

Final Report

Samoa Ocean Accounts Pilot - Tourism Satellite Account Linkages to Gross Domestic Product and System of Environment-Economic Accounting (SEEA)

5 December 2019



Report prepared under the overall guidance of the Government of Samoa, Ministry of Natural Resources and Environment with assistance provided by the Samoa Bureau of Statistics and Samoa Tourism Authority, in partnership with United Nations Economic and Social Commission for Asia and the Pacific.

The results presented in the pilot study are tentative and the views expressed do not necessarily reflect that of the agencies involved.

Contents

1 Executive Summary.....	4
1.1 The Policy Context for the Samoa Pilot Tourism Satellite Accounts	4
1.2 Sustainable Development of the Tourism Industry (initial stage is the development of a TSA):	5
2 Introduction	7
2.1 Background	7
2.2 Scope.....	8
Chart 1 TSA Linkages	9
3. Methodology.....	9
3.1 Introduction	9
3.2 Approaches/Methodology	9
3.3 Linking TSA to Gross Domestic Product	10
3.3.1 Process: National Accounts linkage:	10
3.4 Linking TSA to Employment & Capital Formation.....	11
3.4.1 Process: Employment Statistics	11
3.4.2 Process: Capital Formation	11
3.5 Linking TSA to Water Accounts	11
3.5.1 Process: Water Accounts	12
Table 1 TIR Estimates and Assumptions for Water Accounts linkages	13
Table 2 Supplementary Notes for Water Accounts	14
3.6 Linking TSA to Energy (Electricity sub accounts) Accounts.....	14
3.6.1 Process: Electricity Accounts.....	14
Table 3 TIR Estimates and Assumptions for Electricity Accounts linkages	15
Table 4 Supplementary Notes for Water Accounts	15
3.7 Data Sets	15
4. Results	16
4.1 Background	16
4.2 Results Overview.....	16
4.2 Results: TSA National Accounts linkages	16
Table 5: Direct Tourism Impact.....	16
Chart 2: Tourism Industry Rank	17
Table 5: Tourism Industry Rank	17
Table 6: Tourism Product Ratios	18

Table 7: Tourism Industry Ratios 19

4.3 Results: TSA Water Accounts linkages 19

Table 8: Tourism Linkages to Water Accounts..... 20

4.4 Results: TSA Electricity Accounts linkages 21

Table 9: Tourism Linkages to Electricity Accounts 21

5. Key Lessons Learnt 21

5.1 Positive Lessons 21

5.2 Key Challenges 22

6. Way Forward 22

Acknowledgment 23

Appendix 1: TSA Indicator Survey 24

Appendix 2: Pilot TSA Compilation Steps..... 27

1 Executive Summary

1.1 The Policy Context for the Samoa Pilot Tourism Satellite Accounts

The country: Samoa is a Small Island Developing State (SIDS) situated in the middle (-13.69, -171.85) of the Pacific Ocean. Its land area is 2,820 km² and an EEZ of 98,500 km² the smallest in the Pacific. In 2018, the population was estimated to be 197,731, Gross Domestic Product was SAT \$2.156 billion equivalent to SAT \$10,906 per capita or ¹\$4,115 USD dollars placing Samoa as a developing country.

Real Income has been increasing over the last decade as a result of higher real growth rate averaging 1.4% compared to a population increase of less than 1 percent. In the last 5 years, nominal GDP has increased at an average rate of 4.1% compared to a population growth rate of 0.8 percent.

The importance of the ocean: The Oceans plays an important role in both social and economic context with over 75% of the population residing within 2 kms of the oceans. The oceans support both subsistence and commercial incomes with the highest export commodity in 2018 being Fish which accounts for 29.5% of total exports.

The ocean is vital for the Tourism Industry one of two highest foreign exchange earner along with Private Remittance. In 2018, Remittance registered SAT \$525.7 million, 24.4% of GDP and Tourism Earnings was estimated at SAT \$493.85 million or 22.9% of Gross Domestic Product.

Concerns: During the Scoping Study and reflected in the Samoa Scoping Report, Fish Exports has increased sharply from SAT \$8.2 million in 2013 to SAT \$26.1 million in 2015 and continued to increase to SAT \$37.9 million in 2016. In 2018 fish export was \$32.4 million tala. The rapid increase in fish produce mirrors what happened in the mid 1990's when the fishing industry first took off in Samoa before declining sharply a decade later as a result of over-fishing. The recent increase in fishing activities is attributed to offshore fishing licenses. Incorporating the SEEA framework in relation to Oceans and the Fisheries Industry would greatly improve the management of the fishery resources.

Planning Context: The overall national plan for Samoa Strategy for the Development of Samoa 2016 - 2020 identifies 4 Priority Areas, Economic, Social, Infrastructure and Environment. The oceans and tourism accounts are covered under these 4 priority areas. Furthermore, the National Environment Sector Plan 2017 – 2021 contains specific key areas such as “*Sustainable Management and Development of Samoa’s Natural Resources*” (freshwater, forests, land, biological diversity, oceans); “*Resilient Built Environment*” (Waste, chemicals & hazardous, wastewater, low carbon developments, sustainable development planning). Under these areas specific activities are included such as Samoa Ocean Strategy and Marine Spatial Planning both currently being developed. Other key planning documents of relevance are the Tourism Sector Plan 2014 – 2019; Agriculture Sector Plan 2016 – 2020; Transport Sector Plan 2014 – 2019 and Community Sector Plan 2016 – 2021.

The Draft Scoping Study Report presents 3 possible pilot projects for consideration.

1. Sustainable Development of the Tourism Industry (initial stage is the development of a Tourism Satellite Account (TSA).
2. Marine Spatial Planning, National Ocean Strategy development and Monitoring.
3. Strengthening monitoring of national and sector development indicators.

These 3 projects are not mutually exclusive but are interlinked.

The main gaps identified for these 3 possible projects relates to key Statistical datasets and Legislations. These include:

- ❖ Overall Stock of Marine Resources.

¹ Exchange Rate of 1USD to SAT2.65

- ❖ Population Density and Distribution of Specific Species including threatened/vulnerable species and invasive marine species.
- ❖ Transactions datasets between Oceans and other Accounts such as Water, Energy and Waste Accounts, Tourism Satellite Accounts.
- ❖ Overarching policy and framework on Oceans including seabed mining.

The selection of three possible pilot projects takes into account the multitude of issues mentioned above, is combined into 3 broad pilot topics common synergies and objectives. The selection also reflects extensive stakeholder² consultations (through bilateral meetings and dedicated workshops) in the weeks of 11 February, and 5 May 2019. Follow-up consultations with key national stakeholders were also conducted in the period February and May 2019.

During the May 2019 consultations with key stakeholders, consensus reached to pursue with the Sustainable Development of the Tourism Industry with the initial stage being the development of a Tourism Satellite Account (TSA). This option was seen practical and the development of an experimental TSA was feasible for completion within the 5 to 6 months timeframe for the pilot studies.

1.2 Sustainable Development of the Tourism Industry (initial stage is the development of a TSA):

The tourism industry has been identified as one of strategic importance for Samoa. An initial step towards understanding the value of the tourism industry to the economy is through the development of a TSA for Samoa. This would provide policy makers and planners with the tool to analyse the sectoral, cross-sectoral impacts and trade-offs to sustainably plan and develop the tourism industry. Sustainable development of the tourism industry is dependent on the environment, including through water and energy usage, waste generation, and land and marine space and ecosystems use.

Tourism when sustainably managed, considers economic, social and environmental concerns. The TSA would identify the direct contribution of the tourism sector to GDP. The TSA could be further utilised to analyse the industry carriage capacity, noting the impact on, and use of, resources such as land, marine spaces, ecosystems, water, energy and waste generated.

The tourism industry activities are also closely related to the comparative strengths of Samoa's products which are based on ocean and coastal resources. With the TSA developed, further analysis and applications to spatial (land and marine spaces) is needed, as well as, implications on intensity of industry use of energy and water, and waste generated. The development of energy, water and solid waste accounts by the Samoa Bureau of Statistics, could be compared to the TSA findings to understand intensity of resource use by tourism sector, for example. The marine spatial planning initiative underway through MNRE and IUCN's effort could be used to consider tourism shore and offshore marine activities, which will support sustainable tourism efforts in terms of understanding spatial and ecosystem carriage capacities.

Scoping the pilot: A Scoping Study Report was developed for Samoa from February to June 2019 through the Ministry of Natural Resources and Environment with support from the United Nations Economic and Social Commission for Asia and the Pacific. The Study was intended to support national ocean related policies and programs culminating with the achievement of SDG14: *“Conserve and sustainably use the oceans, seas and marine resources for sustainable development”* and 2016/17 – 2019/20 Strategy for the Development of Samoa (SDS).

² Ministry of Natural Resources and Environment (MNRE), Ministry of Agriculture and Fisheries, Ministry of Finance, Samoa Bureau of Statistics (SBS), Ministry of Foreign Affairs and Trade, Ministry of Communication and Information Technology, Ministry of Tourism, Samoa Water Authority, and Ministry of Works, Transport and Infrastructure. Selected development partner stakeholders were consulted, including Secretariat of the Pacific Environment Programme, Conservation International, International Union for Conservation of Nature, the National University of Samoa and United Nations Environment Programme.

The focus of the pilot studies is to work with Samoa in adopting international standards such as the System of Environmental Economic Accounting (SEEA) as a framework to develop key statistics to assist with the development and monitoring of sustainable ocean policies. Developing the TSA includes 2 main broad areas namely, linking to National Accounts and linking to other key accounts in this case water and energy focussing on electricity only.

Linking to Sustainable Resource Management: The tourism industry demands resources from other sectors such as Water, Land Use, Energy and Oceans. Developing Input/Output Tables for Tourism provides an important tool for managing the Tourism industry in Samoa and tracks resource requirements and impact between the tourism industry and other industries currently being measured in the System for National Accounts.

