



# Tourism Satellite Account 2019



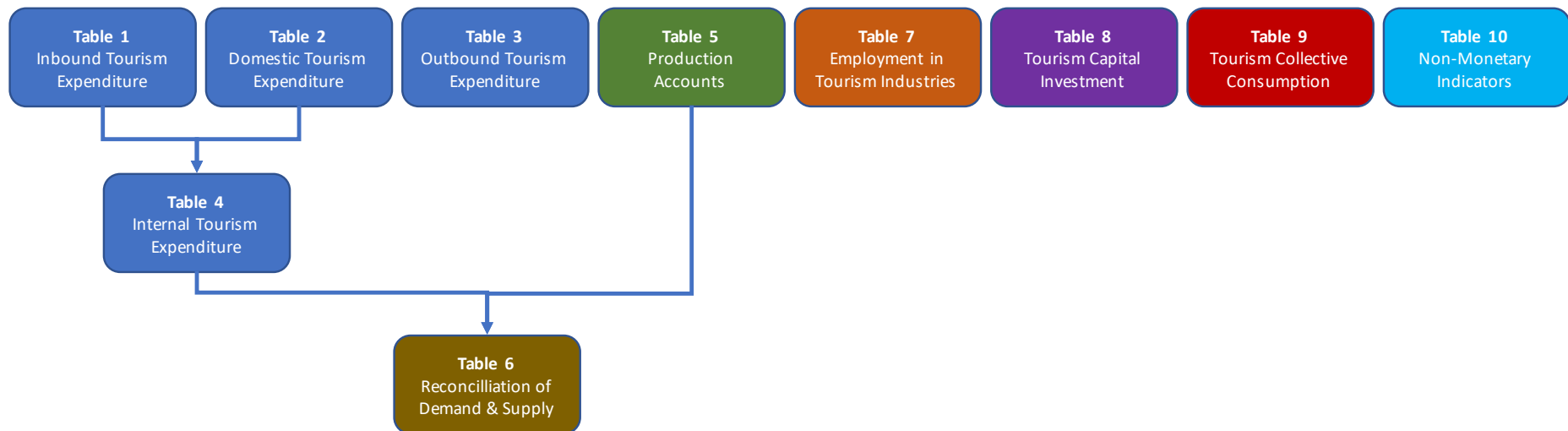
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# Introduction

This report presents the first compilation of a Tourism Satellite Account (TSA) for Papua New Guinea (PNG). The methodology follows the Recommended Methodological Framework (TSA:RMF 2008) developed by the United Nations World Tourism Organization (UNWTO) and adopted by the United Nations Statistical Committee (UNSC).

The TSA consists of up to 10 tables as shown below, although most countries do not develop all of these. As the figure below shows, the most important Tables are numbers 1, 2, 4, 5 and 6, as they are essential for the calculation of the key indicators, in particular Tourism Direct Gross Domestic Product (TDGDP) in Table 6. This first TSA for PNG includes Tables 1, 2, 4, 5, 6 and 10, as there is available data for the compilation of these six tables.



The development of the PNG TSA is intended to be the first step in an iterative process of regular updates that will continually improve the level of detail in its tables and the robustness of the figures. This process is being carried out around the world by destinations intent of measuring the economic importance of tourism using the same concepts, classifications and definitions as used for measuring other sectors such as agriculture, mining and construction.

Only by developing a first TSA is it possible to progress down this path of continual development, which can be achieved through improving tourism demand-side surveys, such as international inbound, cruise and domestic tourism surveys. However, it is also critical that supply-side data capture and data processing also keeps pace with that of the demand side, as the TSA is all about reconciling tourism demand and supply. Consequently, the involvement of national accountants in future compilations of the TSA is essential.

This report is structured in five parts as follows:

1. Key Findings: the top line findings from the TSA in graphical format
2. The Tables: the TSA tables for PNG
3. WTTC Comparison: comparing the TSA findings with WTTC economic modelling for PNG
4. Technical Notes: sources, methodology and assumptions used to compile the TSA tables
5. The Way Forward: recommendations for improving data capture and organisation for future TSA compilations

*Note: a first TSA compilation is often called an “Experimental TSA”, and this is very much the case for this first TSA for PNG. The data comes with a strong statistical health warning. It is anticipated that improvements to the systems of tourism statistics in PNG will enable more detailed and robust compilations in the future.*

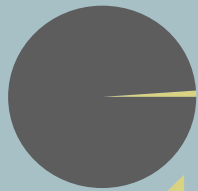




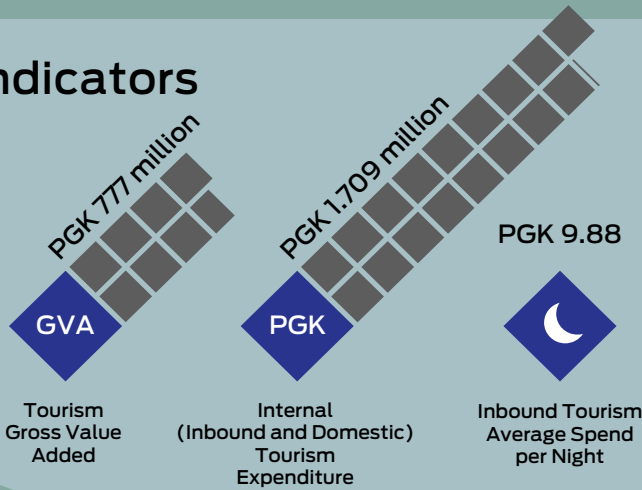
# 1. Key Findings

# Papua New Guinea Tourism Satellite Account 2019

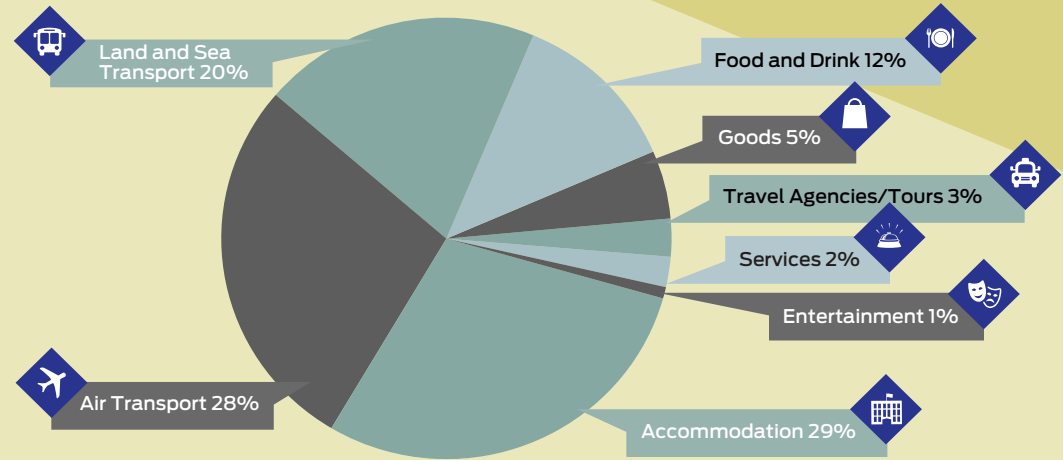
## Economic Indicators



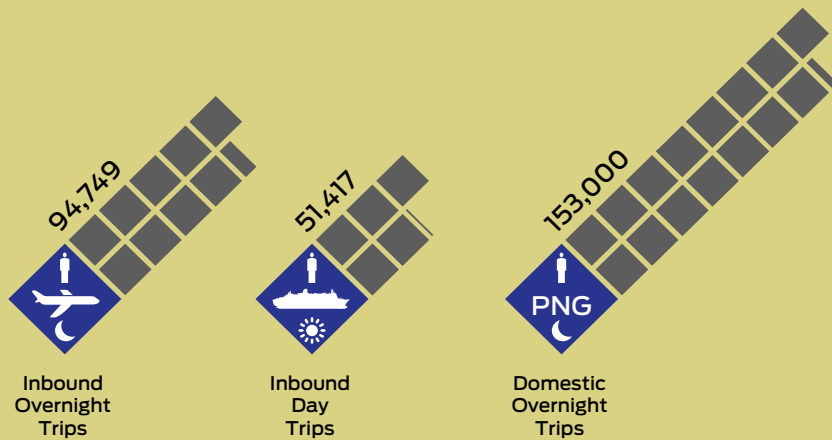
Tourism GDP  
0.9%



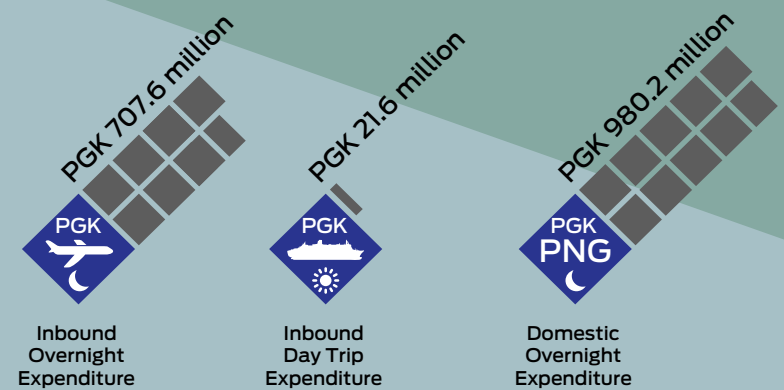
## Internal (Inbound and Domestic) Tourism Expenditure



