

## **1 EXECUTIVE SUMMARY**

### **1.1 Hazard exposure**

1.1. Pacific island countries (PICs) are vulnerable to a broad range of natural disasters stemming from hydro-meteorological (such as cyclones, droughts, landslide and floods) and geo-physical hazards (volcanic eruptions, earthquakes and tsunamis). In any given year, it is likely that Fiji, Tonga and Vanuatu are either hit by, or recovering from, a major natural disaster.

1.2. The impact of natural disasters is estimated by the Pacific Catastrophe Risk Assessment and Financing Initiative as equivalent to an annualized loss of 6.6% of GDP in Vanuatu, and 4.3% in Tonga. For Fiji, the average asset losses due to tropical cyclones and floods are estimated at more than 5%.

1.3. In 2014, Tropical Cyclone (TC) Ian caused damage equivalent to 11% to Tonga's GDP. It was followed in 2018 by damage close to 38% of GDP from TC Gita. In 2015, category five TC Pam displaced 25% of Vanuatu's population and provoked damage estimated at 64% of GDP. In Fiji, Tropical Cyclone Winston affected 62% of the population and wrought damage amounting to 31% of GDP, only some three and a half years after the passage of Tropical Cyclone Evan.

1.4. Vanuatu and Tonga rank number one and two in global indices of natural disaster risk. Seismic hazard is an ever-present danger for both, together with secondary risks arising from tsunamis and landslides. Some 240 earthquakes, ranging in magnitude between 3.3 and 7.1 on the Richter Scale, struck Vanuatu and its surrounding region in the first ten months of 2018. Eruptions of the Manaro Voui volcano and subsequent evacuations of Ambae Island evidence the hazard with which national authorities must contend. Eruptions of a submarine volcano in Tonga's Ha'apai island chain have added a new island of significant scientific and tourist interest.

1.5. Climate change is likely to increase the intensity of risk and associated losses from hydro-meteorological hazards. One hazard that may increase in frequency, but which is generally less-researched, is that of drought, and its impact on agricultural production and trade. The economic burden of small storms and localized events (such as flooding or minor earthquakes) also tends to be neglected.

### **1.2 Impact on economic growth and trade**

1.6. Frequent natural disasters exacerbate the economic and development challenges faced by the Pacific Island countries. These constraints include geographical remoteness, narrow production bases and small populations. High transportation costs are a drag on competitiveness and raise the cost of disaster response.

1.7. Natural disasters exert downward pressure on economic growth and are often debt-creating. Cyclone Gita reduced Tonga's GDP from a predicted 3.4% to 0.4% in 2018. In Fiji, TC Winston caused a reduction in economic growth of 2.5%. Vanuatu's economic growth dropped 2.8 percentage points in the year of Cyclone Pam. The storm also pushed back Vanuatu's expected graduation from LDC status by three years. In December 2017, the UN Committee on Development Policy recommended that Vanuatu's smooth transition process should seek to reduce the country's vulnerability to natural disasters ahead of Vanuatu's planned LDC graduation on 4 December 2020.

1.8. Reconstruction activity is an important economic stimulus in the aftermath of disasters. However, it can exert pressure on the current account. In Vanuatu, the stock of public debt to GDP increased by 20 percentage points after Cyclone Pam to reach 48.8% in 2016 – on a par with the 47.3 projected for Fiji and 43.2% for Tonga in 2018.

1.9. Reconstruction and recovery efforts after disasters reduce resources available for productive investment, further tighten limited government budgets, and create higher debt risk. IMF projections of PICs debt sustainability worsens if exposure to future natural disasters are included. Vanuatu's current account deficit is expected to widen to around 9% of GDP in 2017 and 2018, without transfers of official development assistance, external debt in Tonga and Vanuatu would far higher. Fiji's current account deficit widened to 5.0% of GDP in 2016 following TC Winston.

1.10. Trade plays a vital role in the economies of the three PICs surveyed in this report. The ratio of trade (exports plus imports of goods and services) to GDP has grown significantly in both Tonga and Vanuatu. Vanuatu's total trade as a share of GDP increased by 28 percentage point from 78.4% in 2000 to 106.4% in 2016. The trade to GDP ratio for Tonga jumped 42.2 percentage points to reach 95.7% over the same period. Trade is integral to economic growth and development. It is also an important factor in disaster response, recovery and resilience.

### 1.3 Policy issues

1.11. Successive tropical cyclones have led to lessons being learnt by both governments and relief organizations in disaster response. An issue that arose in the responses to both Tropical Cyclones Winston and Pam was the accumulation of unwanted relief items, "unsolicited bilateral donations"(UBDs). These consignments delayed the timely clearance of relief items through customs and other border controls and meant government incurred storage and disposal costs. Of the UBDs sent to Vanuatu, 50% of food items were expired by the time they were accessed and had to be destroyed.

1.12. A push to "cash, not goods" reduced problems with unsolicited items in response to TC Gita in Tonga and TC Donna in Vanuatu. Lessons learnt by national emergency management offices and key relief actors may be another explanatory factor.

1.13. Another important dimension to the response in Tonga is that telecommunications and digital connectivity were not lost during or in the aftermath of TC Gita. Tongans affected were able to communicate their needs, for example through social media, to family and diaspora members overseas, ensuring that relief consignments (including those sent by the business community) had an addressee and met a real need.

1.14. The government's customs duty exemption policy encouraged assistance from the Tongan diaspora. It also sought to stimulate construction services through the exemption of duties and charges on building materials for household and business use. This targeted approach compares favourably with the more blanket customs exemption policies used in response to other cyclones.

1.15. A further factor to consider in the response to TC Gita is the important role played by remittances. Remittances accounted for 26.6% of Tonga's GDP in 2016. Diaspora remittances helped lessen the distress caused by disaster events. For small businesses, remittances also contributed to business liquidity. Income remitted from overseas has been a factor in the expansion of imports, particularly for consumption purposes. Imports as a percentage of GDP jumped 15.2% between 2000 and 2016 to reach more than 60% in Vanuatu. The increase was even more pronounced for Tonga with imports as a share of GDP growing by 35% to 74.1% over the same period. Moving to cash for disaster relief may not mean fewer imports.

1.16. Ensuring that customs and other border clearance procedures operate efficiently and promptly, including in disaster situations is an area where trade facilitation reforms may help including implementation of the WTO Trade Facilitation Agreement.

1.17. Natural disasters have proven a set-back in efforts to diversify merchandise exports, notably in the agriculture sector – a sector that has suffered significantly from hydro-meteorological events. In addition to production losses, often in niche fresh products with narrow export windows, tropical cyclones have broken critical links in fresh produce value chains. These links are critical to gain and maintain market access to high value regional markets with demanding biosafety controls. Business solidarity in the reconstruction of damaged pack houses and quarantine treatment facilities is a welcome recognition of this critical link.

1.18. Sanitary and phytosanitary risks also present a significant barrier to the realization of commercial value from storm waste e.g. timber from commercially valuable fallen trees. With a high proportion of merchandise exports originating in the agriculture sector drops in exports have been precipitous (37% in Vanuatu after Cyclone Pam) and slow to recovery particularly for market segments with long production cycles e.g. tree crops. Factors such as power outages, access to credit and slow pay-outs of insurance claims have also constrained recovery in manufacturing and services including tourism.

1.19. The resilience of services, particularly tourism is positive, not least given the scope for diversification in outbound source markets. Investment in runway and airport upgrading should help airlift capacity during disasters and rekindle demand in traditional markets. Expansion of insurance coverage would support resilience but may require need action to reassure global reinsurance markets about contingent liabilities.

1.20. In concluding remarks at the 2018 WTO Trade Policy Review, the delegation of Vanuatu suggested that the trade and economic implications of natural disasters were a trade concern that should be addressed on its own merits." Learning from the experience with integrating health objectives into tariff policy, a similar approach could be piloted for disaster resilience. Similar considerations could also be applied in government procurement.

## 2 INTRODUCTION

2.1. Between 1950 and 2011, extreme weather-related events in the Pacific Islands region affected approximately 9.2 million people and caused economic damages of around US\$3.2 billion. Recent estimates show that expected losses due to natural disasters on an annualized basis in the Pacific far exceed those in almost all other countries in the world. The economic costs of natural disasters are high for most PICs—on average between 0.5 to 6.6% of GDP is lost annually – and climate change will increase vulnerabilities. For example, the impacts of natural disasters is equivalent to an annualized loss of 6.6% of GDP in Vanuatu, and 4.3% in Tonga.<sup>1</sup>

2.2. Natural hazards affect Pacific Island Countries (PICs) differently. Whereas atoll island nations outside the cyclone belt and seismic zones are more affected by slow-onset events, such as saline intrusions and coastal erosion, rapid-onset disasters are frequent occurrences in the high-volcanic islands. Overall, hydro-meteorological disasters cause most economic losses, whereas geo-hazards are by far the major cause of human loss. (World Bank 2017)

2.3. Between 1981 and 2016, there were 32 Category Four and 27 Category Five cyclones. Tropical cyclones have traditionally been the most serious climate hazard for PICs in terms of total damage and loss. Vanuatu is the most at risk from cyclone events, and is expected to lose, on average, US\$36.8 million annually.

2.4. Annual costs of coastal adaptation and adaptation of infrastructure to changes in rainfall and temperature alone are predicted to range from US\$400 million to US\$1.2 billion by 2040, with the size of the range driven by the variability between climate scenarios used for the analysis, including on changes in temperature and rainfall as well as low and high estimates of likely sea-level rise. It is important to note that these costs reflect additional adaptation requirements due to projected climate-change impacts over the next 25 years on top of what is required to adapt to current weather conditions. (World Bank 2017)

2.5. Over the coming decades, tropical cyclones are expected to increase in intensity, although not necessarily in frequency. Rising sea levels increase the risk of storm surges and it is likely that seasonal droughts will continue to increase in intensity, and floods in both intensity and frequency. For some of the low-lying atolls such as Kiribati, the Marshall Islands, and Tuvalu, projections of sea-level rise imply that significant portions of their land area might become more exposed to storm surges and submerged, and that salinization will reduce the availability of fresh water resources. Climate change is also projected to affect the location and migration patterns of fish in the Pacific. (World Bank 2017)

2.6. Flood risk (from rainfall not associated with cyclones) is very significant in the region, often causing significant losses. For example, Fiji experienced devastating floods in 2004, 2009, 2012 (twice) and 2014. The 2009 event caused damages and losses of US\$135 million. The average asset losses due to tropical cyclones and floods are estimated at more than F\$500 million (US\$235 million) per year, representing more than 5% of Fiji's GDP. More recently, flash flooding in the Solomon Islands in 2014 caused damage and loss estimated at US\$108.9 million, equivalent to 9.2% of GDP, resulted in the death of 22 people and affected approximately 52,000 people in total. (World Bank 2017)

2.7. Coastal erosion, storm surges and king tides are major hazards affecting the coasts of the PICs. There are up to 30,000 islands located within the Pacific Ocean with a total coastline of over 50,000 km. According to a study of 12 PICs, 57% of the assessed built infrastructure is located within 500 meters of their coastlines, amounting to a total replacement value of US\$21.9 billion. (World Bank 2017)

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<sup>1</sup> This section draws extensively on the following publication: "Pacific Possible: Long-term Economic Opportunities and Challenges for Pacific Island Countries", 2017, Washington, DC: World Bank. Available at: <http://documents.worldbank.org/curated/en/168951503668157320/pdf/ACS22308-PUBLIC-P154324-ADD-SERIES-PPFullReportFINALscreen.pdf>

2.8. Droughts also increasingly impact PICs. Water sources are vulnerable to the effects of El Niño and La Niña events<sup>2</sup>, which have the potential for significant water-related impacts for many communities across the region. Both the Federated States of Micronesia and the Marshall Islands declared a state of emergency due to the 2015-16 El Niño-induced drought. In the same event the price of kava rose 500% in Tonga due to drought damage to the kava crop. Another example of drought occurred in Tuvalu in 2011, which led to severe rationing of fresh water supplies. Water sources are vulnerable to the effects of El Niño events. Table 1 below indicates the occurrence of different hazards across the Pacific in the years 2015-2016. Higher impact events are shaded darker (i.e. those with a larger number of people affected, and total economic damage).

**Table 1: Occurrence of hazards across the Pacific (2015-2016 data)**

Sub-region	Nation	Flood & Landslide	Drought	Tropical Cyclone
North Pacific	Marshall Islands			
	Micronesia			
	Palau			
Central Pacific	Kiribati			
	Niue			
	Samoa			
	Tonga			
	Tuvalu			
South Pacific	Fiji			
	New Caledonia			
	Papua New Guinea			
	Solomon Islands			
	Vanuatu			

Source: UNDP, ESCAP, OCHA 2017<sup>3</sup>

2.9. Most of the population, urban centres and critical infrastructure are located on the coast and are, therefore, exposed to coastal hazards. For example, in November 1979, December 2008, and March 2014, extratropical storms caused large swell and flooding throughout Majuro, Marshall Islands and Tropical Cyclone Wilma cause destructive storm surges in Ha'apai (Tonga) in January 2011.

2.10. Many PICs are also situated within the Pacific "Ring of Fire" which aligns with the boundaries of tectonic plates, making them extremely vulnerable to earthquakes and tsunamis. The Solomon Islands, Tonga, and Vanuatu are the most at risk to earthquakes and tsunamis of all PICs. Vanuatu was affected by devastating earthquakes and tsunamis several times in the last few decades. In 1999, a magnitude 7.5 earthquake caused extensive damage to Pentecost Island, leaving more than 10 dead, over 100 injured and millions of dollars in losses. The earthquake generated a large tsunami, including a six-meter wave.

2.11. In 2002, a magnitude 7.3 earthquake struck near Vanuatu's national capital of Port Vila, causing millions of dollars in damage to buildings and infrastructure. More recently, in 2009, a devastating tsunami struck Samoa and Tonga following an 8.1 magnitude earthquake, resulting in waves reaching as high as 22 meters in Tafahi, Tonga which destroyed over 20 villages and caused

<sup>2</sup> El Niño refers to large-scale warming of surface water in the central and eastern equatorial Pacific Ocean and changes in the tropical atmospheric circulation (i.e. winds, pressure and rainfall). La Niña refers to large scale cooling in the same zone. Source: World Meteorological Organization: <https://public.wmo.int/en/About-us/FAQs/faqs-el-ni%C3%B1o-la-ni%C3%B1a>

<sup>3</sup> A multi-agency (UNDP, ESCAP, OCHA) study of lessons learnt 2017. Enhancing Resilience to Extreme Climate Events: Lessons from the 2015-2016 El Nino Event in Asia and the Pacific. Available at <http://www.unescap.org/sites/default/files/El%20Nino%20report-%20finalized%20ESCAP07082017.pdf>

233 fatalities in Samoa (189), Tonga (9) and American Samoa (35). In 2013, a tsunami struck the Solomon Islands, following an 8.0 magnitude earthquake.