Approach: Administrative records could provide a detailed list of Enterprises directly under the Tourism Industry. Revenue and Expenditure streams could be obtained from this group that could be used as a starting point in developing the Tourism Satellite Accounts for Samoa. Purchases from the agriculture sector, energy and water usage could all be obtained from administrative records. However, other datasets would require surveys to obtain approximate benchmarks such as Waste generated, value of the ocean in terms of direct and indirect income as well as establishing key coefficients for the Tourism Satellite Accounts.

Activities undertaken: Activities undertaken in implementing the pilot study includes: Establishment of working group; Conduct Research and data collection on available administrative datasets; Consultations with key stakeholders; TSA Indicator Survey Design and Data collection and constructing the relevant TSA Tables.

Main challenges and needs: The main challenges observed during the pilot relates to: Lack of key Data Sources; Institutional arrangements for rapid access to administrative data sets especially SEEA data sources; Technical capacity within some of the key agencies outside SBS to compile the required administrative data sets; limited time available for the pilot exercise and difficulty in linking TSA with SEEA framework, specifically waste and accounts due to data gaps.

Way Forward: There is a need for the Government of Samoa and potential development partners to fully expand the TSA linkages to other key SEEA accounts. This requires the completion of the Waste, and Energy and development of Marine Accounts. Furthermore, a comprehensive TSA Indicator Survey would improve current Supply and Demand estimates thus improving the Tourism Industry ratios.

2 Introduction

2.1 Background

This report is be considered in conjunction with the Samoa Pilot Study Scoping Report prepared under the overall guidance of the Government of Samoa, Ministry of Natural Resources and Environment (MNRE), in partnership with United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)) submitted to the Government of Samoa (GOS) in June 2019. Thus, the Final Report focusses on the selected pilot study namely the experimental Tourism Satellite Accounts (TSA) and establishing linkages to System of Environmental-Economic Accounting (SEEA). The final report concentrates on 3 Main broad areas:

- i. TSA Linkages to National Accounts;
- ii. TSA linkages to other crucial Accounts such as Waste, Water, Energy and Land-Use using the SEEA Framework; and
- iii. Way Forward as to further develop and transform the pilot study into a fully fledge TSA system that captures TSA linkages to national accounts and other Key Accounts on a regular basis.

The TSA was selected from 3 options that were detailed in the “Samoa Ocean Accounts Scoping Report” presented to Government in June 2019. The scoping report identified the tourism industry as one of strategic importance for Samoa. A pilot study is currently underway to, as an initial step, understand the value of the tourism industry to the economy through the TSA development for Samoa. The TSA would identify the direct contribution of tourism industry to GDP. Then TSA could be further utilized to analyze the industry carriage capacity, noting the impact on, and use of, resources such as land, marine spaces, ecosystems, water, energy and waste generated. The pilot study will use the findings of SEEA energy, water and solid waste accounts produced by the Samoa Bureau of Statistics and compare with the TSA findings to understand intensity of resource use by tourism sector, for example.

The tourism industry activities are closely related to the comparative strengths of Samoa’s product which is based on ocean and coastal resources. With the TSA developed, further analysis and applications to spatial (land and marine spaces) will be possible. The marine spatial planning initiative underway through MNRE and IUCN’s effort will be used to consider tourism shore and offshore marine activities, which will support sustainable tourism efforts in terms of understanding spatial and ecosystem carriage capacities.

The MNRE led an Ocean Accounts Partnership in collaboration with the Samoa Bureau of Statistics (SBS), the Samoa Tourism Authority and UNESCAP to develop an Experimental Tourism Satellite Accounts.

The Final Report explains the adopted approach and methodology used for the Samoa Pilot TSA and is intended to be adopted by the GOS to expand the pilot exercise into a fully-fledged Tourism Satellite Accounts. The TSA links Tourism indicators to national account currently compiled using the 2008 System of National Accounts (SNA). The TSA would also link to other key accounts such as waste, water, energy and land use in Samoa with the SEEA framework as this basis. Being an ocean economy-based industry, Tourism industry activities are largely dependent on supply and use of ocean resources.

The pilot Tourism Satellite Accounts (TSA) is largely based on existing data coupled with a TSA Indicator Survey albeit being a sample of less than 5 percent of tourism related³ enterprises. The TSA Indicator Survey is key in obtaining tentative⁴ Demand and Supply Ratios.

Finally, the GOS has expressed great demand and support for TSA development as it is critical in their efforts towards sustainable development of their tourism industry. The TSA provides the ideal tool to assist policy and decision makers in ensuring the Tourism Industry economical contributions are measured accurately and the impact on other key resources are properly accounted.

2.2 Scope

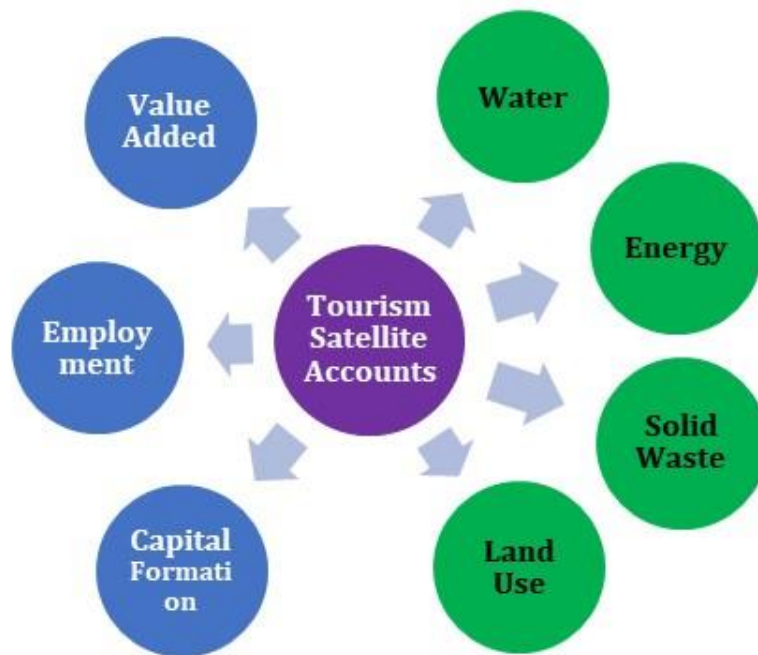
The timeframe allocated for this Pilot Study was 6 months although the actual work was done in 4 to 5 months. Within this timeframe and available resources, the Pilot Study Scope furnished the following:

- i. Developing the required Survey Framework including Survey Questionnaire and Expected Output Tables and implement the survey fieldwork to obtain results on Tourism Demand and Supply.
- ii. Develop the methodology so that the survey may be expanded to obtain key information on the usage of other key resources such as water, energy, land use and waste generated using the SEEA framework.
- iii. Develop and set the appropriate methodology for developing Tourism Satellite Accounts clearly identifying the Tourism Industry Input and Output tables and Tourism Industry Ratios (TIR).
- iv. Obtain estimates on the Tourism Industry contribution to GDP, Employment and Capital Formation.
- v. Obtain estimates on the Tourism Industry usage of water resources and electricity.
- vi. Provide clear recommendations and to improve pilot estimates as to include other key accounts such as land-use and waste.

³ Includes: Accommodation Services; Food Serving Services; Beverage Serving Services; Land Transport Services of Passengers; Water Transport Services of Passengers; Air Transport Services of Passengers; Travel Agencies and Other Reservation Services; Leasing or Rental Services concerning Cars and Light Vans without Operator and Recreational, Cultural and Sporting Services.

⁴ Used for Input and Output Table calculations

Chart 1 TSA Linkages



3. Methodology

3.1 Introduction

The development of the TSA involves a multitude of approaches.

The main driver for this methodology was guided by 2 key factors namely, available timeframe and financial resources for the pilot. However, the way forward does present a more concrete initiatives that could be undertaken by both development partners as well as the Government of Samoa. The TSA pilot study was developed based on best practice with a view that it would be expanded fully into a comprehensive TSA that would measure both tourism industry GDP contribution as well as attributes to other key assets such as Water, Waste, Energy, and Land usage.

The methodology is robust and can be varied as circumstances changes and new data sources are identified and developed.

3.2 Approaches/Methodology

The adopted approach was to ensure the methodology follows set International Manuals thus the TSA results could be compared both at the regional and international levels. Where datasets are missing, these are estimated based on international best practices.

The approach was to fully utilize key administrative datasets readily available and collected as part of the existing Samoa Statistical data collection mechanisms. Finally, the TSA key dataset on Tourism Expenditure by Type of Product and Type of Tourist was collected from the Samoa TSA Indicator Survey conducted by the Technical Assistance (TA) covering the 2018 calendar year. A potential TSA Indicator Questionnaire is attached as Appendix 1.

Samoa has developed experimental Waste Accounts for 2013/2014 and 2015/2016 and Experimental Water accounts for 2014/2015 and Energy Accounts albeit only the electricity sub-component for 2018. The data from the Water and Electricity Generation accounts have been linked as these estimates were deemed by the TA as being more creditable. However, the approaches and methodology illustrated in these accounts could be expanded in the future to include other more complex accounts such as Waste.

3.3 Linking TSA to Gross Domestic Product

The main ⁵approach to calculating Gross Domestic Product in Samoa is the Production approach based on value added generated by each Industry using the 2008 System of National Accounts. The TSA adopted methodology was to use the UN “2008 Tourism Satellite Account Recommended Methodological Framework”. This is in harmony with the basic system of concepts, classifications, definitions, tables and aggregates of the System of National Accounts 2008 (SNA 2008), the international standard for a systematic summary of national economic activity, from a functional perspective. The national account industry split is based on the International Standard Industry Classification (ISIC) Revision 4.

TSA Linkage to National Accounts: The approach was to measure the value-added contributions for industries that are directly related to the Tourism Industry. This is structured according to the “2008 Tourism Satellite Account Recommended Methodological Framework” 2 tier-split being Tourism – Characteristic products and Tourism-Related Products.