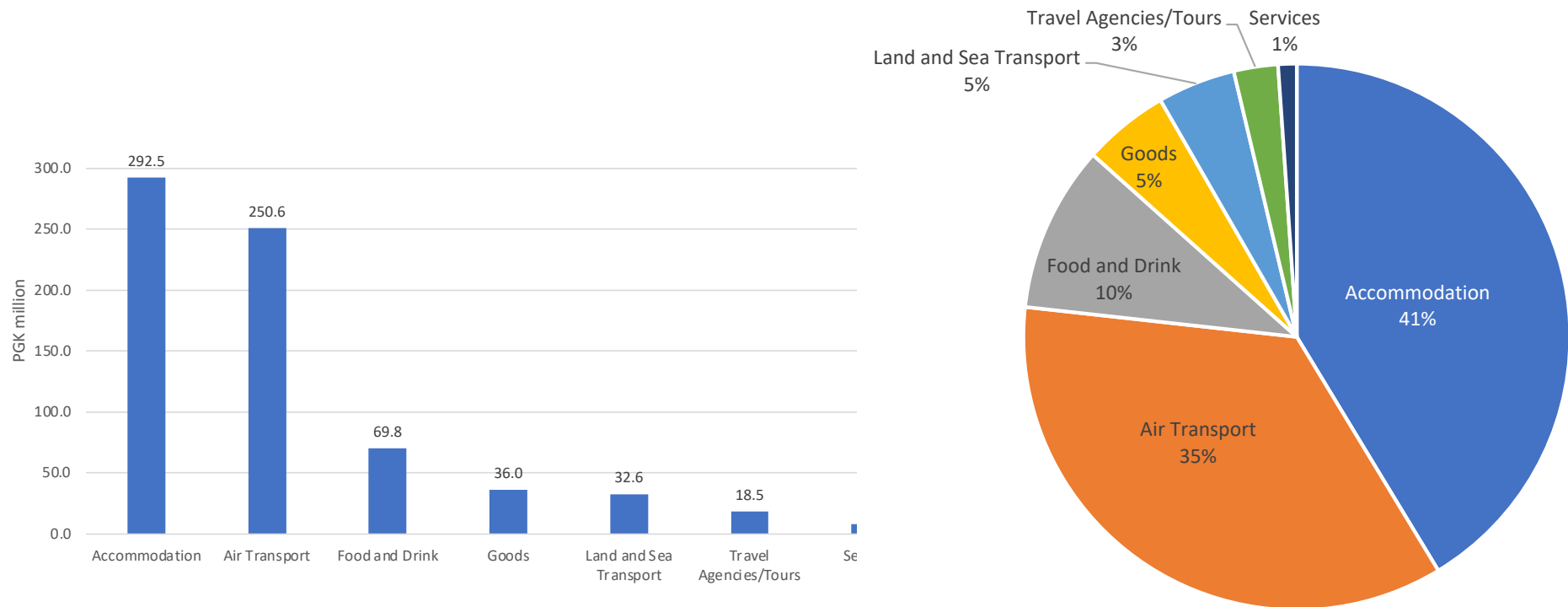
## Tourism Trips



## Tourism Expenditure



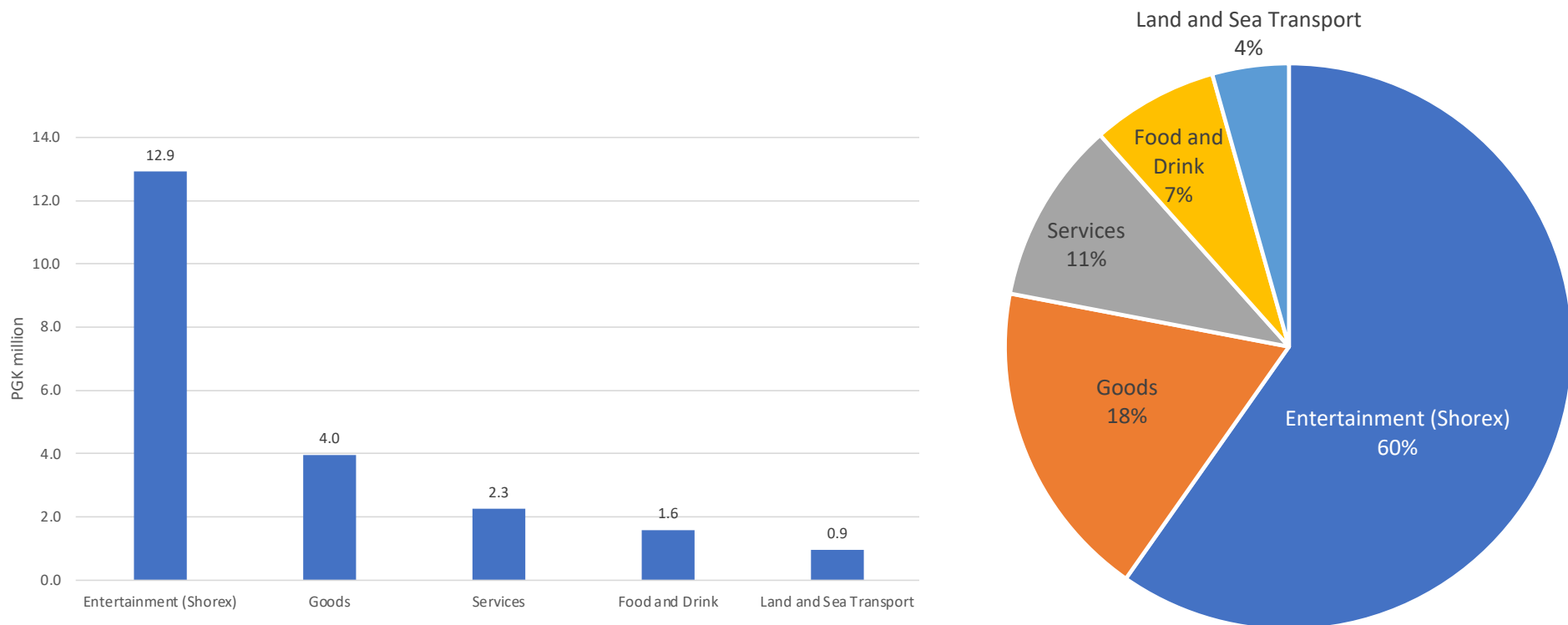
# Inbound Air Visitor Expenditure



Inbound air visitor expenditure totalled PGK 707.6 million in 2019, with accommodation (41%) and air transport (35%) accounting for the largest proportion of expenditure.

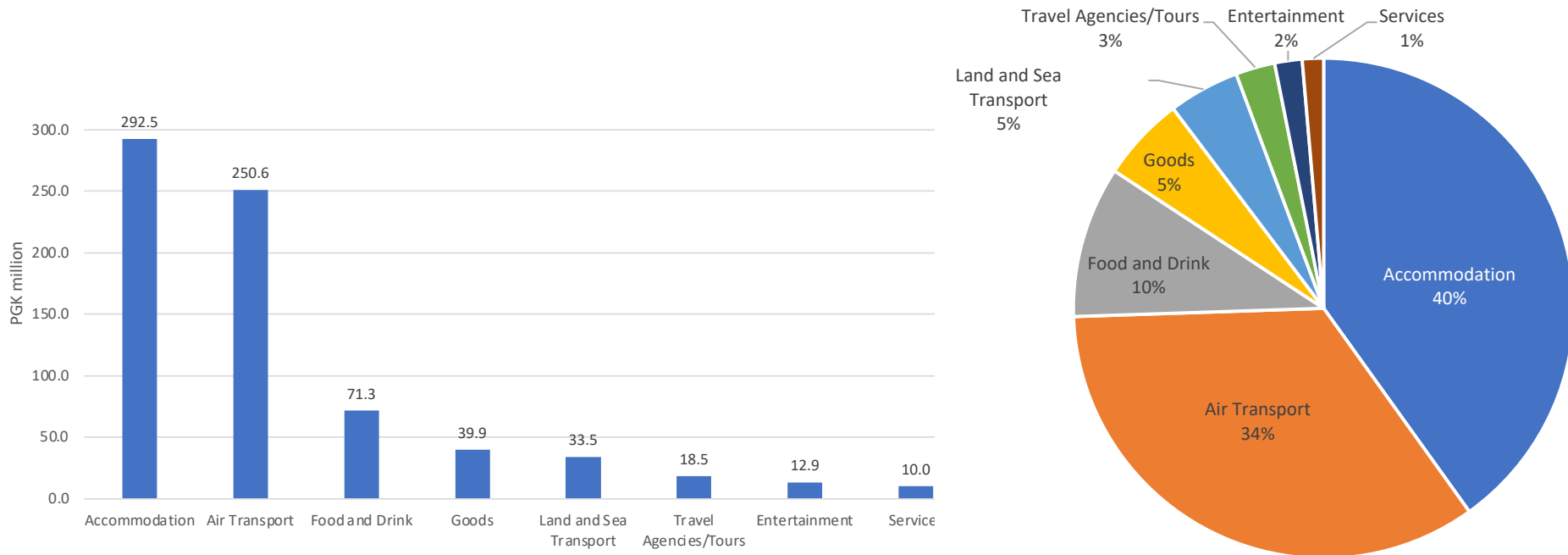


# Inbound Cruise Visitor Expenditure



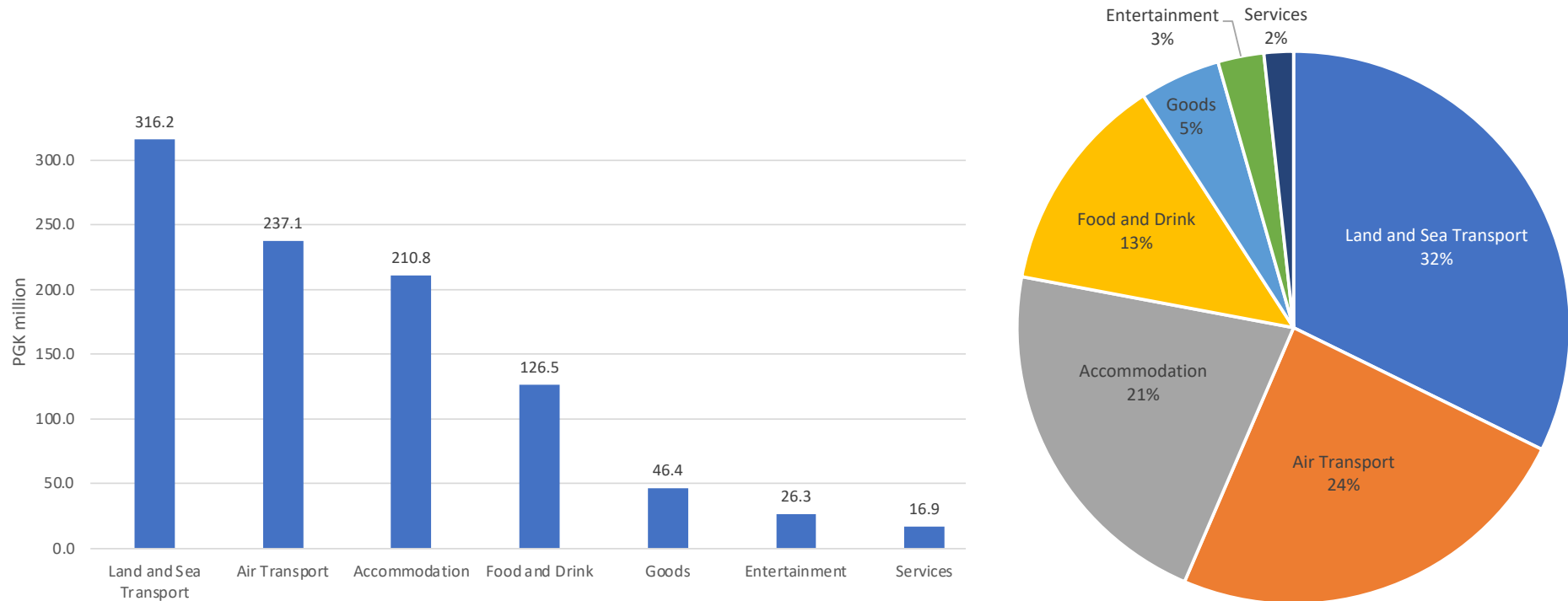
Inbound cruise visitor expenditure totalled PGK 21.6 million in 2019, with entertainment - mainly shore excursions (60%) and goods – mainly shopping (18%) accounting for the largest proportion of expenditure.

