses and other stakeholders which, (linked to the previous point), contributes to limited business preparedness and an undeveloped tourism offer
- Cruise passengers lack confidence in the goods and services available. This is due to factors such as a lack of information on quarantine procedures when returning home, limited transparency of pricing from some souvenir sellers of souvenirs and a general lack of product understanding (i.e. cultural value and production methods of handicrafts)
- Leakage of indirect expenditure could be reduced by purchasing local throughout the supply chain
- The numbers of cruise tourists visiting PNG and SI is currently low compared to similar destinations. Security concerns, lack of destination information and marketing were the major factors highlighted that inhibit increased numbers of tourists visiting PNG and/or SI

The following is an outline of the problems identified, summarising the responses received from cruise passengers, crew and businesses, and the findings of in-country workshops held in Port Moresby and Honiara in March 2016.

5.1.1 Basic port infrastructure is inadequate, limiting access for larger cruise ships

A leading barrier to the development of cruise tourism in many of the ports is the lack of adequate infrastructure to permit efficient access for larger cruise ships. Additional infrastructure is also required in hub ports (i.e. Alotau and Honiara) to enable cruise ships to extend their stay at small ports and offer a more extensive cruising schedule.

In Honiara, the wharf must be sufficiently large enough to permit the largest cruise ships in the Pacific region (maximum length size of 264 metres) to berth and take on-board fresh water supplies at 50 tonnes per hour at a quality meeting World Health Organization (WHO) standards. At present, cruise ships must anchor offshore and tender passengers to shore. Passenger responses indicate that the inconvenience of this slow and inefficient process was one of the reasons some passengers decided to stay on-board. For others it limited the time they had ashore. The new wharf currently under construction will accept its first 200-metre plus cruise ship in September 2016.

As Alotau is the port of call for many cruise ships from Australia, there is a need for the same standard of fresh water supplies to be available as in Honiara. The ability to take on fresh water is an important factor as it improves the comfort levels for cruise ship passengers and helps to open up other destinations in the area to cruise tourism.

In smaller ports of call, (such as Kitava), the construction of a new jetty is required to enable two tenders to disembark simultaneously so that passengers can be transported to and from larger cruise ships more efficiently. Improvements are also required at Madang port to reinforce and extend the port berth to enable larger ships to dock in port more regularly.

Without these infrastructure improvements, cruise operators will not be able to extend their cruise offer in PNG and SI using larger cruise ships. The impact on passenger comfort and access to ports will also hinder the development of cruise tourism in both countries.

5.1.2 The tourism industry is not established in some destinations

Kitava, Kiriwina and Doini are considered subsistence economies with most inhabitants relying on fishing and agriculture for their livelihoods. Cruise tourism income is a rare source of cash to supplement otherwise low incomes and is important as it enables families to purchase essentials which they cannot barter (e.g. fuel, boat engine parts, and tools). The small local economy has not developed sufficiently to maximise the opportunities that cruise tourism offers.

In the urban centres of Alotau, Rabaul and Honiara, (which have more developed economies), the tourism industry is still considered to be in its infancy. Visits by larger cruise ships are increasing from a low base in comparison to other Pacific Island destinations (e.g. Vanuatu and Fiji). As a consequence, the following features of the tourism industry limited the passenger expenditure and the impact of cruise tourism more generally:

- Many businesses are family owned which limits the indirect impacts of cruise tourism expenditure as revenue goes directly in to household budgets. For instance, handicrafts and coconut drinks are typical products produced and sold to cruise passengers but these require limited production inputs and therefore have limited economic impact outside of the family
- Family members may not be paid for their work and are unlikely to be fully employed by activities related to cruise tourism. As noted, many vendors see cruise tourism as a supplementary income rather than a primary source of employment. The implication is that while the number of persons employed may be high, only a limited number can be considered full-time and wages are likely to be below average full-time equivalent earnings

- Without an established tourism industry in smaller ports, there may be a reluctance to see its longer term potential. One business owner interviewed suggested that some vendors may see tourists as an opportunity to 'make a quick buck', opposed to a long-term business opportunity. In part this reflects the short time cruises have been stopping in these ports, and the infrequency of cruise ships which currently visit. This short-term mentality reduces the willingness of local businesses to invest in premises and the quality of their products and services, subsequently hampering the development of a more substantive tourism industry

While these issues are more acute in the smaller ports, the tourism industry in Alotau, Rabaul and Honiara is no less under-developed according to passenger and business feedback (see box below). The contrast of PNG and SI destinations with Port Vila on the second cruise in this study illustrates the scale of the gap – not only in the number of businesses established to serve cruise passengers, but also in the level of cruise passenger expenditure and its economic impact.

If PNG and SI are to benefit from the opportunities that cruise tourism offers, one of the first steps must be to establish an economy and tourist industry with the capacity to handle the influx of tourists in a sustainable way, while at the same time maintaining the unspoilt and uncommercial nature of the ports, (which many passengers highlighted as a drawcard). Factors limiting the growth of businesses include limited access to start-up capital, limited knowledge of financial management among business owners, limited awareness of tourism possibilities in remote areas, and cultural challenges such as issues with local women setting up businesses.

Summary of business feedback – tourism industry development

"The cruise tourism industry is very new and the local businesses are trying to keep up – they have not seen this kind of influx before." (Alotau)

"Tourism is still very up and down – people are still learning." (Alotau)

"Locals need to be passionate about what they make, rather than trying to make a quick buck" – dishonesty and overcharging of tourists." (Alotau)

"It is an exciting time for the area due to the cruise ships and the income is often all the income people get from selling carvings, etc." (Kiriwina)

"They think cruise ships are great – it is the only way to make money – otherwise they just live off the land through farming." (Kiriwina)

"It will come – they are still getting their heads around it." (Rabaul)

5.1.3 Businesses lack commercial awareness

A major draw for cruise passengers visiting PNG and SI is the uncommercial and unspoilt nature of the destinations visited by cruise ships. However, pre-visit focus groups with passengers revealed that the lack of commercial experience and awareness among businesses has led to reduced expenditure by passengers compared to what they had planned to spend. There is a lack of business acumen about what to produce, how to sell those products to cruise tourists and at what price. This also reflects the limited product offer in terms of tours and handicrafts highlighted in the qualitative findings.

In some destinations the lack of established business premises to operate from meant that many handicraft sellers have to travel from nearby villages in order to meet the cruise ship on arrival and sell products by the roadside, at irregular intervals and with limited information on the price of goods for sale. On the second cruise researchers noted some improvement in business acumen with vendors displaying fixed prices in Doini, providing straws for coconut drinks, and instilling hygienic food-handling practices. However, this is not considered common practice and passengers expect a higher standard before they are willing to increase expenditure. Quotes from interviews highlighting this issue are provided in the box below.

Summary of business feedback – business commercial awareness

“There is a lack of knowledge of what tourists want – there is a disconnect between what is on offer and what is there.” (Tourist Authority, Alotau)

“Products can be very expensive as some carvings are priced at 440 Kina and these are not very popular – tourists are typically looking for smaller items around 20 Kina.” (Alotau)

“Local people have little knowledge of how to sell or run businesses so they need help from government (which is starting to happen).” (Alotau)

“Need to educate the locals more on what is needed for tourists” (Rabaul)

The stop at Port Vila on the second cruise reinforced the scale of the problem. Casual observation of the researchers revealed that expenditure by cruise passengers was much higher in Port Vila compared to previous destinations visited. In part this was due to the fact that this was the last stop on the cruise and passengers were encouraged to spend left-over currency.

5.1.4 There is a disconnect between cruise operators and local businesses

A disconnect between cruise operators, local businesses and other stakeholders is another factor impeding the development of the tourism industry in PNG and SI. According to interviews with businesses the disconnect takes three forms:

1. **Limited communication about cruise schedules**, resulting in many vendors missing the cruise ship visit. This is particularly relevant on the smaller islands where many vendors have to travel from nearby villages. In larger towns, the lack of communication results in many vendors not opening up their premises or being ill prepared for the influx of tourists. The majority of businesses interviewed in all destinations highlighted the need for better communication and collaboration between local providers and cruise ships
2. **Lack of a long-term commitment by cruise operators to stop at ports** does not provide conditions conducive to investment by local businesses. While there are enterprising locals who wish to start their own business and existing businesses wanting to expand (e.g. from a street stall to permanent premises), without a commitment by cruise operators to guarantee a regular stream of tourists, development is hampered.
3. **Limited coordination and collaboration of local businesses and communities.** Workshops highlighted the fragmented nature of many efforts to inform businesses of forthcoming cruise stops and the local response to ensuring businesses are open, streets are clean and attractive, and support is provided in terms of providing currency exchange services or destination information to passengers.

5.1.5 Cruise passengers lack confidence in the goods and services available

Although less developed than some South Pacific Island destinations, PNG and SI does offer a choice of attractions, goods and services (including organised tours, handicrafts, food and drink) which passengers can spend their money on. However, researchers observed that many passengers were reluctant to purchase goods and services available for several reasons:

- **Passengers were uncertain regarding quarantine rules** and this deterred many consumers from buying handicrafts. On the first cruise passengers were provided with information through a video presentation, an on-board quarantine box, and a presentation by a cruise ship representative. On the second cruise less information was available to passengers and no quarantine box was provided. This meant passengers were not given nearly enough information to make informed purchasing decisions. Their concerns included not wanting to lose souvenirs at customs, not wanting to line up for inspection at customs, and not wanting to damage Australia's ecosystem
- There was scepticism about **whether the products available are genuine**. Passengers were not willing to purchase handicrafts if they thought they were mass-produced or not locally made. Concerns about the finish of some items, (which were considered too consistent to be handmade), and the fact that the same items would appear at multiple destinations at different prices also led scepticism and confusion
- Prior to disembarking, passengers also stated that they are **poorly informed of the spending opportunities and activities available at each destination** (i.e. local markets, crafts, local tour guides, schedule of performances). On the first cruise, a printed document was left in cabins prior to each port of call. On the second cruise, no written information for Doini, Kiriwina, Kitava and Honiara was made available to passengers. In Alotau, Rabaul and Port Vila pamphlets were distributed on the first day of the cruise providing information on tours available for purchase through the cruise operator. However, some of the printed materials were out-of-date and not informative enough for passengers wishing to plan a day of activities. A destination expert was also on board the second cruise to provide lectures about each stop. The content of the lectures focussed on history, culture and sightseeing, but there was limited practical information on where things can be found at each destination, the prices of goods and services, and the options available to those wanting to take a local tour (see summary in the box following). Passenger feedback highlighted frustration at a general lack of practical information and in some instances "misinformation" provided by the lecturer on some ports. Although many were willing to explore each port with an open mind, they lacked the basic information needed to navigate each destination, arrange activities and make the most of the opportunities available

These factors resulted in passengers not feeling sufficiently confident and empowered to make the most of the spending opportunities in each port of call. A summary of the feedback from businesses and passengers is provided in the box following.