Tourism – Characteristic products identified for Samoa were: *Accommodation Services; Food Serving Services; Beverage Serving Services; Land Transport Services of Passengers; Water Transport Services of Passengers; Air Transport Services of Passengers; Travel Agencies and Other Reservation Services; Leasing or Rental Services concerning Cars and Light Vans without Operator and Recreational, Cultural and Sporting Services and*

Tourism Related Products includes: *Retail Sales, Retail services are further disaggregated according to Food, Beverage & Tobacco, Wearing Apparel including “Elei”, Fuel, Handicrafts and Others such as Jewellery, Sporting Goods and so forth. Elei was highlighted separately given its importance to the tourism industry in Samoa.*

The above was split according to Tourism Demand and Non-Tourism demand. The aggregate/sum of both are aligned with current GDP estimates for these respective industries were appropriate.

Furthermore, Tourism Demand is further split according to Domestic and International Demand. Domestic demand is disaggregated according to Household, Government and Business demand. International Demand was maintained at the Aggregate level, but this could potentially be further disaggregated by Tourist Country of ⁶Origin or usual place of residency.

3.3.1 Process: National Accounts linkage:

Step 1: Collect national accounts published datasets namely GDP by Industry for 2018 in current prices and detailed VAGST Sales and Expenses by Industry.

Step 2: Restructure the published GDP estimates according to TSA Manual Layout. Value Added (VA) for Food & Beverage Services, Retail Trade/Commerce and Financial Service are obtained directly from published national accounts estimates. However, Split VA for Transportation according to Road/Land; Water and Air transportation. Also, split Accommodation and Restaurants using VAGST Sales for each to determine their percentage. Travel

⁵ There are 3 Main Approaches to calculating GDP, Production, Expenditure and Income.

⁶ Referred to as Tourism Market

Agencies & Tour Operators Activities, Rental & Leasing Activities, Recreational & Cultural Activities and Education Services are also estimated based on VAGST Sales and Expenditure values for 2018.

Step 3: Obtain Demand and Supply Estimates based on Tourism–Characteristic products and Tourism-Related Products. These are obtained from the TSA Indicator survey results albeit being a very small sample and supplemented with VAGST detailed results.

Step 4: Implicitly derive Tourism Product Ratios by dividing Demand estimates with Supply Estimates for Tourism–Characteristic products and Tourism-Related Products.

Step 5: Reconstruct Tourism Sales by Industry (Tourism–Characteristic products and Tourism-Related Products) by multiplying Sales by Industry with Tourism Product Ratios (TPR) derived in Step 4 above.

Step 6: Implicitly derive Tourism Industry Ratio (TIR) by dividing Tourism Sales by Total Industry Output/Sales.

3.4 Linking TSA to Employment & Capital Formation

Linking the TSA to Employment and Capital formation simply requires using the TIR to obtain the Tourism Industry values for Employment and Capital Formation estimates. In the case of Samoa, the Employment datasets are obtained from administrative records collected by the Samoa National Provident Fund. However, Capital Formation last estimates are obtained from the 2015 Business Activity Survey (BAS) and these are then extrapolated using VAGST sales. However, capital formation should be obtained in the future either from a BAS or ⁷administrative data collected by the Ministry for Revenue (MFR).

3.4.1 Process: Employment Statistics

Step 1: Obtain Employment Data from SBS by Industry and by Gender. Employment data includes both number of persons employed by Gender and by Industry, and respective wages paid.

Step 2: Restructure the published Employment data estimates according to TSA Manual Layout.

Step 3: Multiply employment data by industry with TIR to obtain Tourism employment statistics covering both number of persons employed by Industry, Gender and Wages paid.

3.4.2 Process: Capital Formation

Step 1: Obtain latest estimates for capital formation from the 2015 BAS.

Step 2: Estimate capital formation by extrapolating the BAS estimates using VAGST records and applying 2015 wages to capital ratios.

Step 3: Restructure the capital formation estimates according to TSA Manual Layout.

Step 4: Multiply capital formation estimates by industry with TIR to obtain Tourism capital formation data by industry.

3.5 Linking TSA to Water Accounts

Samoa has developed Water Accounts for 2016/2017 financial year (FY). The assumption used in linking Supply and Usage of Water and Tourism is that the TIR derived for 2018 calendar year remains the same thus could also be applied for 2016/2017 financial year Water Accounts.

⁷ Corporate Tax Business Audited Accounts

3.5.1 Process: Water Accounts

Step 1: Obtain Water Accounts detailed accounts from SBS and restructure “Other Industries” according to *Accommodation, Food Services, Education, Public Administration, Wholesale & Retail, Trade, Human Health and Social Work, Real Estate, Rental and Leasing Activities, Other Service Activities, Financial and Insurance Services, Arts, Entertainment and Re-Creation, Transportation and Storage, Administrative and Support Service Activities, Activities of Extraterritorial Organizations, Information and Communication, Professional, Scientific and Technical Activities and Households.*

Step 2: Use the survey results to split water usage for Accommodation and Transport.

Set 3: TIR Estimates are directly applied at the industry level where applicable. Other assumptions are shown in Table 1 and Table 2 below.

Table 1 TIR Estimates and Assumptions for Water Accounts linkages

Total Water Value on Supplied Water by Samoa Water Authority (SAT\$)		
Industries	Tourism Industry Ratio_%	Core Assumptions
Agriculture, Livestock and Fishing	-	Not Applicable
Manufacturing, Mining & Quarrying and Construction	-	Not Applicable
Manufacturing	-	Not Applicable
Construction	-	Not Applicable
Mining & Quarrying	-	Not Applicable
Electricity, Gas and Air Condition Supply	-	Not Applicable
Water Supply, Collection and Treatment	0.11	Assumption, 0.11 of waste treated from accommodation
Sewerage	0.11	Assumption, 0.11 of waste treated from accommodation
Other Industries		
Accommodation and Food Services		
<i>Accommodation (0.8)</i>	0.80	Pro Rate according to Accommodation & Food Services
<i>Food Services (0.2)</i>	0.62	Pro Rate according to Accommodation & Food Services
Education	0.24	Tourism Industry Ratio
Public Administration and Defense	0.02	Assume water and energy usage is pro rated according to
Wholesale & Retail Trade	0.20	Tourism Industry Ratio
Human Health and Social Work	0.05	Estimate 5% of MOH used by Tourism
Real Estate, Rental and Leasing Activities	0.20	Estimate 20% of Rental Property used by Tourism
Other Service Activities	0.12	Use total Tourism Industry Ratio as proxy
Financial and Insurance Services	0.01	Tourism Industry Ratio
Arts, Entertainment and Re-Creation	0.36	Tourism Industry Ratio
Transportation and Storage		
<i>Land Transportation and Storage</i>	0.30	Pro Rate according to air, sea and land transport
<i>Sea Transportation and Storage</i>	0.34	Pro Rate according to air, sea and land transport
<i>Air Transportation and Storage</i>	0.98	Pro Rate according to air, sea and land transport
Administrative and Support Service Activities	0.15	Estimate that this category consists of 20% from Car Rentals Includes car rentals
Activities of Extraterritorial Organizations	-	Not Applicable
Information and Communication	0.12	Use total Tourism Industry Ratio as proxy
Professional, Scientific and Technical Activities	-	Not Applicable
Total Industries		
Households	0.01	Households water usage by Tourism (VFR tourist only staying for average of 14 days)
Grand Total		
Percentage of Water Usage by tourism		

Table 2 Supplementary Notes for Water Accounts

Supplementary Notes	
1. Tourism Industry Ratio for 2018 used to estimate 2016/2017 FY. Assumption being no changes during this period	
2. Government Salaries	t Estimates FY 18-19 Amount
Total Government including STA	\$ 170,000,000.00
Quarantine	\$ 886,341.60
Immigration	\$ 718,709.60
STA	\$ 1,686,003.95
Police	\$ 848,277.15
Percentage of Total Salaries	0.024
3. Tourism Data	2018
Total arrivals (persons)	172,496
VFR	75,912
VFR Staying with Relatives (0.75)	60,730
Average VFR Length of Stay (14 days)	850,214
Population days in 208	72,970,135
5. Population 2016	195,979
Population Estimate 2017 @1% annual growth rate	197,939
Population Estimate 2018 @1% annual growth rate	199,918
Percentage of VFR population days	0.012

Step 3: Multiply the respective water values by industry with the Tourism Industry Ratios shown in Table 1.

3.6 Linking TSA to Energy (Electricity sub accounts) Accounts

During the pilot study, the energy accounts for Samoa were still in experimental phase and only the ⁸electricity sub accounts were completed for 2018.

3.6.1 Process: Electricity Accounts

Step 1: Obtain detailed Electricity Accounts from SBS and restructure Electricity Sales according to: *Hotels, Industrial, Religions, Schools, Street lights, Domestic, Commercial and Government Departments.*

Step 2: Estimate Electricity sales for Accommodation and Transport sectors based on electricity costs obtained from the survey.

Step 3: TIR Estimates are directly applied at the industry level were applicable. Other assumptions used in the Electricity Accounts are shown in Table 3 and Table 4.

Step 4: Multiply the respective electricity sales by industry with the Tourism Industry Ratios shown in Table 3.