# Total Inbound Expenditure



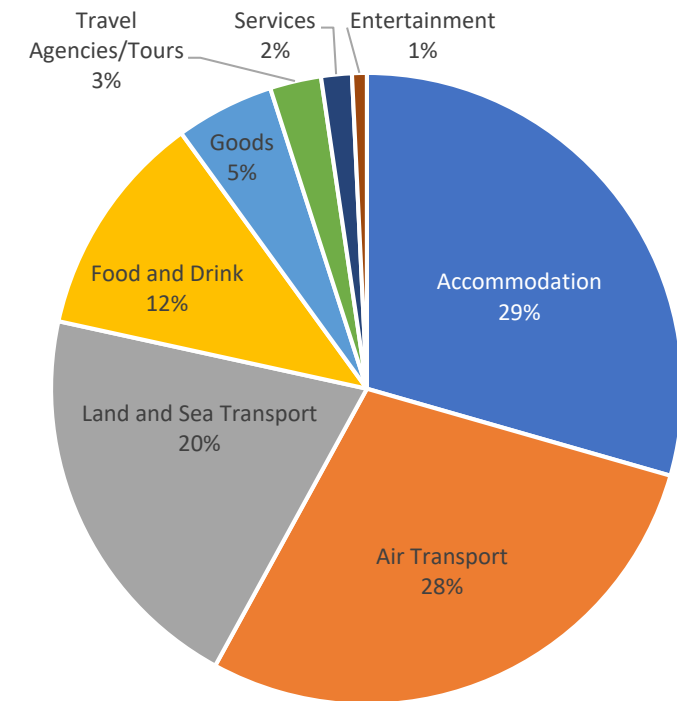
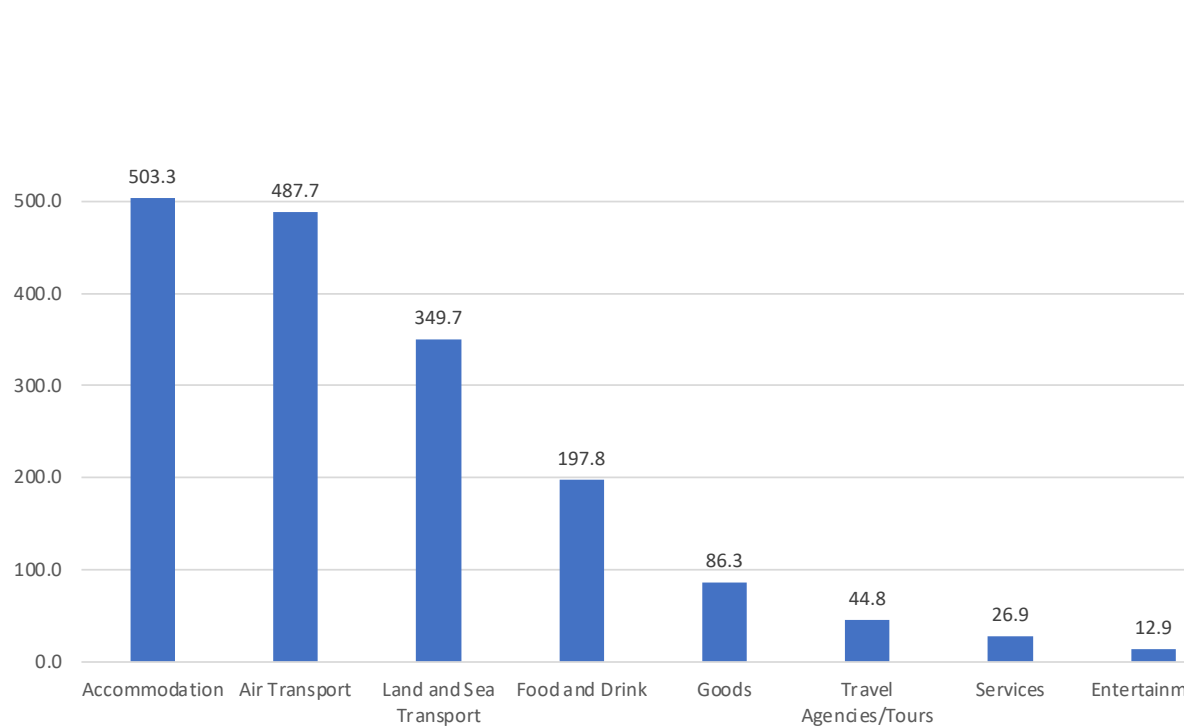
Total inbound visitor expenditure (the sum of overnight and same day visitors) amounted to PGK 729.2 million, and analysis shows that almost three quarters (74%) of expenditure was on accommodation and air transport. Food and drink accounted for 10% of all expenditure.

# Domestic Visitor Expenditure



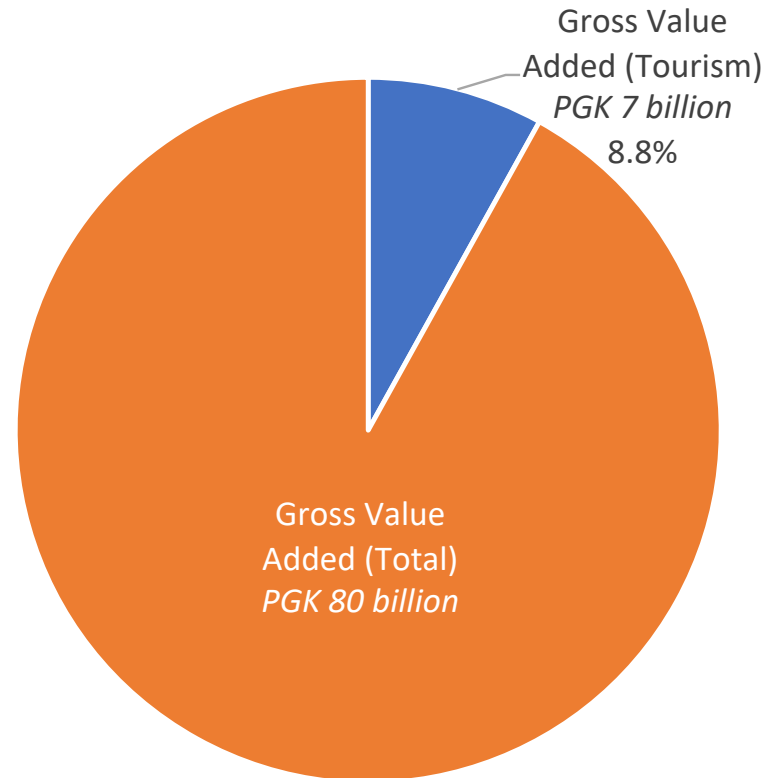
Domestic visitor expenditure was estimated to be PGK 980.2 million in 2019, with land and sea transport making up almost one third (32%) of all expenditure, followed by air transport (24%), and then accommodation (21%).

# Internal Tourism Expenditure



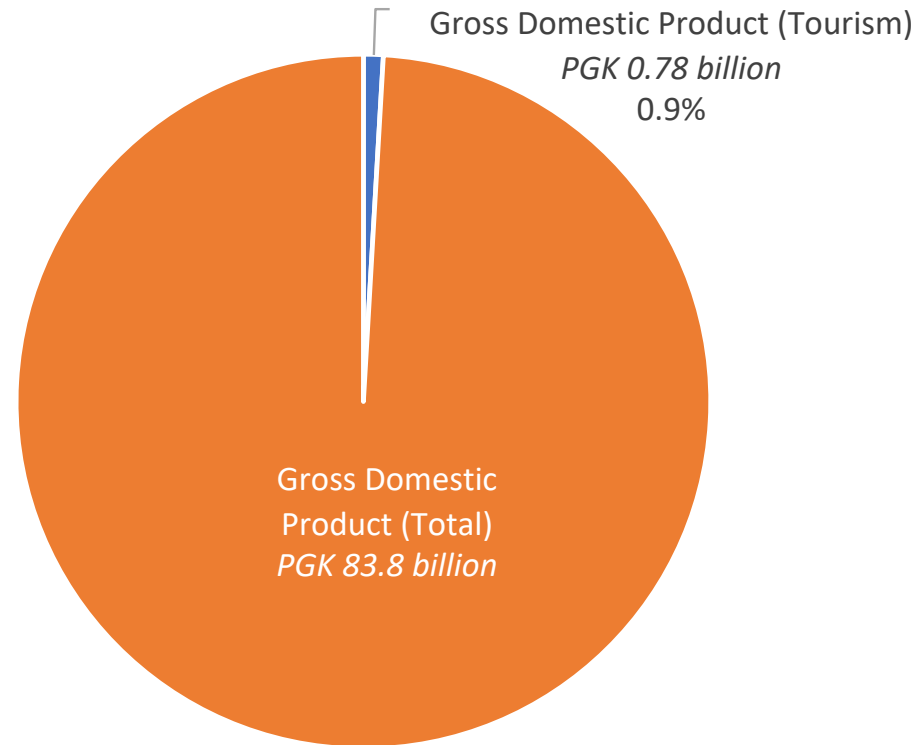
Internal tourism expenditure comprises all tourism expenditure of visitors, both resident and non-resident, within PNG. It is the sum of inbound tourism expenditure and domestic tourism expenditure. This indicator provides the most comprehensive measurement of tourism expenditure in PNG. It was estimated as being PGK 1.7 billion.