Summary of business and passenger feedback – passenger confidence

Quarantine uncertainty

“There needs to be better information on the quarantine laws so passengers and locals know exactly what they can bring on board.” (Business, Alotau)

“Many passengers are willing to take the risk but many are not – especially with bigger, more expensive purchases.” (Business, Rabaul)

Destination information

“There should be ‘do’ and ‘don’t’ information on what passengers can bring for the children on the island – books, pens, and paper are good. Lollies and soft drinks are not.” (Business, Kitava)

“Awareness needed about local providers – there is no information on the boat leaflets about them.” (Business, Alotau)

“There is no tourist website for Rabaul – it needs more advertising abroad which should be done by the local tourism board.” (Business, Rabaul)

“There needs to be more information and more maps for tourists as well as easier transport – [the business] get very few visitors from the cruise ships.” (Business, Rabaul)

There is an historical society in Rabaul – the cruise ships should contact them to help train tour guides who currently only give basic or incorrect information.” (Business, Rabaul)

“Passengers had not conducted detailed research prior to this trip and were unsure of what to expect.” (Passenger focus groups and in-depth interviews)

“The current consensus was that these documents [cruise provided leaflets] contain some information but most passengers would like more.” (Passenger focus groups and in-depth interviews)

“Passengers like bringing gifts for the local communities which are much appreciated (e.g. pens, paper, and toys). However, many were unaware this was an option.” (Passenger focus groups and in-depth interviews)

“Passengers would like more information about the products and services each port is renowned for.” (Passenger focus groups and in-depth interviews)

5.1.6 Passenger expectations are often not met

Despite expressing a willingness to be ‘surprised’ by what each destination offered and not wanting destinations to become like Fiji (as one passenger quoted), many passengers found that destinations did not meet their expectations for the following reasons:

- **Limited awareness about options available to passengers:** Many passengers felt that they were not informed of the options available to them. For example, many passengers did not know that local tour guides and transport could be arranged at each destination, rather than booked solely through the cruise operator. During focus groups, passengers stated that they often booked through the cruise operator even though it was more expensive because they considered it a safer and more convenient option. Nevertheless, would like to have been made aware of the alternatives and given the choice

- This refers to Honiara in particular, where the second cruise did not arrange tours and it would have been helpful to know what local alternatives were available. Businesses confirmed they were willing to provide hire cars, drivers and other services to cruise passengers if tourists came to them but they require some promotion and/or information to be provided on-board the cruise ships
- **Trip itineraries did not allow sufficient time to enjoy the scenery or learn from the experience.** Many passengers felt rushed to “tick boxes” with little time left to engage with local communities and purchase the goods and services available. While it is understandable that tourists want to spend more time to explore and experience a place of interest, the research consultant noted that the tour provider often requires a strict schedule to enable the timely pick up of the next group of tourists. Feedback from passengers suggests the current balance is not quite right as passengers were only given to 5-10 minutes at each site on some excursions. On other trips, the number of stops was cut short, and in one case, the attraction was closed, unbeknownst to the tour guide
- **Prices were higher than expected** in PNG and SI, limiting cruise passenger expenditure. Many tourists expected PNG, in particular, to be relatively inexpensive and planned their expenditure accordingly. In reality, prices were broadly comparable to Australia for items such as drinks and food, which came as a surprise to many. More pre-cruise information was requested by passengers to plan their trips
- **Information about the range of activities available was often limited.** Passengers stated that they were given insufficient information about what there was to do at each destination, subsequently contributing to lower expenditure. Businesses highlighted the need to promote awareness of the activities and attractions available at each destination, (including scuba diving, surfing, sailing, fishing, walking etc.)

Insights from passengers and businesses concerning expectations are provided in the box below.

Summary of business and passenger feedback – passenger expectations

“Being able to deliver on the expectations of tourists through a range of products and training of the local people.” (Alotau)

“Cruise ship could be very good for the hire car business but obviously there are many elderly passengers who don’t expect to drive – we would be happy to provide a driver if asked.” (Honiara)

“Passengers would have liked to have known more about the opportunities to book local tour operators in Rabaul and Alotau (or local guides on island ports.)” (Passenger focus groups and in-depth interviews)

“The annual Canoe Festival was held in early November (Alotau). There were expectations from passengers that they would be able to see this festival.” (Passenger focus groups and in-depth interviews)

5.1.7 Destinations lacked basic facilities

A common problem expressed in focus groups was a lack of facilities on-shore, which deterred cruise tourists from leaving the cruise ship (i.e. to nearby villages) or to seek out attractions and businesses which could be appealing to tourists (e.g. cafes, restaurants, handicraft vendors). Passenger feedback highlighted the lack of the following facilities in particular:

- **Limited currency exchange facilities** on-board and on-shore. On the first cruise, a limited amount of local currency was available on-board and the cruise operator noted that the amount available had been reduced in recent years due to the operating costs associated with holding this money

On the second cruise, no similar provision was made available. In the less commercial destinations of Kitava, Kiriwina and Doini, there was no currency exchange facilities available ashore, forcing some vendors to exchange AUD for local currency, to enable passengers to make purchases. With limited local currency available to vendors, many passengers in focus groups considered they could have spent more. At larger destinations, passengers were frustrated by a lack of information about the location and opening hours of banks or currency exchange facilities. Without this information, very few passengers were able to find and use these facilities, leaving many with limited local currency. The exception was Honiara where foreign exchange facilities are available, ATMs are located close to the wharf and AUD is widely accepted

- **Lack of maps and directional information to guide passengers:** Passengers noted it was difficult to find destination maps and/or directions to basic amenities and services, (e.g. banks, toilets, food and beverage retailers, attractions, points of interest etc.). This information was not available prior to arrival in port, and once ashore there were limited signs and directions. As consequence, cruise passengers were reluctant to explore some destinations and were unaware of opportunities for leisure and entertainment where they could have spent money. This also contributed to many passengers returning to the cruise ship after only a short visit ashore, and the difficulty passengers had in exchanging currency on the second cruise
- **Lack of sanitation facilities:** many passengers were concerned about the lack of sanitation facilities ashore, particularly in the smaller ports of call. Even in the larger ports this was also considered a problem due to limited directional signage making it difficult for passengers to find these facilities even where they were available. As the number of cruise ship passengers visiting PNG and SI grows, this is clearly a priority need
- **Lack of shaded areas:** passengers reported that there was insufficient seating and shaded areas available in Kitava, Kiriwina and Doini. Many older passengers surveyed on both cruises cited this reason for staying on-board or returning to the ship after only a short time on-shore

5.1.8 Leakage of indirect expenditure

Leakage refers to the expenditure which flows out of an economy when a proportion of the costs of production and profits flow to an overseas beneficiary. For example, fuel is often imported, so the amount a tour operator pays towards fuel costs, taxes and some costs for the vendor, goes to the overseas fuel supplier. The less leakage, the greater the impact on the local economy as money is allowed to flow into local investment, employment and household expenditure.

Four sources of significant leakage were identified from the research:

- **Cruise operator supply chains for goods and services.** Each cruise takes on-board a large volume of goods and services at the destinations it visits and/or on before embarking on a cruise from its home port. Operators do not currently procure goods and services in PNG nor SI
- **Cruise operator-organised tours and excursions:** Many passengers are encouraged to purchase tours promoted on-board and sold through the cruise companies. These tours are often more expensive than the tours provided by local guides and as a proportion of the price goes to the cruise operator as profit, leakage from the local economy is increased. Allowing local providers to advertise on-board was suggested as a means to inform passengers of the alternatives, increase the number of local tours booked and increase the income to local economies. A caveat is that many passengers prefer to purchase cruise operator-arranged tours for convenience, insurance and general safety reasons. Cruise operators also only work with local providers that meet their minimum standards

- **A high proportion of cruise passengers go ashore, but return early**, reducing the size of the captive market for local economies. For example, feedback from the first cruise highlighted that while passengers went ashore in the morning, many went back on-board for lunch and did not return ashore in the afternoon. Interviews with businesses in Honiara and Rabaul also highlighted that other than tour companies and vendors, local businesses (specifically cafes, restaurants and hotels) are not getting many tourists through the door. This reflects a number of issues related to limited transportation, the lack of prior information at each destination, low passenger awareness about what is available and a lack of local business promotion. Consultant notes highlighted that it may also not be in the interests of cruise operators for passengers to be spending more money on local food and drink. A local businessperson in Alotau suggested that better information could be a solution saying that:
"Cruise operators also tell tourists to be wary of buying local food... they once prepared 1,500 meals and sold about 30"
- **Foreign-owned businesses:** As in the Vanuatu study, the research found that many businesses profiting from cruise tourism, (e.g. shop owners and tour operators) are owned by expatriates. Consequently, there is leakage of profits overseas which could otherwise be reinvested into local economies. In part, this is a reflection of the limited tourism industry and the difficulties associated with starting businesses in these countries, which can be addressed by supporting the development of local economies and increasing tourist numbers in the long-term

5.1.9 The numbers of cruise tourists visiting PNG and SI is currently low compared to similar destinations.

The reasons given by businesses and passengers suggested that the reasons more people do not visit PNG and SI are:

- **PNG has a negative reputation** among some potential tourist markets, driven by crime in Port Moresby and media reports about the country. This negative perception is not limited to just cruise tourism and was identified by passengers and businesses as a hindrance to tourism growth in PNG
- **There is limited promotion of PNG and SI** as tourist destinations in the media. This extends to a lack of guidebooks, websites, and other sources of information that inform and promote destinations. These sources are also helpful for tourists who have decided to visit PNG and SI, as they can find out more about the attractions, culture and activities available. Businesses also suggested that more could be made of the connections many potential tourists have with the region (e.g. family members who fought in World War II) to find out more and visit in the future. Natural attractions such as unspoilt beaches, volcanoes, and coral reefs could also be featured more in promotional materials.
 Businesses on the smaller islands indicated that improved coverage of the water-based activities (such as scuba diving) would help to bring in more tourists
- **Customs and immigration procedures in PNG** could be improved. At present, cruise ships must use proclaimed ports for clearance which limits cruise itineraries and the frequency of calls. Cruise operators consider this a competitive disadvantage compared to other Pacific Island destinations. This could be addressed by PNG and SI permitting cruise operators to bear the cost of using immigration services at non-proclaimed ports, and bringing the process in line with other PICs in order to increase passenger time on-shore

6 Cost benefit analysis of the opportunities for increasing the economic impacts of cruise tourism to Papua New Guinea and Solomon Islands

6.1 Introduction

6.1.1 Overview

This section introduces and then assesses the costs and benefits of a shortlist of options selected to address the barriers and challenges preventing the full realisation of the economic impact of cruise tourism to PNG and SI. The options include packages of actions to be taken together to benefit from synergies that reduce the cost and/or maximise expected benefits.

The options were developed from a long list of actions developed during in-country workshops with businesses, donors and government stakeholders; primary research with passengers and businesses during two cruises in November 2015 and January 2016; and the additional input of cruise operators and the Seaport Group, port infrastructure and development experts. Proposed actions were grouped into nine categories:

- Infrastructure investment actions
- Product development of goods and services available to cruise tourists
- Capacity building, (referring to actions to improve the absorption of cruise tourism expenditure by local economies)
- Communication and collaboration between local stakeholders, businesses, government and cruise operators
- Funding
- Training and education needs
- Passenger information and awareness
- Improving standards and awareness, to improve destination quality and enforcement of existing minimum standards
- Local impact

Each proposed action was prioritised as either a short-term priority (enabling planned cruise schedules in PNG and SI to take place), or a longer-term priority to develop the potential of, and maximise the future benefits of cruise tourism in each country. This helped to identify the most urgent actions that could be grouped together as options. This exercise also identified actions that are so long-term in nature that they are not priorities for this study. For example, developing a fly-cruise offer in PNG and SI was considered a long-term action which requires not only cruise ships to be based in PNG or SI, but also a high frequency of direct flights and sufficient airport capacity to be established before such an offer can be developed. This would also include improved road connections between the port and airport. Experts consulted considered this action unfeasible in the foreseeable future, but suggested it could be considered once the necessary infrastructure is in place 10 years or more from now. For this reason the action was screened out.

The shortlist of proposed actions were then grouped as options, giving consideration to the on-going actions of the private sector, local and national governments and development partners to any potential synergies to support cruise tourism in PNG and SI. The final shortlist of options was then taken forward for the CBA.

6.1.2 Methodology for assessing the costs and benefits of the proposed options

The CBA aims to quantify the costs and benefits of the proposed shortlist of options. The impacts are assessed over a 10-year period, reflecting the fact that many options require action in the first year, resulting in benefits from years 2 to 10. This approach is consistent with the Vanuatu 2014 study.

A summary of the general assumptions used in the analysis is provided in Table 6.1. A more detailed description of methodology used to quantify each option, the assumptions and data sources used is provided in Annex 4. An elaborated summary accompanies the assessment of each option in the following sub-sections outlining options for PNG and SI. The final sub-section provides the consultant's concluding remarks on the CBA.