⁸ Energy sub account

Table 3 TIR Estimates and Assumptions for Electricity Accounts linkages

EPC Electricity Sales 2018 (MWh) and Tourism Linkages		
	Tourism Industry Ratio_%	Core Assumptions
Domestic	0.01	Households electricity usage by Tourism (VFR tourist only staying for average of 14 days)
Commercial	0.20	Use Retail Trade Tourism Industry Ratio as proxy. It is assumed Retail Trade is the largest Industry I this category. However should be disaggregated in the future
Gov't Dept.	0.02	Pro rate according to usages for MAF Quarantine Division with Assumption 0.8 of Quarantine used by the Tourism Industry; Immigration 0.8 used by Tourism and Police 0.05 used by Tourism and STA 0.95 used by Tourism Industry
Hotels	0.80	Tourism Industry Ratio
Industrial	0.00	Not Applicable
Religions	0.05	Assume 5% used by Tourism Industry
Schools	0.00	Not Applicable
Street lights	0.12	Use total Tourism Industry Ratio as proxy
Grand Total		

Table 4

Supplementary Notes for Water Accounts

Supplementary Notes	
1. Tourism Industry Ratio for 2018 used to estimate 2016/2017 FY. Assumption being no changes during this period	
2. Government Salaries	Budget Estimates FY 18-19
	Amount
Total Government including STA	\$ 170,000,000.00
Quarantine	\$ 886,341.60
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Population days in 208	72,970,135
5. Population 2016	195,979
Population Estimate 2017 @1% annual grov	197,939
Population Estimate 2018 @1% annual grov	199,918
Percentage of VFR population days	0.012

3.7 Data Sets

The key datasets used for the Samoa Pilot Tourism Satellite Accounts are:

- TSA Indicator Survey.
- Interviews with key Enterprises to collect tentative indicators on:
 1. Percentage of Customers that are

classified as Tourist

2. Usage of Tourism related products and
3. Enterprises Usages of Water, Energy, Waste and Land.

- Tourist Arrival and Expenditure.

- VAGST Sales and Expenditure by Industry.
- National Account GDP Estimates by Industry.
- Employment data on Persons employed and Wages by Gender and by Industry and
- Capital Formation Estimates based on 2015 Business Activity Survey extrapolated to 2018 using changes to VAGST Sales.

4. Results

4.1 Background

The results presented are tentative only as the Tourism Supply and Demand were obtained from a very small survey sample of 58 Tourism related enterprises. Thus, the Tourism Product Ratios could be further refined with a greater TSA Indicator Survey coverage.

4.2 Results Overview

The Tourism Industry plays a vital role in the Samoan economy. In 2018, there were 176,196 tourist arrivals with the largest percentage 46% from New Zealand followed by Australia with 21 percent. In terms of purpose of travel, 43% were Visiting Friends & Relatives (VFR) and 35% were purely on holiday. From this number of arrivals, it was estimated that Tourism earnings was SAT \$493.8 million.

4.2 Results: TSA National Accounts linkages

Table 5: Direct Tourism Impact

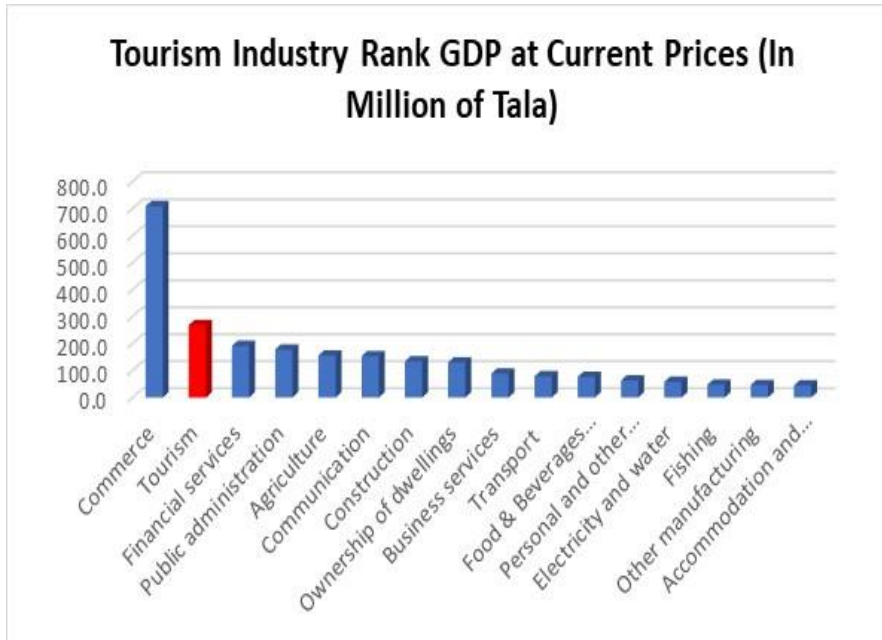
Direct Tourism Impact								
	Tourism Expenditure (SAT Million)	GDP (SAT Million)	Direct Tourism Value Added (SAT Million)	Direct Tourism Contribution to GDP	Total Persons formally Employed	Direct Tourism Employment	Direct Tourism Contribution to Formal Employment	Direct Tourism Capital Formation (SAT Million)
1 Jan 2018 to 31 December 2018	\$ 493.85	\$ 2,156.41	\$ 268.23	12.44%	24,346	5,245	21.5%	\$ 63.75

Based on the pilot TSA, direct Tourism Value Added was SAT \$268.23 million representing 12.4% of Gross Domestic Product (GDP).

In terms of formal employment, Total Employment as registered with the Samoa National Provident Fund for 2018 was 24,346 and 21.5% was estimated from the pilot TSA to be directly attributed to Tourism or around 5,245 persons employed.

⁹ Defined in this case as being registered with the Samoa National Provident Fund

Chart 2: Tourism Industry Rank



GDP Industry Rank: Commerce is the largest Industry in Samoa with a Value Added of SAT \$709.1 million in current prices for 2018. Commerce is fueled mainly by remittance. In the pilot TSA, almost 20% of Commerce (Retail Trade) was Tourism related. The Value-Added estimate from Tourism Characteristics Industries and Tourism Related Industries was SAT \$268.2 million placing it as the second largest Industry behind Commerce.

Table 6 below shows tourism product ratios derived from the TSA Indicator Survey. Overall, Total Tourism-Characteristic Products was roughly

71% and Total Tourism Related Products was 10.5 percent.

Table 5: Tourism Industry Rank

Tourism Industry Rank	
GDP At current prices (In Million of Tala)	2018
<i>Commerce</i>	709.1
<i>Tourism</i>	268.2
<i>Financial services</i>	191.5
<i>Public administration</i>	177.7
<i>Agriculture</i>	155.8
<i>Communication</i>	153.3
<i>Construction</i>	134.1
<i>Ownership of dwellings</i>	130.2
<i>Business services</i>	88.6
<i>Transport</i>	78.7
<i>Food & Beverages manufacturing</i>	76.7
<i>Personal and other services</i>	63.2
<i>Electricity and water</i>	58.0
<i>Fishing</i>	47.8
<i>Other manufacturing</i>	46.5
<i>Accommodation and restaurants</i>	45.3

Table 6: Tourism Product Ratios

Derivation of Tourism Product Ratios Year Ended December 2018 (Million of Tala)			
Products	Total Demand (Table1)	Total Supply (Table3)	Tourism Product Ratio
Tourism-Characteristics Products			
Accommodation Services	66.00	68.52	0.963
Food Serving Services	10.64	15.04	0.708
Beverage Serving Services	4.54	6.76	0.671
Land Transport Services of Passengers	20.81	62.70	0.332
Water Transport Services of Passengers	10.07	26.61	0.378
Air Transport Services of Passengers	80.67	88.63	0.910
Travel Agencies, Tour Operators and Other Reservation Services	19.38	21.71	0.893
Leasing or Rental Services - Cars and Light Vans without Operator	5.41	6.51	0.831
Recreational, Cultural and Sporting Services.	10.34	24.53	0.421
Total Tourism-Characteristic Products	227.86	321.01	0.710
Tourism-Related Products			
Retail sales	285.67	2,354.15	0.121
<i>Food</i>	176.24	1,396.12	0.126
<i>Beverage & Tobacco</i>	9.15	26.63	0.344
<i>Wearing Apparel including "Elei"</i>	8.05	37.21	0.216
<i>Fuel</i>	28.49	628.98	0.045
<i>Handicrafts</i>	60.74	68.43	0.888
<i>Others such as Jewellery, Sporting Goods and so forth.</i>	2.99	196.78	0.015
Financial Services,	3.69	295.20	0.012
Gambling Services	0.00	2.20	0.001
Education Services	11.22	204.11	0.055
Total Tourism-Related Products	300.57	2,855.66	0.105
Source: Implicit			

One of the key findings for the TSA is the estimation of the Tourism Industry Ratio. For Samoa Accommodation was estimated to be around 0.8 or 80% of Accommodation was from Tourists, Food & Beverage was 0.62, Air Transport was 0.98. Full Tourism Industry Ratio are shown in Table 7 below.