## Tourism Industries Gross Value Added



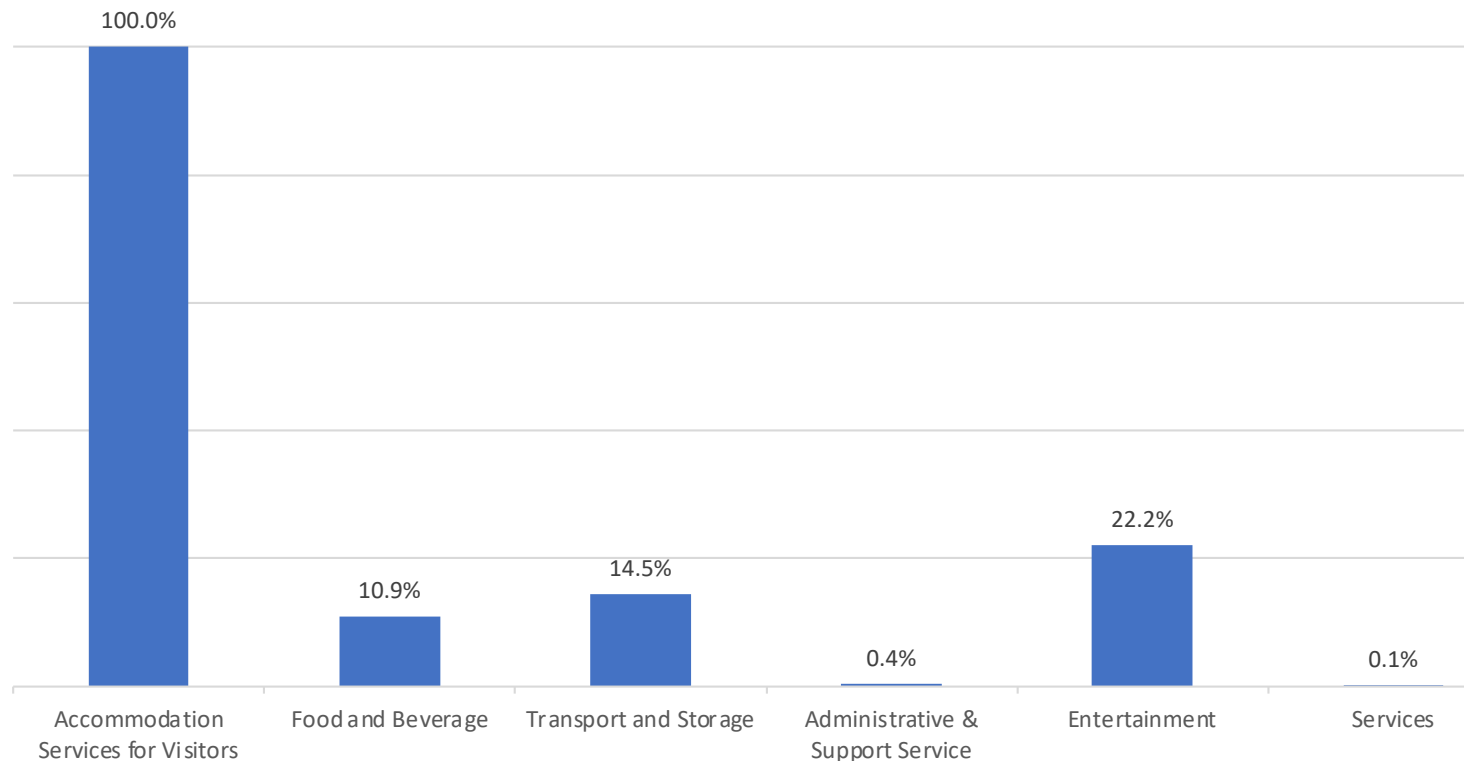
We estimate that the gross value added of the groups of industries where tourism industries are represented in national accounts in PNG is around PGK 7 billion, which accounts for 8.8% of total gross value added in the economy. Tourism's actual contribution in the economy will be less than this as not all the output of the groups of industries where tourism industries are represented is due to tourism.

## Tourism Industries Gross Value Added



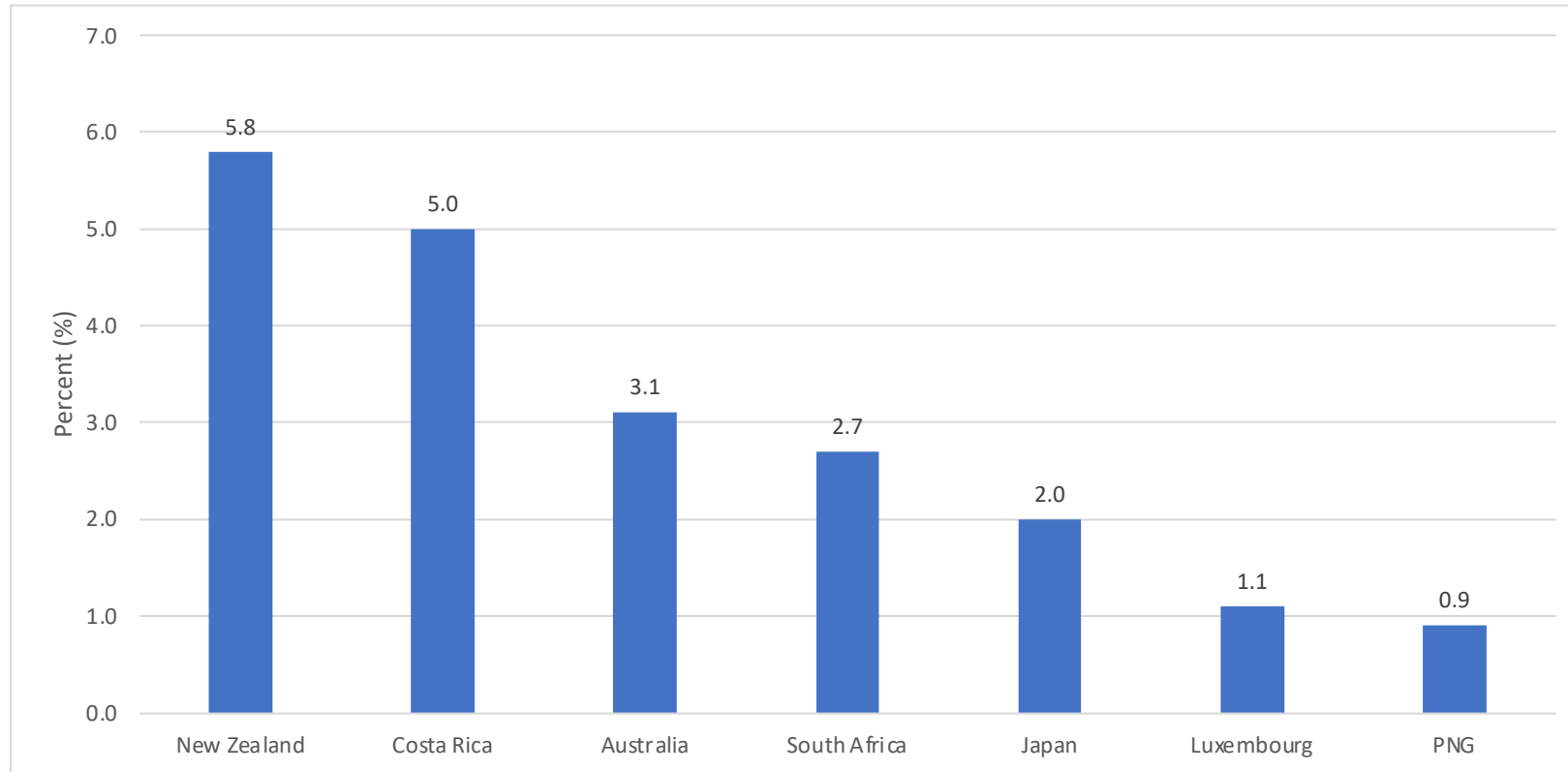
The TSA estimates that tourism **directly** contributes 0.9% (or PGK 777 million) to the economy of PNG. This is the key output of the TSA, and is possible by comparing demand with supply based on the data available from the visitor surveys and national accounts.

## Tourism Share of Domestic Output



Whilst Tourism Direct Gross Domestic Product (TDGDP) is estimated at 0.9%, it is also possible to estimate tourism's contribution to the domestic output of individual industries. This allows a useful comparison with other TSA compilations around the world. Overall these look to be in line with what would be expected, with the exception of *entertainment* which appears to be too low.

## International TSA Comparisons



Data from other Tourism Satellite Accounts show the contribution to GDP in different countries around the world (in 2019). It must be borne in mind that tourism's contribution to GDP in any country is relevant to the size of that economy and the other industries that make it up – not the value of tourism itself.





## 2. The Tables

# Table 1

## INBOUND TOURISM EXPENDITURE BY PRODUCTS AND CATEGORIES OF VISITOR (PGK Millions)

Products	Total Inbound Tourism Expenditure		
	Tourists	Same-Day Visitors	Total Visitors
<b>SPECIFIC PRODUCTS</b>			
Accommodation	292.5	X	292.5
Food and Beverage Serving Services	69.8	1.6	71.3
Passenger Transport Services			
Land and Sea Passenger Transport Services	32.6	0.9	33.5
Air Passenger Transport Services	250.6	0.0	250.6
Travel Agencies and Similar	18.5	0	18.5
Entertainment	0.0	12.9	12.9
<b>NON-SPECIFIC PRODUCTS</b>			
Services	7.8	2.3	10.0
Goods	36.0	4.0	39.9
<b>TOTAL</b>	<b>707.6</b>	<b>21.6</b>	<b>729.2</b>
Number of Trips	94,749	51,417	146,166
Number of Overnights	936,120	0	936,120

# Table 2

## DOMESTIC TOURISM EXPENDITURE BY PRODUCTS, TYPES OF TRIP AND CATEGORIES OF VISITOR (PGK Millions)

Products	Resident Visitors						Total Domestic Tourism Expenditure		
	On a Domestic Trip			On an International Trip (expenditure prior to leaving PNG)					
	Tourists	Same-Day Visitors	Total Visitors	Tourists	Same-Day Visitors	Total Visitors	Tourists	Same-Day Visitors	Total Visitors
<b>SPECIFIC PRODUCTS</b>									
Accommodation	210.8		210.8				210.8	0.0	210.8
Food and Beverage Serving Services	126.5		126.5				126.5	0.0	126.5
Passenger Transport Services									
Land and Sea Passenger Transport Services	316.2		316.2				316.2	0.0	316.2
Air Passenger Transport Services	237.1		237.1				237.1	0.0	237.1
Travel Agencies and Similar	0.0		0.0				26.3	0.0	26.3
Entertainment	26.3		26.3						
<b>NON-SPECIFIC PRODUCTS</b>									
Services	16.9		16.9				16.9	0.0	16.9
Goods	46.4		46.4				46.4	0.0	46.4
<b>TOTAL</b>	<b>980.2</b>		<b>980.2</b>				<b>980.2</b>	<b>0.0</b>	<b>980.2</b>
Number of Trips	153,000		153,000						
Number of Overnights	1,147,500		1,147,500						