2.12. As part of the efforts to build an integrated and inclusive approach for resilience in the Pacific region, the Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) was adopted in 2016. The goal of the FRDP is to ensure an integrated approach, whenever possible, to addressing and managing climate change and disaster risk.<sup>4</sup> The implementation of the FRDP is done through the Pacific Resilience Partnership Taskforce. To ensure inclusive participation of a range of key stakeholders, the Taskforce comprises fifteen members, with five representing PICs and territories, five for civil society and private sector, and five for regional organisations and development partners.

2.13. The text that follows examines the impact of hydro-meteorological and geo-physical hazards on the economies of three Pacific Island States: Tonga, Vanuatu and Fiji. The analysis examines the record of disaster events, their impact on macroeconomic and trade performance, together with trade issues that have arisen in disaster response, recovery and resilience. Key insights are summarized in an executive summary. Research was undertaken at the end of May 2019 in support of this analysis for Tonga by Michael Roberts and Arne Klau for Vanuatu and Fiji. Emmanuel Orkoh, Nazia Mohammed and Wanjiku Waweru provided research and writing support for the analysis. Barbara Marcetich provided administrative support.

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<sup>4</sup> Framework for Resilient Development in the Pacific, An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) 2017-2030. Available at: [http://prdrse4all.spc.int/sites/default/files/frdp\\_2016\\_resilient\\_dev\\_pacific.pdf](http://prdrse4all.spc.int/sites/default/files/frdp_2016_resilient_dev_pacific.pdf)

### 3 TONGA

#### 3.1 Basic facts

3.1. Tonga is a small, middle-income economy in the South Pacific, vulnerable to natural disasters. Geographical remoteness, high transportation costs, low diversification and connectivity, a narrow production base, and limited economies of scale place Tonga at a competitive disadvantage. Tonga's economy is highly dependent on remittance flows and donor grants, with agriculture and tourism being the main exports, posing sustainability challenges.<sup>5</sup>

3.2. Like many other small Pacific island nations, Tonga's economic growth potential is constrained by structurally high costs and exposure to economic and environmental shocks. Its location makes Tonga the most geographically remote nation from major centres of economic activity in the world.<sup>6</sup> Over the last twenty years, per capita GDP has grown by 1.1% on average, compared to 2.3% globally. While this is lower than the average of any other developing region, it is faster than the small Pacific islands average (0.9%), illustrating the challenges faced by the region.<sup>7</sup>

3.3. Small size and remoteness combine to push up the cost of economic activity in Tonga, limiting the competitiveness of its exports of goods and services in world markets, and reducing the potential to realize economies of scale. Small size and remoteness also push up the cost of providing public services. High dependence on imports combined with a lack of sufficient size for meaningful diversification makes Tonga highly vulnerable to external economic shocks. These factors combine to make growth, inclusive or otherwise, particularly elusive in Tonga.<sup>8</sup>

3.4. Tongan businesses face challenges typical of small island economies, including geographic isolation, limited human and financial resources, a small domestic market, and high cost of doing business. Businesses have been vulnerable to three types of internal and external shocks: (i) natural disasters have severely impacted the local economy and businesses in the past, (ii) the last global financial crisis adversely impacted diaspora remittances and thus the flow of capital for local businesses, and (iii) the import-based economy is susceptible to external price shocks, which affect input prices for local businesses. Businesses view limited access to finance as a major impediment to business growth.<sup>9</sup>

3.5. Tonga's economy is highly trade dependent. Total trade as a share of GDP has risen by 42.2 percentage points from 53.5% in 2000 to 95.7% in 2017. Most of the growth has occurred in imports. Over half of Tonga's imports are food (with the main trading partners New Zealand and Fiji) and fuel (with Singapore the main source of refined petroleum products). Imports as a share of GDP has grown from 39.0% to 74.1% over the same period. Export growth has in contrast been tepid, with exports as a share of GDP increasing only from 14.5% to 21.7% between 2000--2017. Most merchandise exports are of agricultural produce.

3.6. Tonga acceded to the WTO in July 2007 with short transition periods to implement the WTO agreements on Customs Valuation and Trade-Related Aspects of Intellectual Property Rights-, and some reductions in tariffs. Tonga bound all its tariff lines, and no final bound rate exceeds 20%.

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<sup>5</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>6</sup> "Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

<sup>7</sup> "Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

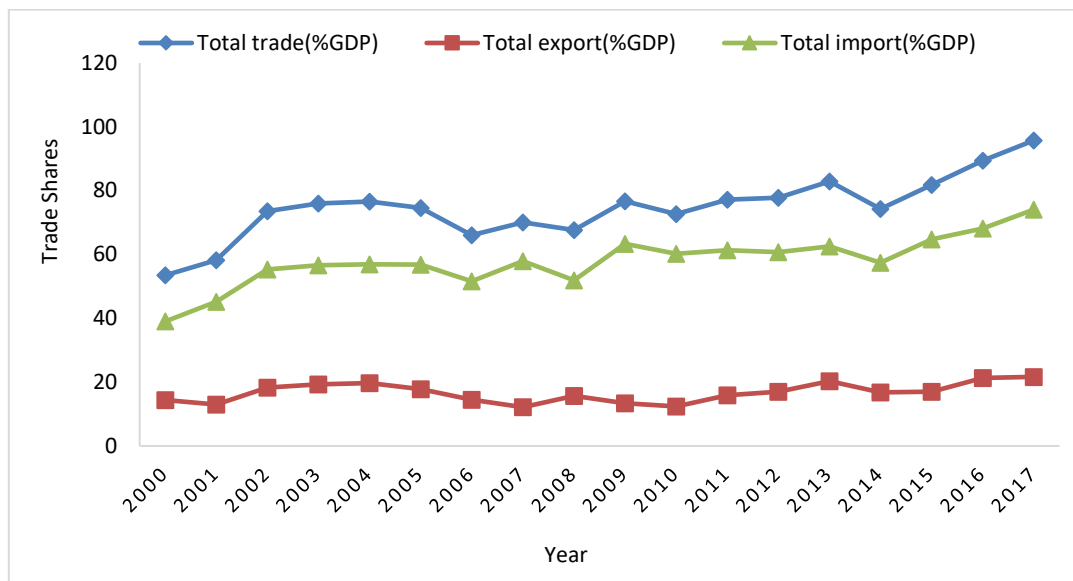
<sup>8</sup> "Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

<sup>9</sup> Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>



Tonga undertook specific commitments under the General Agreement on Trade in Services (GATS) in 90 (of around 160) services subsectors.<sup>10</sup>

**Figure 1: Imports, exports and total trade as a percentage of GDP**



Source: WTO computation based on data from the World Bank

3.7. Remittances accounted for 26.6% of GDP in 2016.<sup>11</sup> Remittances are a critical income source, and recent years have seen improved remittance growth following the expansion of overseas worker programs such as the Australian Seasonal Worker Program and the New Zealand Recognized Seasonal Employers Program.<sup>12</sup> Remittances from expatriates provide a major boost to the local economy, and help explain why merchandise imports outstrip exports by a factor of at least 10:1 in any given year. In Tonga, remittances are used by relatives of emigrants to finance consumption, mostly of imported goods.<sup>13</sup>

3.8. The authorities estimate that the Tongan population is roughly matched by another 100,000 Tongans living abroad, mainly in New Zealand, Australia and the United States (Hawaii). The emigration of Tongans is reflected in a relatively low population growth rate (0.4% p.a. since 2006). It has also contributed to a shortage of skilled labour in some sectors, and low productivity growth.<sup>14</sup> Figure 2 below shows how remittance receipts have grown over the period 2006-2018.

<sup>10</sup> "Tonga: Trade Policy Review, Review by the Secretariat", 27 February 2014, WT/TPR/S/291/Rev.1 Available at: [https://www.wto.org/english/tratop\\_e/tpr\\_e/tpr\\_e.htm](https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm)

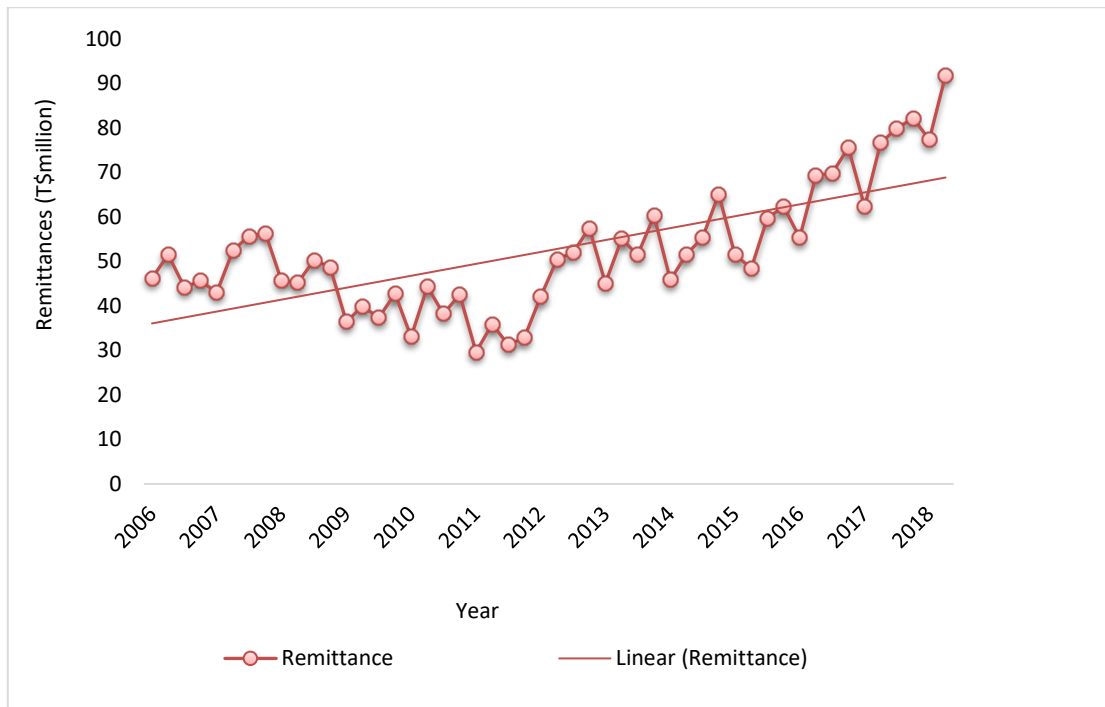
<sup>11</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>12</sup> Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

<sup>13</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>14</sup> "Tonga: Trade Policy Review, Review by the Secretariat", 27 February 2014, WT/TPR/S/291/Rev.1 Available at: [https://www.wto.org/english/tratop\\_e/tpr\\_e/tpr\\_e.htm](https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm)



**Figure 2: Growth of remittance receipts 2006-2018**

Source: WTO computation based on data from National Reserve Bank of Tonga

3.9. Tonga's economic growth is driven by agriculture, construction and tourism.<sup>15</sup> The country has a narrow economic base that is led by the agriculture sector which accounts for 16 percent to GDP.<sup>16</sup> Tonga has a very small manufacturing sector and modest tourism sector which has the potential for expansion. Construction and infrastructure projects funded by donor grants and soft loans have been the main drivers of the country's economic growth in recent years. The contribution of manufacturing output to GDP is relatively small (about 6%) and the sector continues to decline in importance, while imports increase. The main activity is food packing, processing and beverage production.

3.10. The services economy contributes about 50% to GDP, with tourism playing an important role in supporting transport, hotels, commerce, and other services. The current account deficit is driven by construction cycles and largely financed by development grants and remittances. The current account deficit (after grants) as a share of GDP has varied between 3% and 1% of GDP in the last five years, peaking in years of large public sector construction works (e.g. 2012 and 2015). The current account deficit has been adequately financed by capital inflows.<sup>17</sup>

3.11. The population of 106,000 is dispersed across 36 of its 177 islands, with around one quarter of the population based in the capital of Nuku'alofa. Tonga's Gross Domestic product (GDP) per capita in 2018 was \$4,126, and its GDP growth of rate was 3.2%. The prevalence of extreme poverty is very low in Tonga, at 1.1% nationwide, which suggests there are fewer than 1,200 people in extreme poverty in the entire country. Poverty based on the \$3.10-a-day line is somewhat higher, at 8.2% of the population, with rural populations more likely to live in poverty than those in urban areas (9.1% compared to 4.9%). This is consistent with local views that while there are very few

<sup>15</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>16</sup> "Pacific Community: The Tonga Agriculture Policy Bank", Available at: <https://pafpnet.spc.int/policy-bank/countries/tonga>

<sup>17</sup> Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

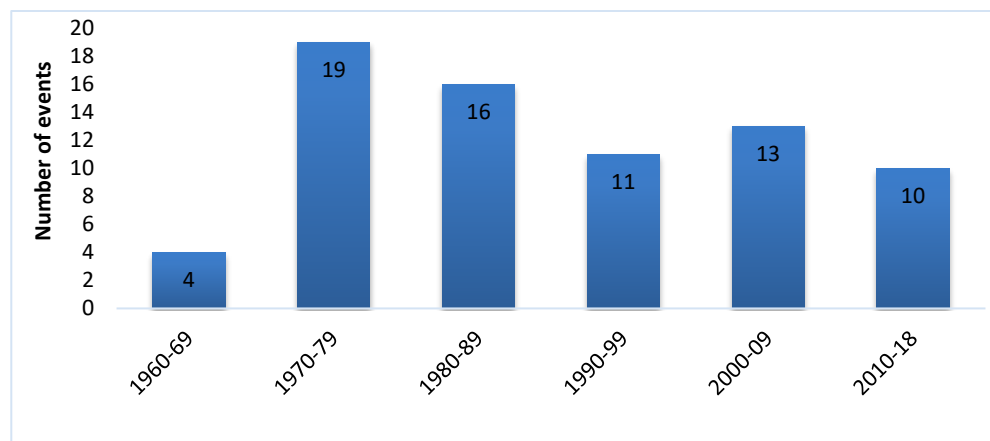
people in abject poverty in Tonga, “hardship” or lack of cash for basic goods, is significantly more widespread.<sup>18</sup>

### 3.2 Exposure to natural disasters

3.12. Tonga is one of the most vulnerable countries to the effects of natural disasters and climate change. The country is ranked second (behind Vanuatu) as most disaster-prone country in the world, according to the 2016 World Risk Index.<sup>19</sup> Its location within the Pacific Ring of Fire, which is aligned with the boundaries of tectonic plates makes the country susceptible to extreme seismic and volcanic activity, strong earthquakes and tsunamis. Frequent tropical cyclones also affect Tonga with damaging winds, rain, and storm surge.