Table 7: Tourism Industry Ratios

Derivation of Tourism Industry Ratios Year Ended December 2018 (Million of Tala)														
Products	Tourism-Characteristics Industries								Tourism-Related Industries			All Non Tourism Related Industries	Imports	Total
	Accommodation	Food & Beverage Services	Road Passenger Transport	Water Passenger Transport	Air Passenger Transport	Travel Agencies & Tour Operators Activities	Rental & Leasing Activities	Recreational & Cultural Activities	Retail Trade	Financial Services	Education Services			
Tourism-Characteristics Products														
Accommodation Services	59.3	6.7	-	-	-	-	-	-	-	-	-	-	-	66.0
Food Serving Services	6.4	4.3	-	-	-	-	-	-	-	-	-	-	-	10.6
Beverage Serving Services	3.0	1.5	-	-	-	-	-	-	-	-	-	-	-	4.5
Land Transport Services of Passengers	1.0	-	19.8	-	-	-	-	-	-	-	-	-	-	20.8
Water Transport Services of Passengers	1.1	-	-	9.0	-	-	-	-	-	-	-	-	-	10.1
Air Transport Services of Passengers	0.6	-	-	-	80.1	-	-	-	-	-	-	-	-	80.7
Travel Agencies, Tour Operators and Other	2.4	2.0	-	-	-	15.0	-	-	-	-	-	-	-	19.4
Leasing or Rental Services - Cars and Light Vans without	0.6	-	-	-	-	-	4.8	-	-	-	-	-	-	5.4
Recreational, Cultural and Sporting Services.	0.1	-	-	-	-	-	-	9.4	-	-	-	0.9	-	10.3
Total Tourism-Characteristic Products	74.4	14.5	19.8	9.0	80.1	15.0	4.8	9.4	-	-	-	0.9	-	227.9
Tourism-Related Products														
Retail sales														
<i>Food</i>	-	-	-	-	-	-	0.0	0.0	170.1	-	-	0.8	5.2	176.2
<i>Beverage & Tobacco</i>	0.8	0.1	-	-	-	-	0.0	0.0	4.9	-	-	0.3	3.1	9.2
<i>Wearing Apparel including</i>	-	-	-	-	-	-	0.0	0.0	7.7	-	-	0.1	0.2	8.1
<i>Fuel</i>	-	-	-	-	-	-	0.0	0.0	11.5	-	-	2.8	14.1	28.5
<i>Handicrafts</i>	-	-	-	-	-	-	0.9	0.1	59.8	-	-	-	-	60.7
<i>Others such as Jewelleries, Sporting Goods and so forth.</i>	-	-	-	-	-	-	0.0	0.0	2.0	-	0.1	0.8	0.1	3.0
Financial Services,	-	-	-	-	-	-	-	-	-	3.0	-	0.7	-	3.7
Gambling Services	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0
Education Services	-	-	-	-	-	-	-	-	-	-	1.4	9.8	-	11.2
Total Tourism-Related	0.8	0.1	-	-	-	-	0.9	0.1	256.0	3.0	1.5	15.4	22.7	300.6
Direct Tourism Sales	75.2	14.6	19.8	9.0	80.1	15.0	5.8	9.5	256.0	3.0	1.5	16.2	22.7	528.4
Total Industry Output	94.6	23.7	65.8	26.5	82.0	19.1	7.5	26.3	1,311.7	270.7	6.4	2,327.5	-	4,261.8
(TIR)	0.80	0.62	0.30	0.34	0.98	0.78	0.77	0.36	0.20	0.01	0.24	0.01		0.12

Source: Implicit

4.3 Results: TSA Water Accounts linkages

According to the Samoa Experimental Water Accounts for 2016/2017 FY published by the SBS, the total value of water for 2016-2017 was SAT\$18.52 million and Tourism share was \$2.12 million or 11.5 percent.

Of the Tourism share, SAT \$0.9 million was for Accommodation and SAT \$0.175 for Food Services, SAT \$0.138 million for Wholesale & Retail Trade, SAT \$0.099 million for Real Estate, Rental & Leasing Activities, SAT \$0.077 million for Arts, Entertainment and Re-creation, SAT \$0.017 million for Land Transportation and Storage, SAT \$0.022 million for Sea Transportation and Storage including Cruise Ships and SAT \$0.188 for Air Transportation and Storage. Finally, SAT \$0.13 million of water resources were appropriated to Visiting Friends & Relatives residing with their families thus covered under Households.

The total results for the TSA linkages to the Water accounts are shown in Table 8.

Table 8: Tourism Linkages to Water Accounts

Total Water Value on Supplied Water by Samoa Water Authority (SAT\$)				
Industries	2016-17	Tourism Industry Ratio_%	2016-17 Tourism Usage	Core Assumptions
Agriculture, Livestock and Fishing	152,762.70	-	-	Not Applicable
Manufacturing, Mining & Quarrying and Construction	628,073.20	-	-	Not Applicable
Manufacturing	546,828.70	-	-	Not Applicable
Construction	79,926.50	-	-	Not Applicable
Mining & Quarrying	1,318.00	-	-	Not Applicable
Electricity, Gas and Air Condition Supply	6,749.00	-	-	Not Applicable
Water Supply, Collection and Treatment	400	0.11	35.20	Assumption, 0.11 of waste treated from accommodation and 0.8 of accommodation from Tourism Industry
Sewerage	3,542.00	0.11	311.70	Assumption, 0.11 of waste treated from accommodation and 0.8 of accommodation from Tourism Industry
Other Industries	6,550,483.34		1,997,430.32	
Accommodation and Food Services	1,415,161.10		-	
Accommodation (0.8)	1,132,128.88	0.80	900,180.89	Pro Rate according to Accommodation & Food Services
Food Services (0.2)	283,032.22	0.62	175,155.71	Pro Rate according to Accommodation & Food Services
Education	1,102,703.00	0.24	263,717.65	Tourism Industry Ratio
Public Administration and Defense	754,431.90	0.02	14,695.74	Assume water and energy usage is pro rated according to Salaries for MAF Quarantine Division with Assumption 0.8 of Quarantine used by the Tourism Industry; Immigration 0.8 used by Tourism and Police 0.05 used by Tourism and STA 0.95 used by Tourism Industry
Wholesale & Retail Trade	710,681.40	0.20	138,705.65	Tourism Industry Ratio
Human Health and Social Work	607,176.10	0.05	30,358.81	Estimate 5% of MOH used by Tourism
Real Estate, Rental and Leasing Activities	499,702.60	0.20	99,940.52	Estimate 20% of Rental Property used by Tourism
Other Service Activities	379,767.10	0.12	47,088.99	Use total Tourism Industry Ratio as proxy
Financial and Insurance Services	356,712.60	0.01	3,893.95	Tourism Industry Ratio
Arts, Entertainment and Re-Creation	214,746.80	0.36	77,762.92	Tourism Industry Ratio
Transportation and Storage	197,676.10		-	
Land Transportation and Storage	59,404.49	0.30	17,851.90	Pro Rate according to air, sea and land transport
Sea Transportation and Storage	66,938.51	0.34	22,667.20	Pro Rate according to air, sea and land transport
Air Transportation and Storage	193,187.95	0.98	188,801.69	Pro Rate according to air, sea and land transport
Administrative and Support Service Activities	92,106.60	0.15	14,109.13	Estimate that this category consists of 20% from Car Rentals Includes car rentals
Activities of Extraterritorial Organizations	63,120.50	-	-	Ask for confirmation on what this entails. i.e. if it includes embassies located on Samoa
Information and Communication	20,158.80	0.12	2,499.58	Use total Tourism Industry Ratio as proxy
Professional, Scientific and Technical Activities	14,483.90	-	-	Not Applicable
Total Industries	7,342,010.24		1,997,777.22	
Households	11,182,834.70	0.01	130,297.24	Households water usage by Tourism (VFR tourist only staying for average of 14 days)
Grand Total	18,524,844.94		2,128,074.46	
Percentage of Water Usage by tourism			11.5%	

4.4 Results: TSA Electricity Accounts linkages

Electricity accounts measured in Mega Watt hours shows around 138,424 (MWh) for 2018. Of this total, it was estimated that 13,921 (MWh) or 10.1% of the total electricity sales was attributed to the Tourism industry. Total electricity used by Hotels used 5,594 (MWh) and 4,448 (MWh) of this amount was estimated to be used by tourist.

The full Tourism linkages to electricity is shown in Table 9.

Table 9: Tourism Linkages to Electricity Accounts

EPC Electricity Sales 2018 (MWh) and Tourism Linkages				
	2018	Tourism Industry Ratio_%	2018 Tourism Usage	Core Assumptions
Domestic	45,908.8	0.01	534.9	Households electricity usage by Tourism (VFR tourist only staying for average of 14 days)
Commercial	38,977.9	0.20	7,607.4	Use Retail Trade Tourism Industry Ratio as proxy. It is assumed Retail Trade is the largest Industry I this category. However should be disaggregated in the future
Gov't Dept.	26,635.8	0.02	648.6	Pro rate according to usages for MAF Quarantine Division with Assumption 0.8 of Quarantine used by the Tourism Industry; Immigration 0.8 used by Tourism and Police 0.05 used by Tourism and STA 0.95 used by Tourism Industry
Hotels	5,594.3	0.80	4,448.2	Tourism Industry Ratio
Industrial	9,625.5	0.00	0.0	Not Applicable
Religions	6,531.2	0.05	326.6	Assume 5% used by Tourism Industry
Schools	2,280.8	0.00	0.0	Not Applicable
Street lights	2,869.2	0.12	355.8	Use total Tourism Industry Ratio as proxy
Grand Total	138,423.5		13,921.4	
Percentage of Energy Usage by tourism	10.1%			

5. Key Lessons Learnt

The Pilot TSA work for Samoa revealed several key lessons which reflect both positive aspects as well as key challenges when taking this pilot project further.

5.1 Positive Lessons

- Strong TSA demand from the GOS thus resulting in great the pilot project.
- Utilize available data sets and address key data gaps as possible with the usage of key proxies and available administrative data sources such as detailed VAGST
- Importance of taking the first step and not to wait until all perfect.
- Well-functioning coordinating mechanism at the national level to ensure all ministries and respective agencies and non-government organizations (NGOs) are heavily involved with the pilot thus improving local

Do not wait until all statistics are available, make a start with the data you have already.

support for efficiently as records. datasets are

ownership of the project. In addition, this would also contribute towards long term sustainability of the project.

5.2 Key Challenges

- Costs for data collecting such as the TSA Indicator Survey.
- Required access to detailed administrative datasets.
- Required skill set to code and aggregate large volume of administrative data.
- Incomplete SEEA accounts such as Waste and other to be developed such as Land-Use.
- Costing for carrying out key surveys.
- Limited timeframe and resources for carrying out the

Available Resources for Data Collection factored into medium and long terms project plans.

accounts yet

pilot study.

6. Way Forward

Complete TSA: The TSA Pilot has provided tentative Tourism Industry Ratios that could be used for the next 5 years. However, a greater sample for the TSA Indicator Survey is need as to refine Tourism Product Ratio estimates. The TIR would be used to link the TSA to other SEEA accounts such as Waste, Full Energy Accounts and Land-Use Accounts.

Complete Other SEEA Accounts: The SBS, MNRE and Ministry of Finance (MOF) are expected to work together in finalizing the Waste, Energy Accounts.