# Table 4

**INTERNAL TOURISM EXPENDITURE BY PRODUCTS AND TYPES OF TOURISM (PGK Millions)**

Products	Internal Tourism Expenditure		
	Inbound Tourism Expenditure	Domestic Tourism Expenditure	Internal Tourism Expenditure
<b>SPECIFIC PRODUCTS</b>			
Accommodation	292.5	210.8	503.3
Food and Beverage Serving Services	71.3	126.5	197.8
Passenger Transport Services			
Land and Sea Passenger Transport Services	33.5	316.2	349.7
Air Passenger Transport Services	250.6	237.1	487.7
Travel Agencies and Similar	18.5	26.3	44.8
Entertainment	12.9	0.0	12.9
<b>NON-SPECIFIC PRODUCTS</b>			
Services	10.0	16.9	26.9
Goods	39.9	46.4	86.3
<b>TOTAL</b>	<b>729.2</b>	<b>980.2</b>	<b>1,709.4</b>

# Table 5

## PRODUCTION ACCOUNTS OF TOURISM INDUSTRIES AND OTHER INDUSTRIES (AT BASIC PRICES) (PGK Millions)

Products	Tourism Industries							Other Industries	Output of domestic producers (at basic prices)	
	I. Accommodation and food service activity		L. Real estate activities (Imputed Rent)*	H. Transport and storage services	N. Administrative and support service activities	R. Arts, entertainment and recreation	G. Wholesale and retail trade*			TOTAL
	a) Accommodation Services for visitors except in (b)	Food and beverage serving industry	b) Services associated with vacation home ownership							
<b>SPECIFIC PRODUCTS</b>										
Accommodation									-	
a) Accommodation Services for Visitors (other than b)	503.29							503.29	503.29	
b) Accommodation services associated with vacation home ownership			3,658.41					3,658.41	3,658.41	
Food and Beverage Serving Services		1,809.24						1,809.24	1,809.24	
Transport & Storage Services				5,789.68				5,789.68	5,789.68	
Administrative & Support Service Activities					10,636.05			10,636.05		
Entertainment						58.31		58.31	58.31	
<b>NON-SPECIFIC PRODUCTS</b>										
Services							10,064.25	39,561.82	39,561.82	
Goods								59,868.63	59,868.63	
<b>Total Output (at basic prices)</b>	503.29	1,809.24	3,658.41	5,789.68	10,636.05	58.31	10,064.25	18,796.57	121,885.43	
<b>Total Intermediate Consumption (at purchasers prices)</b>	195.08	701.29	548.76	3,776.28	4,205.22	29.56	2,314.14	11,770.32	41,793.35	
<b>Total Gross Value Added (at basic prices)</b>	308.21	1,107.95	3,109.64	2,013.40	6,430.83	28.75	7,750.12	<b>7,026.25</b>	<b>80,092.08</b>	
Taxes less subsidies on products									3,753.10	
<b>Gross Domestic Product (GDP)</b>									<b>83,845.18</b>	
<b>Tourism Industries Gross Value Added (TIGVA)</b>								<b>8.8%</b>		

# Table 6

## TOTAL DOMESTIC SUPPLY AND INTERNAL TOURISM CONSUMPTION (AT PURCHASERS PRICES) - PGK millions Part 1

Products	Tourism Industries													
	I. Accommodation and food service activity				L. Real estate activities (Imputed Rent)		H. Transport and storage		N. Administrative and support service activities		R. Arts, entertainment and recreation		G. Wholesale and retail trade	
	Accommodation for Visitors: a) Services for visitors except in (b)		Food and Beverage Serving Industry		Accommodation for Visitors: b) Services associated with vacation home ownership									
	Output	Tourism	Output	Tourism	Output	Tourism	Output	Tourism	Output	Tourism	Output	Tourism	Output	Tourism
<b>SPECIFIC PRODUCTS</b>														
Accommodation														
a) Accommodation Services for Visitors (other than b)	503.29	503.29												
b) Accommodation services associated with vacation home ownership*					3,658.41	-								
Food and Beverage Serving Services			1,809.24	197.79										
Transport & Storage Services							5,789.68	837.41						
Administrative & Support Service Activities									10,636.05	44.84				
Entertainment											58.31	12.92		
<b>NON-SPECIFIC PRODUCTS</b>														
Services*													10,064.25	12.94
Goods														
<b>Total Output (at basic prices)</b>	503.29	503.29	1,809.24	197.79	3,658.41	-	5,789.68	837.41	10,636.05	44.84	58.31	12.92	10,064.25	12.94
<b>Total Intermediate Consumption (at purchasers prices)</b>	195.08	195.08	701.29	76.67	548.76	-	3,776.28	546.20	4,205.22	17.73	29.56	6.55	2,314.14	2.98
<b>Total Gross Value Added (at basic prices)</b>	308.21	308.21	1,107.95	121.12	3,109.64	-	2,013.40	291.22	6,430.83	27.11	28.75	6.37	7,750.12	9.97
Taxes less subsidies on products														
<b>Gross Domestic Product (GDP)</b>														

Continued →

# Table 6 (cont.)

## TOTAL DOMESTIC SUPPLY AND INTERNAL TOURISM CONSUMPTION (AT PURCHASERS PRICES) - PGK millions

### Part 2

Products	Tourism Industries: TOTAL		Other Industries		Total Domestic Output (at basic prices)		
	Output	Tourism	Output	Tourism	Output	Tourism	Tourism Share (%)
<b>SPECIFIC PRODUCTS</b>							
Accommodation							
a) Accommodation Services for Visitors (other than b)	503.29	503.29			503.29	503.29	100.0%
b) Accommodation services associated with vacation home ownership*	3,658.41	-			3,658.41	-	0.0%
Food and Beverage Serving Services	1,809.24	197.79			1,809.24	197.79	10.9%
Transport & Storage Services	5,789.68	837.41			5,789.68	837.41	14.5%
Administrative & Support Service Activities	10,636.05	44.84			10,636.05	44.84	0.4%
Entertainment	58.31	12.92			58.31	12.92	22.2%
<b>NON-SPECIFIC PRODUCTS</b>							
Services*	10,064.25	12.94	29,497.57	26.88	39,561.82	39.82	0.1%
Goods			59,868.63		59,868.63	-	0.0%
<b>Total Output (at basic prices)</b>	<b>32,519.23</b>	<b>1,609.20</b>	<b>89,366.20</b>	<b>26.88</b>	<b>121,885.43</b>	<b>1,636.08</b>	<b>1.3%</b>
<b>Total Intermediate Consumption (at purchasers prices)</b>	<b>11,770.32</b>	<b>845.20</b>	<b>30,023.03</b>	<b>14.12</b>	<b>41,793.35</b>	<b>859.32</b>	<b>2.1%</b>
<b>Total Gross Value Added (at basic prices)</b>	<b>20,748.91</b>	<b>764.00</b>	<b>59,343.17</b>	<b>12.76</b>	<b>80,092.08</b>	<b>776.76</b>	<b>1.0%</b>
Taxes less subsidies on products					3,753.10		
<b>Gross Domestic Product (GDP)</b>				<b>TDGDP</b>	<b>83,845.18</b>	<b>776.76</b>	<b>0.9%</b>

# Table 10

## A. NUMBER OF TRIPS AND OVERNIGHTS BY FORMS OF TOURISM AND CLASSES OF VISITORS

Trip Type	Inbound Tourism			Domestic Tourism		
	Tourists (Overnight Visitors)	Day Visitors	Visitors	Tourists (Overnight Visitors)	Day Visitors	Visitors
<b>Numer of Trips</b>	94,749	51,417	146,166	153,000	-	153,000
<b>Number of Overnights</b>	936,120	x	936,120	1,147,500	x	1,147,500

## B. INBOUND TOURISM: NUMBER OF ARRIVALS AND OVERNIGHTS BY MODE OF TRANSPORT

Mode of Transport	Number of Arrivals	Number of Overnights
Air	94,749	936,120
Cruise	51,417	51,417
<b>Total</b>	<b>146,166</b>	<b>987,537</b>

## C. INBOUND TOURISM: NUMBER OF ARRIVALS BY PURPOSE OF VISIT



# Table 10 (cont.)

## C. INBOUND TOURISM: NUMBER OF ARRIVALS BY PURPOSE OF VISIT

Purpose of Visit	Number of Arrivals
Holiday	25,199
VFR	11,182
Business	46,793
MICE	3,818
Education	1,569
Sports	1,170
Other	5,018
<b>Total</b>	<b>94,749</b>

## D. ACCOMMODATION CAPACITY BY TYPE

Accommodation Type	Establishments	Rooms	Beds
Hotel	76	2,082	2,568
Motel	28	1,356	2,158
Resort	36	366	678
Lodge	131	1,304	1,802
Guest House and Other	194	1,087	1,733
<b>Total</b>	<b>465</b>	<b>6,195</b>	<b>8,939</b>



### 3. WTTC Comparison

# WTTC Comparison

The World Travel & Tourism Council (though Oxford Economics) has developed a model that, amongst other things, estimates tourism's contribution to GDP. However the WTTC estimations for many countries that have not developed a tourism statistical system are based on a very weak statistical basis, and derive mainly from econometrical relationships observed all over the world. WTTC estimates tend to show a brighter situation to what really exists in a country by including indirect and induced effects.

Nevertheless, when developing a TSA it is useful to compare the WTTC findings and those of the Tourism Satellite Account. The WTTC report for PNG in 2019 (see overleaf) indicates that international visitor spend is PGK 7.2 million, whilst the TSA estimates it at PGK 707.6 million (inbound tourist expenditure).