3.13. In any given year, it is likely that Tonga is either hit by or recovering from, a major natural disaster.<sup>20</sup> Estimated annual average disaster damage and losses from cyclones, earthquakes and tsunami are equivalent to 4.4 of GDP. Between 1960 and 2018 (see Figure 3), Tonga has been hit by an average of 12 tropical cyclones each decade. Since 1997, Tonga has experienced approximately 14 natural disasters which have affected a total of 109,000 people and damaged over 1,500 homes.<sup>21</sup>

**Figure 3: Number of Tropical Cyclones affecting Tonga from 1960 – 2018**



Source: WTO calculation<sup>22</sup>

3.14. Notable natural disasters that have hit Tonga in the past include, Tropical Cyclone (TC) Isaac in 1982, TC Hina in 1997, TC Waka in 2001, and TC Heta in 2004. TC Isaac and Waka destroyed many homes along with much of the country’s agricultural crops, causing T\$134.2 million (US\$75 million) in losses. TC Hina caused total damage of approximately T\$18.2 million (US\$10.2 million) in 1997 values.<sup>23</sup> Incidents of earthquakes (7.8 magnitude) and subsequent tsunami in 2009 destroyed over half of the houses on Niua Tutapu before continuing to cause further damage on Samoa.

<sup>18</sup> Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

<sup>19</sup> World Risk Index 2016. Available at: <http://www.irrinternational.org/2016/03/01/world-risk-index/>

<sup>20</sup> Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

<sup>21</sup> The World Bank (2015) Pacific Catastrophe Risk Assessment and Financing Initiative(PCRAFI). Country Note. Available at <https://www.qfdrr.org/sites/default/files/publication/country-note-2015-pcrafi-tonga.pdf>

<sup>22</sup> The World Bank (2015) Pacific Catastrophe Risk Assessment and Financing Initiative(PCRAFI). Country Note. Available at <https://www.qfdrr.org/sites/default/files/publication/country-note-2015-pcrafi-tonga.pdf>

<sup>23</sup> FAO & Government of Tonga (2014). TONGA Cyclone Ian in Ha’apai Rapid Damage Assessment to the Agriculture and Fisheries Sectors Report. Available at <https://reliefweb.int/report/tonga/cyclone-ian-ha-apai-rapid-damage-assessment-agriculture-and-fisheries-sectors-report> .

3.15. The country is expected to incur, on average, T\$28.2 million (US\$ 15.8 million) per event per year in losses due to earthquakes and tropical cyclones. In the next 50 years, Tonga has a 50% chance of experiencing per event loss exceeding T\$319 million (US\$178.2 million), and a 10% chance of experiencing a per event loss exceeding T\$783 million (US\$437.4 million).<sup>24</sup>

3.16. In recent years, two Tropical Cyclones (Ian in January 2014 and Gita in February 2018) have hit Tonga. Cyclone Ian, with sustained winds of more than 124 mph and gusts up to 180 mph, was one of the most powerful storms ever recorded to hit Tonga's Ha'apai Island group, causing significant damage to housing and critical infrastructure.<sup>25</sup> It affected some 5,500 people (almost 70% of the Ha'apai island group inhabitants), The housing sector was particularly affected, with approximately 75% of Ha'apai's housing stock destroyed or severely damaged.<sup>26</sup> A post-disaster economic assessment of TC Ian estimated the combined physical damage and economic loss from this event to be T\$90 million (US\$50.3 million), equivalent to 11% of Tonga's gross domestic product (GDP). (Government of Tonga, and FAO, 2014)<sup>27</sup>.

3.17. Tropical Cyclone (TC) Gita passed over the Tongatapu and 'Eua island groups around 11 pm on Monday February 12, 2018. It was the strongest tropical cyclone to impact Tongatapu and 'Eua since TC Isaac in March 1982, with an average wind speed of 130 kph and gusts of up to 195 kph - just short of a category 5 storm. An accompanying storm surge reached 1m above normal high-tide levels, and 200 mm of rainfall fell over a 24-hour period, resulting in localized flooding.

3.18. The storm impacted approximately 80,000 people, approximately 80% of Tonga's population. It brought down power lines; damaged and destroyed schools, resulting in closures; destroyed crops and fruit trees; and damaged public buildings, including the domestic airport, the Parliament building, and Tonga meteorological services. TC Gita also significantly impacted housing, with over 800 houses destroyed and a further 4,000 damaged. Damage and losses from TC Gita are estimated at \$164.1 million, equivalent to 37.8% of the country's GDP.<sup>28</sup>

### 3.3 Impact on natural disasters on trade and the economy

3.19. Tonga's economic growth has been adversely affected by the frequent occurrence of natural disasters, and external price shocks.<sup>29</sup> Cyclone Gita reduced the GDP growth rate from 2.9% in 2017 to 0.4% in 2018. Economic growth had been predicted to reach 3.4% in 2018. Following the onset of TC Ian in 2014, total trade as a share of GDP decreased by 9 percentage point from 82.9% in 2013 to 74.2% in 2014. Imports as a share of GDP fell by 4 percentage points from 62.6% to 57.4%, while exports dropped by 5 percentage point from 20.4% to 16.8% - with agricultural exports the main casualty.

<sup>24</sup> The World Bank (2015) Pacific Catastrophe Risk Assessment and Financing Initiative(PCRAFI). Country Note. Available at <https://www.gfdr.org/sites/default/files/publication/country-note-2015-pcrafi-tonga.pdf>

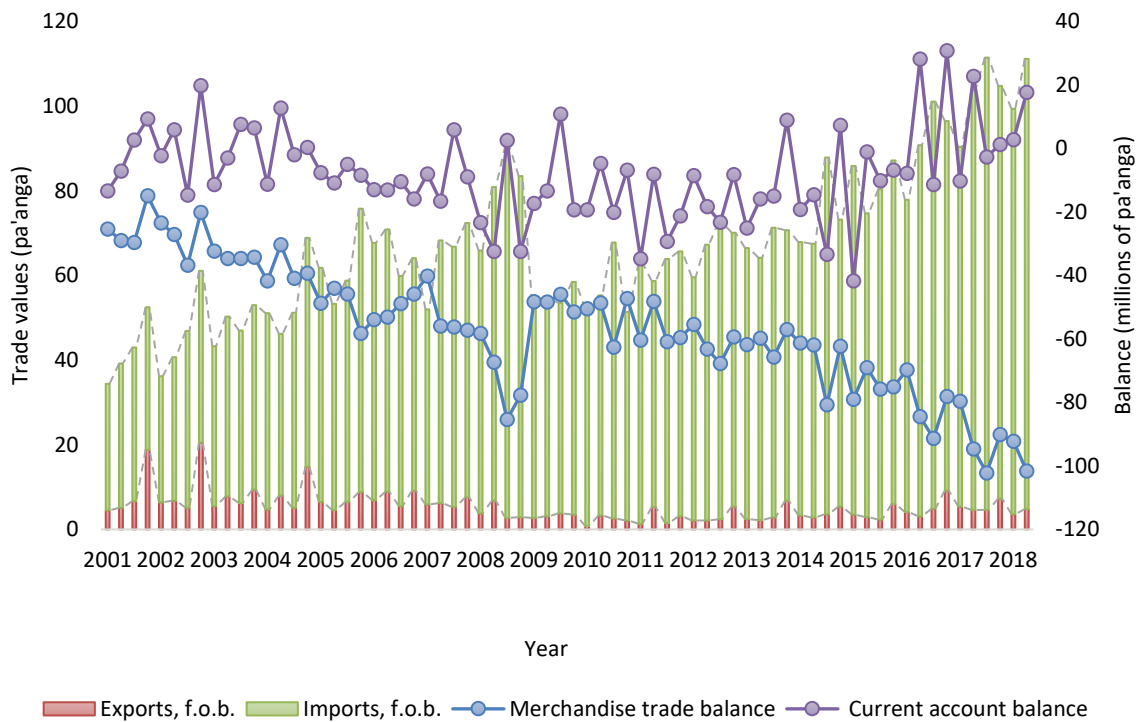
<sup>25</sup> Singh, A. (2014). Post Tropical Cyclone Ian Rapid Water Resources Assessment. Technical Report 202. Available at: [https://www.researchgate.net/publication/287194962\\_Post\\_Tropical\\_Cyclone\\_Ian\\_Rapid\\_Water\\_Resources\\_Assessment\\_Lifuka\\_Kingdom\\_of\\_Tonga](https://www.researchgate.net/publication/287194962_Post_Tropical_Cyclone_Ian_Rapid_Water_Resources_Assessment_Lifuka_Kingdom_of_Tonga)

<sup>26</sup> t The World Bank (2015) Pacific Catastrophe Risk Assessment and Financing Initiative(PCRAFI). Country Note. Available at <https://www.gfdr.org/sites/default/files/publication/country-note-2015-pcrafi-tonga.pdf>.

<sup>27</sup> FAO & Government of Tonga (2014). TONGA Cyclone Ian in Ha'apai Rapid Damage Assessment to the Agriculture and Fisheries Sectors Report. Available at <https://reliefweb.int/report/tonga/cyclone-ian-ha-apai-rapid-damage-assessment-agriculture-and-fisheries-sectors-report>

<sup>28</sup> "Tonga", Country Home page, Global Facility for Disaster Reduction and Recovery <https://www.gfdr.org/tonga>

<sup>29</sup> "Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

**Figure 4: Trends of merchandise trade and balances**

Source: WTO computation based on data from National Reserve Bank of Tonga

3.20. The impact of TC Ian was significant, but less severe than TC Gita, with the focus of damage being the outer chain of the Ha'apai Island group. Nevertheless, TC Ian still contributed to a worsening of Tonga's trade balance and an increase in Tonga's stock of debt equivalent to 43.2% of GDP, external debt accounting for approximately 92% of that amount. In its 2018 assessment of the Tongan economy, the IMF noted that reconstruction costs after Cyclone Ian in 2014, and a legacy of large external loans, have contributed to an accumulation of external debt in Tonga.<sup>30</sup>

3.21. Reconstruction and recovery efforts after disasters reduce resources available to other sectors, further tighten already limited government budgets, and expose the economy to higher debt risk. The IMF–World Bank 2017 Debt Sustainability Analysis indicated that reconstruction costs due to disasters had significantly contributed to the accumulation of the country's external debt. Although external debt remains stable in the short term, the debt distress rating increased from moderate to high risk in the medium term.

3.22. The increase in Tonga's external debt risk rating indicates the fiscal fragility of the economy and the significant impact of disasters on the country's debt sustainability. The government's policy of no non-concessional external debt has helped in controlling the country's outstanding debt. However, to maintain fiscal sustainability, the IMF and World Bank are recommending prudent spending to achieve and maintain a budget surplus equivalent to 1.0% of GDP over the medium term, as well as providing for buffers at a minimum of 4-5 months of the government's recurrent expenditure.<sup>31</sup>

3.23. Important to note also is that remittances act as a fiscal buffer, at both household and at a business level for micro, small and medium sized enterprises. In the aftermath of TC Gita in

<sup>30</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>31</sup> "Pacific Economic Monitor", December 2018, Asian Development Bank. Available at: <https://www.adb.org/sites/default/files/publication/471196/pem-december-2018.pdf>

February 2018, remittance receipts from families and relatives abroad recorded growth of T\$4.4 million (18.5%) to reach a monthly high in March of T\$28.0 million.

3.24. In the wake of Tropical Cyclone Ian, the government of Tonga and the World Bank through the Global Facility for Disaster Risk Reduction, with funding from the Africa Caribbean Pacific-European Union Natural Disaster Risk Reduction Program, worked rapidly to assess damage, and implement a recovery program which would strengthen the housing and transport infrastructure sectors against future natural hazards. A Cyclone Ian Relief Account was established by Ministry of Finance and had received T\$1.5 million (US\$837,000) in contributions by March 20, 2014. The donations came from development partners, communities, businesses, individuals, and the Tongan diaspora, all of whom wished to contribute toward the relief efforts. In addition to the cash donations received from the international community in the month after TC Ian, a further T\$25.7 million (US\$14.4 million) was committed to facilitate the response plan.

3.25. In the immediate aftermath of TC Gita cyclone, donor contributions and insurance pay outs enabled substantial contributions to the government's Emergency Fund. One example is the approval of supplemental funding totalling US\$10 million by the World Bank's Board of Executive Directors in June 2018 as part of Tonga's Second Inclusive Growth Development Policy Operation.

3.26. The IMF projects that Tonga's fiscal deficit will widen to 2.3% of GDP in 2018 and reach 4.4% of GDP in 2020 due to increased infrastructure investment. It should stabilize at around 1.4% of GDP, before the effect of any future natural disasters. Table 2 gives information on macroeconomic indicators.

**Table 2: Selected macroeconomic indicators for Tonga**

	FY2015	FY2016	FY2017	FY2018	FY2019
Output and prices (percent change)			Est.	Proj.	Proj.
Real GDP	3.7	3.4	2.7	3.4	3
Consumer prices (period average)	0.1	-0.6	7.2	5.3	2.5
Consumer prices (end of period)	0.2	0.2	10.3	2.5	2.5
GDP deflator	1.5	1.7	3.1	2.1	2.1
Total Revenue	34.9	40.9	44.5	53.5	52.6
Revenue (excluding grants in-kind)	28.1	30.6	30.5	32.1	30.3
Grants in-kind	6.8	10.3	14	21.5	22.3
Total Expenditure	37.6	41.3	44.9	55.8	54.5
Exports, f.o.b.	19.4	24.1	25.3	26.4	27
Imports, f.o.b.	-207.7	-202.8	-235.1	-258.4	-281.2
Services (net)	-19.4	-9.1	-14.4	-17.3	-21.7
Investment income (net)	4.5	2.5	6.8	8.7	11.6
Current transfers (net)	137.9	129.7	166	190.5	207.5
Of which: Remittances	102.2	112.2	117.4	124.3	130.4
Of which: Official grants	27	33	53.1	69.6	80.5
Current account balance	-65.3	-55.6	-51.3	-50.1	-56.7
(In percent of GDP)	-15	-13.2	-12	-11.8	-12.9
Overall balance	-16.2	23.9	3.5	15.4	-8.5
Terms of trade (annual percent change)	-3.6	2	3.1	-1.8	-0.5
Gross official foreign reserves (US\$ millions)	142.5	166.4	169.9	185.2	176.7
(In months of imports)	6.3	6.3	5.9	5.9	5.5
Public debt (external and domestic)	51.4	51.8	48	49.2	50.3
External debt	45.2	44	41.8	43.2	44.6
Debt service ratio	1.6	1.6	1.6	1.5	3.8
GDP per capita (T\$ thousands)	8.1	8.5	9	9.5	9.9

Source: IMF 2018<sup>32</sup>

<sup>32</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

3.27. The nature of the damages and losses from TC Evan and Gita varied significantly in scale, by island, by district and by business. At a sectoral level though, the two cyclones had comparable impacts, with the sectors that sustained the greatest damage being agriculture and fisheries.

3.28. The agriculture sector (comprising crops, livestock, fisheries, and forests) accounted for 17% of Tonga's GDP in 2016. About 75% of Tonga's population lives in rural areas, with agriculture and fisheries being the main source of livelihoods. Tonga has one of the highest rates of subsistence food production among Pacific Island Countries, largely based on traditional production of root crops, which provide food security, employment, and income for many households. As such, tropical cyclones have a particularly serious impact on some of the poorest and most vulnerable Tongans through their effect on small-scale and subsistence farming activities. These events also impact the trade and macroeconomic performance.