Core assumptions of the CBA

Assumption	Valuation		Details
	Solomon Islands	Papua New Guinea	
Assessment period	10 years		Vanuatu 2014 study
Exchange rate	0.18SBD:AUD	0.47PGK:AUD	xe.com
	1.3USD: AUD		
Discount rate	1%	2%	Vanuatu study 2014 discount rate (7%), minus (-) average inflation rate 2011-14 of SI and PNG (5.95%/4.8%) ³⁰
Construction costs	Occur in year 1		Vanuatu 2014 study
Maintenance costs	Occur in years 2-10		

Estimated impact is reported as the present value of the costs and benefits over the 10-year period in today's money. That is, by discounting the flow of costs and benefits in years 1-10, we account for inflation which would otherwise mean AUD 1 today is only worth AUD 0.95 next year and even less the year after. The net impact of the costs and benefits is referred to as the net present value (NPV) of the options as it is the expected benefits of the option minus its expected costs. This value is also presented as a ratio of benefits to costs. For example, a 2:1 ratio would imply spending AUD 1 results in benefits of AUD 2.

³⁰ Source: World Bank

6.2 Papua New Guinea

6.2.1 Option 1: Infrastructure improvements to existing ports of call

The following infrastructure actions were identified for ports of call in PNG to enable cruise ships to access each destination and efficiently disembark passengers:

- **Action 1:** Extension of a jetty in Kitava to enable simultaneous disembarkation of two tenders for more efficient transportation of passengers to and from larger cruise ships
- **Action 2:** Alotau provision of fresh water supplies for cruise ships to WHO standards. As the first port of call for cruise ships from Australia, development of this capability is considered a priority for cruise development in the region
- **Action 3:** Madang reinforcement and extension of the port berth to enable more regular and larger ships to dock in port. Based on the assessment of the Seaport Group this would entail the construction of two sinker blocks and upgrades to fenders

All three actions are included under this option and are considered the responsibility of the relevant port authority to implement.

The CBA results are provided in the box below.

Costs

The assumed unit costs are consistent with those used in the SI assessment, based on estimates provided by Seaport Group. In year 1 this includes the construction of beach shelters/huts (AUD 65,000) and extension of the existing jetty at Kitava (AUD 195,000), the improvement of water supplies at Alotau to WHO standards (AUD 195,000), and the construction of two sinker blocks and upgrades to fenders at Madang (AUD 39,000).

Maintenance costs incurred in years 2-10, differ by capital asset, with 1-2 per cent of CAPEX per year assumed in the case of landing facilities (i.e. jetty), 15-20 per cent for beach shelters and 10 per cent for water supply equipment.

Present value of costs: AUD 0.7 million

Benefits

These infrastructure improvements will increase the attractiveness and accessibility of these destinations for cruise ships, resulting in an increased number of calls to Kitava (an additional four in years 2-4 and seven in years 5-10 according to Carnival Australia projections, Alotau (two additional call in years 5-10), and Madang (an additional three in years 2-4 and eight in years 5-10).

Present value of benefits: AUD 3.1 million

Net Present Value (NPV)

AUD 2.4 million

Benefit-cost ratio

4.3:1

6.2.2 Option 2: Upgrade port amenities in PNG

Option 2 combines a number of actions concerning improvements to the port area for cruise passengers. The overarching objective is to make the port area more appealing to passengers, ensuring more passengers disembark and increase their expenditure. This option includes the following:

- **Action 1:** Construct a sanitation block near or at the wharf area in Kitava and Kiriwina
- **Action 2:** Provide covered areas, including seating for passengers in Kitava and Kiriwina
- **Action 3:** Erect clear signage to enable cruise passengers to navigate from the port area to leading attractions and points of interest in Alotau and Rabaul. Although amenities exist (i.e. currency exchange and banks), passengers do not know where to go to reach them

This is an option for local and national governments to implement the above

The CBA results are provided in the box below.

Costs

The costs are assumed to be AUD 52,000 for the construction of a sanitation block, and AUD 97,500 for the construction of covered areas and seating for passengers in Kitava and Kiriwina. In Alotau and Rabaul improvements to signage are assumed to cost AUD 19,500. All costs are based on Seaport Group estimates and occur in year 1.

Maintenance of the sanitation block is estimated to cost 10 per cent of CAPEX in years 2-10 and 5 per cent for the maintenance of covered seating areas.

Present value of costs: AUD 0.2 million

Benefits

These improvements are likely to result in passengers spending more time ashore at each destination, increasing their total expenditure as a consequence. Passenger expenditure is assumed to increase proportionally with increased time ashore as follows:

In Kitava and Kiriwina, time spent is increased from to 3.4 to 3.6 hours currently to 3.8 hours; as observed in Doini Island from year 3; and

In Alotau and Rabaul, passenger time spent ashore is assumed to increase by 15 minutes from year 3.

Present value of benefits: AUD 1.6 million

Net Present Value (NPV)

AUD 1.4 million

Benefit-cost ratio

7.6:1

6.2.3 Option 3: Streamlining customs and immigration procedures in PNG

Two actions are proposed under this option:

- **Action 1:** Legislative changes to enable the cruise operators to use non-proclaimed ports for clearance. This will allow cruise companies to plan itineraries more effectively and increase cruise frequency. This could be achieved by increasing the number of proclaimed entry/exit ports, or using procedures like other PICs where the cruise operator is allowed to bear the cost of using immigration services at non-proclaimed ports. Most of the costs associated with this new procedure (i.e. to fly a customs officer to the non-declared port of entry) would be borne by cruise operators directly
- **Action 2:** Improve the process of clearing passengers in line with processes used in other PICs. The current immigration process is cumbersome, takes a long time (requiring crew to collect and copy passports for all passengers) and reduces on-shore time for the passengers who must wait for their passports to be returned before disembarking. In other jurisdictions, (such as New Zealand), arrival formalities are performed at sea with authorities joining the vessels at the overseas port of departure. In other cases this is conducted on-board the ship before passengers disembark. This could be efficiently carried out in a processing area as passengers leave the ship

This option should be implemented by PNG's customs and immigration service. The CBA results are provided in the box below.

Costs

A Standard Cost Model (SCM) approach was used to quantify the cost of this option assuming:

The time of 10 legislators for one month are required to undertake legislative change, (at PNG government pay scale 18); and

The cost of training equates to 20 customs officers' time for one month (at PNG government pay scale 10).

Present value of costs: AUD 0.1 million

Benefits

As in the previous options, the benefits are assumed proportional to the additional time passengers spend ashore due to less onerous customs procedures. This option is also assumed to increase the number of calls to Conflict Island, which will be accessible under the new legislation. The detailed assumptions are:

The number of calls to Conflict Island increases to nine calls per year in years 3-10. Spending levels are assumed to be similar to passenger expenditure observed in Kitava; and

Increase in time spent ashore in Alotau by 15 minutes in years 3-10, due to less time spent on customs procedures by passengers.

Present value of benefits: AUD 0.9 million

Net Present Value (NPV)

AUD 0.8 million

Benefit-cost ratio

13.8:1

6.2.4 Option 4: Increase the provision of foreign exchange services

An acute problem in PNG ports of call was the limited availability of foreign exchange (forex) facilities, which consequently limits passenger expenditure. Having a forex on-shore is costly due to the irregularity of cruise ship calls, whereas the costs of a forex on-board would be borne by cruise ship operators alone, and hence are not costed as part of this assessment.

- **Action 1:** Providing an ATM or foreign exchange booth at or near the wharf in Alotau

Providing one ATM near or at the wharf in Alotau was considered sufficient to meet the demand for forex based on current passenger numbers. As Alotau is the first port of call for many cruises it was assumed that the availability of an ATM machine at the wharf would increase passengers spend over the entire trip in PNG. The CBA results are provided in the box below.

Costs

The costs of installing and operating a foreign exchange service in Alotau is estimated based on the following assumptions:

AUD18,850 for the purchase and installation of an ATM machine in year 1; and
10% of the purchase cost per annum in maintenance in years 2-10.

Present value of costs: AUD 0.03 million

Benefits

From year 2, the presence of a foreign exchange service is estimated to increase expenditure by an average of AUD25 per passenger for the 20% of passengers who are assumed to make use of this new service.

Present value of benefits: AUD 1.9 million

Net Present Value (NPV)

AUD 1.87 million

Benefit-cost ratio

57:1

6.2.5 Option 5: Development of the product offer in PNG

Option 5 combines two actions to develop the product offer in PNG:

- **Action 1:** Establish a more formalised cruise committee
- **Action 2:** Develop tours and excursions on smaller islands (i.e. Kitava and Kiriwina)

A major barrier to cruise tourism development and its economic impact is the lack of communication about passenger data and cruise schedules between cruise operators and local stakeholders, and inadequate dissemination of information within local economies.

One proposed action is to establish a cruise committee in each port composed of cruise tourism-related stakeholders. The other is a role for tourism authorities to gather and disseminate information of national interest to improve communication, cooperation and collaboration at the national level.

The terms of reference related to the roles and responsibilities of the cruise committee should include:

- Dissemination of information (e.g. cruise schedules, alerting businesses to Sunday arrivals)
- Share information on passenger expenditure and feedback
- Collect the opinion of businesses, conduct passenger research once ashore to provide accurate market intelligence to inform future development and decision-making
- Work with cruise operators to develop the cruise offer
- Planning and identifying future investment needs
- Function as the principle source of information to feed into leaflets, videos and other marketing information materials

Consultation also highlighted the need for the development of tours and excursions to meet passenger demands. The analysis shows that the economic impact of cruise tourism is greatest from passenger expenditure on tours and excursion in each destination. On the cruise trips surveyed, there were no tours available on-board in Kitava and Kiriwina and the local tour market is in its infancy. It is recommended that capacity development training is organised for current and potential tour operators in Kitava and Kiriwina.

The cost benefit analysis assumed the main cost under this option would be time spent by cruise committee members to perform their function, as well as funding the capacity building for tour operators in Kitava and Kiriwina. The main benefit would come from increased spending by passengers visiting PNG.

Costs

A SCM approach was used to estimate the costs of committee meetings and the time needed to administer the sharing of information. It is assumed that these costs will be incurred in all years. The Consultant has used SI employee survey data on average wage costs and estimated the time each activity involves, and estimated the cost by multiplying these two numbers per activity. The total cost is estimated by multiplying the number of persons involved in the activity, and/or its frequency. Table A4.6 in Annex 4 provides more details on the data used.

Training costs were obtained via quotation from a training provider for a 1-3 month business capacity course in PNG. It is further assumed that this training is provided in years 1 and 2 only, with a 20 per cent administration fee charged on the training cost.

Present value of costs: AUD 0.2 million

Benefits

Through improved communication and a better developed tour offer, it is assumed passengers visiting Alotau will spend more achieving 80 per cent of expenditure observed in Rabaul in years 3-10. In Kitava and Kiriwina passengers will spend twice more than the current spending on tours.

Present value of benefits: AUD 3.1 million

Net Present Value (NPV)

AUD 2.9 million

Benefit-cost ratio

13:1

6.2.6 Option 6: Improving information provision to passengers in PNG

The need to improve the quality and quantity of information provided to passengers when making destination and purchasing decisions was identified as a priority. Without this information, average passenger expenditure is reduced partly due to uncertainty regarding quarantine restrictions, especially in relation to handicrafts (in particular those with feathers and seeds).

The actions recommended to address low expenditure are:

- Providing quarantine videos and leaflets to passengers
- Updating destination information provided by cruise operators to passengers
- Developing and providing maps of the port, city centre and areas of interest
- Informing passengers of the opportunity to make donations

Efforts should be coordinated closely with those of the Pacific Horticulture and Agricultural Market Access (PHAMA) program on quarantine issues and the cruise committee/ donor organisation regarding donations and general information given to passengers. Cruise operators are also an important communication channel to passengers and should be involved in implementation. It is anticipated that the cruise committee would take the lead in this option. The estimated impacts are provided in the box below.