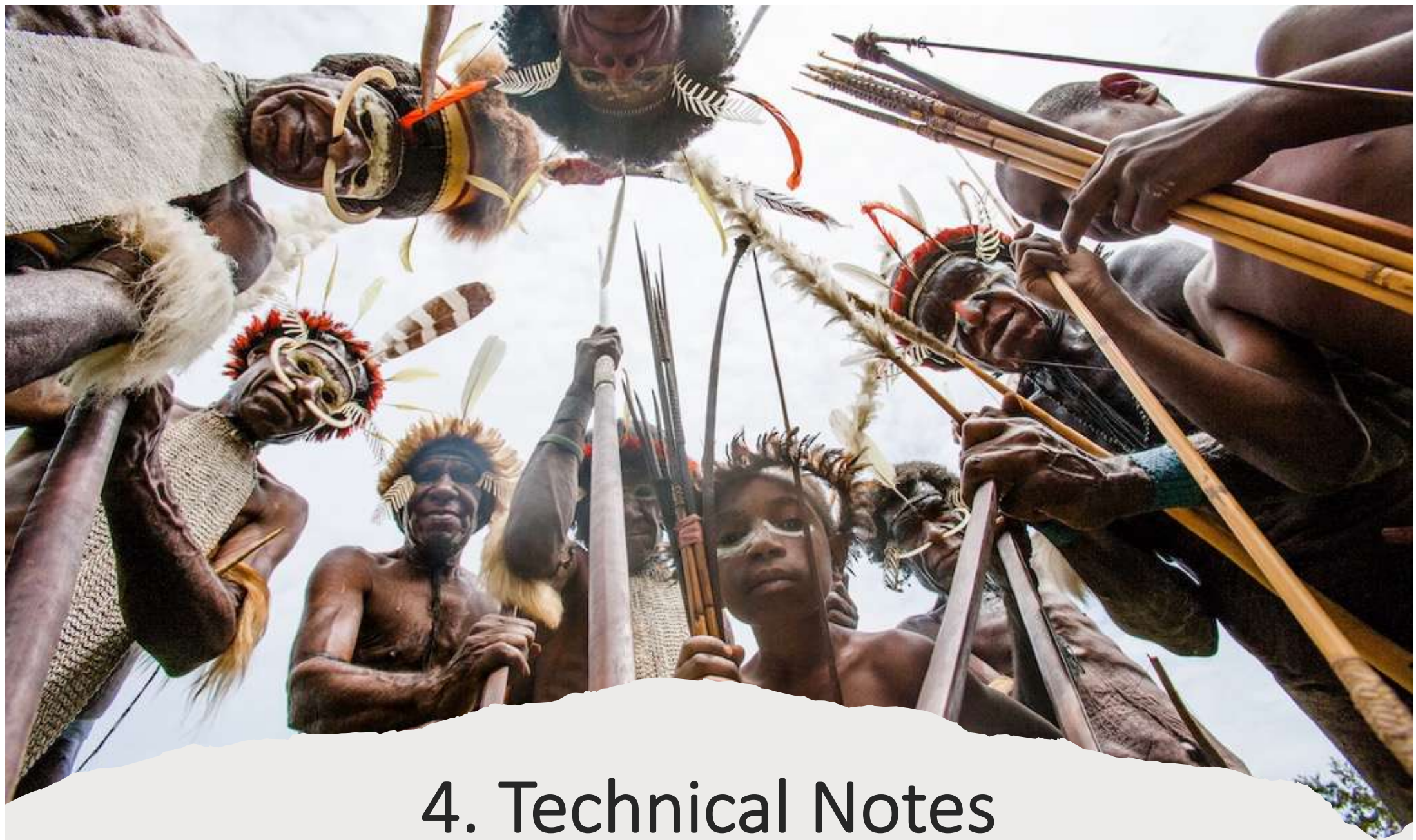
As the table on the right shows, based on the WTTC figure, the average visitor would spend US\$22 per trip, or US\$2.2 per night, which is clearly wrong. The TSA estimates spend as US\$2,156 per visit, and US\$218 per night, which appears to be more realistic.

Inbound Spend	WTTC	TSA
Visitor Spend	PGK 7.2 m	PGK 707.6 m
Visitor Spend	US\$ 2.1 m	US\$ 204.3 m
Spend/Visitor	US\$ 22	US\$ 2,156
Spend/Night	US\$ 2.2	US\$ 218.2

The WTTC estimates tourism contribution to GDP as 2.0%. As previously stated, WTTC tends to overstate the contribution of tourism for many reasons, including its inclusion of indirect spend (the TSA methodology only includes direct tourism expenditure).

Therefore, the TSA calculation of Tourism Direct GDP of 0.9% appears in line with what might be expected when comparing with WTTC model findings.

WORLD TRAVEL & TOURISM COUNCIL		PAPUA NEW GUINEA	
		2021 Annual Research: Key Highlights <sup>1</sup>	
Papua New Guinea Key Data			
2019		2020	
	<b>2.0%</b> of Total Economy Total T&T GDP = PGK1,651.8MN (USD476.9MN)	<b>1.4%</b> of Total Economy Total T&T GDP = PGK1,132.0MN (USD326.9MN)	<b>-31.5%</b> Change in Travel & Tourism GDP vs -3.9% real economy GDP change
	<b>74.3</b> Jobs (000s) (3.1% of total employment)	<b>61.7</b> Jobs (000s) (2.7% of total employment)	Change in jobs <sup>2</sup> <b>-16.9%</b> -12.6 (000s)
	<b>PGK 7.2 MN</b> Visitor spend 0.012% of total exports (USD2.1MN)	<b>PGK 1.8 MN</b> Visitor spend 0.004% of total exports (USD0.5MN)	Change in international visitor spend: <b>-75.8%</b> -USD 1.6 MN
	<b>Domestic:</b> <b>PGK 1,366.5 MN</b> Visitor spend (USD 394.6MN)	<b>PGK 906.1 MN</b> Visitor spend (USD 261.6MN)	Change in domestic visitor spend: <b>-33.7%</b> -USD 132.9 MN



## 4. Technical Notes

# Technical Notes

This section provides technical notes on the TSA compilation. The intended readers are those who are interested in how the tables are compiled and what assumptions have been made. However, they also provide some insight into any shortcomings in the data which are explored further in the next section: The Way Forward.

The Technical Notes are divided into the the five tables they relate to: TSA Table 1, Table 2, Table 4, Table 5 and Table 6.



## Table 1: Inbound Tourism Expenditure by Products and Categories of Visitor

### Tourists

This data is entirely derived from the 2019 International Visitor Survey. The following assumptions have been made:

- All international air travel was with national PNG carriers, as this is not differentiated in the analysis of the survey.
- International Transport is assumed to correspond to *Airfares + Domestic Travel* in the survey.
- Local and Sea Passenger Transport Services is assumed to correspond to *Local Transport* in the survey.
- Goods are assumed to correspond to *Souvenirs, Retail and Other* in the survey.
- Services are assumed to correspond to *Internet and Other Services* in the survey.

There appears to be no expenditure relating to Entertainment in the survey. This is addressed further in The Way Forward section of this report.

Although day visitors are included in the survey, they make up less than 0.5% of the sample, and therefore are not analysed separately. Therefore all expenditure has been allocated to Tourists (Overnight Visitors).

An exchange rate of US\$1 = PGK 3.464 has been applied.

### Day Visitors (Cruise)

This data is derived from the Economic Impact of Cruise Tourism 2016 report, which has a base year of 2015. The number of passengers in 2015, 2016, 2017, 2018 and 2019 is known and these growth rates are applied to expenditure measured in AUS\$ in 2015. It has been assumed that average spend per passenger has not changed over this period – there has been negligible change in spend per day of overnight visitors over the same period, and the assumption that stagnation of spend rates also applies to cruise passengers.

*Other* cruise expenditure, as measured by the survey, has been allocated to Services in Table 1.

An exchange rate of AUS\$1 = PGK 2.388 has been applied.

## Table 2: Domestic Tourism Expenditure by Products and Categories of Visitor

This data is derived from the Domestic Visitor Survey undertaken with a reference year of 2018. The following assumptions have been made when developing TSA Table 2:

- Entertainment is assumed to correspond to *Tours (Entertainment)* in the survey.
- Goods is assumed to correspond to *Shopping + Other* expenditure in the survey.
- Services is assumed to correspond to *Communications* in the survey.

In order to roll forward the 2018 data to 2019, the Consumer Price Index (CPI) was used.

The Domestic Visitor Survey only surveyed Tourists (Overnight Visitors) and therefore there is no domestic day visitor expenditure included in Table 2. Also, there was no capture of the domestic element of outbound expenditure – for example a resident of PNG travelling to Australia flying on Air Niugini. Therefore columns 4, 5 and 6 of Table 2 remain blank.

## Table 4: Internal Tourism Expenditure by Products and Types of Tourism

Table 4 is simply the sum of Tables 1 and 2. The last columns in each of Tables 1 and 2 form the first two columns in Table 4. The summation of Inbound Tourism (Table 1) and Domestic Tourism (Table 2) is called Internal Tourism.



## Table 5: Production Accounts of Tourism and Other Industries (at basic prices)

This data is derived from two key sources:

- PNG National Accounts 2006-2019 (downloaded from [www.nso.gpv.pg](http://www.nso.gpv.pg))
- TSA Table 4

Tourism Industries output are located within the following groups of industries in national accounts:

- G. Wholesale and retail trade
- H. Transport and storage
- I. Accommodation and food service activity
- L. Real estate activities (Imputed Rent)
- N. Administrative and support service activities
- R. Arts, entertainment, and recreation

The PNG National Accounts 2006-2019 document provides only economic aggregates (Output & GVA) of these groups of industries. Further distribution of these groups' aggregates is not available in most cases at the Division, Group, Class, Subclass levels (see table on Page 49). So, for example, it is not possible to break transport down into air, land and sea, as it has been on the demand side (visitor surveys).

Also, there is no data providing the breakdown of total output by products (goods/services) offered by each industry (i.e. there is no option to present secondary production), therefore the whole output must be allocated to the main product in Table 5). For example, the output of accommodation may be made up of accommodation services, food and beverages, and tours. The availability of secondary data sources (for example, a more detailed Supply-Use Table, a business register, business economic surveys) would be needed for these purposes.

The main indicator of Table 5 is Tourism Industries Gross Value Added (TIGVA), calculated as the sum of GVA of all identified Tourism Industries. However, as it was not possible to identify the tourism industries within the broad groups presented in the national accounts report, the TIGVA calculation includes the GVA of industries that have no relation to tourism.

## Table 5: Production Accounts of Tourism and Other Industries (at basic prices)

Therefore, in Table 5, *L. Real estate activities (imputed rent)* and *G. Wholesale and retail trade* have been considered as “Other Industries” as only a small proportion of them is expected to be related to tourism. By doing this, Table 5 calculated TIGVA as 8.8% of Total GVA.

### Compilation Notes

***I. Accommodation and Food Service Activity:*** outputs are divided using the estimation of accommodation services of in Table 4. This decision is taken based on the following assumptions:

- Accommodation services consumption in Table 4 is valued at market prices. It is assumed that there is no tax on this service. Therefore, the same amount presented as consumption is the output at basic prices.
- As the distribution of the output of accommodation services by industries is unknown, 100% of this output is allocated to the accommodation industry (i.e. no other industry in PNG has provided accommodation services).
- Food Service activity output is calculated as the remaining output of national accounts Group I after the allocation of accommodation services; this output is presented as the main product (Food and Beverage Serving Services).

***L. Real Estate Activities (imputed rent):*** output is presented individually in Table 5 as it is available in the national accounts publication and because this output includes the imputed rent of secondary dwellings in PNG. Part of this output should be considered as being related to tourism as owners may stay in their own second homes or rent them out to visitors. However only a marginal part of this output is related to tourism. Consequently, it was decided not to include this group in the calculation of TIGVA.