3.29. TC Ian in 2014 caused a total of T\$97.5 million damage and production losses in the agricultural sector. It paralyzed local food supply on Ha'apai island and of key cash crops for some six to ten months. Damages to tree crops (coconuts, breadfruit, mangoes, citrus), and key cash crops (mulberry, sandalwood) and pandanus were as high as 90%.

3.30. TC Gita in 2018 caused an estimated T\$129.3 million damages to the agricultural sector. Production losses caused by TC Gita translated into significant drops in exports. Major crops exports fell by 1,686 tonnes (37.4%) due to a fall in major exported crops such as root crops, plantain and coconuts. The export of cassava dropped by 1,590 tonnes (53.0%), giant taro (kape) declined by 49.0 tonnes (48.2%), and plantain and coconuts decreased by 37.0 tonnes (69.1%) and 11.0 tonnes (13.9%) respectively. These outweighed a rise in the exported volume of yam, taro and breadfruit. TC Gita also caused disruptions to the schedule of shipping vessels and other facilities necessary for exporting.

3.31. Both cyclones also affected the fisheries sector. TC Ian caused damage to the fisheries sector on Ha'apai island of T\$1.14 million, affecting a total of 206 fishing households in the affected area. Damage sustained to fishing boats, outboard motors and, more severely, to an estimated 100% of all fishing gear, including nets, diving equipment, lines and other equipment Ha'apai island. TC Gita also damaged fisheries assets, both artisanal and also to commercial snapper boats.

3.32. In the forestry subsector, the timber industry was impacted by high winds from TC Ian that damaged infrastructure and trees. Commercially high-value trees such as mulberry and pandanus trees accounting for a substantial portion (89%) of damage during TC Gita, while timber trees (pine, mahogany) accounted for the remainder.

3.33. TC Ian disrupted economic activity on Ha'apai island as many shops were either damaged or shut down leading to limited supplies. Transportation of goods to functioning shops in Haapai was constrained and expensive. It severely impacted business activity, pushing businesses to rely more on their savings and donations from outside, including remittance flows. TC Gita inflicted similar damage but on a wider scale. A survey conducted among a sample of businesses in the affected communities of Tongatapu and 'Eua, estimated that approximately 60% had reported partial damage to their properties, with a further 3% of businesses destroyed. Total damages to assets was estimated at \$55.27 million.

3.34. Both TC Ian and Gita affected tourism with damage to resorts, cancelled bookings and a severe business down-turn. The cyclones contributed to a short-term reduction in employment opportunities and subsequent impact on the local economy (Government of Tonga, and FAO, 2014). TC Gita caused estimated damage of T\$40.6 million to the tourism sector, mainly in the form of damages to accommodation (90% of the total damages). Around 72 of the 76 accommodation businesses on Tongatapu and 'Eua sustained damage, with the resort category (14 properties) most affected. Of the T\$12.1 million in damages, an estimated T\$9.5 million was uninsured.

3.35. The impact of TC Gita on the power sector was estimated at T\$17.14 million, consisting of T\$13.41 million in damage to infrastructure and T\$3.7 million in losses to Tonga Power Limited (TPL) mainly from loss of revenue. This disrupted power supply on the islands of 'Eua and Tongatapu, affecting all Tonga Power Limited (TPL) customers in the area. All customers on 'Eua (approximately 1,170) were disconnected from the electricity supply for 14 days before power was restored. On Tongatapu, approximately 17,782 customers who were disconnected from the electricity supply. Like the power sector, Tonga's transport infrastructure and networks across the three subsectors (land, maritime, and aviation) also suffered minor damage.

3.36. The IMF projects that over the next three to four years, losses from Cyclone Gita will be partially offset by reconstruction and repair activity for housing, public buildings, and schools, which is began in the 2017/18 and expected to ramp up over the next two years before scaling back in 2020/21.

### 3.4 Policy issues

3.37. In preparation of the arrival of TC Gita, a state of emergency was declared for the whole of Tonga by the Acting Prime Minister. The state of emergency initially covered the period Monday, 12 February until Monday, 12 March 2018. It was subsequently further extended to 9 April. Responsibility for coordinating the response to the cyclone fell to the National Emergency Management Organization (NEMO). Response was organized around a series of nine clusters, each with a lead national agency and supported by UN organizations and other agencies.<sup>33</sup> Overall coordination and logistics were managed by the Director of NEMO.

3.38. Within the essential services cluster, power was reported as restored to 76% of customers on the main island of Tongatapu only by 8 March. Tonga Power Ltd worked with AusAid to restore operation. Generators supplied by Ausaid restored power in outer island communities, including to village health clinics. Without power, many businesses were unable to recommence operations, and cold chain operations (for medicines and foodstuff) were compromised.

3.39. In the logistics cluster, NEMO organized distribution of relief containers received from overseas into three categories: family to family, organizations/church to organization/church and containers addressed to no one in particular. In addition to containers, a large number of parcels were sent by air freight by members of the Tongan diaspora to their relatives and friends back home. The New Zealand-Tonga Business Council was a key actor, mobilizing donations of relief supplies. Another important actor was the Church, with many faith-based groups sending and distributing relief supplies. The transport, customs clearance and distributions of relief was facilitated by the lack of major damage to airport and port infrastructure, and rapid clearance of storm debris by the Tongan army.

3.40. To support response and recovery, the Government of Tonga approved a six-month waiver on all duties and taxes on foodstuffs and clothing sent by Tongans abroad and destined for household consumption. The exemption of these items ended on 30 August 2018, and the government made press announcements in advance of this deadline to alert the end of the exemption. Hundreds of containers filled with donated goods were sent to the Kingdom from New Zealand – with most of the containers provided free of charge by the business community.<sup>34</sup> No quantitative restrictions on exemptions were applied to households. A further exemption on tax and import duties is being applied by the Government of Tonga on building materials will continue. The exemption is due to expire in February 2020. The exemption applied both to households and businesses, again without quantitative restrictions applied.

3.41. The Trade Policy Review of Tonga conducted in 2014 noted that in terms of revenue forgone, customs duty and tax exemptions play a significant role. The Review found that Tonga's customs tariff stipulates exemptions for certain uses or users that amounted to (T\$91.2 million in 2012/13), equivalent to about 40% of government expenditures. The exemptions include fuel subsidies (concessions) for electricity generation and transport, for manufacturers of beer and other alcoholic beverages, for the fisheries sector, electricity generation, air transport, domestic shipping. Box 1 below outlines the sector-specific exemptions outlined in the 2014 TPR in more detail.<sup>35</sup>

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<sup>33</sup> The nine clusters covered: Coordination and logistics; emergency shelter and non-food items; essential services; Health, Nutrition, Waster, Sanitation and Hygiene; Safety and Protection; Food Security and Livelihood; Communications; Education; Repair/Rebuilding of Houses; Restoring the Economic and Social Environment.

<sup>34</sup> "Gov't reminds Tongans overseas to take advantage of Gita tax-free before August 30", Kanivatonga News, 27 July 2018. Available at: <https://kanivatonga.nz/2018/07/govt-reminds-tongan-overseas-to-take-advantage-of-gita-tax-free-before-august-30/>

<sup>35</sup> "Tonga: Trade Policy Review, Review by the Secretariat", 27 February 2014, WT/TPR/S/291/Rev.1 Available at: [https://www.wto.org/english/tratop\\_e/tpr\\_e/tpr\\_e.htm](https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm)



### Box 1: Sector-specific tariff exemptions

- **Agricultural Sector:** Duty and Consumption tax free goods include agricultural tools, live animals, stock feed, packaging materials, timber milling equipment, insecticides, pesticides, fungicides, agricultural equipment and implements including hand tools, seeds, fertilizer, packaging materials. Special exemptions are available after a national emergency.
- **Construction sector:** Basic building materials are duty free: timber, roofing iron, cement, guttering, plumbing pipes (PVC); capital items are 3% duty; payment by instalment allowed. Special exemptions after a national emergency are also available. For instance, tax on building materials were removed for two years after Cyclone Gita ravaged Tonga.
- **Education and medical:** Medicines, medical equipment, educational materials (imported by educational institutions), charitable donations, project materials (funded by Donor Partners), payment by instalment allowed, sale of leases for residential purposes are exempt from consumption tax if sold by a business registered for CT.
- **Fisheries sector:** Various items are designated duty and consumption tax free. These include fishing inputs, fuel, fishing vessels; navigation and sea safety equipment; outboard and inboard engines and spare parts; fishing gear; fishing bait; fish; aggregating Devices; vessel monitoring systems; hydraulic drop-line fishing reel; pearl oyster farm equipment and materials; aquaculture farm equipment and materials and fish fence wire. Special exemptions are available after a national emergency.
- **Manufacturing sector.** A range of items are designated duty free. These include compound alcoholic preparations, bottles, malt, yeast and sugar imported for beer manufacture, egg trays, packaging, bottles, bottle caps, resins, dyes, pigments, benzoic acids etc for paint making, sugar, powdered milk for ice-cream, carbonates, materials for the manufacture of roofing iron, capital items are 3% & basic building materials are duty free, payment by instalment allowed with conditions. Special exemptions after a national emergency are also available.
- **Tourism sector:** Various items have been listed as duty exempt and reduced for the tourism sector. These include basic building materials: timber, roofing iron, cement, guttering, plumbing pipes (PVC). Capital items are 3% duty listed.
- **Transport sector** - life saving equipment, equipment for use within confines of airport, communication and signal equipment, and basic building materials are duty free, with capital items listed at 3%. Special exemptions after a national emergency are also available.

Source: WTO, Trade Policy Review, Tonga<sup>36</sup>

3.42. Issues with unsolicited bilateral donations were not reported by NEMO or donors. Learning the lessons from the response to Cyclone Pam in Vanuatu, the Government of New Zealand, and non-governmental organizations recommended cash gifts, rather than donation of goods.<sup>37</sup> Where goods were sent, they were in response to a request for those goods from an actor in the affected Tongan population (e.g. a family member, church group or business). Social media platforms played a key role in ensuring that the supply of relief materials mapped need in the aftermath of Cyclone Gita.<sup>38</sup>

3.43. The continued operation of telecommunications links in many places and the rapid re-establishment of the network in places where it was damaged helped the relief and recovery effort. Those affected were able to communicate their needs, including to the Tongan diaspora. Telecom companies were also actively engaged in the relief effort. Digicel flew a Boeing 737 filled

<sup>36</sup> "Tonga: Trade Policy Review, Review by the Secretariat", 27 February 2014, WT/TPR/S/291/Rev.1 Available at: [https://www.wto.org/english/tratop\\_e/tpr\\_e/tpr\\_e.htm](https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm)

<sup>37</sup> Interview with New Zealand High Commission in Nuku'Alofa, 28 May 2018

<sup>38</sup> Interview with Pacific Trade and Invest, Auckland, 1 June 2018

with humanitarian relief from Fiji shortly after the passage of TC Gita and also loaded relief supplies onto a French navy ship. In addition to the distribution of aid, the company loaded \$10 of free credit onto customers phones in advance and immediately after the passage of the cyclone.

3.44. In advance of the arrival of TC Gita, Digicel engineers removed equipment from phone towers and generally readied the network for the storm. The preparations meant that the connectivity was not lost, even though the Digicel office in Nuku'alofa was severely damaged. Building work to refurbish the company's commercial premises was completed at the end of May 2018.

3.45. Among the issues highlighted by the company was access to power to charge phones and bank liquidity problems. In the three weeks it took to restore power to Tongatapu, some customers experienced problems in charging their phones. Digicel offers a mobile money service to remit money where credit can be converted to cash. With ATMs out of action and banks struggling with liquidity, the company encountered some issues in converting credit to cash – not least since the volume of remittances more than doubled after the storm. Digicel Tonga Ltd was helped in their response and recovery by a Digicel Group-wide emergency operations' manual.

3.46. Tonga is taking steps to implement the WTO's Trade Facilitation Agreement (TFA). In April 2017, Tonga notified to the WTO its TFA commitments in Categories A, B, and C with indicative dates for implementation. Five months later, Tonga notified to the WTO implementation dates for its category B commitments. WTO analysis suggests that 17.6% of TFA measures will come into legal force on Tonga's ratification of the TFA. Some 56% of commitments require additional time to be implemented. Some 26.5% of commitments were placed in category C (i.e. requiring capacity building support to undertake). Indicative implementation dates stretch to 2020 for category B commitments and 2022 for category C commitments.

3.47. To support implementation of the TFA, Tonga has requested capacity building for TFA measures including: making information available through the internet, comments and information before entry into force, advance rulings, test procedures, risk management, post-clearance audit, average release times, authorized operators, border agency cooperation, formalities, acceptance of copies, use of international standards and single window.<sup>39</sup> At the time of writing, Tonga had not deposited its instrument of acceptance of the TFA.

3.48. Recovery from Tropical Cyclone Gita exposed pre-existing structural constraints in the Tongan economy. In the view of the IMF, these constraints include shortcomings in the business climate, and the need to expand market access for exports and increase the value added of domestic production through building manufacturing and packaging capacity in Tonga. A policy recommendation made by the IMF is structural reform to attract investments and to increase private sector participation in public enterprises.<sup>40</sup>

3.49. Limited business opportunities and difficulty in accessing credit constrain private sector development, particularly for micro, small, and medium enterprises (MSMEs).<sup>41</sup> Access to credit was a notable constraint in the post-cyclone period, with the private sector requesting access to credit at soft interest rates to support recovery.<sup>42</sup>

3.50. The national authorities are developing Tonga's National Trade Framework strategy for enhancing export-oriented production and an MSME development strategy. The government's Tonga Strategic Development Framework addresses some of these structural issues, particularly as regards development of resilient infrastructure, enhancing health and education to build human capital, and

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<sup>39</sup> WTO Trade Facilitation Agreement Database  
<https://www.tfdatabase.org/uploads/notification/NTON1A1.pdf>

<sup>40</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>41</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>42</sup> Situation Report 12, Tropical Cyclone Gita, 12 March 2018, National Emergency Management Office.

promoting the diversification of domestic production, notably in agriculture, manufacturing, and tourism.<sup>43</sup>

3.51. Tropical Cyclone Gita in 2018, was a significant set-back for the agriculture sector. Significant destruction to standing perennial crops such as bananas, cassava, coconuts etc was due to Cyclone Gita. This led to the major decline in agricultural exports. The storm caused an estimated T\$129.3 million damages to the agricultural sector. Tonga's agricultural and horticultural export performance had rebounded since 2011. Seasonality strongly favours Tonga in accessing the New Zealand market. Tongan production of horticultural products tends to be higher, and prices lower, between June and October. This coincides with the period when supplies of many items in New Zealand are scarce or non-existent, and when prices in Australia (a competing exporter) are the highest. There are good air and sea freight linkages between Tonga and Auckland, although costs, particularly for air freight, tend to be high due to low volumes. Current exports are almost entirely confined to low value products transported by sea, such as root crops, pumpkins, squash, watermelons and coconuts. Exports of fresh fruit and vegetables are negligible, and there are no export protocols in place for a number of potentially profitable export commodities.<sup>44</sup>

3.52. Progress in negotiating new or improved access has been slow, resulting in a high level of frustration and missed export opportunities. New market access agreements have been few and hard won, and trade in some products has stagnated or declined due to the imposition of more onerous protocols for products that were historically traded with relative ease. These conditions apply to some extent to most agricultural and horticultural commodities, with approved market access pathways for some items (albeit with strict compliance protocols), but total import prohibition for others.<sup>45</sup>

3.53. One constraint identified by PHAMA is the limited capacity to support the expansion of the export sector in terms of export inspection and certification. This is exacerbated by the demands on Ministry of Agriculture, Forests and Food (MAFFF) to inspect and certify large numbers of small consignments of handicraft products (mats, wood carvings, tapa etc.) MAFFF also has limited capacity to provide the necessary research and extension support including grower registration and quality assurance schemes, maintain required biosecurity standards such as pest and disease surveillance, and to progress market access issues and negotiate export/import protocols. Other factors which need to be considered include the high cost of agricultural inputs (seeds, fertilisers, agro-chemicals etc.), the high cost of fuels and energy, limited access to finance and inadequate infrastructure of the packhouses which are required to be Hazard Analysis Critical Control (HACCP) certified, an issue in view of MAFFF.