Costs

Estimates of the costs of this option are based on:

A quotation of AUD 81,000 for the production of a three-minute video providing quarantine information; AUD 0.1 per double sided leaflet produced for passengers. It is assuming all passengers receive a leaflet on each cruise.

Three days of a person's time on an average government salary (from PNG Employment survey) per year to update map and destination information.

The updating of the information and provision of leaflets occurs in each and every year.

Present value of costs AUD 0.1 million

Benefits

This analysis conservatively estimates that by being more informed, passengers on average spend 20 per cent more on souvenirs and donations in years 3-10 than they do at present.

Present value of benefits: AUD 3.2 million

Net Present Value (NPV)

AUD 3.1 million

Benefit-cost ratio

27:1

6.3 Solomon Islands

6.3.1 Option 1: Upgrade Honiara's port infrastructure

The first priority for Honiara is to upgrade the port capacity in order to handle large cruise ships. An AUD 33.8 million investment, funded by the Japan International Cooperation Agency (JICA), is already underway for the construction of a new 180 to 200-metre long wharf in Honiara.

Cruise ships are currently required to anchor offshore and ferry passengers to and from the port in smaller vessels. The journey takes 20-30 minute in each direction, making disembarkation much slower and less efficient than it could be, and reducing passenger time on-shore. For the full economic impact of cruise tourism to be realised by businesses in Honiara, a first step is to ensure that cruise ships are able to moor directly at the port wharf, providing direct and efficient access to the town for passengers.

The new wharf will berth 220-metre ships by October 2016, 264-metres pending the successful operation of 220-metre ships and potentially up to 300-metre ships in the future. However, the location and environmental conditions of the new wharf are not optimal and the original design was done for 200-metre cargo ships. Using the facility for the larger cruise vessels is theoretically possible, but needs to be tested.

A second priority is to ensure adequate fresh water supplies are available to cruise ships. As a first stopping point for many cruises, fresh water supplies are needed in Honiara to replenish supplies before visits are made to smaller ports in the region. The alternative would be greater desalination of sea water on-board. The provision of fresh water also offers an additional revenue stream for port operators.

The specifications of the required actions are:

- **Action 1:** A wharf capable of handling future cruise ships of up to 264-metres in length, and current ships of 220-metres in length (already in construction)
- **Action 2:** Water supplies to WHO standards of 50 tonnes per hour

Both actions are required in time for the inaugural call of Pacific Eden to Honiara on 1 October 2016. These actions are considered the responsibility of the Solomon Islands Port Authority (SIPA).

If implemented, these improvements are expected to encourage more cruise ships to call in Honiara and increase the time passengers spend ashore. It is estimated that in 10 years cruise tourism alone will cover some 50 per cent of the costs of the investments needed under Options 1³¹.

31 Calculated benefit cost ratio is 0.5:1

An additional benefit of the new wharf is increased capacity of Honiara's port to handle larger cargo ships. The expected increased number and revenue from cargo ships is not quantified due to the lack of available data. The result of the CBA for Option 1 are presented in the box below.

Costs

JICA's 'Project for the Improvement of Honiara Port Facilities' has allocated AUD 33.8 million including construction of the new wharf, which is assumed to take place in year 1. Seaport Group estimates the cost of improving the water supply available at Honiara to WHO standards to be AUD 195,000 in year 1, plus maintenance costs of 2 per cent of the initial cost per year thereafter.

Present value of costs: AUD 48.5 million

Benefits

Two benefits are quantified:

- Increased number of cruise calls to Honiara, including larger ships due to improved infrastructure (based on Carnival Australia growth projections)
- Time spent onshore by passengers is increased from 3.7 hours on average to 4.3 hours (best performing large port of call surveyed – Rabaul)

A third benefit – improved cargo handling from the new wharf – has not been quantified. The assessment is conservative, as in practice a new wharf would be expected to have a lifecycle in excess of 10 years, which would see the benefits exceed the costs over time.

Present value of benefits: AUD 49.3 million

Net Present Value (NPV)

AUD 0.7 million

Benefit-cost ratio

1.02:1

6.3.2 Option 2: Upgrade Honiara's port amenities

Option 2 combines a number of actions concerning improvements to the port area for cruise passengers. The overarching objective is to make the port area more appealing to passengers, thus ensuring more passengers disembark and increase their expenditure in Honiara. This option also ensures that port facilities are better equipped to handle the influx of passengers forecast to visit Honiara. This option includes the following actions:

- **Action 1:** Construct and maintain a sanitation block
- **Action 2:** Provide covered areas, including seating for passengers which is considered important to provide shade and cover in times of inclement weather
- **Action 3:** Provide clear signage to enable cruise passengers to navigate from the port area to leading attractions and points of interest
- **Action 4:** Provide litter bins and make the area more attractive for cruise passengers via port beautification

For cost purposes it would be beneficial if these actions are implemented simultaneously to uplift the port area and its facilities in preparation for larger cruise visits starting 1 October 2016. Actions should be taken by SIPA in cooperation with the Honiara City Council. The CBA analysis is summarised in the box below.

Costs

Seaport Group provided estimates on the unit costs of constructing a sanitation block at Honiara (AUD 52,000), covered areas and seating for passengers³² (AUD 97,500), provision of signage (AUD 19,500) and litter bins/beautification of the port area (AUD 13,000). These are all considered one-off costs incurred in year 1. Maintenance costs of 10 per cent of CAPEX are assumed for the sanitation block and other amenities, incurred in years 2-10.

Present value of costs: AUD 0.3 million

Benefits

The benefit of the port improvements is that by making the area more attractive to tourists, they are more likely to spend more time ashore and therefore increase their expenditure (assumed proportionally). Time spent ashore is assumed to increase from the current 3.7 hours on average to 4.3 hours, based on the best performing port (Rabaul). It is assumed spending increases proportionally with time (i.e. a one per cent increase in time spent ashore increases spending by one per cent). The number of calls to Honiara is assumed to remain constant at seven calls per year from 2017.

Present value of benefits: AUD 0.5 million

Net Present Value (NPV)

AUD 0.2 million

Benefit-cost ratio

1.8:1

32 Purchase, delivery and erection of four 4m by 4m shelters, self-erected on site

6.3.3 Option 3: Development of product offer in Honiara

Option 3 combines two actions to develop the product offer in Honiara:

- **Action 1:** Establish a more formalised cruise committee
- **Action 2:** Develop tours and excursions

A major barrier to cruise tourism development and its economic impact is the lack of communication related to passenger data and cruise schedules between cruise operators and local stakeholders, and inadequate dissemination of information within the local community.

A cruise committee currently exists in Honiara, which meets on an ad hoc basis prior to the arrival of each cruise ship. Individual businesses also broadcast cruise arrivals the day before to ensure businesses are open (especially on Sundays) and are prepared to manage cruise arrivals on the day. However, the cruise committee would benefit from more formalised roles and responsibilities, regular meetings, and the provision of a single point of contact for all information on cruise tourism in the Solomon Islands.

The terms of reference for a more formalised cruise committee should include:

- Dissemination of information (e.g. cruise schedule, alerting businesses to Sunday arrivals)
- Share information on passenger expenditure and feedback
- Collect the opinion of businesses and conduct passenger research to provide accurate market intelligence to inform future development and decision-making
- Work with cruise operators to develop the cruise offer
- Plan and identifying future investment needs
- Function as the principle source of information to feed into leaflets, videos and other marketing and information materials

The last bullet mentioned above is important for a number of stakeholders (including cruise operators and websites promoting SI as a tourism destination) to ensure that the information they provide to passengers is accurate and reliable. The recommended frequency of meetings is once per month with attendance by all major stakeholders.

Consultation also highlighted the need to develop tours and excursions to meet passenger demands. The analysis shows that the economic impact of cruise tourism is greatest from passenger expenditure on tours and excursion in each destination. On the cruise trip surveyed, there were no tours available on-board. Tours will be available on P&O cruise ships from May 2016 onwards.

Since the market is in its infancy, there is a need to improve the quality of tours. It is recommended that a capacity development training is organised for current and potential tour operators in Honiara. The CBA results are provided below.

Costs

A standard cost model approach was used to estimate the costs of committee meetings and the time needed to administer the sharing of information. It is assumed that these costs will be incurred in all years. This study has used SI employee survey data on average wage costs and have estimated the time each activity involves and the cost by multiplying these two numbers per activity. To estimate the total cost, this is then multiplied by the number of persons involved in the activity, and/or its frequency (see Table A4.6 in Annex 4 provides more details on data used).

Training costs were obtained via a quotation from a training provider for a 1-3 month business capacity course in SI. It is further assumed this training is provided in years 1 and 2 only, with a 20 per cent administration fee charged on the training cost.

Present value of costs: AUD 0.1 million

Benefits

Through better communication between stakeholders and the development of a tour offer, it is assumed passengers visiting Honiara will spend more, achieving level of expenditure close to the level observed in Alotau. Conservatively, the analysis assumes the spending increases to 80 per cent of the level reported in Alotau in years 3 and 4 (i.e. after training in years 1 and 2), and to 100 per cent of the level reported in Alotau in years 5 to 10.

Present value of benefits: AUD 1.58 million

Net Present Value (NPV)

AUD 1.47 million

Benefit-cost ratio

15:1

6.3.4 Option 4: Opening up of destinations in the Solomon Islands to cruise tourism

Realising the economic potential of the Solomon Islands as a cruise tourism destination requires the expansion of the cruise offer from a single port of call (Honiara) to multiple ports in the country. Establishing multiple destinations will in time scale up the economic impact.

The core market for cruise tourism consists of 7-10 day schedules from Cairns. Destination ports must therefore be located within a day's cruise of each other and be sufficient in number to provide 3-5 day packages. With Honiara the home or focal port of call, the remaining destinations could include Gizo and Tavanipupu.

- **Action 1:** Opening Gizo as destination for large vessels

Consultation with cruise operators identified the following needs to be addressed in order to open Gizo as a cruise destination:

- A hydrographical study for the destination
- Additional bollards/large cleats to be added adjacent the sloping concrete ferry wharf at Gizo to permit ship tenders to safely berth alongside
- The red and white navigational beacons and green starboard hand buoy as marked on official chart BA 1735 to be replaced to International Association of Lighthouse Authorities (IALA) standards at Gizo. This will assist ship tenders (lifesaving appliances) in making safe entrance and exit from the port area
- Encouraging and supporting Solomon Islands Marine Safety Administration (SIMSA) to ensure the maintenance of navigational aids and an effective Marine Safety Information (MSI) system as required by the International Marine Organization Safety of Life at Sea (IMO SOLAS) convention
- **Action 2:** Opening Tavanipupu as a destination for large vessels

Developing this destination would require investing in the following areas:

- Preliminary weather monitoring
- Hydrological survey of reef entrance to Tavanipupu
- Destination impact study
- Landing facilities (i.e. jetty)
- Beach shelters /huts

The CBA results are provided in the box following.

Costs

The actions required for the development of the SI cruise offer have been provided by Seaports. The estimated unit costs are summarised in the table below for Gizo and Tavanipupu, which are assumed to be incurred in year 1.

Type of cost	Valuation (AUD)
Action 1: Gizo	
Hydrography survey for the location ³³	52,000
Additional bollards/large cleats to be added adjacent the sloping concrete ferry wharf to allow ships tenders to safely berth alongside	19,500
The red and white navigational beacons and green starboard hand buoy as marked on official chart BA 1735 to be replaced to IALA standards (SIMSA)	26,000
Public toilet facilities at or near the landing area	52,000
Action 2: Tavanipupu	
Preliminary weather monitoring	26,000
Hydrography survey for this location ³⁴	52,000
Destination impact study	65,000
Landing facilities (i.e. jetty) ³⁵	325,000-650,000
Beach shelters /huts ³⁶	65,000

Consistent with earlier assessment, maintenance costs are assumed to equate to 10 per cent of CAPEX incurred in years 2-10. Based on passenger survey results, passenger expenditure in both destinations is assumed equivalent to average expenditure in Kitava.