Datasets for Energy Accounts are readily available. The MOF is expected to complete these over the next 6 months. Obtaining detailed clients lists from the Electrical Power Corporation and coding these using the ISIC Rev 4 is the ideal approach to take this further.

Key datasets for Waste Accounts are collected via MNRE administrative records specifically the weighing bridge at the landfill. Rubbish collection theoretically covers all households in Samoa and provides the main regular data source for waste accounts. However, the disaggregate split between different types of waste such as Biodegradable Waste, Chemical Waste, E waste and so forth would need to be collected via Waste Audit Surveys.

Land-use Accounts have not been compiled or currently considered as a priority. However, in the long term, if this account becomes a national priority, access to detailed land registry data currently maintained by the Ministry of Natural Resources and Environment would be required to understand feasibility.

Developing Marine Accounts: The Pilot TSA Framework presents the initial steps towards the development of marine accounts for Samoa. The lessons obtained from the pilot such as: consistency in methodology and framework; utilizing other accounts already developed; access to available administrative data sets and obtaining the required resources are vital as Samoa plans and moves forward in constructing marine accounts. The marine accounts could capture economic concerns related to tourism activities related to use of ocean resources (building on the SEEA-TSA pilot). Over the medium-term, steps could be considered towards including into marine accounts other ocean sustainability concerns, including plastic wastes and ecosystem health.

Developing Ocean or Marine Accounts for Samoa is expected to be discussed by the Steering Committee in the coming months. Key areas to be discussed includes the following areas:

- Should the marine accounts focus on a specific island such as Savaii, or specific areas, or undertaken on a national level.

- Undertake a data stock take on what is available including data collected as part of technical studies by the National University of Samoa and other Institutions.
- Identify the types of support needed such as technical as well financial support for data collection.
- Technical equipment needed to collect key ocean statistics.
- Develop a roadmap in developing marine accounts for Samoa including identifying potential development partners and relevant agencies such as ESCAP for support.

The full process for TSA compilation is shown in Appendix 2 of this report.

Acknowledgment

Finally, the TA wishes to acknowledge the guidance and support provided by Ministry of Natural Resources and Environment, as well as, ESCAP. In addition, the TA is grateful for the Samoa Bureau of Statistics and Samoa Tourism Authority for the access granted in obtaining key datasets used for the Samoa Pilot Tourism Satellite Accounts.



SAMOA BUREAU OF STATISTICS



GENERAL INSTRUCTIONS

PURPOSE: The survey provides an important means of understanding the consumption patterns of goods and services by types of type of tourist and by type of product. The results of the survey will be used by the Samoa Bureau of Statistics in the estimation of the Tourism expenditure and other key indicators.

REFERENCE PERIOD: Reference period is the calendar year 2018.

CONFIDENTIALITY OF INFORMATION: Information supplied will be used by the department for the preparation of statistics. Any release of information will be in accordance with the Statistics Act and only authorised persons will have access to individual information.

COMPULSORY REQUIREMENT: All Businesses which receive this questionnaire are required under the Statistics Act 2015 to provide correct data during the interview. Failure to provide the correct data could result in legal action without further notice.

CONFIDENTIALITY OF INFORMATION: Pursuant to Section 21 of the Statistics Act, all information supplied in this questionnaire will remain strictly **CONFIDENTIAL**. This information will not be released in any form that will identify your Business.

CONTACT PERSON FOR HELP AND ADVICE:

Aliimuamua Malaefono Taua – T. Faasalaina
GOVERNMENT STATISTICIAN/(CEO)

Types of tourists

International tourist

An international tourist is defined for this purpose as a person who travels to a country other than that in which they have their usual residence, and outside their usual environment. While travelling, they do not stay in any one place for more than 12 months.

Domestic tourist

Domestic tourists are Samoan residents who travel within Samoa but outside their usual environment. While travelling they do not stay in any one place for more than 12 months. There are 3 different categories of domestic tourists:

- A **household tourist** is one whose purpose of visiting is other than the carrying out of a business activity.
- A **government traveler** is an employee of a central or local government sector enterprise whose purpose of travel is to carry out an official activity and whose expenses are met either in full or in part by the central or local government.
- A **business traveler** is an employee of a private sector enterprise whose purpose of travel is to carry out a business activity and whose expenses are met either in full or in part by their employer.

The following types of persons are not considered tourists:

- Persons such as travelling salespersons for whom travel is an intrinsic part of their job
- Persons who travel for the purpose of being admitted to, or detained in, a residential facility, such as hospital, prison or long-stay care
- Persons travelling as part of a shift to a new permanent location
- Persons undertaking military duties
- Persons travelling between two types of their usual environment.

Samoa's TSA covers only tourists who travel to or within Samoa. These are classified as either International or Domestic Tourists.

QUESTIONNAIRE

(Please provide percentages per product / service purchased by tourists and Non-Tourists)

Products	Tourism demand				Non Tourism demand	Total Sales
	Domestic Tourist Demand			International Tourist demand		
	Household demand	Government demand	Business demand			
Tourism-characteristic products						
Accommodation services						100 %
Food serving services						100 %
Beverage serving services						100 %
Land transport services of passengers						100 %
Water transport services of passengers						100 %
Air transport services of passengers						100 %
Travel agencies and other reservation						100 %
Leasing or rental services concerning cars and light vans without operator						100 %
Recreational, cultural and sporting						100 %
Tourism-related products						
Retail sales						100 %
<i>Food</i>						100 %
<i>Beverages and Tobacco</i>						100 %
<i>Wearing apparel</i>						100 %
<i>Fuel</i>						100 %
<i>Handicraft</i>						100 %
<i>Others (Jewelleries, sporting goods and games toys.</i>						100 %
Financial services						100 %
Gambling services						100 %
Education services						100 %

Person we should contact if any queries arise regarding this form:

Name: _____

Telephone: _____

Facsimile: _____

Email: _____

Signature: _____

Date: _____

THANK YOU FOR COMPLETING THE QUESTIONNAIRE

Appendix 2: Pilot TSA Compilation Steps

Step 1

The TSA Indicator Survey provides the first estimates of Tourism Expenditure by type of product and type of tourist. This information provides both domestic and international demand by Tourism-characteristic products and Tourism-related products.

$$[\text{Domestic Demand} + \text{International Demand} = \text{Total Demand}]$$

Total Demand for Tourism-characteristic products and Tourism-related products are divided by Total Supply to calculate Tourism Product Ratios.

Domestic, International and total demand are shown in Table 1 below.

Step 2

Utilize national accounts data to derive components of GDP for the economy based on the classifications outlined in the “2008 Tourism Satellite Account Recommended Methodological Framework”. These are *Accommodation, Food & Beverage Service Activities, Road Passenger Transport, Water Passenger Transport, Air Passenger Transport, Rental & Leasing Activities, Travel Agency and Tour Operators, Recreational and Cultural Activities, Retail Trade, Financial Services, Education Services and All Non-Tourism Related Industries (Residue)*.

Table 1: Tourism Expenditure by Type of Product and Type of Tourist

Tourism Expenditure By Type of Product and Type of Tourist Year Ended December 2018 (Million of Tala)					
Products	Domestic Demand			International Demand	Total Demand
	Household Demand	Government Demand	Business Demand		
Tourism-Characteristics Products					
Accommodation Services	2.02	0.77	1.09	62.13	66.00
Food Serving Services	1.18	1.01	1.89	6.57	10.64
Beverage Serving Services	0.39	0.18	0.30	3.67	4.5
Land Transport Services of Passengers	14.02	0.41	1.07	5.30	20.8
Water Transport Services of Passengers	5.45	0.86	0.84	2.92	10.1
Air Transport Services of Passengers	7.75	4.24	9.46	59.23	80.7
Travel Agencies, Tour Operators and Other Reservation Services	2.44	0.17	3.96	12.80	19.4
Leasing or Rental Services - Cars and Light Vans without Operator	0.74	0.09	0.65	3.94	5.4
Recreational, Cultural and Sporting Services.	0.92	-	0.39	9.03	10.3
Total Tourism-Characteristic Products	34.9	7.7	19.6	165.6	227.9
Tourism-Related Products					
Retail sales	172.54	1.57	39.05	72.51	285.67
<i>Food</i>	159.27	0.25	9.95	6.77	176.24
<i>Beverage & Tobacco</i>	7.32	-	1.46	0.38	9.15
<i>Wearing Apparel including "Elei"</i>	3.22	0.46	3.24	1.13	8.05
<i>Fuel</i>	2.25	0.86	23.59	1.79	28.49
<i>Handicrafts</i>	-	-	-	60.74	60.74
<i>Others such as Jewellery, Sporting Goods and so forth.</i>	0.47	0.01	0.81	1.71	2.99
Financial Services,	0.01	0.00	0.00	3.68	3.69
Gambling Services	0.00	-	-	-	0.00
Education Services	6.41	-	-	4.81	11.22
Total Tourism-Related Products	178.95	1.57	39.05	81.00	300.57
Total Tourism Demand by Type of Tourist	213.9	9.3	58.7	246.6	528.4

Source: TSA Indicator Survey

The full national accounts breakdown by Industry is shown in Table 2.