3.54. Tropical Cyclone Gita caused significant damage to a critical component of the agricultural export value chain i.e. post-harvest facilities for fumigation, grading, and packing into reefer containers (chilled and frozen) prior to export. Establishment of the MAFFF post-harvest facility at Nuku'alofa and a modern private sector HACCP accredited packhouse, operated by Nishi Trading Co Ltd, were major advances for efforts at agricultural diversification.

3.55. The MAFFF facility was established with EU STABEX funding in 2010 and is equipped for washing, peeling, cutting, bagging, chilling and freezing produce with a capacity of around 4-5 tonnes per day. It also includes a methyl bromide fumigation chamber with a capacity of around 20 tonnes per day. The facility operated by Nishi Trading was Tonga's first international standard export packhouse and food processing plant, and partly financed by a grant from the EU-funded Increasing Agricultural Commodity Trade programme. The packhouse is used to process Nishi's own

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<sup>43</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>44</sup> " Infrastructure requirements for horticultural exports from Tonga", 15 January 2018, David Young and Carol Nelson, Pacific Horticultural and Agricultural Market Access (PHAMA) Program. Available at: <http://phama.com.au/wp-content/uploads/2018/01/TR116-Infrastructure-requirements-for-horticultural-exports-from-Tonga.pdf>

<sup>45</sup> " Infrastructure requirements for horticultural exports from Tonga", 15 January 2018, David Young and Carol Nelson, Pacific Horticultural and Agricultural Market Access (PHAMA) Program. Available at: <http://phama.com.au/wp-content/uploads/2018/01/TR116-Infrastructure-requirements-for-horticultural-exports-from-Tonga.pdf>

produce for export and is available on a fee-for-service basis for other growers and exporters.<sup>46</sup> Box 2 below highlights support from the regional business community to re-establish operations.

**Box 2: Rebuilding agricultural export capacity in the wake of Tropical Cyclone Gita**

Following natural disasters, aid and rebuilding initiatives are usually directed at communities and families. It is relatively rare though for affected businesses in disaster-struck regions, particularly in the Pacific Islands, to receive overseas assistance to rebuild damaged business infrastructure. A group of private sector companies, led by the Auckland chapter of the University of Otago Alumni Association, came together to do exactly that – rebuild a major Tongan exporter's infrastructure devastated by Cyclone Gita. The group decided to direct the rebuilding effort primarily at affected Tongan businesses. Nishi Trading, one of Tonga's leading exporters was identified. Situated on the main island of Tongatapu, the company's farm suffered massive damage, where some 300 acres of plantation was affected in addition to severely damaged buildings housing its packhouses and other infrastructure. Getting Nishi on track will have multiple positive effects for revitalising the economy. To support the effort, Australasia building industry major Fletcher Group committed to provide steel coils, which Metalcraft, New Zealand's leading roofing iron manufacturer pressed the steel into roofing products. Matson Shipping provided discounted freight.

Source: Pacific Periscope<sup>47</sup>

3.56. In the view of the IMF, to broaden export markets, strategies should tackle the inclusion of relevant international standards to ensure that products can be exported to partner countries.<sup>48</sup> The PHAMA programme identified fruit fly quarantine and research as vital for Tonga's exports of fresh fruit and vegetables, such as papaya and chilli. However, the plant quarantine facility at the airport (high temperature forced air treatment facility) still needs to be certified by New Zealand. Tonga has a bilateral quarantine arrangement with New Zealand. The fumigation facility is run by the MAFF.<sup>49</sup>

3.57. A concern highlighted during the national WTO workshop on the SPS and TBT agreements held in May 2018 was difficulty in disposing of waste forest products due to the presence of quarantine plant pests. Hurricane Gita downed many commercially valuable trees, but these were either left where they had fallen or were used in the domestic building industry. To get around this difficulty, the Pacific Horticultural and Agricultural Market Access Program (PHAMA) imported mobile sawing machines so that the timber could be used in the domestic building industry.

3.58. Another sector that has been impacted by the successive tropical cyclones, but that has demonstrated considerable resilience and growth is the tourism sector. Figure 5 below shows the growth of tourism receipts over the period of 2006-2018 – with the impact of Hurricane Ian in 2014 on tourism receipts evident in the time series. Visitor exports generated T\$110.2mn (USD48.4mn), 63.4% of total exports in 2017.<sup>50</sup> World Travel and Tourism Council (WTTC) research suggests that visitor exports may fall in 2018 by 22.8%, due to the impact of TC Gita. Tourist arrivals are predicted by WTTC to grow from 47,000 to 87,000 per year by 2028, with tourism's share in national investment rising from 15.6% to 21.5% over the same period.

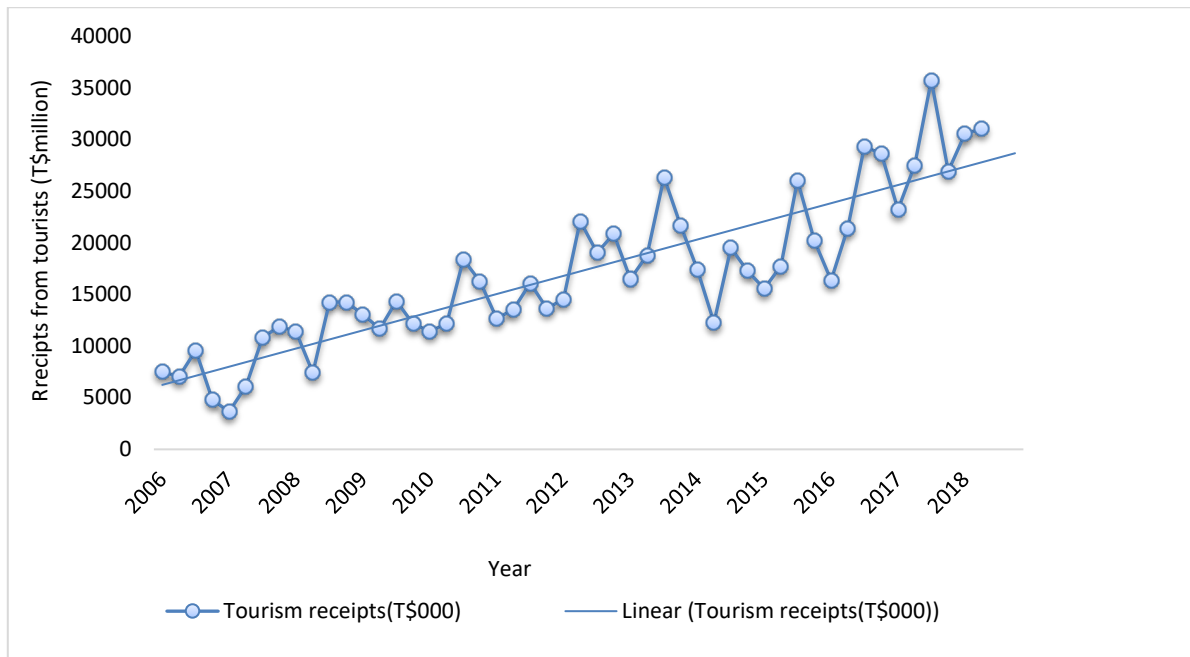
<sup>46</sup> "Infrastructure requirements for horticultural exports from Tonga", 15 January 2018, David Young and Carol Nelson, Pacific Horticultural and Agricultural Market Access (PHAMA) Program. Available at: <http://phama.com.au/wp-content/uploads/2018/01/TR116-Infrastructure-requirements-for-horticultural-exports-from-Tonga.pdf>

<sup>47</sup> "NZ firms join hands to rebuild cyclone ravaged Tongan business", 22 May 2018, Available at: <https://pacificperiscope.wordpress.com/2018/05/22/nz-firms-join-hands-to-rebuild-cyclone-ravaged-tongan-business/>

<sup>48</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

<sup>49</sup> "Tonga: Trade Policy Review, Review by the Secretariat", 27 February 2014, WT/TPR/S/291/Rev.1 Available at: [https://www.wto.org/english/tratop\\_e/tpr\\_e/tpr\\_e.htm](https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm)

<sup>50</sup> "Tonga: Economic Impact of Tourism 2018", World Travel and Tourism Council, Available at: <https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/tonga2018.pdf>

**Figure 5: Growth of tourism in Tonga – 2006-2018**

Source: WTO computation based on data from National Reserve Bank of Tonga

3.59. Tourist arrivals fall into two distinct categories: those arriving by air and those arriving by sea (on cruise ships or private yachts). Arrivals by air to Tonga have grown 44% over the past 10 years, to and reached a peak of 62,500 in 2017. While the number of overnight visitor arrivals is modest compared to neighbouring Pacific Island destinations, the rate of growth is comparable. The growth of cruise ship visits has also contributed to the expansion of Tonga's tourism sector. In 2017 there were 19 cruise ships carrying almost 22,000 passengers visiting ports in Tonga, more than double the cruise passenger numbers seen in 2013. Approximately 25% of these passengers disembark from ships, spending around T\$200 each on tours, restaurants, and shopping. Finally, the smaller but reportedly higher-spending private yachting market generates around 2,000 arrivals annually.<sup>51</sup>

3.60. The South Pacific Tourism Organization is exploring the Chinese outbound market as a potential growth market. China's market share of Pacific tourism has more than doubled since 2013 to reach 7% of arrivals in 2017. Further growth is expected, including as a result of the China Pacific Tourism Year initiative.<sup>52</sup> Diversification in tourism to new outbound markets can play an important role in disaster recovery and future resilience.

3.61. One factor mentioned by Pacific Trade and Invest as a constraint for reconstruction activity in the tourist sector is insurance coverage and speed of settlement of claims. A background note by the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) highlights that the non-life (general) insurance market in Tonga is small, not only in absolute terms, but also relative to the size of the country's population and economy. In 2015, total non-life insurance premium was T\$7.6 million (US\$4.3 million). This equates to premium per capita of around T\$75.2 (US\$42), which is lower than rates in other PICs. It is estimated that around 15% of the insurance business in Tonga is placed offshore by international insurance brokers.<sup>53</sup>

3.62. The PCRAFI briefing note stated that in 2015 Tonga had no legislation in place to regulate its insurance industry. In the absence of a regulator, the solvency of domestic insurers, and hence their

<sup>51</sup> "Post Disaster Rapid Assessment Tropical Cyclone Gita", Government of Tonga (2018). Available at [https://www.gfdr.org/sites/default/files/publication/WB\\_Tonga\\_Report\\_FA02\\_Medium\\_0.pdf](https://www.gfdr.org/sites/default/files/publication/WB_Tonga_Report_FA02_Medium_0.pdf)

<sup>52</sup> "SPTO eyes China market to offset decline from traditional markets", 7 February 2019, South Pacific Tourism Organization website. Available at: <https://sustainability.southpacificislands.travel/spto-eyes-china-market-to-offset-decline-from-traditional-markets/>

<sup>53</sup> Pacific Catastrophe Risk Assessment and Financing Initiative, County Note, Tonga February 2015. Available at: <http://pcrafi.spc.int/documents/108>



ability to pay claims and withstand shocks such as natural disasters, are not assessed by any government agency. It is not possible to confirm that insurers have adequate financial security to meet any catastrophe exposures. The absence of a regulator also has implications for consumer protection, as no government agency is ensuring the appropriateness of insurance products sold in the market. In its WTO accession package Tonga excluded limitations to market access and national treatment for the non-life insurance market – except for horizontal limitations.

3.63. As part of its WTO accession package, Tonga scheduled GATS commitments for life insurance services, non-life insurance services and reinsurance. Commitments in the insurance sector do not include any limitations on market access or national treatment for modes 1 (cross-border supply), 2 (consumption abroad) and 3 (commercial presence). Tonga left mode 4 unbound for insurance "except as indicated under horizontal commitments". Under the horizontal commitments, several limitations apply. Government approval is required for foreign investment and foreigners can only attain land through leasing (for up to 99 years with the right to sub-lease). Under mode 4, market access is limited to the entry and temporary stay of services salespersons (for up to 90 days). Market access for intra-corporate transferees is limited to managers, executives, specialists and personnel engaged in establishment, and several conditions need to be met in each category for entry. Under national treatment, it is noted in mode 4 that subsidies available to natural persons may be limited to Tongan citizens.

3.64. Catastrophe risk insurance presents a challenge to insurers' exposure management, according to PCRAFI, because unlike other types of insurance, it presents the possibility of large correlated losses. Insurers need to use a combination of reinsurance, reserves, and diversification within their portfolio to ensure that they can withstand large disaster shocks without threatening their solvency. The capacity of the domestic market in Tonga is constrained by the small number of participants and the limited premium volume. Although some risk is placed offshore, the high cyclone risk has proved a deterrent to market expansion in the past. Insurers in the Pacific region using the international reinsurance markets have been adversely impacted by significant increases in reinsurance costs in recent years.

3.65. Building on experience in the Caribbean, the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) was created in 2016 as a sovereign insurance solution for Pacific governments to address the challenges of financing recovery and resilience. Box 3 provides further details on the operation of PCRAFI.