***H. Transport and Storage, N. Administrative and Support Service Activities and R. Arts, Entertainment and Recreation:*** include all their output in Table 5, however no distribution can be made with the available data.

***G. Wholesale and Retail Trade:*** as with Real Estate Activities (imputed rent), the whole industry is included, however only a marginal part of this output is related to tourism. Consequently, it was decided not to include this group in the calculation of TIGVA.

## Table 6: Domestic Tourism Supply and Internal Tourism Consumption (at purchasers prices)

This data is derived from three key sources:

- TSA Table 4
- TSA Table 5
- PNG National Accounts 2013-2019: Table 4 - Industry Gross Value Added, Current Price Estimates (for the estimation of % Taxes less subsidies on products)

### Compilation Notes

**Assumption 1:** No taxes on tourism services (market prices = basic prices)

- Table 6 compares supply (basic prices) with demand (purchaser's prices).
- Demand (Internal Tourism Consumption) is presented in Table 4. Most of this demand is related to services.
- Conversion from purchaser's prices to basic prices basically affects the goods, since within the price of goods there are wholesale and retail trade margins as well as taxes on these goods.
- Services are less affected as there is no margin or commission for the intermediary, and if there is any this identification should be made in Table 4.
- Accommodation services including a reservation service should be split - for example 90% is consumption of accommodation and 10% consumption of a travel agent.

**Assumption 2:** All transport services are provided by domestic companies. At present the International Visitor Survey includes all air travel (PNG and international carriers) in visitor expenditure. The assumption is that the figure presented in Table 4 includes only the services provided by national carriers.

## Table 6: Domestic Tourism Supply and Internal Tourism Consumption (at purchasers prices)

**Assumption 3:** All travel agency services expenditure is related to the PNG economy. Note that a part of accommodation services and transport services could be related to the reservation (the travel agents or your operators involved in the sale outside of the PNG economy).

**Assumption 4:** 15% of goods expenditure is considered as the commission or margin of retail trade. In Table 6 of the TSA, the main indicators TDGVA and TDGDP must only include the effect of goods consumption on retail trade sector. The rest of the price, related to the production of this good, is not included.

**Assumption 5:** The conversion from TDGVA to TDGDP is done on the basis that taxes on products are not affecting tourism consumption and production. Only an Input-Output framework with suitable data for the conversion from purchasers prices to basic prices might enable a proper calculation of the latter indicator. As a result TDGDP is 0.92% of GDP whereas TDGVA is 0.97% of GVA.



## 5. The Way Forward

# The Way Forward

As with most countries compiling their first TSA, this represents a landmark for Papua New Guinea, as it provides a platform to build on for future TSA compilations.

This section identifies the data improvements that are required in order to ensure the next TSA compilation is more detailed and robust. Essentially this requires improvements in four areas:

- International Visitor Survey: very few changes are required here, but some adjustments will improve the quality of data for the TSA compilation.
- Cruise Visitor Survey: the last cruise survey was a one-off study. Unlike the International Visitor Survey which is compiled each year, PNGTPA must put in place a regular cruise survey to measure visitor expenditure.
- Domestic Visitor Survey: the 2018 survey provides some good data for the compilation of Table 2 of the TSA, however a more robust survey needs to be implemented to provide more data on what is clearly a very important part of the tourism sector in PNG.
- National Accounts: more detailed data is required in order to include more rows and columns in the TSA (for example break down *Transport and Storage* into *Air Passenger Transport*, *Sea Passenger Transport*, etc).

This section includes recommendations on how to improve each of these areas.

The Papua New Guinea Tourism Promotion Authority (PNGTPA) works with the New Zealand Tourism Research Institute (NZTRI) to deliver an annual International Visitor Survey that is based on departed visitors receiving an email and link to an online survey. The report provides outstanding data on PNG's key markets which is essential for marketing, planning and development of the sector. The survey also captures visitor expenditure, and this is of particular interest for the compilation of the TSA. In 2019, 21,239 emails were sent to visitors who had departed PNG; these generated 2,608 responses.

The survey collects and analyses expenditure by the following groups:

- Accommodation
- Airfares
- Food and Beverages
- Domestic Travel
- Local Transport
- Retail
- Tours
- Souvenirs
- Internet and Other Services
- Other

For the purposes of TSA development, some changes are recommended with regards to Airfares, Domestic Travel and Local Transport. These are described in the table overleaf.

## International Visitor Survey

Expenditure Item	Proposed Changes to the IVS
Airfares	The expenditure recorded in Airfares includes all carriers, although the survey (Q4) asks the traveller which airline they flew on. Future analysis of the survey should split airfares into national (Air Niugini and PNG Air) and non-national (all others) carriers, as the TSA should only include expenditure related to national carriers. All other expenditure is outside the PNG economy.
Airfares and Domestic Travel	Airfares does not strictly include international travel only. It also includes domestic flights that are purchased prior to visiting PNG. For the TSA, it is important to keep international and domestic airfares separate. Therefore, it is proposed that Airfares be renamed International Airfares and only include flights to-from PNG, and Domestic Travel is renamed Domestic Flights and includes <b>all</b> domestic flight expenditure only ( <b>not</b> any other transport expenditure, such as ferry fares).
Local Transport	Local Transport includes all land and sea-based transport (that is purchased in PNG and any pre-arrival expenditure). In line with the previous box (above) this should be renamed Domestic Land/Sea Transport and include all land and sea transport expenditure.

In addition to these changes, some modification to the expenditure categories is recommended, as well as providing a little more guidance for respondents in Q21 of the survey; this should potentially improve the quality of data received from visitors. It is appreciated that recall of expenditure is the most difficult part of a visitor survey, and it is hoped that these changes will reduce uncertainties as well as prompt visitor recall.



## 21. During your most recent visit to Papua New Guinea, how much do you estimate that you spent on each activity?

Accommodation	Include any expenditure on food and beverages in your accommodation.
Food and Beverages	Include all expenditure on food and drink outside of your accommodation. Remember to include any food or drink purchased in shops, as well as cafés and bars.
Domestic Flights	Include all expenditure on flights taken within Papua New Guinea.
Domestic Land/Sea Transport	Include all expenditure on land and sea transport within Papua New Guinea. Include car hire and any fuel you bought, taxis, buses, water taxis and ferries.
Tours/Tour Operator Services	Include any tours or guide services you took whilst travelling around.
Handicrafts, Art and Souvenirs	Include all expenditure on these items, even if they were presents for other people.
Other Shopping	Include all other shopping, but remember to exclude food and drink, which you should add to Food and Beverages.
Internet and Telecommunications	Include all expenditure on Internet and telephone, mobile phone cards and data.
Other Services	Include expenditure on all other services, such as massages, hairdressing, and tips.

*Note: the survey currently excludes asking the visitor about expenditure in entertainment, recreation and culture – this might include entry to museums, shows, and other attractions. If this is relevant in PNG it should also be added.*

In 2016, a collaboration between the Governments of Papua New Guinea, the Solomon Islands, International Finance Corporation (IFC), Australian Aid, and Carnival Australia produced a report on the Economic Impact of Cruise Tourism on both countries. This detailed survey generated some excellent data on cruise visitor expenditure in PNG.

As the TSA has been compiled for 2019, the 2015 cruise visitor expenditure data (which was the base year for the 2016 report) has had to be “rolled forward” to estimate expenditure in 2019. This is a normal procedure when developing TSAs as often countries are not undertaking inbound air, land and sea surveys each year, or indeed domestic visitor surveys (see next section).

In 2015 there were 15,724 cruise passenger arrivals in PNG, spending AUS\$ 2.8 million. By 2019 these had increased to 51,417, and by modelling the data we estimate a total expenditure of AUS\$ 9.1 million (or PGK 21.6 million), with each spending an average of PGK 421.

The Cruise Visitor Survey generated expenditure by cruise passengers in the following groups:

- Tours and Entertainment
- Souvenirs
- Retail
- Food and Beverage
- Local Transport
- Other

This is adequate for future cruise surveys, which will be required if PNG is to update the TSA in the future, although Souvenirs and Retail can be combined as *Shopping* to simplify the questionnaire.

Measuring domestic tourism is usually the weakest element of any country's system of tourism statistics. However, it is essential as it can contribute significantly to the economic impact of the tourism sector in a destination. Nevertheless, due to the complexity and cost of measuring domestic tourism, it is often neglected.

Fortunately, PNGTPA undertook a Domestic Visitor Survey in 2018 which has generated some useful data on expenditure by residents of PNG travelling within the country. This has been used for the TSA, and "rolled forward" using the consumer price index (CPI) for 2019, the base year of the TSA. The survey sampled 3,622 domestic travellers over the period March to November 2018.

However the survey does have some weaknesses as follows:

- It targeted tourists (overnight visitors) only, therefore domestic day visitors were not included.
- It was undertaken in the domestic departure lounges at Jacksons International Airport, and therefore only included tourists who were travelling by air.
- It does not include any domestic expenditure related to outbound travel (e.g. flying outbound on Air Niugini, or other purchases in PNG before travelling outbound).

The exclusion of day visitors and domestic expenditure related to outbound travel suggests a possible underestimation of domestic tourism spend. However, the surveying of air travellers only suggests a possible overestimation of spend, as these tourists are likely to be higher spenders. It is not clear how these may all balance out, but until another survey is undertaken the only data there is to work with is that from the 2018 Survey. The estimation for domestic tourism expenditure in 2019 based on the 2018 Survey was PGK 980 million, which is more than that generated by inbound tourism expenditure (air and cruise combined). This underlines the importance of domestic tourism in PNG.

## Planning for Future Domestic Visitor Surveys

It is important that another Domestic Visitor Survey is planned and implemented prior to the next TSA compilation. The most effective way of executing this type of data collection is through a household survey, and the most cost-effective solution is to add domestic tourism questions to an existing household survey. If this is possible then the cost of such a survey is likely to remain relatively small.

Whilst the number of questions in a domestic survey can vary depending on what additional information PNGTPA may want to gain from it, the core questions that must be included are shown overleaf. The approach is to list all persons in the household that is selected (Column 1) and identify the number of day and overnight trips taken by each over a period prior to the interview. This period is usually anything between one month and a whole year (12 months). A recall period of one month is best, as the respondent's answers are likely to be most accurate. However, this will require a greater number of households to be selected in order to gain a sample that covers the whole year. A recall period of 12 months gathers a lot of data in one interview, but the recall accuracy is likely to suffer. A 3-month recall period is suggested in the survey overleaf and is a good middle-ground.