Present value of costs: AUD 1.5m – AUD 2.6 million

Benefits

The number of cruise visit calls for Gizo and Tavanipupu will increase as per the projections from Carnival Australia in the table below. The number of port calls are additional to the baseline of currently projected calls over the next 10 years (see Section A4.2.3 of Annex 4).

Projected additional calls by year	Gizo	Tavanipupu
Years 2-4	1-7	4-6
Year 5-8	3-12	6-12
Years 9-10	3-17	6-14

Present value of benefits: AUD 4.5 - 12.7 million

Net Present Value (NPV)

AUD 3 - 10.1 million

Benefit-cost ratio

1.7-8.6:1

33 Cost of hydrography survey based on a 5-day survey at location and processing by SIHU

34 Cost of hydrography survey based on a 5-day survey at location and processing by SIHU

35 Landing facilities include 2 berths for ships tenders; valuation highly dependent on location for anchoring and access

36 Two 4m by 4m beach shelters, self-erected on site

6.3.5 Option 5: Improving information provided to passengers in Soloman Islands

The need to improve the quality and quantity of information provided to passengers when making destination and purchasing decisions was identified as a priority. Without this information, average passenger expenditure is reduced partly due to uncertainty regarding quarantine restrictions, especially in relation to handicrafts (in particular those with feathers and seeds).

The actions recommended actions to address low expenditure are:

- **Action 1:** Provide quarantine videos and leaflets to passengers
- **Action 2:** Update destination information provided by cruise operators to passengers
- **Action 3:** Develop and provide maps of the port, city centre and areas of interest
- **Action 4:** Inform passengers of the opportunity to make donations to local communities

Efforts should be coordinated closely with those of PHAMA on quarantine issues and the cruise committee/ donor organisation regarding donations and general information given to passengers. Cruise operators are also an important communication channel to passengers and should also be involved in implementation. It is anticipated that the cruise committee would take the lead in this option.

The CBA results are provided in the box below.

Costs

Estimates of the costs of this option are based on:

- A quotation of AUD 81,000 for the production of a three-minute video providing quarantine information
- AUD 0.1 per double sided leaflet produced for passengers (it is assumed that all passengers receive a leaflet on each cruise)
- Three days of a person's time on an average government salary (from SI Employment survey) per year to update map and destination information

Updating the information and the provision of leaflets occurs every year.

Present value of costs AUD 0.1 million

Benefits

The Consultant conservatively estimates that by being more informed, passengers on average spend 20 per cent more on souvenirs and donations in years 3-10 than they do at present.

Present value of benefits: AUD 0.7 million

Net Present Value (NPV)

AUD 0.6 million

Benefit-cost ratio

6.7:1

6.4 Concluding remarks

The headline findings are summarised in Table 6.1.

Providing an ATM or foreign exchange booth at/or near the wharf in Alotau (the first port of call for many cruises), is found to have the highest benefit-cost ratio. In short, it was found that the PGK is not frequently available currency for tourists visiting PNG and many traders in PNG do not accept alternative currency (i.e. AUD). Without currency exchange facilities on the cruise ship, this resulted in many passengers being unable to make purchases when visiting PNG ports. The low fixed cost of providing such an amenity is easily offset by increased passenger expenditure for the 10 years under assessment.

In the same vein, **improving information provided to passengers in both PNG and SI** is also estimated to have a large positive net impact. In-depth interviews with passengers indicated that they wanted to spend more, but lacked the opportunities and confidence to do so. It is a relatively low cost exercise to provide a three-minute quarantine video, update destination materials and provide a map of the ports to encourage cruise passengers to explore and better navigate each port visited. These actions will also give passengers the confidence to purchase handicrafts, ultimately resulting in higher expenditure.

Increased cooperation and coordination between businesses, local communities, government and cruise operators, particularly in the development of future tours and excursion offers (which are the highest expenditure items for passengers), is also anticipated to generate significant net benefits. Businesses should be better prepared for cruise ship arrivals, with an improved range of better-priced and coordinated products to offer to passengers. Key to this option in PNG and SI is the establishment of more formalised cruise committees in each port with assigned roles and responsibilities. For example, it is assumed these committees will take the lead in broadcasting the arrival of cruise vessels to local businesses and providing destination information to cruise operators to ensure information given to passengers is relevant and up-to-date.

Improvements to customs and immigration procedures in PNG is expected to generate significant benefits as speedier and more efficient procedures free up additional time for passengers to spend ashore. Benefits are estimated proportional to the extra time spent ashore, when more goods and services are likely to be purchased.

Improving port amenities, such as the provision of shaded areas and seating, sanitation blocks and litter bins, in many destinations is shown to have a significant net positive impact. The option makes the port area more attractive to passengers considering a trip ashore.

Opening up cruise destinations such as Gizo and Tavanipupu in SI, requires significant upfront investments at high cost. For example, this includes jetties, upgrades to wharfs and hydrological surveys to be carried out before larger cruise ships can operate efficiently at these ports. However, over time the improvements enable increased levels of expenditure from a higher frequency of calls and numbers of passengers.

The new wharf at Honiara is already under construction and will provide net benefits within 25 years. However, the benefits to freight shipping operators from a new wharf are not quantified in the assessment due to lack of data. The anticipated benefits would be much greater as cargo shipping is the largest user of the port. To enable more cruise tourists to visit Honiara, this option was considered priority.

Table 6.1 Summary of the costs and benefits of the proposed options to improve the impact of cruise tourism to PNG and SI³⁷

Option	Details	Present Value (AUD million)		Net Present Value	Benefit-cost ratio
		Costs	Benefits		
Papua New Guinea					
Increased provision of foreign exchange services	<ul style="list-style-type: none"> Provide an ATM or foreign exchange booth at or near the wharf in Alotau 	0.03	1.9	1.87	57
Improving information provided to passengers	<ul style="list-style-type: none"> Provide quarantine videos and leaflets to passengers Update destination information provided by cruise operators to passengers Develop and provide maps of the port, city centre and areas of interest Inform passengers of the opportunity to make donations. 	0.1	3.2	3.1	27
Improvements to customs and immigration procedures	<ul style="list-style-type: none"> Legislative change to enable the cruise operators to use non-proclaimed ports for clearance to plan itineraries more effectively and increase cruise frequency. This could be done by increasing the number of proclaimed entry/exit ports or using procedures like other PICs where the operator is allowed to bear the cost of using immigration services at non-proclaimed ports. Most of the costs associated with the new procedure (i.e. to fly customs officers to the non-declared port of entry) would be borne by cruise operators directly Improve the process of clearing passengers in line with processes used in other PICs. Currently the immigration process takes a long time (requiring passport copies to be taken for all passengers, which is cumbersome as passenger passports have to be collected by crew) and it reduces on-shore time for the passengers who must wait for their passports to be returned before disembarking 	0.1	0.9	0.8	13.8
Development of the product offer	<ul style="list-style-type: none"> Establish a more formalised cruise committee Develop tours and excursions at smaller islands (Kitava and Kiriwina) 	0.2	3.1	2.9	13.1
Upgrade port amenities	<ul style="list-style-type: none"> Construct a sanitation block near or at the wharf area in Kitava and Kiriwina Provide covered areas, including seating for passengers in Kitava and Kiriwina Provide clear signage to enable cruise passengers to navigate from the port area to leading attractions and points of interest in Alotau and Rabaul. Although amenities exist, passengers do not know where to go to reach them (i.e. currency exchange and banks) 	0.2	1.6	1.4	7.6

37 Costs and benefits of investments are estimated over 10 years. Costs and benefits of investment in Honiara's wharf is estimated over 25 years reflecting the longer life to asset and the fact that this investment is ongoing.

Option	Details	Present Value (AUD million)		Net Present Value	Benefit-cost ratio
		Costs	Benefits		
Infrastructure improvements to existing ports of call	<ul style="list-style-type: none"> Extension of a jetty in Kitava to enable simultaneous disembarkation of two tenders for more efficient transportation of passengers to and from larger cruise ships Alotau – provision of fresh water supplies for cruise ships to WHO standards. As the first port of call for cruise ships from Australia, development of this capability is considered a priority for cruise development in the region Madang – reinforcement and extension of the port berth to enable more regular and larger ships to dock in port. Based on the assessment of Seaports marine engineers this would entail construction of two sinker blocks and upgrades to fenders 	0.7	3.1	2.4	4.3
Solomon Islands					
Development of the product offer in Honiara	<ul style="list-style-type: none"> Establish a more formalised cruise committee Develop more tours and excursions 	0.1	1.58	1.47	15
Open new destinations in the Solomon Islands cruise offer	<ul style="list-style-type: none"> Open Gizo as a destination for large vessels, requiring: <ul style="list-style-type: none"> A hydrographical study for the destination Additional bollards/large cleats to be added adjacent the sloping concrete ferry wharf at Gizo to permit ship tenders to safely berth alongside The red and white navigational beacons and green starboard hand buoy as marked on official chart BA 1735 to be replaced to IALA standards at Gizo. This will assist ship tenders (lifesaving appliances) in making safe entrance and egress from the port area Encourage and support SIMSA to ensure the maintenance of navigational aids and an effective Marine Safety Information (MSI) system as required by IMO SOLAS Open Tavanipupu as a destination for large vessels, requiring: <ul style="list-style-type: none"> Preliminary weather monitoring Hydrological survey of reef entrance to Tavanipupu Destination impact study Landing facilities (i.e. jetty) Beach shelters /huts 	1.5-2.6	4.5-12.7	3-10.1	1.7-8.6

Option	Details	Present Value (AUD million)		Net Present Value	Benefit-cost ratio
		Costs	Benefits		
Improving information provided to passengers	<ul style="list-style-type: none"> • Provide quarantine videos and leaflets to passengers • Update destination information provided by cruise operators to passengers • Develop and provide maps of the port, city centre and areas of interest • Inform passengers of the opportunity to make donations 	0.1	0.7	0.6	6.7
Upgrade Honiara's port amenities	<ul style="list-style-type: none"> • Construct and maintain a sanitation block • Provide covered areas, including seating for passengers, considered important to provide shade and cover in times of inclement weather • Improve signage to enable cruise passengers to navigate from the port area to leading attractions and points of interest • Provide litter bins and port beautification actions to make the area more attractive for cruise passengers 	0.3	0.5	0.2	1.8
Upgrade Honiara's port infrastructure	<ul style="list-style-type: none"> • Construct a wharf capable of handling future cruise ships of up to 264-metres in length, and current ships of 220-metres in length (already under construction) • Provide water supplies to WHO standards of 50 tonnes per hour 	48.5	49.3	0.7	1.02

ANNEXES



Annex 1 Methodology

A1.1 Selecting a sample of cruise ships and ports for primary data collection

Only a handful of cruise ships were calling into PNG and SI ports during the data collection period (November 2015 – March 2016). Based on purposive sampling, two ships were selected for research:

- P&O Pacific Dawn departing Brisbane Australia on 7 November and calling into PNG ports of Alotau, Kitava, Rabaul, Kiriwina and Doini
- Princess Cruises/Sea Princess departing Brisbane Australia on 22 January and calling into PNG ports of Alotau, Doini Island, Kiriwina, Kitava, Rabaul as well as Honiara in SI and Port Vila in Vanuatu

A1.2 Survey of passengers and crew members

A survey of passengers and crew members was conducted to collect data for on-shore spending and visit satisfaction. For the purpose of comparison, the survey questionnaire followed the same structure and questions used for BREA and Vanuatu 2014 studies.