### **Box 3: Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI)**

Since 2016, the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) has provided Pacific Island governments with insurance against tropical cyclones, earthquakes and tsunamis. Vanuatu, Tonga, the Marshall Islands, Samoa and the Cook Islands were the first policyholders to join PCRAFI in 2016. PCRAFI aims to provide immediate budget support following a major tropical cyclone or earthquake/tsunami. The insurance is designed to cover emergency losses, which are estimated using both a modelled representation of the event based on hazard parameters and a calculation of total modelled physical damage. Unlike a conventional insurance scheme, where a pay-out would be assessed against actual incurred costs, this scheme pays out on the results of a model. The advantage of this approach is that it results in a much faster pay-out. Countries can choose between three layers of coverage—low, medium, and high—depending on the frequency of events. PCRAFI made a payment of US\$1.27 million towards recovery from Cyclone Ian and a further payment of US\$3.5 million in the wake of Cyclone Gita.

Source: World Bank<sup>54</sup>, PCRAFI<sup>55</sup>

3.66. An important feature of the government's infrastructure strategy is the mainstreaming of natural disasters resilience and climate proofing by increasing the standards of newly built buildings, roads, and the electricity grid. Tonga has developed a National Infrastructure Investment Plan

<sup>54</sup> "Tonga to Receive US\$1.27 Million Payout for Cyclone Response", 23 January 2014, World Bank Available at: <http://www.worldbank.org/en/news/press-release/2014/01/23/tonga-to-receive-payout-for-cyclone-response>

<sup>55</sup> "Tonga Receives Record Insurance Payout Following Cyclone Gita", 20 February 2018, Pacific Catastrophe Risk Insurance Company. Available at: <https://reliefweb.int/sites/reliefweb.int/files/resources/TC%20Gita%20PCRIC%20Final%20Press%20Release%2020feb.pdf>

FY2013-23 with the support of the Pacific Infrastructure Advisory Centre. One of the plan's four themes is sustainability, safety, and resilience. The plan focuses on economic infrastructure facilities such as energy supply systems (electricity, fuel); telecommunications (telephone, internet, and broadcasting); water and waste management (water supply, waste water, drainage, and solid waste); and transportation (airports, roads, and sea ports).

3.67. Development partners' support plays a critical role in Tongan infrastructure development.<sup>56</sup> External sources of infrastructure financing include grants from development partners, concessional loans from international financial institutions, self-financing by public enterprises, and limited financing by government from consolidated revenues.

3.68. Currently most economic infrastructure, except roads and outer island ports in Tonga are managed and operated by public enterprises whose financial performance improved in recent years with respect to (i) recording profits, (ii) more paying dividends to the government, and (iii) more strong capacity to self-fund infrastructure maintenance and renewal and fund some of the capital investment projects. Box 5 highlights the public policy choices associated with enforcement of building codes and retrofitting of buildings.

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<sup>56</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>



#### Box 4: Building standards and infrastructure investment

The housing sector suffered severe damage and losses from Tropical Cyclone Gita. The storm left 808 private houses destroyed and 3,985 damaged. The education sector was equally affected with school facilities (such as classrooms, staff houses, dormitories) water and sanitation facilities, and associated school furniture, books, and other resources severely damaged. In all, 30 classrooms were damaged beyond repair, 85 had major damage, and 120 had minor damage.<sup>57</sup>

In the opinion of the World Bank, ensuring that new buildings can withstand at least one-in-fifty (50) year cyclone wind speeds should be a high priority for policy makers in the Pacific. The changes required to ensure that structures are more robust to cyclones will usually involve small additional costs and modest adjustments to designs when buildings are constructed. The successful implementation of higher building standards will, however, require actions to improve compliance with the new code, including investment in training of engineers and contractors, strengthening of the design and construction permitting process, and provision of enforcement resources.

For existing buildings, cyclone wind retrofitting options can decrease expected losses by 35-50%. Such investments are not always justified, however, when the costs of heavy retrofitting to meet higher standards are greater relative to the benefits in terms of loss reduction. Governments need to prioritize the buildings for which retrofitting would be appropriate to ensure cost-efficiency. For instance, light retrofitting will be more cost-efficient in countries that face higher cyclone risks—notably Vanuatu, Fiji, the Marshall Islands, Tonga and Samoa—where retrofitting public buildings (for example, schools and hospitals) appears to be economically justified.

The heavy retrofitting of public buildings becomes a viable policy option when factoring in their role as evacuation shelters during cyclones. Benefits, including avoidance of potential loss of life or injuries and the loss of the services provided by buildings, should be considered in future analyses. For housing stock, retrofitting is shown to be too expensive in many countries and, therefore, early replacement of the buildings in combination with upgraded construction standards may be a better strategy.

Reconstruction efforts should seek to ensure that buildings—especially public buildings—should incorporate the code improvements necessary to ensure greater resilience to the current and future distribution of cyclone risks. The benefits of greater wind resistance will increase because of climate change over the life of the buildings.

Source: World Bank<sup>58</sup>

3.69. Infrastructural development contains a large trade element. Tonga is highly dependent on capital imports related to construction.<sup>59</sup> Tonga is not a member of the Government Procurement Agreement. In its 2017 review, the IMF noted that improving compliance with procurement regulations that support competitive and value-for-money public sector tendering is a key priority for the Tongan Government. Inefficiencies in the procurement process could otherwise increase the cost and related import bill following a natural disaster. Steps already taken include the launch of a Procurement Reform Action Plan, the establishment of a new Central Procurement Unit in Ministry of Finance and National Planning, new Treasury instructions on procurement, and procurement

<sup>57</sup> "Pacific Possible: Long-term Economic Opportunities and Challenges for Pacific Island Countries", 2017, Washington, DC: World Bank. Available at: <http://documents.worldbank.org/curated/en/168951503668157320/pdf/ACS22308-PUBLIC-P154324-ADD-SERIES-PPFullReportFINALscreen.pdf>

<sup>58</sup> "Pacific Possible: Long-term Economic Opportunities and Challenges for Pacific Island Countries", 2017, Washington, DC: World Bank. Available at: <http://documents.worldbank.org/curated/en/168951503668157320/pdf/ACS22308-PUBLIC-P154324-ADD-SERIES-PPFullReportFINALscreen.pdf>

<sup>59</sup> "Tonga : 2017 Article IV Consultation-Press Release; and the Staff Report for Tonga", 17 January 2018, Country Report No. 18/12, International Monetary Fund, Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/01/17/Tonga-2017-Article-IV-Consultation-Press-Release-and-the-Staff-Report-for-Tonga-45566>

regulations. The CPU is now fully operational and is overseeing all major public procurements, whilst also providing capacity building for procurement officers in line ministries.<sup>60</sup>

3.70. World Bank research suggests that the highest adaptation costs for PICs by 2040 will be coastal protection. To protect PICs from coastal erosion, sea and river flooding, and submergence, three "hard" options are recommended: (i) beach nourishment (particularly in areas with high tourism revenue); (ii) sea and river dike construction; and (iii) port upgrades.

3.71. In the opinion of the World Bank, there is little prospect that the high costs of building sea walls could be financed by the countries themselves. To manage the uncertainties around future climate change and shoreline behaviour, flexibility should be incorporated into the design of coastal protection interventions. In some situations, hard structural options could be combined with softer non-structural options (for example, ecosystem-based approaches, beach nourishment) to reduce the cost and mitigate the environmental and social impacts. In all cases, strengthening institutional capacity for integrated coastal management is an essential element of responding to climate change.

3.72. Many climate scenarios suggest that total annual precipitation will increase in most PICs because of climate change. This increase will be accompanied by greater variation in rainfall between wet and dry months, with more intense rainfall in the wettest periods of the year. Adaptation to climate change should, therefore, involve measures to: (i) increase the capacity to store water that is accumulated in wetter months for use in the drier months; and (ii) manage the run-off caused by more intense periods of rain. Investment in increased water storage and rainwater harvesting, especially on islands with limited amounts of land suitable for reservoirs, will be critical. Water tanks will play a key role here and are mostly imported.

3.73. One option for adapting to climate change would be to increase the existing design standards for flood defences, drainage infrastructure and buildings to a higher standard of protection. A "one size fits all" approach to flood risk and drought management will not be appropriate for PICs. Even if coastal protection is provided to protect infrastructure from sea-level rise and storm surges, additional expenses will be required to protect power and telecommunication, water and sewers, urban areas, roads and other transport, hospitals, schools and housing infrastructure from changes in rainfall and temperature. The materials and designs used in building infrastructure, as well as the frequency of maintenance, would need to be altered to maintain the same quality of infrastructure services as in the absence of climate change.

3.74. Tonga is also investing close to US\$40 million in building resilience through improvement of multi-hazard early warning Systems including: ADB Climate Resilience Sector Project (CRSP) Project with a budget of US\$2 million for upgrade of Weather and Coastal Ocean monitoring Equipment; Pacific Resilience Project with a budget of US\$11 million for Upgrade of Multi-hazard Early Warning System and Japan Grant Aid -with a budget of US\$25.5 million for the Nation Wide Early Warning System.

3.75. In a highly trade-dependent country with limited skills and capacity, many of the architecture, environment and planning services needed to ensure appropriate adaptation solutions will need to be procured by government from overseas, including from other PICs.<sup>61</sup>

3.76. The need for such specialist services was underscored by the discovery of the presence of asbestos in building materials exposed by TC Gita. Older, weathered buildings and unmanaged waste stockpiles are a potential health risk to island communities and relief personnel. In response, the government needed to recruit a certified asbestos specialist to supervise the removal, replacement and disposal of asbestos containing materials.<sup>62</sup>

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<sup>60</sup> "Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

<sup>61</sup> "Tonga - Second Inclusive Growth Development Policy Operation," April 27, 2017, World Bank Report No. 113909-TO, Available at: <http://documents.worldbank.org/curated/en/603771493517689484/pdf/Tonga-Second-Inclusive-Growth-DPO-PD-04062017.pdf>

<sup>62</sup> Situation Report 12, Tropical Cyclone Gita, 12 March 2018, National Emergency Management Office.

## 4 VANUATU

### 4.1 Basic facts

4.1. Vanuatu is an island nation located in the South Pacific Ocean. Port Vila, on the island of Efate, is the capital. The archipelago is composed of about 82 islands of volcanic origin of which 65 are inhabited and 14 have surface areas of more than 100 square kilometres. Most of the islands are mountainous and of volcanic origin, and have a tropical or sub-tropical climate. Total land surface is about 4,700 square kilometres.

4.2. Vanuatu's population is approximately 270,000. With 106 languages spoken, Vanuatu is home to the highest linguistic density in the world. Most of the population lives in rural areas where subsistence farming, fishing and production of cash crops such as kava, coconut and cocoa are the main sources of livelihood. However, population growth, of some 2.3% annually, and a rapid urbanization rate are exercising increasing pressure on land and other natural resources.

4.3. Vanuatu has been ranked by the United Nations University the world's most disaster-prone country.<sup>63</sup> It is faced with various specific challenges including: high cost of public service provision due to its geographical location and dispersed islands; a narrow economic base; and a vulnerability to external economic shocks, notably those emanating from natural hazards. Vanuatu is susceptible to a variety of both hydro-meteorological and geophysical hazards due to its location in the South Pacific tropical cyclone basin and the Pacific Ring of Fire.<sup>64</sup>

4.4. Climate and disaster resilience are one of five environmental priorities in the 15 point "Vanuatu 2030: The People's Plan", the National Sustainable Development Plan for the period 2016 to 2030. Specifically, on disaster resilience, the plan states that: "We will marshal support to enhance our resilience and adaptive capacity to the impacts of natural and man-made disasters, including increasingly more intense, more frequent, and more prolonged extreme weather events. We will also continue to draw on our rich history of resilience and risk reduction that stems from our traditional knowledge and practices, particularly in relation to food production and preservation."

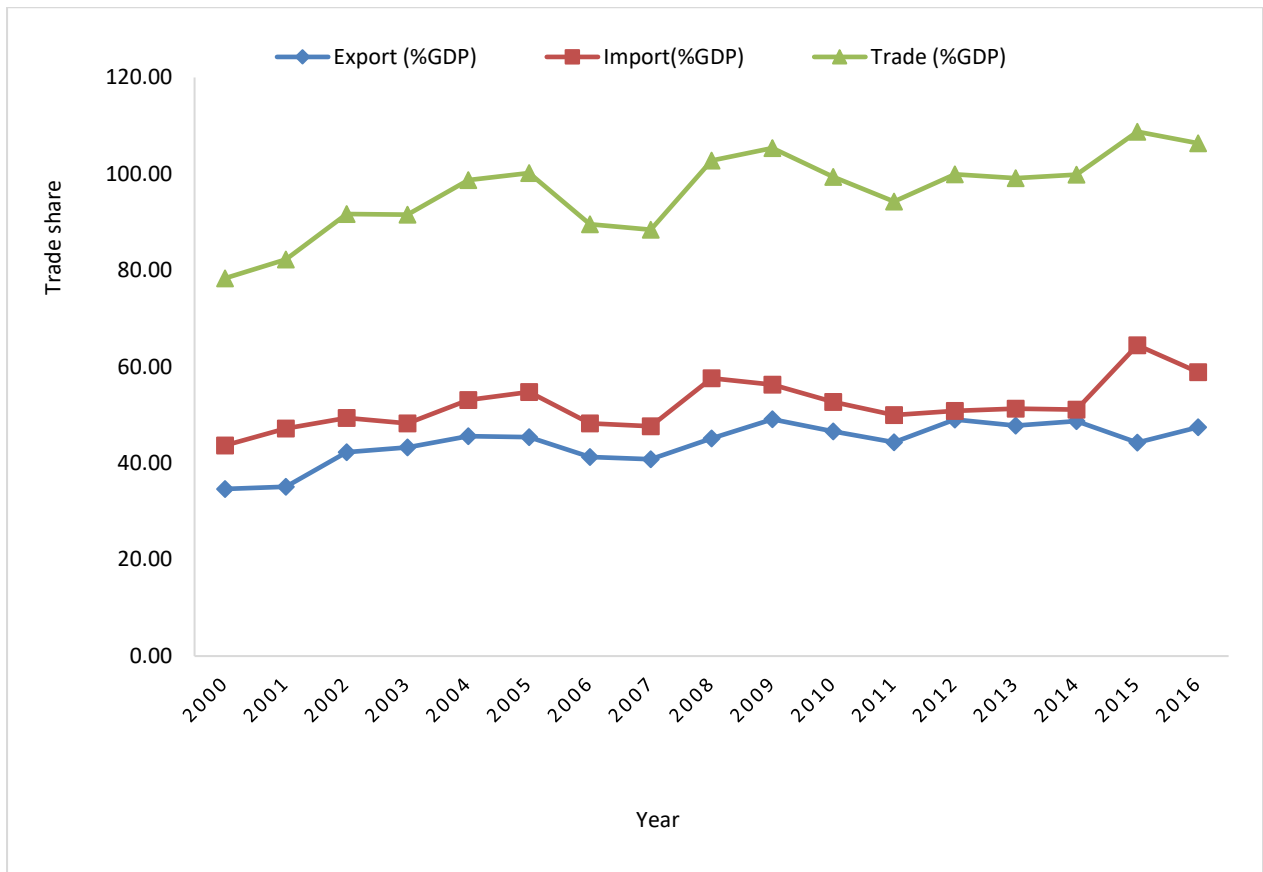
4.5. Vanuatu's economy is driven by the services sector, notably the tourism industry, followed by agriculture, fishing and the industrial sectors. Tourism is the main generator of foreign exchange, benefiting mostly from visitors from Australia and New Zealand. In 2016, estimated GDP per capita was about US\$2,900.