Table 2: National Accounts by Industry

Natacc Production by Industry Year Ended December 2018. (Million of Tala)													
	Tourism-Characteristics Industries								Tourism-Related Industries			All Non Tourism Related Industries	Total
	Accomoda tion	Food & Beverage Service Activities	Road Passenger Transport	Water Passenger Transport	Air Passenger Transport	Travel Agencies & Tour Operators Activities	Rental & Leasing Activities	Recreatio nal & Cultural Activities	Retail Trade	Financial Services,	Education Services		
GDP at Current Prices													2,156
GDP by Production	36.2	9.1	19.7	9.8	49.2	18.2	6.3	22.8	709.1	191.5	4.8	1,079.8	2,156.4
Total Output	94.6	23.7	65.8	26.5	82.0	19.1	7.5	26.3	1,311.7	270.7	6.4	2,327.5	4,261.773
Less Intermediate Consumption	58.4	14.6	46.2	16.7	32.8	0.9	1.3	3.5	602.6	79.3	1.6	1,247.7	2,105.367
GDP by Income	36.2	9.1	19.7	9.8	49.2	18.2	6.3	22.8	709.1	191.5	4.8	1,079.8	2,156.4
Compensation of Employees	17.1	4.7	11.2	5.0	27.1	10.0	2.6	13.3	552.1	38.8	3.8	327.3	1,013.0
Consumption of Fixed Capital	6.2	0.7	4.4	2.5	11.9	0.6	2.0	5.3	36.8	38.2	1.0	131.8	241.5
Gross Operating Surplus	12.9	3.6	4.1	2.4	10.1	7.6	1.7	4.1	120.2	114.4	0.0	620.7	901.9

Source: SBS National Accounts & Employment Statistics

Some of the key assumptions used in this pilot have been:

1. Split Accommodation & Restaurants by 0.8 and 0.2 respectively.
2. Split Transport by Road, Water and Air by 0.25, 0.125 and 0.625 respectively.
3. Education Estimates were obtained from 2018/2019 Government Budget Estimates for events such as hosting of Meetings, Seminars and Workshops.

These assumptions should be further verified based on detailed VAGST datasets supplemented with selected business audited accounts.

Step 3

Calculate the total output of each tourism-characteristic and tourism-related industry presented in Table 2 above and disaggregated into tourism products as shown in Table 3 below. This gives the total supply of each industry classified by Product.

Table 3: Sales by Product and Industry

Sales by Product and Industry Year Ended December 2018 (Million Tala)														
Products	Tourism-Characteristic Industries								Tourism-Related Industries			All Non Tourism Related Industries	Imports	Total
	Accommodation	Food & Beverage Service Activities	Road Passenger Transport	Water Passenger Transport	Air Passenger Transport	Travel Agencies & Tour Operators	Rental & Leasing Activities	Recreational & Cultural Activities	Retail Trade	Financial Services,	Education Services			
Tourism-Characteristic Products														
Accommodation Services	61.5	7.0	-	-	-	-	-	-	-	-	-	-	-	68.5
Food Serving Services	9.0	6.0	-	-	-	-	-	-	-	-	-	-	-	15.0
Beverage Serving Services	4.5	2.3	-	-	-	-	-	-	-	-	-	-	-	6.8
Land Transport Services of Passengers	3.1	-	59.6	-	-	-	-	-	-	-	-	-	-	62.7
Water Transport Services of Passengers	2.9	-	-	23.7	-	-	-	-	-	-	-	-	-	26.6
Air Transport Services of Passengers	0.6	-	-	-	88.0	-	-	-	-	-	-	-	-	88.6
Travel Agencies, Tour Operators and Other Reservations	2.6	2.3	-	-	-	16.8	-	-	-	-	-	-	-	21.7
Leasing or Rental Services - Cars and Light Vans with Drivers	0.7	-	-	-	-	-	5.8	-	-	-	-	-	-	6.5
Recreational, Cultural and Sporting Services	0.3	-	-	-	-	-	-	22.2	-	-	-	2.1	-	24.5
Total Tourism-Characteristic Products	85.2	17.6	59.6	23.7	88.0	16.8	5.8	22.2	-	-	-	2	-	321.0
Tourism-Related Products		0.21												
Retail sales														
<i>Food</i>	-	-	-	-	-	-	0.3	0.4	1,347.8	-	-	6.4	41.3	1,396.1
<i>Beverage & Tobacco</i>	2.5	0.3	-	-	-	-	0.0	0.0	14.1	-	-	0.8	9.0	26.6
<i>Wearing Apparel including "Elei"</i>	-	-	-	-	-	-	0.0	0.0	35.7	-	-	0.4	1.0	37.2
<i>Fuel</i>	-	-	-	-	-	-	0.3	0.3	253.5	-	-	62.6	312.3	629.0
<i>Handicrafts</i>	-	-	-	-	-	-	1.0	0.1	67.4	-	-	-	-	68.4
<i>Others such as Jewellery, Sporting Goods and so forth</i>	-	-	-	-	-	-	0.2	0.1	130.7	-	7.5	54.1	4.1	196.8
Financial Services,	-	-	-	-	-	-	-	-	-	236.5	-	58.7	-	295.2
Gambling Services	-	-	-	-	-	-	-	2.2	-	-	-	-	-	2.2
Education Services	-	-	-	-	-	-	-	-	-	-	25.6	178.5	-	204.1
Total Tourism-Related Products	2.5	0.3	-	-	-	-	1.8	3.2	1,849.2	236.5	33.1	361.5	367.7	2,855.7
Sales of Domestically Produced Non Tourist Related Products	2.8	1.8	0.2	-	1.2	0.1	0.0	5.9	5.1	-	509.6	3,484,411	-	-
Total Sales	94.6	23.7	65.8	26.5	82.0	19.1	7.5	26.3	1,311.7	270.7	6.4	2,327.5	367.7	4,261.8
Less Inputs of Tourism-related Products	-	-	-	-	-	-	-	-	-	-	-	-	367.7	-
Total Output	94.6	23.7	65.8	26.5	82.0	19.1	7.5	26.3	1,311.7	270.7	6.4	2,327.5	-	4,261.8

Source: SBS National Accounts & TSA Indicator Survey

Step 4

The tourism product ratio for each product is summarized in Table 4.

This is obtained by dividing the value of Total Tourism Expenditure (Demand) from Table 1 by the Total Supply obtained from Table 3.

$$[\text{Total Demand} / \text{Total Supply} = \text{Tourism Product Ratio}]$$

For accommodation for instance, the product ratio is 0.96, Food Serving Services is 0.71, Beverage Serving Services 0.67 and Air Transport is 0.91.

Retail Sale was estimated at 0.12 with the highest ration being Beverage & Tobacco with 0.34. Handicrafts had a ratio of 0.89. Full Tourism Product Ratio are shown in Table 4

Table 4: Sales by Product and Industry

Derivation of Tourism Product Ratios Year Ended December 2018 (Million of Tala)			
Products	Total Demand (Table1)	Total Supply (Table3)	Tourism Product Ratio
Tourism-Characteristics Products			
Accommodation Services	66.00	68.52	0.96
Food Serving Services	10.64	15.04	0.71
Beverage Serving Services	4.54	6.76	0.67
Land Transport Services of Passengers	20.81	62.70	0.33
Water Transport Services of Passengers	10.07	26.61	0.38
Air Transport Services of Passengers	80.67	88.63	0.91
Travel Agencies, Tour Operators and Other Reservation Services	19.38	21.71	0.89
Leasing or Rental Services - Cars and Light Vans without Operator	5.41	6.51	0.83
Recreational, Cultural and Sporting Services.	10.34	24.53	0.42
Total Tourism-Characteristic Products	227.86	321.01	0.71
Tourism-Related Products			
Retail sales	285.67	2,354.15	0.12
<i>Food</i>	176.24	1,396.12	0.13
<i>Beverage & Tobacco</i>	9.15	26.63	0.34
<i>Wearing Apparel including "Elei"</i>	8.05	37.21	0.22
<i>Fuel</i>	28.49	628.98	0.05
<i>Handicrafts</i>	60.74	68.43	0.89
<i>Others such as Jewelries, Sporting Goods and so forth.</i>	2.99	196.78	0.02
Financial Services,	3.69	295.20	0.01
Gambling Services	0.002	2.198	0.001
Education Services	11.22	204.11	0.05
Total Tourism-Related Products	300.57	2,855.66	0.11
Source: Implicit			

Step 5

To derive the Tourism Industry Ratios, each industry's supply by product given in Table 3 was multiplied by their respective tourism product ratio shown in Table 4 to calculate the tourism supply by industry.

The Tourism supply is shown in Table 5 below. This was derived by dividing the direct Tourism sales by total output in Table 3 to give tourism industry ratios shown in red in Table 5. The Tourism Industry Ratio is the proportion of each industry's total output that is purchased by tourists.

Furthermore, the Tourism Industry Ratio is important when factoring in other accounts such as energy, waste and water. The usages of these respective assets at the industries level by the tourism industry could be simply estimated by factoring the appropriate tourism industry ratios.