The following protocol was applied at each port of call of the two selected cruise ships:

- Paper-based surveys were distributed to passenger cabins by crew members at each port of call
- The surveys were collected by crew members from passenger cabins the following day
- Surveys were distributed before each port of call of the cruise
- By completing a survey after each port visit and leaving it in cabin for collection, passengers entered a promotion to win the 'ultimate cruising package' to be enjoyed on the last day of the cruise
- A leaflet was distributed along with the surveys to passengers. The leaflet included details of the promotion and details for recruitment to later stages of passengers' research (see A1.3 Additional Qualitative Research with Passengers)
- A sample size of 100 passengers per port was targeted to ensure robust results

A1.3 Additional qualitative research with passengers

An in-depth understanding of passenger and crew expenditure at each port was gathered through a four-step approach to passenger research:

- In-depth interviews (Phase 1)
 - Approximately 20-30 interviews were conducted per cruise during the first three days after departing Australia, each lasting around 20 minutes
 - The purpose of the Phase 1 was to discuss expectations of spending at the ports prior to arrival and what aspects they are looking forward to
 - Vouchers were provided by Carnival Australia to incentivise passenger participation
- In-depth interviews (Phase 2)
 - Phase 2 interviews were carried out once passengers and crew visited a port, and used to collect instant qualitative feedback on the experience and spend at each port
 - The team conducted approximately 5-10 interviews per cruise, each lasting approximately 10-15 minutes
 - Vouchers were provided by Carnival Australia to incentivise passenger participation
- Focus groups
 - Four focus groups took place on each ship during days 7-10 on the return trip to Australia
 - Passengers discussed overall experiences of the ports and what they have spent money on. Discussions focused on what demands and expectations passengers had when visiting ports that were not met, and what they would be willing to spend if the tourism offer was enhanced
 - Groups were segmented by travel group and life-stage to capture differences in demands and expectations of the ports in question
 - Vouchers were provided by Carnival Australia to incentivise passenger participation
- In-depth interviews (Phase 3)
 - The final phase interviews took place on days 7-10 as the cruise returns to Australia
 - The team conducted approximately 20-30 interviews per cruise, each lasting approximately 10-15 minutes to discuss overall experiences of the ports and what they spent their money on
 - Incentives were considered to encourage participation by passengers and crew

A1.4 Business research

When passengers were visiting the port, researchers carried out interviews with 5-10 businesses per day using a short survey. The survey took between 10-25 minutes to complete and requested information on the basic costs structure of businesses, levels of employment and their suppliers to enable a reliable mapping of the value chain.

The format of the business interviews proved slightly challenging with some businesses due to low business acumen. As a result, specific questions around business costs were not always answered (in detail). Instead, business owners were instead able to provide personal views on opportunities and challenges regarding cruise ship tourism and its impact on their business.

A1.5 Cruise operator and shipping agent data

Administrative data was collected from:

- Cruise operators (i.e. Carnival Australia) including:
 - Number of port calls per year, by how many vessels
 - Number of passenger visits per year to PNG and SI
 - Size of vessels and crews
 - Itineraries (including day trips, excursions and entertainment)
 - Take-up of excursions/tours/entertainment by passengers
 - Cost of itineraries - to cruise passenger (if pre-booked or discounted)
 - Taxes, fees and surcharges paid by cruise at each port, including fuel costs
 - Value of goods and services taken on board vessel at each port, by vessel/itinerary
 - Local staff used by cruise (on board or in port services if known)

We also gathered opinions/ data on:

- Projected future demand for cruises
- Expected future schedules and itineraries in PNG and SI
- Expected changes in vessel size
- Expected changes to passenger offering (i.e. facilities, activities, trips/excursions)
- Required infrastructure developments in the countries to support future cruise tourism growth

Other large cruise operators were also contacted (i.e. Royal Caribbean Cruises and Norwegian Cruise Lines) but they didn't have cruise ships visiting PNG or SI in 2015.

- Shipping agents handling cruise ships in PNG and SI:
 - Number and type of cruise ships handled at each port in 2015
 - Examples of port fees charged to the cruise operator

A1.6 Main differences with previous studies

During the Vanuatu 2014 study, the survey with passengers and crew members was administrated by the hotel operation staff on board of the cruise ships. There was no direct presence of researchers on-board. However, a small number of cruise ships visiting PNG and SI during the study period and the large number of ports required a different approach.

As a result, two experienced market researchers from TNS Australia were present on-board two cruise ships to encourage passengers' participation in more than one survey and conduct other qualitative research (see A1.3 Additional Qualitative Research with Passengers). Quantitative findings of the current study are hence enforced with qualitative insights gathered during field work.

Annex 2 Quantitative analysis of passengers' spending drivers

The table below summarises the correlation between the potential driving factors and mean spend, and compares them with the Vanuatu 2014 study. The factor that is strong and positively correlated to mean spend indicates (but does not establish with certainty) that the factor causes more spending.

Table A2.1 Summary table: Drivers of passenger expenditure

Factor	Vanuatu (Previous Study)	Papua New Guinea (This Study)	Solomon Islands (This Study)
Income			
Income	Little influence	Weakly Positive correlation	No correlation
Satisfaction			
Variety of things to see and do	Strongly Positive correlation	Strongly positive correlation	Strongly positive correlation
Satisfaction for shopping opportunities	Strongly Positive correlation	Weakly Positive correlation	Positive correlation
Likelihood of Returning in next three years	Strongly Positive	No correlation	Weakly positive correlation
Time ashore/Awareness of activities			
Time ashore	Positive correlation up to 7 hours	Positive correlation up to 6 hours	Positive correlation up to 5 hours
Awareness of on shore tours/activities	No correlation	Positive correlation	No correlation
Availability of options			
If more options were available, those who spent would have spent more on...	Would have spent more on clothing, watches/jewellery, and souvenirs	Would have spent more on clothing, watches/jewellery, handicrafts/souvenirs, and entertainment	
If more options were available, those who did not spend would have spent more on...	Would have spent more on clothing, souvenirs	Would have spent more on tours on the day, handicrafts/souvenirs	
Pre-purchased tour			
Pre-purchased tour	Spend less in transport and more in souvenirs if tours were pre-purchased	Spend less in transport, more in souvenirs if tours were pre-purchased. Spend about the same in F&B	

Annex 3 Cost Structures and Assumptions

This annex outlines the draft assumptions made related to the indirect impact assessment on the economy of PNG and SI:

- It shows assumed cost structure for each of the industries covered in the study
- It maps out the assumed flow of the money into one of the three final categories (local beneficiaries, government and leakage)
- Summarizes the sources for assumptions

These assumptions and cost structures were applied to the ports of Alotau, Doini Island, Kitava, Kiriwina and Rabaul in PNG and Honiara port in SI.

A3.1 Tours and Entertainment Services

Table A3.1 Comparison of assumptions for tours and entertainment services industry in PNG and SI (2015) and Vanuatu (2014)

	Papua New Guinea	Solomon Islands	Vanuatu (activity based tour operators)	Vanuatu (tour operators – transfer)
Cost Structure				
Staff costs	11%	11%	30%	15%
Goods and materials	4%	0%	4% (electricity/ water/gas)	
Equipment	5%	0%	15% (loan repayment)	5% (loan repayment)
Services	8%	2%	10% (transfers)	
Fuel/transport (ownership/ rental, maintenance, and fuel)	9%	38%	10%	15%
Property Rental / Ownership	10%	21%	10% (asset investment)	25% (asset investment and electricity/ water/gas)
Insurance	8%	8%		
Other	16%	0%	10%	20%
Profit margin	30%	19%	11%	20%
Labour				
Average Salary (PGK)	7,143	N/A	-	-
Labour Intensity (FTE per 1000 AUD)	0.31	Assumed PNG Labour intensity	-	-

Source: ICF and Vanuatu 2014 Study

Assumption	Source for Papua New Guinea	Source for Solomon Islands
Cost structure	TNS and ICF business survey	
Share of local goods, equipment and services	100% based on TNS and ICF business survey. Services supplied by local transport providers (mini bus) and hiring local tour guides	
GST	10% applied to staff costs and profit. VAT on intermediate consumption refunded to business operators so not calculated. It is further assumed only 50% ashore tour providers are registered and pay VAT as there are many ad-hoc tour guides offering services	GST (goods and service tax rates applied) 10% Services tax applied to staff costs. GST on intermediate consumption refunded to business operators so not calculated (10% tax on domestic goods and 15% tax on imported goods not accounted). It is further assumed only 50% of ashore tours providers are registered and pay GST as there are many ad-hoc tour guides offering services
Insurance	100% of insurance costs are assumed to be imported, with no import duties applied	
Income tax	42% tax rate applied on average salary only for registered tour operators	11% tax rate applied on average salary only for registered tour operators
Social Security	Not applied – most businesses in tours and entertainment sector employ less than 15 employees	For registered businesses contribute 7.5% of salary cost and deduct 5% from private beneficiaries (employee salary)
Corporate taxes	No corporate tax applied to profits of family businesses. 30% tax rate for residents and 48% for non-residents Share of locally owned businesses assumed 100%	No corporate tax applied to profits of family businesses. 30% tax rate for residents and 35% for non-residents. Share of locally owned businesses assumed 100%
Employment	Employment impact has been calculated by calculating the total number of staff employed in the industry per country and dividing this by the total industry income (for year 2015)	
2nd round of suppliers	The main suppliers are transport companies (buses, taxis). It is assumed that 100% of the money spent on fuel/transport and rent/ownership is further multiplied through the local transport sector	

A3.2 Transport Services (taxi/bus/ground transportation)

Table A3.2 Comparison of assumptions for transport services industry in selected countries

	Papua New Guinea	Solomon Islands	Vanuatu
Cost Structure			
Staff costs	11%	PNG cost structure assumed	16%
Goods and materials	0%		51% (cost of products)
Equipment	8%		5% (rent/loan repayment)
Services	0%		8% (electricity/water/gas)
Fuel/transport (ownership/ rental, maintenance, and fuel)	37%		
Property Rental / Ownership	0%		
Insurance	12%		
Other	0%		12%
Profit margin	32%		8%
Labour			
Average Salary (PGK)	2,750	N/A	-
Labour Intensity (FTE per 1000 AUD)	0.13	Assumed PNG Labour intensity	-

Source: ICF and Vanuatu 2014 Study

Assumption	Source for Papua New Guinea	Source for Solomon Islands
Cost structure	TNS and ICF business survey	
Share of local goods, equipment and services	100% based on TNS and ICF business survey	
VAT	10% applied to staff costs and profit. VAT on intermediate consumption refunded to business operators so not calculated. It is further assumed only 50% ashore tour providers are registered and pay VAT as there are many ad-hoc tour guides offering services	GST (goods and service tax rates applied) 10% Services tax applied to staff costs. GST on intermediate consumption refunded to business operators so not calculated (10% tax on domestic goods and 15% tax on imported goods not accounted). It is further assumed only 50% of ashore tours providers are registered and pay GST as there are many ad-hoc tour guides offering services
Insurance	100% of insurance costs are assumed to be imported, with no import duties applied	
Income tax	42% tax rate applied on salaries for registered businesses (90% of businesses are assumed to be registered)	11% tax rate applied on salaries for registered businesses (90% of businesses are assumed to be registered)
Social Security	Not applied – most businesses in transport sector employ less than 15 employees	For registered businesses contribute 7.5% of salary cost and deduct 5% from private beneficiaries (employee salary)
Fuel	10% ad valorem import tax on fuel 100% of fuel is imported to the economy	10% ad valorem import tax on fuel 100% of fuel is imported to the economy
Corporate taxes	No corporate tax applied to profits of family businesses. 30% tax rate for residents and 48% for non-residents Share of locally owned businesses assumed 80%	No corporate tax applied to profits of family businesses. 30% tax rate for residents and 35% for non-residents Share of locally owned businesses assumed 80%
Employment	Employment impact has been calculated by calculating the total number of staff employed in the industry per country and dividing this by the total industry income (for year 2015).	
2nd round of suppliers	It is assumed that the multiplier effect through the second round of suppliers is zero – major supply comes through imported goods (fuel, vehicles)	

A3.3 Specialist tourist retail industry (handicrafts, souvenirs, artwork)

Table A3.3 Comparison of Specialist Tourist Retail Industry in Selected Countries