4.6. Vanuatu's ratio of total trade (exports plus imports of goods and services) to GDP increased by 28 percentage points from 78.4% in 2000 to 106.4% in 2016 (see Figure 6). Within the sixteen-year period, import as a share of GDP remained higher than export as a share of GDP. While export as a share of GDP increased by 12.8 percentage point, import as a share of GDP increased by 15.2 percentage point. This imbalance was worsened by the onset of TC Pam in 2015 where export as a share of GDP plummeted while import surged.

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<sup>63</sup> "WorldRiskReport 2016", United Nations University. Available at: [http://collections.unu.edu/eserv/UNU:5763/WorldRiskReport2016\\_small\\_meta.pdf](http://collections.unu.edu/eserv/UNU:5763/WorldRiskReport2016_small_meta.pdf)

<sup>64</sup> "Vanuatu – Country Note", February 2015, Pacific Catastrophe Risk Assessment and Financing Initiative, World Bank Group Available at: <http://pcrafi.spc.int/documents/183>

**Figure 6: Trade to GDP ratio for Vanuatu**

Source: WTO computation based on data from the Asian Development Bank

4.7. In 2010, the last year for which figures are available, 10.7% of the population lived below the national poverty line. Life expectancy is about 72 years while adult literacy rate is some 85%. In UNDP's 2016 Human Development Index, Vanuatu ranked 134<sup>th</sup> of 188 countries and territories. The labour market is characterized by a high degree of informality.

4.8. Vanuatu is a least developed country; graduation from LDC status is expected in 2020. The UN Committee on Development Policy first considered Vanuatu eligible for graduation in 2006 and again in 2009. In 2009, the Committee deferred a decision on graduation while further evidence was sought of the sustainability of Vanuatu's development progress. The CDP subsequently recommended graduation to take place in December 2017, but noted that "smooth transition mechanisms should address, among other things, the impact of the eventual loss of trade preferences as well as how to ensure appropriate access to funds and programmes aimed at reducing the country's vulnerability to natural disasters." In response to Cyclone Pam, the graduation of Vanuatu was postponed for three years by the UN General Assembly. Graduation is now scheduled for 4 December 2020.

## 4.2 Exposure to natural hazards

4.9. According to the UN University World Risk Index, Vanuatu is the world's most at-risk country for natural disasters.<sup>65</sup> Located on the seismically active "Ring of Fire", Vanuatu is highly exposed to geophysical risks arising from volcanoes, earthquakes, and resulting tsunamis and landslides. Hydro-meteorological hazards include tropical cyclones, floods, and droughts.

4.10. Between 1980 and 2014, Vanuatu experienced approximately 53 disaster events, of which 46% were earthquakes and 35% tropical cyclones. Floods, volcanic activity, and storm surges make

<sup>65</sup> World Risk Index 2015. Available at: <http://www.irdrinternational.org/2016/03/01/world-risk-index/>

up the rest. Estimates suggest that these events affected around 300,000 people.<sup>66</sup> The last 60 years have seen almost 1,000 tropical cyclones with hurricane-force winds, a yearly average of approximately 16. Since 1990, Vanuatu has experienced at least 20 damaging tropical cyclones.<sup>67</sup> The most significant cyclones before Tropical Cyclone (TC) Pam in recent years were TC Ivy in 2004 and TC Uma in 1987, each affecting nearly 50,000 people and causing many millions of dollars of destruction (see table 3 below).

**Table 3: Natural disasters in Vanuatu and their impacts 1980-2014**

Disaster type	Event count	Total deaths	Total affected population (approx.)	Total damage (USD million)
Storm – Tropical cyclone	16	79	290,000	205
Earthquake	8	12	15,000	n.a.
Volcano	5	0	19,000	n.a.
Flood	2	0	4,000	n.a.
Storm – Other	1	32	n.a.	n.a.
Tsunami	1	100	n.a.	n.a.
Landslide	1	1	3,000	n.a.
Average per year	1	6	9,500	> 5.9

Source: IMF 2015 based on EMD-DAT<sup>68</sup>

4.11. Eruptions of the Manaro Vouï volcano on Ambae Island prompted compulsory evacuations of the population in September 2017 and again April 2018. Continuous explosions and spewing of volcanic ash made it too dangerous for continued habitation. An explosion on 28 July 2018 launched volcanic material over 12 kilometres into the atmosphere causing cancellation of international flights between Fiji, Solomon Islands and Vanuatu.<sup>69</sup> The 11,000 population of Ambae has now been permanently resettled on Maewo island. Nor is Ambae the only island with active volcanoes in the Vanuatu archipelago. On 24 October 2018, the website of the Vanuatu Meteorological and Geo-hazards Department indicated alerts for volcanic activity in operation on a total of six islands.

4.12. Earthquakes are also a regular occurrence. Data from the United States Geological Survey indicates that 240 earthquakes, ranging on the Richter Scale between a magnitude of 3.3 and 7.1 occurred in the Vanuatu region in the first ten months of 2018. Earthquakes may also generate secondary hazards such as tsunami waves.

4.13. Another hazard faced by Vanuatu is tropical cyclones. The tropical cyclone season runs from November to April. Vanuatu (land and sea) receives about 2-3 cyclones per season, with the greatest frequency in January and February. On average, Vanuatu and its marginal seas is a common route to some 20 to 30 cyclones per decade, with 3 to 5 causing severe damage. Tropical cyclones result in heavy rain, strong winds, flash flooding, coastal flooding, riverine flooding, storm surge, land slide, very rough seas and strong to damaging winds inland.<sup>70</sup>

<sup>66</sup> World Bank (2015) Pacific Catastrophe Risk Assessment and Financing (PCRAFI) Initiative: Country Note, Vanuatu. Available at <https://www.gfdr.org/sites/default/files/publication/country-note-2015-pcrafi-vanuatu.pdf>

<sup>67</sup> German Development Cooperation (ND) Post-Pam: lessons learned for [German] development cooperation in Vanuatu and the Pacific. Available at <https://www.adaptationcommunity.net/wp-content/uploads/2017/05/PostPam-Study.pdf>

<sup>68</sup> IMF (2015): Vanuatu – Country Report, June 2015 No. 15/149. 2015 Article IV Consultation and Request for Disbursement Under the Rapid Credit Facility and purchase under the Rapid Financing Instrument—Press Release; Staff Report; and Statement by the Executive Director for Vanuatu. Available at <https://www.imf.org/external/pubs/ft/scr/2015/cr15149.pdf>

<sup>69</sup> "Ambae state of emergency and off island relocation", 3 August 2018, Government of Vanuatu, Available at: <https://www.gov.vu/en/public-information/646-ambae-state-of-emergency-and-off-island-relocation>

<sup>70</sup> Tropical cyclone, Vanuatu Meteorological and Geohazards Department, 24 October 2018, <https://www.vmqd.gov.vu/vmqd/index.php/forecast-division/tropical-cyclone>

### Box 5: Tsunami Warning Systems

Since 1968, the Intergovernmental Coordination Group for the Pacific Tsunami Warning System (PTWS) has sought to coordinate efforts to prevent loss of life from ocean-crossing tsunamis. The PTWS, run by the US National Oceanic and Atmospheric Administration (NOAA), provides warnings for Pacific basin tele-tsunamis (i.e. tsunamis that can cause damage away from their source). Information and threat warnings are communicated to national emergency management offices (including the Vanuatu National Disaster Office and Vanuatu Meteorology and Geo-Hazards Department) and other officials. Regular tsunami warnings are issued. One recent example is a tsunami warning was issued for New Caledonia, Fiji and Vanuatu on 29 August 2018 in response to a 7.1 magnitude earthquake off the eastern coast of New Caledonia. In August 2017, a Tsunami Early Warning System was completed with funding from the World Bank and Japan as part of the Mainstreaming Disaster Risk Reduction project.

Source: Intergovernmental Coordination Group for the Pacific Tsunami Warning System<sup>71</sup>

4.14. Significant cyclone damage has been recorded from Tropical Cyclone (TC) Uma, a category 4 cyclone that caused damage of VT 14.4 billion (US\$150 million), that made landfall in February 1987. More recently, Vanuatu was hit in January 2011 by TC Vania, causing damage of VT 71 million (US\$742,000), or some 6.3% of GDP and affected over 10,000 households.

4.15. Writing in February 2015, the Pacific Catastrophe Risk Assessment and Financing Initiative predicted that Vanuatu could expect to incur, on average over the long term, annual losses of VT 4.6 billion (US\$48 million) due to earthquakes and tropical cyclones.<sup>72</sup> The study found that over "the next 50 years, Vanuatu has a 50% chance of experiencing a loss exceeding VT 31.6 billion (US\$330 million) from a single event, and has a 10% chance of experiencing a loss exceeding VT 51.8 billion (US\$540 million)". In fact, Vanuatu had only to wait until March of the same year for an event loss causing damage exceeding VT 31.6 billion (US\$330 million) to occur: Cyclone Pam.

4.16. Between 12-14 March 2015, category 5 Cyclone Pam struck Vanuatu, with estimated wind speeds of 250 km/h and wind gusts that peaked at around 320 km/h, causing wide devastation and extensive damages. An estimated 65,000 people – about a quarter of Vanuatu's total population – were displaced from their homes. Approximately 17,000 buildings were damaged or destroyed, including houses, government buildings, schools, clinics, and other medical facilities. Communication across the country was crippled, with only one cellular tower in Port Vila remaining operational, and the power grid was devastated. Four days after the storm, nearly 60 inhabited islands remained cut-off from the outside world.

### 4.3 Impact on the economy

4.17. The Post-Disaster Needs Assessment undertaken by the Government of Vanuatu estimated total economic damages caused by Cyclone Pam at approximately VT 48.6 billion, equivalent to 64% of GDP. Sectors that sustained the highest level of damage were the housing (32% of total damage costs) followed by tourism sector (20%), the education sector (13% damage), and the transport sector (10%). The largest economic losses were expected in the agriculture and tourism sectors. The environmental sector also suffered significant losses to ecosystem services, although these losses could not be accounted within the GDP impacts. Table 4 below provides further information.

<sup>71</sup> Intergovernmental Coordination Group for the Pacific Tsunami Warning System. Available at: [http://itic.ioc-unesco.org/index.php?option=com\\_content&view=article&id=1179:intergovernmental-coordination-group-for-the-pacific-tsunami-warning-and-mitigation-system-icqptws&catid=1153&Itemid=1153](http://itic.ioc-unesco.org/index.php?option=com_content&view=article&id=1179:intergovernmental-coordination-group-for-the-pacific-tsunami-warning-and-mitigation-system-icqptws&catid=1153&Itemid=1153)

<sup>72</sup> "Vanuatu – Country Note", February 2015, Pacific Catastrophe Risk Assessment and Financing Initiative, World Bank Group Available at: <http://pccrafi.spc.int/documents/183>



**Table 4: Summary of Tropical Cyclone Pam Disaster Effects by Sector**

	Disaster Effect (VT Millions)			Share of Disaster Effects (%)		Lost Personal Income
	Damage	Losses	Total	Private	Public	Vt millions
<b>Productive Sectors</b>	<b>8,526</b>	<b>10,403</b>	<b>18,928</b>	<b>98</b>	<b>2</b>	<b>1,607</b>
Agriculture	1,421	4,641	6,062	93	7	227
Commerce and Industry	1,196	2,152	3,348	100	0	487
Tourism	5,908	3,610	9,518	100	0	983
<b>Social Sectors</b>	<b>14,339</b>	<b>630</b>	<b>14,969</b>	<b>67</b>	<b>33</b>	<b>-</b>
Housing(Private)	9,452	440	9,893	100	0	-
Health	870	107	977	1	99	-
Education	3,908	79	3,987	0	100	-
Culture	109	3	112	100	0	-
<b>Infrastructure Sectors</b>	<b>6,403</b>	<b>2,926</b>	<b>9,329</b>	<b>51</b>	<b>49</b>	<b>-</b>
Transport	3,017	2,137	5,155	43	57	-
Public Buildings	532	12	544	0	100	-
Water	414	284	697	63	37	-
Energy	179	106	285	100	0	-
Communication	2,261	387	2,648	67	33	-
<b>Cross-cutting sector</b>	<b>0</b>	<b>5,328</b>	<b>5,328</b>	<b>0</b>	<b>100</b>	<b>-</b>
Environment	0	5,328	5,328	0	100	-
<b>Grand Total</b>	<b>29,268</b>	<b>19,286</b>	<b>48,554</b>	<b>69</b>	<b>31</b>	<b>1,607</b>

Source: Post-Disaster Needs Assessment 2015.<sup>73</sup>

4.18. The Post-Disaster Needs Assessment predicted that the storm would reduce GDP growth by 2.8% to about 0.2% in 2015, against an expected growth rate of more than 3%. Reconstruction and recovery led by the building and construction sector has had a positive multiplier on economic growth. Economic growth jumped to 4.0% in 2016 and 4.2% in 2017, more than double the rate recorded in 2013.

4.19. Vanuatu's public debt accelerated in the wake of the Cyclone Pam reconstruction. The stock of public and public guaranteed debt increased sharply from 28.7 percent of GDP in 2014 to 48.8 percent in 2016. This is mainly due to disbursements for infrastructure and reconstruction activities, though the new external borrowing was highly concessional. Vanuatu's public debt is now at the higher end, compared to other Pacific Island countries (PICs).