Whilst the questionnaire gathers the number of trips taken by all persons in the household (Columns 1 to 3), the details of a trip, including expenditure, is only requested for the most recent trip taken by the head of the household (or person in the household who is being interviewed). This most recent trip is then used to approximate data for all other trips taken. This approach is widely used and prevents the survey from becoming too long and onerous. After all, at the time of the interview it is unlikely that all persons in the household would be present and able to answer the questions.

## Definition and Sampling

Before implementing a domestic visitor survey, the definition of a domestic tourism trip must be made very clear to respondents.

A domestic tourism trip refers to travel entirely within PNG that starts and ends at the person's place of usual residence. The duration of this trip must be no longer than 364 days, and must be to a place that is outside of his/her *usual environment*. The trip can be for any purpose, including holiday, visiting friends and relatives, business, religious purposes, etc. Note that the *usual environment* of the person needs to be defined, and varies from country to country depending on population mobility. However, a 40 km radius of the household or any place the respondent visits four times a month or more is suggested as appropriate for PNG.

The purpose of the *usual environment* definition is to exclude from domestic tourism all trips that are within a "reasonable" proximity of the person's place of residence, and trips to all places they otherwise visit on a regular basis. For example someone living in Port Moresby cannot consider a trip to Pari (around 10 km away) as being a tourism trip. Similarly, if a person who lives in Port Moresby travels to Kupiano (a distance of 180 km) every weekend, they also should not be considered a domestic visitor, as they regularly visit the place they travel to, and it is therefore considered to be within their *usual environment*.

These definitions are of paramount importance when measuring domestic tourism and therefore should be properly understood by the interviewers, and explained carefully to the respondent in the household.

Note: if the concept of distance when defining the *usual environment* is expected to be too difficult for respondents to understand, the duration of a trip could be used instead. In this case, the 40 km rule can be replaced with "any trip that is longer than one hour in duration by own vehicle or public transport". All journeys using other modes of transport (walk, bicycle, etc) can be excluded from domestic tourism.

Finally, the selection of households will require careful sampling to ensure that there is no bias – for example surveying only high income neighbourhoods. This is typically the work of National Statistics Office, and their assistance should be sought.

**DOMESTIC TRIPS: Eligible respondents are:**      **Questions 1-3: all household members aged 2 years and above**  
**Questions 4-10: Head of household only**

**Q: Did any household member take a domestic trip in the last 3 months?**

Yes = 1  
 No = 2 --- **End (or go to next section of Household Survey)**

ID No.	1. Did [NAME] take a domestic trip in the last 3 months? Yes=1 No=2 => Next person	2. How many domestic trips did [NAME] take in the last 3 months?	3. How many of the trips were day trips and how many overnight trips. What was the total number of nights spent away from home?			FOR THE MOST RECENT DOMESTIC TRIP										10. How many people did this expenditure cover?							
			A. Day Trips	B. Overnight trips	C. Total number of nights away from home	4. What was the principal destination?	5. Main purpose of visit?	6. How many nights was [NAME] away from home on this trip?	7. What was the main type of accommodation used on this trip?	8. Main mode of transport used?	9. How much you spent on this trip? In total? And on each of the following services?												
											A. Accommodation	B. Food and Drink	C. Transport	D. Tours and Recreation	E. Shopping		F. Other Services	G. Total					
01	HEAD																						
02																							
03																							
04																							
05																							
06																							
07																							
08																							
09																							
10																							
11																							
12																							

Example of a completed form:

ID No.	1. Did [NAME] take a domestic trip in the last 3 months? Yes=1 No=2 => Next person	2. How many domestic trips did [NAME] take in the last 3 months?	3. How many of the trips were day trips and how many overnight trips. What was the total number of nights spent away from home?			FOR THE MOST RECENT DOMESTIC TRIP											10. How many people did this expenditure cover?	
			A. Day Trips	B. Overnight trips	C. Total number of nights away from home	4. What was the principal destination?	5. Main purpose of visit?	6. How many nights were you away from home on this trip?	7. What was the main type of accommodation used on this trip?	8. Main mode of transport used?	9. How much you spent on this trip? In total? And on each of the following services?							
											A. Accommodation	B. Food and Drink	C. Transport	D. Tours and Recreation	E. Shopping	F. Other Services		G. Total
01	1	3	2	1	4	N. Britain	1	4	1	1	250	132	70	0	24	30	506	1
02	2																	
03	2																	
04	1	2	0	2	12	N. Ireland	2	3	2	3	0	243	78	50	12	0	383	2
05	1	4	4	0	0	Port M	3	0		1	0	60	0	0	10	7	77	1
06																		
07																		
08																		
09																		
10																		
11																		
12																		

Note that to fully complete Table 2, capturing the domestic portion of outbound travel expenditure (e.g. flying outbound on a PNG carrier or purchasing a suitcase in PNG for the trip). Therefore, it is recommended that when undertaking the Domestic Visitor Survey, residents are also asked about any outbound trips (overnight trips are sufficient as day trips are negligible) and record any expenditure in PNG related to that trip. The same categories of spend should be used, and the name of the airline recorded, so it is possible to identify national and non-national carriers.

In order to improve the TSA to include more detail, the data from the supply-side requires further detail. As set out in The Way Forward section, the output of the tourism industries are located within the following groups in national accounts:

- G. Wholesale and retail trade
- H. Transport and storage
- I. Accommodation and food service activity
- L. Real estate activities (Imputed Rent)
- N. Administrative and support service activities
- R. Arts, entertainment, and recreation

The PNG National Accounts 2006-2019 document provides only economic aggregates (Output & GVA) of these groups of industries in most cases, however more detail is required by the TSA as shown in the table overleaf. The aim is to obtain data for those industry groups that are shaded in blue.

In addition to this, the national account data lacks any breakdown of total output by products (goods/services) offered by each industry (there is no option to present secondary production). Therefore the whole output is currently being allocated to the main product in Table 5. For example, the output of accommodation may be made up of accommodation services, food and beverages, and tours, but there is no data to show this at present. The availability of secondary data sources (for example, a more detailed Supply-Use Table, a business register, or business economic surveys) is needed, and should be developed or sought for these purposes.



Usually, tourism industries are identified at the Class (4-digit ISIC) level. The coloured cells show the codes and the level (Group, Class or Subclass) in which tourism industry is located and identified. Required data is shaded in blue.

## Tourism Industries in PNG Standard Industrial Classification (PNGSIC) 2014

	Location of Tourism Industries at the division level (2 digit ISIC)
	Location of Tourism Industries at the Group (3 digit ISIC), Class (4 digit ISIC) or Subclass (5 digit ISIC) level
	Required Identification of Tourism Industries at the Group/Class/Subclass level

SECTION	DESCRIPTION	NOTES
A	AGRICULTURE, FORESTRY AND FISHING	
B	MINING AND QUARRYING - TOTAL	
C	MANUFACTURING	
D	ELECTRICITY, GAS, STEAM AND AIRCONDITIONING SUPPLY	
E	WATER SUPPLY, SEWAGE, WASTE MANAGEMENT	
F	CONSTRUCTION	
<b>G</b>	<b>WHOLESALE AND RETAIL TRADE</b>	
	47 Retail trade, except of motor vehicles and motor cycles	Retail Trade of goods connected to tourism (consumed by tourism)
<b>H</b>	<b>TRANSPORT AND STORAGE</b>	Not a tourism industry but necessary to take into account as visitors buy these goods/services
	49 Land transport	
	492 Other Land Transport	
	<b>4922 Other passenger land transport including rental</b>	Tourism industry is identified at the class level. Whole 4922 group is related to land passenger transport services
	50 Water Transport	
	501 SEA AND COASTAL WATER TRANSPORT	
	5011 Sea and coastal passenger water transport	
	<b>50111 Sea and coastal passenger water transport</b>	Only identified at the subclass level (50112 is freight and must be excluded)
	502 Inland water transport	
	5021 Inland passenger water transport	
	<b>50211 Inland passenger water transport</b>	Only identified at the subclass level (50212 is freight and must be excluded)
	51 Air Transport	
	<b>511 Passenger air transport</b>	Tourism industry is identified at the group level. Whole 511 group is related to passenger transport services

## Tourism Industries in PNG Standard Industrial Classification (PNGSIC) 2014...cont.

I	<b>ACCOMODATION AND FOOD SERVICE ACTIVITY</b>	Whole Section is tourism related but a further breakdown in divisions is needed
	<b>55 Accommodation</b>	Tourism industry is identified at the division level. Whole 55 division is related to accommodation services
	<b>56 Food and beverage service activities</b>	Tourism industry is identified at the division level. Whole 56 division is related to food and beverage services
J	INFORMATION AND COMMUNICATION	
K	FINANCIAL AND INSURANCE ACTIVITIES	
L	<b>REAL ESTATE ACTIVITIES</b>	Whole section is tourism related but a further breakdown in divisions is needed
M	PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	
N	<b>ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES</b>	
	<b>77 Rental and leasing activities</b>	
	<b>771 Renting and leasing for motor vehicles</b>	Tourism industry is identified at the group level. Whole 771 group is related to rental car services
	<b>772 Renting and leasing of personal and household goods</b>	
	<b>7721 Renting and leasing of recreational and sports goods</b>	Tourism industry is identified at the class level.
	<b>79 Travel agency, tour operator, reservation service and related activities</b>	Tourism industry is identified at the division level. Whole 79 division is related to travel agent services
O	PUBLIC ADMINISTRATION AND DEFENCE, COMPULSORY SOCIAL SECURITY	
P	EDUCATION	
Q	HUMAN HEALTH AND SOCIAL WORK ACTIVITIES	
	<b>OTHER SERVICE ACTIVITIES (a)</b>	PNGSIC Sections R, S and T
R	<b>ARTS, ENTERTAINMENT AND RECREATION</b>	
	<b>90 Creative, arts and entertainment activities</b>	Tourism industry is identified at the division level. Whole 90 division is related to creative, arts and entertainment
	<b>91 Libraries, archives, museums and other cultural activities</b>	
	<b>910 Libraries, archives, museums and other cultural activities</b>	
	<b>9102 Museums activities an operation of historical sites and buildings</b>	Tourism industry is identified at the class level. Whole 9102 group is related to tourism related cultural activities
	<b>9103 Botanical and zoological gardens and nature reserves activities</b>	Tourism industry is identified at the class level. Whole 9102 group is related to tourism related cultural activities
	<b>92 Gambling and betting activities</b>	Tourism industry is identified at the division level
	<b>93 Sports activities and amusement and recreation activities</b>	
	<b>931 Operation of sports facilities</b>	
	<b>9311 Operation of sports facilities</b>	Tourism industry is identified at the class level.
	<b>9319 Other sports activities</b>	Tourism industry is identified at the class level.
	<b>932 Other amusement and recreation activities n.e.c.</b>	Tourism industry is identified at the group level.