	Papua New Guinea	Solomon Islands	Vanuatu
Cost Structure			
Staff costs	0%	PNG cost structure assumed	
Goods and materials	20%		65% (material/Cost of Products)
Equipment	0%		
Services	0%		5% (electricity)
Fuel/transport (ownership/ rental, maintenance, and fuel)	14%		
Property Rental / Ownership	12%		10% (rent)
Insurance	0%		
Other	0%		5%
Profit margin	54%		15%
Labour			
Average Salary (PGK)	1,100		-
Labour Intensity (FTE per 1000 AUD)	0.14		-

Source: ICF and Vanuatu 2014 Study

Assumption	Source for Papua New Guinea	Source for Solomon Islands
Cost structure	TNS and ICF business survey	
Share of local goods, equipment and services	100% of based on TNS and ICF business survey. The majority of handicrafts and art work is produced locally	
VAT	No VAT rates applied	No GST rates applied
Insurance	100% of insurance costs are assumed to be imported, with no import duties applied	
Income tax	No tax rate applied	No income tax applied. Most of the souvenir sellers have other jobs or are unemployed and do not normally pay taxes from these activity
Social Security	Not applied – most businesses employ 15 or less employees	Not applied
Corporate taxes	Not applied	Not applied
Employment	Employment impact has been calculated by calculating the total number of staff employed in the industry per country and dividing this by the total industry income (for year 2015)	

A3.4 Food and Beverage Services Industry (restaurants and bars)

Table A3.4 Comparison of assumptions for food and beverage services industry in the selected countries

	Papua New Guinea	Solomon Islands	Vanuatu
Cost Structure			
Staff costs	16%	18%	15%
Goods and materials	32%	19%	52% (cost of product (food/beverages))
Equipment	5%	3%	
Services	6%	0%	5% (electricity, water, gas)
Fuel/transport (ownership/ rental, maintenance, and fuel)	4%	6%	3%
Property Rental / Ownership	12%	0%	9%
Insurance	2%	2%	
Other	4%	15%	1%
Profit margin	18%	38%	15%
Labour			
Average Salary (PGK)	11,111		-
Labour Intensity (FTE per 1000 AUD)	0.34		-

Source: ICF and Vanuatu 2014 Study

Assumption	Source for Papua New Guinea	Source for Solomon Islands
Cost structure	TNS and ICF business survey	
Share of local goods, equipment and services	100% based on TNS and ICF business survey. Supplies come from local markets and supermarkets	
VAT	10% applied to staff costs and profit. VAT on intermediate consumption refunded to business operators so not calculated. It is further assumed 100% of businesses are registered	GST (goods and service tax rates applied) 10% Services tax applied to staff costs. GST on intermediate consumption refunded to business operators so not calculated (10% tax on domestic goods and 15% tax on imported goods not accounted). It is further assumed 100% of businesses are registered
Insurance	100% of insurance costs are assumed to be imported, with no import duties applied	
Income tax	42% tax rate applied on salaries for registered businesses (100% of businesses assumed to be registered)	11% tax rate applied on salaries for registered businesses. (100% of businesses assumed to be registered)
Social Security	Most of businesses employ more than 15 employees. Calculated contributions to government are 6% of the salary (from the employee) and 8.4% of salary for the employer	For registered businesses contribute 7.5% of salary cost and deduct 5% from private beneficiaries (employee salary)
Corporate taxes	No corporate tax applied to profits of family businesses. 30% tax rate for residents and 48% for non-residents Share of foreign owned businesses assumed 50%	No corporate tax applied to profits of family businesses. 30% tax rate for residents and 35% for non-residents Share of locally owned businesses assumed 50%
Employment	Employment impact has been calculated by calculating the total number of staff employed in the industry per country and dividing this by the total industry income (for year 2015)	
2nd round of suppliers	The main suppliers are local supermarkets. It is assumed that 100% of the money spent on goods and material is further multiplied through the local retail industry	

A3.5 General retail industry (supermarket, general store items)

Table A3.5 Comparison of assumptions for general retail industry in the selected countries

	Papua New Guinea	Solomon Islands	Vanuatu
Cost Structure			
Staff costs	30%	Assumed PNG cost structure	20%
Goods and materials	43%		43% (cost of products)
Equipment	0%		
Services	1%		12% (electricity/water/gas)
Fuel/transport (ownership/ rental, maintenance, and fuel)	5%		
Property Rental / Ownership	1%		10% (rent/loan payment)
Insurance	0%		
Other	0%		5%
Profit margin	20%		10%
Labour			
Average Salary (PGK)	1,857		-
Labour Intensity (FTE per 1000 AUD)	0.21		-

Source: ICF and Vanuatu 2014 Study

Assumption	Source for Papua New Guinea	Source for Solomon Islands
Cost structure	TNS and ICF business survey	
Share of local goods, equipment and services	Most of the goods sold at supermarkets are imported. This was assumed at 95%	
Import duties on goods	An average 20% import duty is assumed ³⁸	
VAT	10% applied to staff costs and profit. VAT on intermediate consumption refunded to business operators so not calculated. 100% of businesses assumed to be registered	GST (goods and service tax rates applied) 10% Services tax applied to staff costs. GST on intermediate consumption refunded to business operators so not calculated (10% tax on domestic goods and 15% tax on imported goods not accounted). 100% of businesses assumed to be registered
Insurance	100% of insurance costs are assumed to be imported, with no import duties applied	
Income tax	42% tax rate applied on salaries for registered businesses	11% tax rate applied on salaries for registered businesses
Social Security	Most of businesses employ more than 15 employees. Calculated contributions to government are 6% of the salary (from the employee) and 8.4% of salary for the employer	For registered businesses contribute 7.5% of salary cost and deduct 5% from private beneficiaries (employee salary)
Corporate taxes	30% tax rate for residents and 48% for non-residents Share of foreign owned businesses assumed 80% (Most of the supermarkets are owned by Chinese and Pilipino expats)	30% tax rate for residents and 35% for non-residents. Share of locally owned businesses assumed 70%. Retail trade is predominantly Chinese owned
Employment	Employment impact has been calculated by calculating the total number of staff employed in the industry per country and dividing this by the total industry income (for year 2015) To capture the potential for part-time employment, a range has been calculated based on the assumption of 33% of FTE to be consistent with Vanuatu study	

38 http://www.customs.gov.pg/06_legislation_and_publications/1_legislation/09_Import_Export_Tariff_2012_Version.pdf

A3.6 Kitava and Kiriwina and Doini Islands

The islands of Kitava, Kiriwina and Doini Islands differ from the rest of the ports surveyed. Kitava and Kiriwina function as subsistence economies and the inhabitants are farmers. Doini Island is a privately owned island. In Kitava and Kiriwina, businesses selling goods and services are ad-hoc, family owned businesses set up only when cruise ships arrive. As a result, the impact assessment assumed the revenues received from cruise ships are used entirely by private beneficiaries (for family consumption), there is no supply chain, no taxes are paid (i.e. no government revenue) and nothing leaks from the economy (all the material is sourced locally from farming e.g. wood, vegetables).

Table A3.6 Assumptions for Kitava, Kiriwina and Doini Islands

Assumption	Source for Papua New Guinea
Cost structure	There is no formal economy. It is assumed that 100% of the revenues are used for family consumption
Share of local goods, equipment and services	100% of their materials (i.e. wood, vegetables) is sourced locally. It is assumed there is no leakage
Import duties on goods	No taxes are paid

Annex 4 Assumptions for cost benefit analysis

A4.1 General assumptions

The CBA covers a 10 year period for all options. The discount rates used for options in SI and PNG are 7 per cent (as assumed in the 2014 Vanuatu Study) minus the inflation rates of the respective countries. The inflation rates of Solomon Islands and Papua New Guinea are 5.95 per cent and 4.8 per cent respectively – these are the average inflation rates over 2011-2014.

For options which involve infrastructure constructions, it is assumed that all construction costs will be paid in year 1 and the associated maintenance costs will be incurred from years 2 to 10.

Table A4.1 General assumptions related to CBA of all options

Type of Assumption	Valuation	Source
Period for cost benefit analysis	10 years	Vanuatu 2014 Study
SBD:AUD Exchange Rate	0.18	xe.com
PGK:AUD Exchange Rate	0.47	xe.com
USD:AUD Exchange Rate	1.30	xe.com
SI Discount Rate	1%	Vanuatu 2014 Study, World Bank
PNG Discount Rate	2%	Vanuatu 2014 Study, World Bank

A4.2 Options for PNG

Option 1 – Infrastructure improvements to existing ports of call

Action 1 – Extension of a jetty in Kitava to enable disembarkation of two tenders simultaneously to facilitate the more efficient transportation of passengers to and from larger cruise ships.

Table A4.2 Costs

Type of Cost	Valuation	Source
Extension of the existing jetty	AUD 195,000	Seaport Group estimate
Beach shelters /huts	AUD 65,000	Seaport Group estimate
Maintenance (landing facilities)	1-2% of CAPEX per year	Seaport Group estimate
Maintenance (beach shelters)	15-20% of CAPEX per year	Seaport Group estimate

Table A4.3 Benefits

Type of Benefit	Valuation	Source
Increased number of calls at Kitava in years 2-4	4 additional calls	Carnival Australia
Increased number of calls in years 5-10	7 additional calls	Carnival Australia

Figure A4.1 Existing jetty at Kitava**Additional assumptions**

- Two 4m by 4m beach shelters, self-erected on site
- Baseline number of calls is 13; with the jetty extension, 17 calls expected in 2018-2020 and 20 calls expected in 2021-2026

Action 2 – Water supplies to WHO standards of 50 tonnes per hour at Alotau

**Table A4.4 Costs**

Type of Cost	Valuation	Source
Water supply to WHO standard of 50 tonnes per hour	AUD 195,000	Seaport Group estimate
Maintenance	10% of CAPEX	Seaport Group estimate

Table A4.5 Benefits

Type of Benefit	Valuation	Source
Increased number of calls at Alotau in years 5-10	2 additional calls	Carnival Australia, ICF estimate

Additional assumptions

- Cost for water supplies to reach WHO standards assumes worst case provision, and includes package water treatment, storage and pump
- Revenue from water supply has not been taken into account
- Number of calls at Alotau is likely to decline in the medium to long-term without this action; assumes two additional calls with freshwater supply

Action 3 – Reinforcement and extension of the port berth in Madang to enable more regular and larger ships to dock in port and construction of a sanitation block

Table A4.6 Costs

Type of Cost	Valuation	Source
Construction of two sinker blocks and upgrades to fenders	AUD 39,000	Seaport Group estimate

Table A4.7 Benefits

Type of Benefit	Valuation	Source
Increased number of calls in Madang Year 2 - 4	3 additional calls	Carnival Australia
Increased number of calls at Madang in years 5-10	8 additional calls	Carnival Australia

Additional assumptions

- Baseline is 2-4 calls; 10-12 calls expected from year 4 with reinforcement and extension of port
- Similar impact per passenger as observed in Kitava

Option 2 – Upgrade port amenities

Action 1: Construct a sanitation block near or at the wharf area in Kitava and Kiriwina

Action 2: Provide covered areas, including seating for passengers in Kitava and Kiriwina

Action 3: Provide clear signage to enable cruise passengers to navigate from the port area to leading attractions and points of interest in Rabaul and Alotau

Table A4.8 Costs

Type of Cost	Valuation	Source
Construction of a sanitation block	AUD 52,000	Seaport Group estimate
Maintenance of sanitation block per year	10% of CAPEX	Seaport Group estimate
Construction of covered areas and seating for passengers	97,500	Seaport Group estimate
Signage provision	19,500	Seaport Group estimate
Maintenance (other than sanitation block)	5% of CAPEX	Seaport Group estimate

Table A4.9 Benefits

Type of Benefit	Valuation	Source
Increase in passenger spend from more hours ashore in Alotau and Rabaul from year 3	Increase by 15 minutes	ICF estimate
Increase in passenger spend from more hours ashore in Kitava and Kiriwina from year 3	Increase to current level observed in Doini Island	ICF estimate

Additional assumptions

- Cost for covered areas and seating for passengers includes purchase, delivery and erection of four 4x4-metre shelters, self-erected on-site
- Assume passenger spend increases proportionally with the increase in time spent ashore; time spent to be increased from the current 3.4 and 3.6 hours (at Kitava and Kiriwina respectively) to 3.8 hours, as observed in Doini Island

Option 3 – Improvements to customs and immigration procedures

Action 1: Legislative change (use of non-proclaimed ports for clearance)

Action 2: Improve process of clearing passengers.