Table 5: Sales by Product and Industry

Derivation of Tourism Industry Ratios Year Ended December 2018 (Million of Tala)														
Products	Tourism-Characteristics Industries								Tourism-Related Industries			All Non Tourism Related Industries	Imports	Total
	Accommodation	Food & Beverage Service Activities	Road Passenger Transport	Water Passenger Transport	Air Passenger Transport	Travel Agencies & Tour Operators Activities	Rental & Leasing Activities	Recreational & Cultural Activities	Retail Trade	Financial Services,	Education Services			
Tourism-Characteristics Products														
Accommodation Services	59.3	6.7	-	-	-	-	-	-	-	-	-	-	-	66.0
Food Serving Services	6.4	4.3	-	-	-	-	-	-	-	-	-	-	-	10.6
Beverage Serving Services	3.0	1.5	-	-	-	-	-	-	-	-	-	-	-	4.5
Land Transport Services of Passengers	1.0	-	19.8	-	-	-	-	-	-	-	-	-	-	20.8
Water Transport Services of Passengers	1.1	-	-	9.0	-	-	-	-	-	-	-	-	-	10.1
Air Transport Services of Passengers	0.6	-	-	-	80.1	-	-	-	-	-	-	-	-	80.7
Travel Agencies, Tour Operators and Other	2.4	2.0	-	-	-	15.0	-	-	-	-	-	-	-	19.4
Leasing or Rental Services - Cars and Light	0.6	-	-	-	-	-	4.8	-	-	-	-	-	-	5.4
Recreational, Cultural and Sporting Services	0.1	-	-	-	-	-	-	9.4	-	-	-	0.9	-	10.3
Total Tourism-Characteristic Products	74.4	14.5	19.8	9.0	80.1	15.0	4.8	9.4	-	-	-	0.9	-	227.9
Tourism-Related Products														
Retail sales														
<i>Food</i>	-	-	-	-	-	-	0.0	0.0	170.1	-	-	0.8	5.2	176.2
<i>Beverage & Tobacco</i>	0.8	0.1	-	-	-	-	0.0	0.0	4.9	-	-	0.3	3.1	9.2
<i>Wearing Apparel including "Elei"</i>	-	-	-	-	-	-	0.0	0.0	7.7	-	-	0.1	0.2	8.1
<i>Fuel</i>	-	-	-	-	-	-	0.0	0.0	11.5	-	-	2.8	14.1	28.5
<i>Handicrafts</i>	-	-	-	-	-	-	0.9	0.1	59.8	-	-	-	-	60.7
<i>Others such as Jewellery, Sporting Goods</i>	-	-	-	-	-	-	0.0	0.0	2.0	-	0.1	0.8	0.1	3.0
Financial Services,	-	-	-	-	-	-	-	-	-	3.0	-	0.7	-	3.7
Gambling Services	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0
Education Services	-	-	-	-	-	-	-	-	-	-	1.4	9.8	-	11.2
Total Tourism-Related Products	0.8	0.1	-	-	-	-	0.9	0.1	256.0	3.0	1.5	15.4	22.7	300.6
Direct Tourism Sales	75.2	14.6	19.8	9.0	80.1	15.0	5.8	9.5	256.0	3.0	1.5	16.2	22.7	528.4
Total Industry Output	94.6	23.7	65.8	26.5	82.0	19.1	7.5	26.3	1,311.7	270.7	6.4	2,327.5	-	4,261.8
Tourism Industry Ratio (TIR)	0.80	0.62	0.30	0.34	0.98	0.78	0.77	0.36	0.20	0.01	0.24	0.01		0.12

Source: Implicit

Step 6

The tourism industry ratios were multiplied through each industry's production account shown in Table 2 to obtain total tourism value-added.

Table 6: Direct Tourism Value Added

Derivation of Direct Tourism Value Added Year Ended December 2018 (Million of Tala)														
	Tourism-Characteristics Industries									Tourism-Related Industries			All Non Tourism Related Industries	Total
	Accommodation	Food & Beverage Service Activities	Road Passenger Transport	Water Passenger Transport	Air Passenger Transport	Travel Agencies & Tour Operators Activities	Rental & Leasing Activities	Recreational & Cultural Activities	Retail Trade	Financial Services	Education Services			
Tourism Industry Ratios (TIR)	0.80	0.62	0.30	0.34	0.98	0.78	0.77	0.36	0.20	0.01	0.24	0.01		
Direct Tourism Value Added	28.8	5.6	5.9	3.3	48.1	14.3	4.8	8.2	138.4	2.1	1.1	7.5	268.2	
<i>Equivalent to Tourism Output</i>	75.2	14.6	19.8	9.0	80.1	15.0	5.8	9.5	256.0	3.0	1.5	16.2	505.7	
<i>Less Tourism Intermediate Consumption</i>	46.4	9.0	13.9	5.7	32.0	0.7	1.0	1.3	117.6	0.9	0.4	8.7	237.5	
GDP at Current Prices													2,156.4	
Direct Tourism Value Added as a Percent of GDP													12.4	
Components of Direct Tourism Value Added														
<i>Tourism Compensation of Employees</i>	13.6	2.9	3.4	1.7	26.5	7.8	2.0	4.8	107.8	0.4	0.9	2.3	174.1	
<i>Tourism Consumption of Fixed Capital</i>	4.9	0.4	1.3	0.9	11.6	0.5	1.5	1.9	7.2	0.4	0.2	0.9	31.9	
<i>Tourism Gross Operating Surplus</i>	10.3	2.2	1.2	0.8	9.9	5.9	1.3	1.5	23.5	1.2	0.0	4.3	62.2	

Source: Implicit

Table 6 shows the direct tourism value added in millions of tala. For instance, Accommodation accounts for \$28.8 million tala in value added, Food & Beverage Service activities \$5.6 million, Air Passengers accounts \$48.1 million tala and Retail Trade 138.4 million tala.

The tourism industry ratios could also be multiplied with employment data by industry as well as Gross Fixed capital formation by industry if these are readily available.

Table 7: Direct Tourism Employment and Compensation of Employees by Industry 2018

Direct Tourism Employment and Compensation of Employees by Industry Year Ended December 2018 (Million of Tala)														
	Tourism-Characteristics Industries									Tourism-Related Industries			All Non Tourism Related Industries	Total
	Accommodation	Food & Beverage Service Activities	Road Passenger Transport	Water Passenger Transport	Air Passenger Transport	Travel Agencies & Tour Operators Activities	Rental & Leasing Activities	Recreational & Cultural Activities	Retail Trade	Financial Services	Education Services			
Total Employment in Samoa														
Male	865	251	1,094	159	163	161	159	58	2,235	483	195	8,075	13,888	
Female	692	213	48	153	378	986	976	53	1,349	649	377	4,584	10,458	
Total	1,557	464	1,142	312	541	1,147	1,135	111	3,584	1,132	562	12,659	24,346	
Tourism Industry Ratio	0.80	0.62	0.30	0.34	0.98	0.78	0.77	0.36	0.20	0.01	0.24	0.01		
Total Tourism Employment in Samoa														
Male	688	155	329	54	159	126	122	21	436	5	44	56	2,196	
Female	550	132	14	52	369	773	748	19	263	7	90	32	3,049	
Total	1,238	287	343	106	529	899	869	40	699	12	134	88	5,245	
Tourism Employment as % age of Total Employment													21.5	
Tourism Compensation of Employees ('000)														
Average Compensation per Tourism Employee	13.6	2.9	3.4	1.7	26.5	7.8	2.0	4.8	107.8	0.4	0.9	2.3	174.1	
	11.0	10.2	9.8	15.9	50.2	8.7	2.3	120.0	154.0	34.3	6.8	25.9	33.2	

Source: NPF Data Source

Table 7 shows the direct tourism employment. Total Employment data are obtained from the Samoa Bureau of Statistics based on administrative records collected by the Samoa National Provident Fund. The Tourism Industry ratios are applied to estimate Tourism Employment by Industry, Gender and Tourism Compensation of Employees. For example, it is estimated that 1,238 persons employed in Accommodation are directly related to Tourism.

Table 8: Tourism Gross Fixed Capital Formation by Industry

Tourism Gross Fixed Capital Formation by Industry Year Ended December 2018													
	Tourism-Characteristics Industries								Tourism-Related Industries			All Non Tourism Related Industries	Total
	Accommodation	Food & Beverage Service Activities	Road Passenger Transport	Water Passenger Transport	Air Passenger Transport	Travel Agencies & Tour Operators Activities	Rental & Leasing Activities	Recreational & Cultural Activities	Retail Trade	Financial Services	Education Services		
Capital Formation (Thousands of Tala)													
Land Development and Improvement	-	-	0.0	0.1	0.6	0.0	0.0	2.2	0.0	11.6	-	16.9	31.5
Buildings	4.3	1.2	0.2	0.4	-	-	1.0	7.3	64.2	0.1	0.2	57.4	136.3
Plant & Machinery	2.1	0.7	0.0	0.2	2.8	0.3	0.1	1.0	13.8	0.0	0.0	118.3	139.2
Furniture, Fixtures and Office Equipment	5.1	1.0	0.0	0.2	4.6	0.2	0.3	1.1	31.0	23.8	0.0	27.8	95.0
Transport Vehicles and Related Equipment	1.4	0.8	5.7	1.2	0.6	5.0	0.3	1.1	8.1	10.2	0.0	63.3	97.6
Other Capital Formation	0.1	0.1	0.1	0.2	1.6	0.1	-	0.4	0.0	68.7	0.2	295.0	366.6
Total Capital Formation	12.90	3.63	6.07	2.36	10.15	5.57	1.75	13.11	117.16	114.44	0.44	578.71	866.29
Tourism Industry Ratio	0.80	0.62	0.30	0.34	0.98	0.78	0.77	0.36	0.20	0.01	0.24	0.01	-
Tourism Capital Formation (Thousands of Tala)													
Land Development and Improvement	-	-	0.00	0.03	0.63	0.02	0.00	0.81	0.01	0.13	-	0.12	1.75
Buildings	3.41	0.73	0.07	0.14	-	-	0.78	2.63	12.54	0.00	0.04	0.40	20.74
Plant & Machinery	1.65	0.41	0.01	0.08	2.71	0.20	0.09	0.37	2.69	0.00	0.00	0.82	9.03
Furniture, Fixtures and Office Equipment	4.03	0.59	0.01	0.08	4.49	0.15	0.23	0.39	6.04	0.26	0.00	0.19	16.46
Transport Vehicles and Related Equipment	1.08	0.48	1.72	0.40	0.56	3.88	0.23	0.39	1.59	0.11	0.01	0.44	10.88
Other Capital Formation	0.09	0.04	0.03	0.07	1.53	0.11	-	0.16	0.01	0.75	0.05	2.06	4.89
Tourism Total Capital Formation	10.26	2.25	1.82	0.80	9.92	4.36	1.34	4.75	22.87	1.25	0.11	4.03	63.75

Source: Estimates based on Meetings with Industry Representatives & BAS Data

Table 8 illustrates how Gross Fixed Capital formation could be estimated simply by applying the Tourism Industry Ratios. **This table has been included for completion purposes only and figures are to be treated as illustrative only.** To fully capture Gross Fixed Capital formation, a updated Business Activity Survey (BAS) is required **OR** to utilize business audited accounts. Estimates presented in Table 8 have been calculated from the 2015 BAS and extrapolated based on VAGST annual changes.