Table A4.10 Costs

Type of Cost	Valuation	Source
Time spent to undertake legislative change	10 legislators x 1 month	ICF estimate, PNG government pay scale 18
Cost of training for customs officers	20 customs officers x 1 month	ICF estimate, PNG government pay scale 10

Table A4.11 Benefits

Type of Benefit	Valuation	Source
Increased number of calls at Conflict Island in years 3-10	Increases to 80% spending observed in Alotau	ICF estimate
Increase in passenger expenditure in Alotau from more hours ashore in years 3-10	Increase by 15 mins	ICF estimate

Additional assumptions

- Wage of legislators assumed to be PNG government pay scale point 18
- Wage of customs officers assumed to be PNG government pay scale point 10
- Impact per passenger in Conflict Island similar to impact observed in Kitava
- Assume passenger spend increases proportionally with the increase in time spent ashore

Option 4 – Increased provision of foreign exchange services

Action 1 – Providing ATM and a Forex booth near or at the wharf in Alotau

Table A4.12 Costs

Type of Cost	Valuation	Source
ATM machine	AUD 18,850	Quote to for purchase and installation of ATM machine
Maintenance cost	10% of initial cost	Vanuatu 2014 Study

Table A4.13 Benefits

Type of Benefit	Valuation	Source
Increased passenger spend in Alotau from year 2	Additional AUD25 spend x 20% passengers who utilise service	ICF estimate

Option 5 – Development of product offer in PNG

Action 1: Establish a more formalized cruise committee

Action 2: Development of tours and excursions

Table A4.14 Costs

Type of Cost	Valuation	Source
Time spent by members on meetings	Once per month x 5 members x 1 hour x average wage per hour	ICF estimate
Time spent to share information	2 hours per cruise ship x average wage per hour	ICF estimate
Time spent to collect opinion from businesses and to develop offer with cruise operators	80 days x average government wage per day	ICF estimate
Cost of training	AUD 22,000	Quote for a 1-3 month training course
Administration costs	20% of trainer cost	Vanuatu 2014 Study

Table A4.15 Benefits

Type of Benefit	Valuation	Source
Increased spending on tours and pre-booked tours in Alotau in years 3-10	Increase to 80% of current Rabaul level	ICF estimate
Increased spending on pre-booked tours in Kitava and Kiriwina in years 3-10	2 times current tours spending	ICF estimate

Additional assumptions

- Average wage of committee members assumed to be PNG government pay scale point 18
- Government wage assumed to be PNG government pay scale point 10
- Meetings of the committees is ongoing, i.e. costs are incurred throughout 10 years, assuming 4 cruise committees operate
- Trainings for business operators occur in year 1 (2 trainings) and year 2 (2 trainings).
- 70 per cent of pre-booked tours spending goes into the economy

Option 6 – Improving information provision to passengers

Action 1: Providing quarantine videos and leaflets to passengers

Action 2: Updating destination information provided by cruise operators to passengers

Action 3: Develop and provide maps of the port, city centre and areas of interest

Action 4: Inform passengers of opportunity to make donations.

Table A4.16 Costs

Type of Cost	Valuation	Source
Quarantine videos	AUD 81,000	Price quote for a three-minute video production
Distribution of leaflets and promotion material to passengers	AUD0.1 for each double sided leaflet x total passengers	ICF estimate
Time spend to update information	3 days per year x average government salary	ICF estimate

Table A4.17 Benefits

Type of Benefit	Valuation	Source
Increase spend on souvenirs in years 3-10	Increase by 20%	ICF estimate
Increase spend on donations in years 3-10	Increase by 20%	ICF estimate

Additional assumptions

- Three-minute video production
- Each passenger receives one leaflet, and total passengers assumed to be baseline number of passengers to Alotau
- Government wage assumed to be PNG government pay scale point 10

A4.3 Options for Solomon Islands

Option 1 – Upgrade Honiara’s port infrastructure

Action 1: A wharf capable of handling cruise ships of up to 264-metres in the future, and currently those of 220-metres in length

Action 2: Water supplies to WHO standards of 50 tonnes per hour.

Table A4.18 Costs

Type of Cost	Valuation	Source
New wharf	AUD 33,800,000	JICA funding program
Water supply to WHO standard of 50 tonnes per hour	AUD 195,000	Seaport Group estimate
Maintenance	2% of initial cost per year	Seaport Group estimate

Table A4.19 Benefits

Type of Benefit	Valuation	Source
Increased number of calls at Honiara	Year 1 & 2 7 additional calls Year 3 to 5 15 additional calls Year 6 to 10 20 additional calls	ICF estimate based on Carnival Australia growth projections
Increase in spend from more hours ashore	Hours ashore increase from 3.7 to 4.3 (current level observed in Rabaul).	ICF estimate

Additional assumptions

- Wharf under construction is 180-200 metres long
- Cost for water supplies to reach WHO standards assumes worst case provision, and includes package water treatment, storage and pump
- Assume passenger spend increases proportionally with the increase in time spent ashore. Time spent to be increased from the current 3.7 hours to 4.3 hours as observed in Rabaul

Option 2 – Upgrade Honiara’s port amenities

Action 1: Construct a sanitation block near or at the wharf area

Action 2: Provide covered areas, including seating for passengers

Action 3: Clear signage to enable cruise passengers to navigate from the port area to leading attractions and points of interest

Action 4: Provision of litter bins and port beautification actions to make the area more attractive for cruise passengers

Table A4.20 Costs

Type of Cost	Valuation	Source
Construction of a sanitation block	AUD 52,000	Seaport Group estimate
Maintenance of sanitation block per year	10% of CAPEX	Seaport Group estimate
Construction of covered areas and seating for passengers	AUD 97,500	Seaport Group estimate
Signage provision	AUD 19,500	Seaport Group estimate
Litter bins and port beautification action	AUD 13,000	Seaport Group estimate
Maintenance (other than sanitation block)	10% of CAPEX	Seaport Group estimate

Table A4.21 Benefits

Type of Benefit	Valuation	Source
Increase in expenditure from more hours ashore in years 2-10	Hours ashore increase from 3.7 to 4.3 (current level observed in Rabaul).	ICF estimate

Additional assumptions

- Cost of covered areas and seating for passengers includes purchase, delivery and erection of four 4x4-metre shelters, self-erected on-site
- Assume passenger spend increases proportionally with the increase in time spent ashore; time spent to be increased from the current 3.7 hours to 4.3 hours as observed in Rabaul

Option 3 – Development of product offer in Honiara

Action 1: Establish a more formalized cruise committee

Action 2: Development of tours and excursions

Table A4.22 Costs

Type of Cost	Valuation	Source
Time spent by members on meetings	Once per month x 5 members x 1 hour x average wage per hour	ICF estimate and 2010 SI Employee survey
Time spent to share information	2 hours per cruise ship x average wage per hour	ICF estimate and 2010 SI Employee survey
Time spent to collect opinion from businesses and to develop offer with cruise operators	80 days x average government wage per day	ICF estimate and 2010 SI Employee survey
Cost of training	Two 1-3 months trainings provided in Year 1 and Year 2, 22,000 each	Quote for a 1-3 month international business capacity course
Administration costs	20% of trainer cost	Vanuatu 2014 Study

Table A4.23 Benefits

Type of Benefit	Valuation	Source
Increased cruise passengers' spend in years 3-4	Increases to 80% spending observed in Alotau	ICF estimate
Increased cruise passengers' spend in years 5-10	Increases to spending observed in Alotau	ICF estimate

Additional assumptions

- Wage of committee members assumed to be the average wage of management level in SI
- Government wage assumed to be the average wage of skilled worker in SI
- Meetings of the committee are ongoing, i.e. costs are incurred throughout 10 years
- 1-3 month capacity building programmes take place twice, once in Year 1 and once in Year 2

Option 4 – Development of the Solomon Islands cruise offer

Action 1: Opening Gizo as destination for large vessels

Table A4.24 Costs

Type of Cost	Valuation	Source
Hydrography survey for the location	AUD 52,000	Seaport Group estimate
Additional bollards/large cleats to be added adjacent the sloping concrete ferry wharf- to allow ships tenders to safely berth alongside	AUD 19,500	Seaport Group estimate
The red and white navigational beacons and green starboard hand buoy as marked on official chart BA 1735 to be replaced to IALA standards (SIMSA).	AUD 26,000	Seaport Group estimate
Public toilet facilities at or near the landing area.	AUD 52,000	Seaport Group estimate
Maintenance	10% of CAPEX	Seaport Group estimate

Table A4.25 Benefits

Type of Benefit	Valuation	Source
Additional calls at Gizo in years 2-4	1-7 additional calls	Carnival Australia and ICF estimate
Additional calls at Gizo in years 5-8	3-12 additional calls	Carnival Australia and ICF estimate
Additional calls at Gizo in years 9-10	3-17 additional calls	Carnival Australia and ICF estimate

Additional assumptions

- Cost of hydrography survey is based on a 5-day survey at location and processing by SIHU
- Baseline calls at Gizo is 3; 4-6 calls expected in 2018-2019 and between 12-20 calls could be expected in 2020-2026
- Similar impact per passenger as observed in Kitava

Action 2: Opening Tavanipupu as destination for large vessels**Table A4.26 Costs**

Type of Cost	Valuation	Source
Preliminary weather monitoring	AUD 26,000	Seaport Group estimate
Hydrography survey for this location	AUD 52,000	Seaport Group estimate
Destination impact study	AUD 65,000	Vanuatu 2014 Study
Landing facilities (i.e. jetty)	AUD 325,000 - AUD 650,000	Seaport Group estimate
Beach shelters /huts	AUD 65,000	Seaport Group estimate
Maintenance	15-20% of CAPEX	Seaport Group estimate

Table A4.27 Benefits

Type of Benefit	Valuation	Source
Calls at Tavanipupu in years 2-4	4-6 calls	Carnival Australia and ICF estimate
Calls at Tavanipupu in years 5-8	6-12 calls	Carnival Australia and ICF estimate
Calls at Tavanipupu in years 9-10	6-14 calls	Carnival Australia and ICF estimate

Additional assumptions

- Preliminary weather monitoring involves satellite data analysis
- Cost of hydrography survey based on a 5-day survey at location and processing by SIHU
- Landing facilities include 2 berths for ships tenders; valuation highly dependent on location for anchoring and access
- Two 4x4-metre beach shelters, self-erected on-site
- Baseline calls at Tavanipupu is 0; 4-6 calls expected in 2018-2019 and 12-14 calls could be expected in 2020-2026
- Similar impact per passenger as observed in Kitava

Option 5 – Improving information provision to passengers

Action 1: Providing quarantine videos and leaflets to passengers

Action 2: Updating destination information provided by cruise operators to passengers

Action 3: Develop and provide maps of the port, city centre and areas of interest

Action 4: Inform passengers of opportunity to make donations

Table A4.28 Costs

Type of Cost	Valuation	Source
Quarantine videos	AUD 81,000	Price quote for a three-minute video production
Distribution of leaflets and promotion material to passengers	AUD0.1 for each double sided leaflet x total passengers	ICF estimate
Time spend to update information	3 days per year x average government salary	ICF estimate, 2010 Employment survey SI

Table A4.29 Benefits

Type of Benefit	Valuation	Source
Increase spend on souvenirs in years 3-10	Increase by 20%	ICF estimate
Increase spend on donations in years 3-10	Increase by 20%	ICF estimate

Additional assumptions

- Three-minute video production
- Each passenger receives one leaflet, and total passengers assumed to be baseline number of passengers to Honiara (passengers numbers expected in 2017)
- Average wage assumed to be average wage of skilled worker in SI