4.20. At the WTO Trade Policy Review (TPR) of Vanuatu in October 2018, the Government noted that it had "experienced a construction boom since 2016 which had contributed in sustaining the economy. The overwhelming support from development partners combined with stability in the Government has restored confidence and at the same time reinforced implementation of infrastructure development projects. This has created much needed employment in the industry sector; with spill-over effects felt throughout the economy. This is very important as the Government continues to embark on infrastructure development policy to facilitate trade and at the same time safeguard Government policy on inclusive and sustainable infrastructure development."<sup>74</sup>

4.21. The current account deficit is expected to widen to around 9% of GDP in 2017 and 2018, due to the high import content of infrastructure projects.<sup>75</sup> The current account deficit would continue to be financed by donor grants and loans, as well as foreign direct investment. An IMF Debt Sustainability Analysis (DSA) suggests that the risk of external debt distress in Vanuatu remains moderate, consistent with the 2016 assessment, but the debt service pressure would be on the rise over the medium term.<sup>76</sup>

<sup>73</sup> Post-Disaster Needs Assessment 2015, Tropical Cyclone Pam, March 2015 Government of the Republic of Vanuatu, Available at: <https://dfat.gov.au/about-us/publications/Documents/post-disaster-needs-assessment-cyclone-pam.pdf>

<sup>74</sup> Trade Policy Review: Vanuatu, Government Report, WT/TPR/G/378, 11 September 2018. Available at: [https://www.wto.org/english/tratop\\_e/tpr\\_e/g378\\_e.pdf](https://www.wto.org/english/tratop_e/tpr_e/g378_e.pdf)

<sup>75</sup> "Vanuatu: 2018 Article IV Consultation", April 2018 IMF Country Report No. 18/109. Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/04/26/Vanuatu-2018-Article-IV-Consultation-Press-Release-and-Staff-Report-45821>

<sup>76</sup> "Vanuatu: 2018 Article IV Consultation", April 2018 IMF Country Report No. 18/109. Available at: <https://www.imf.org/en/Publications/CR/Issues/2018/04/26/Vanuatu-2018-Article-IV-Consultation-Press-Release-and-Staff-Report-45821>



4.22. General budget support from the European Union totalling VT 359.6 million (US\$21.8 million), as well as a VT 202.0 million (US\$38.8 million) insurance pay-out from the World Bank, was released into the recurrent budget for financing recovery-related expenditures. At the same time, grant funding for cyclone recovery operations equivalent to VT 667.4 million (US\$72.02 million) has been received from donors. Information reported to the OECD Creditor Reporting System indicates that Vanuatu received an additional US\$150.7 million in support in 2015, of which US\$ 69.7 million was in the form of humanitarian relief. Disbursements totalled US\$103.2 million in 2016.<sup>77</sup>

**Table 5: Vanuatu: Macroeconomic indicators, 2012-2017**

Indicator	2012	2013	2014	2015	2016	2017
GDP growth rate (per cent, constant price)	1.8	2.0	2.3	1.6	4.0	4.2
Inflation rate (%)	1.4	1.4	0.8	2.5	0.9	2.6
Government revenue (billions of national currency)	15.8	16.2	18.6	25.2	24.6	23.3
Government expenditure (billions of national currency)	16.9	16.4	18.0	20.0	29.6	36.2
Government balance (billions of national currency)	-1.2	-0.2	0.6	5.1	-4.9	-12.9
Government balance (per cent of GDP)	-1.6	-0.2	0.8	7.2	-8.5	-8.7
Public and publicly-guaranteed debt (per cent of GDP)		23.1	28.7	42.4	48.8	51.0
Of which external debt		12.6	16.3	30.5	37.6	40.4
Net ODA received (millions of US dollars)*	102	91	100	187	129	n.a.
Current Account	-50.6	-26.4	-2.1	-82.1	-29.5	-120.1
Goods, Credit (Exports)	55	45	63	39	50	57
Goods, Debit (Imports)	253	268	260	308	314	360
Balance on Goods	-198	-223	-197	-269	-264	-303
Services, Credit (Exports)	322	331	307	283	330	342
Services, Debit (Imports)	146	142	141	179	152	159
Balance on services	176	190	166	104	179	184
Balance on Goods and Services	-23	-33	-31	-165	-86	-119

\* 2017 data unavailable.

Source: UN/DESA World Economic and Social Prospects (2018); IMF, International Financial Statistics, accessed 10 February 2018. Note, debt values for 2017 and 2018 are estimates and projections.

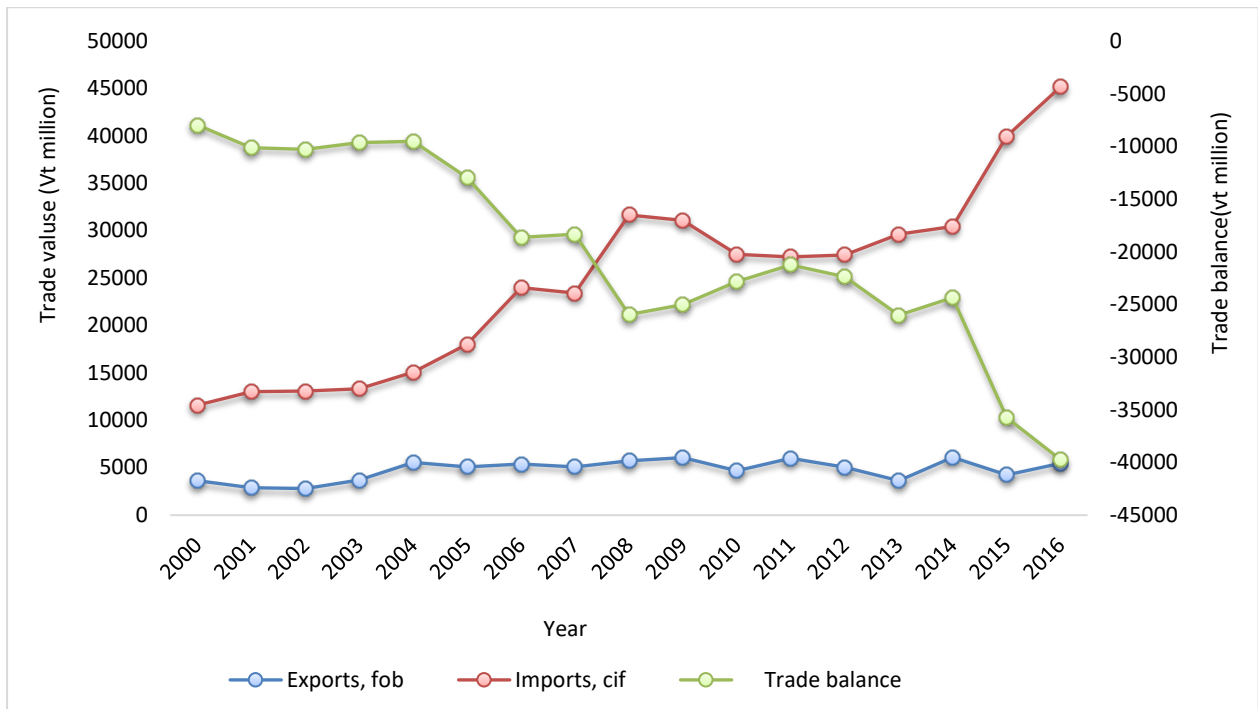
4.23. Tropical Cyclone Pam triggered an insurance pay-out of US\$1.9 million for the Government of Vanuatu from the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) Program. It provided the Government of Vanuatu with a rapid cash injection in their budget. The pay-out was received by the Government of Vanuatu on 21 March – 8 days after the cyclone.

4.24. Established in 2007, PCRAFI is a Pacific-wide region joint initiative of the World Bank and the Asian Development Bank, with financial support from the Government of Japan, Global Facility for Disaster Risk Reduction and Recovery, the European Union, and technical inputs by the GNS Science of New Zealand, Geoscience Australia and AIR Worldwide. It was designed to develop the capacity of Pacific Island countries to manage all levels of disaster risk and through a combination of financial and physical mitigation measures. The PCRAFI program is aligned with other regional initiatives such as the Pacific Resilience Program, a World Bank-funded regional program that is designed to strengthen early warning, resilient investments, and financial protection in the Pacific Region.<sup>78</sup>

4.25. The impact of Cyclone Pam on trade in goods was substantial. Vanuatu's merchandise (see Figure 7 below) exports fell from 6,100 Vt million (US\$62.84 million) in 2014 to 4249 Vt million (US\$ 39.0 million) in 2015 – a decline of 37%. In 2016, exports for trade in goods recovered to 5,446 Vt million (US\$50.2 million). Imports of merchandise goods surged strongly to 39,989 Vt million (US\$366.9 million) in 2015, from 30,435 Vt million (US\$423.0 million and US\$313.5 million) in both 2013 and 2014, representing a growth of 2.6% in 2014 and significant increase to 31.4% leading to the worsening the of the trade balance.

<sup>77</sup> Source: OECD Query Wizard for International Development Statistics. Available at: <https://stats.oecd.org/qwids/>

<sup>78</sup> "Pacific Islands - Pacific Catastrophe Risk Insurance Pilot Program Project. Washington, D.C., World Bank Group. Available at <http://documents.worldbank.org/curated/en/655341475523018949/pdf/PIC-CatastropheRiskInsurancePilotSmallGrant-ICR-FINAL-09302016.pdf>. World Bank Press Release, New Insurance Facility to Boost Natural Disaster Resilience in Pacific Island Countries. See <http://www.worldbank.org/en/news/press-release/2016/11/02/new-insurance-facility-to-boost-natural-disaster-resilience-in-pacific-island-countries> and <http://pubdocs.worldbank.org/en/178911475802966585/PCRAFI-4-pager-web.pdf>

**Figure 7: Exports, imports and trade balance of Vanuatu**

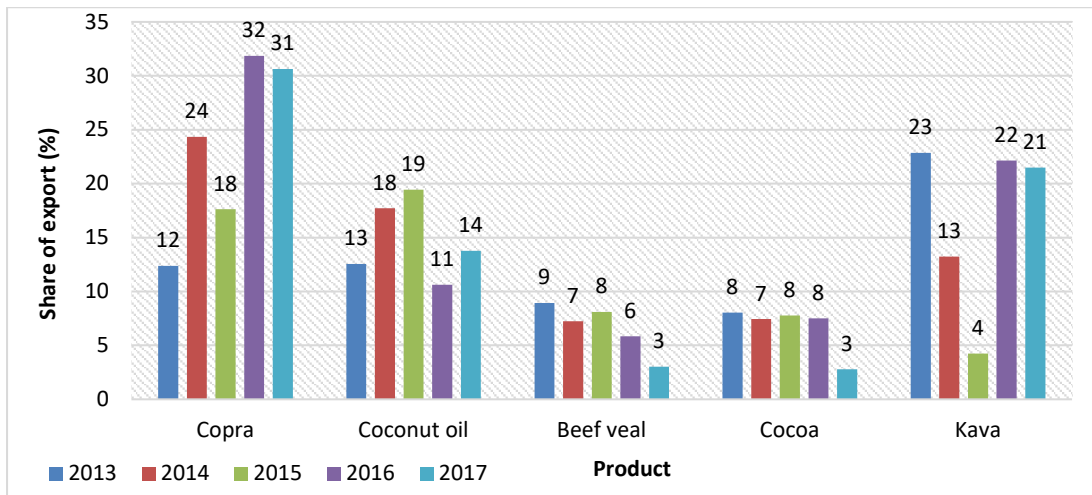
Source: WTO computation based on data from the Asian Development Bank

4.26. The impact on services exports of Cyclone Pam was most strongly felt in the tourism sector. Visitor arrivals by air dropped 17% from 109,000 in 2014 to 90,000 in 2015. Cruise ship visitor arrivals held up more strongly, falling only 8% from 267,000 to 246,000. By 2017, Vanuatu's tourism sector had recovered to pre-Cyclone Pam visitor numbers. Tourism and travel contributed 17.2% of GDP (or US\$ 133.9 million) in 2016. Including jobs and economic activity elsewhere in the economy supported by tourism, the sector is estimated to contribute 37.9% of total employment (28,000 jobs) and 44.5% of GDP.

4.27. The tourism sector is characterised by two main models: expatriate investors/operators and owner-operators. Four of the five major resorts in Port Vila were badly impacted. For example, it took the Holiday Inn more than 15 months to re-open. The smaller owner-operator guesthouses were quicker to start running again, with cruise ships back and docking again soon after the event. Many business owners who had not procured cyclone insurance folded in the aftermath of the storm, unable to reinvest sufficient savings in their businesses or to tap sources of credit.

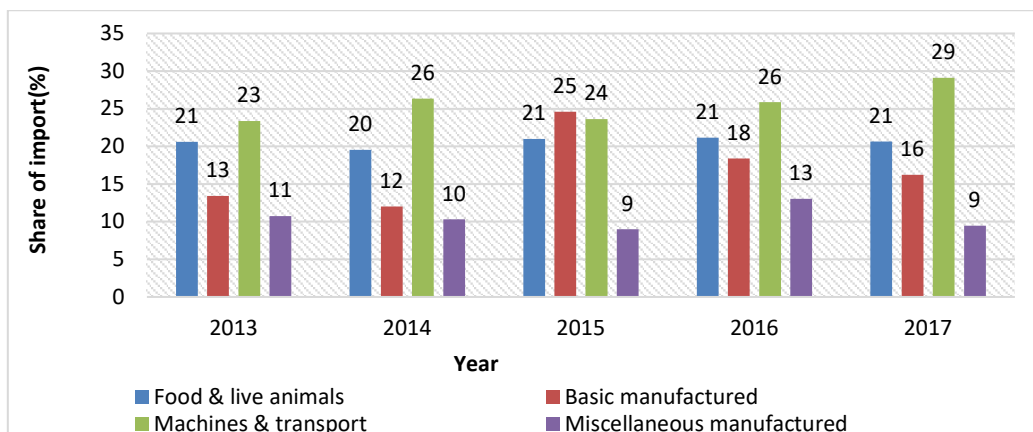
4.28. The World Travel and Tourism Council predicts strong growth of 4.1% per year over the next decade with tourism's contribution to Vanuatu's GDP expected to reach 50.4% of GDP by 2027. Infrastructure investment will be critical to reaching this target. Suspension of services by Air New Zealand and Virgin, and by Qantas of its code share with Air Vanuatu, in January 2016 due to safety concerns over the runway at Port Vila's Bauerfield Airport have limited return to growth in the wake of TC Pam. Completion of the World Bank-funded Vanuatu Aviation Investment Project should expand air links, including with Asian airlines. Investment in upgrading airport capacity should also facilitate future disaster response.

4.29. The composition of merchandise trade was also heavily affected by Cyclone Pam. The share of traditional export goods fell strongly in 2015, against the background of already declining export income. For example, the share of copra fell from 24% to 18%, while the share of kava fell from 13% to 4%. Although the shares of export of copra and kava recovered in 2016 and 2017, those of beef, veal, cocoa and coconut oil remained lower compared to 2014 values.

**Figure 8: Shares of selected principal export products**

Source: WTO Computation based on data from the Department of Customs and Inland Revenue

4.30. On the import side, the share of basic manufactured products increased from 12% in 2014 to 25% in 2015 and remained at 18% and 16% in 2016 and 2017 respectively. The share of import of machines and transport increased from 26% in 2014 to 29% in 2017 after a marginal reduction to 24% in 2015.

**Figure 9: Shares of selected principal imports**

Source: WTO Computation based on data from the Department of Customs and Inland Revenue

4.31. The financial sector was also affected. In the wake of Cyclone Pam, the share of non-performing loans increased (from 11.1% to 12.6% of total loans), while capital adequacy declined. The accommodative stance of Vanuatu's Reserve Bank, which lowered the statutory reserve deposit (SRD) requirement and the liquid asset requirement alleviated potential liquidity pressure on banks in the aftermath of the cyclone. Insurers were also heavily affected, with total reimbursements related to Pam amounting to VT 5.5 billion (US\$ 51.4 million).

#### 4.4 Policy issues

4.32. In the view of the IMF, internalizing the risks to growth associated with natural disasters and boosting the readiness to respond and manage their destructive force is critical to Vanuatu's development strategy. Lessons from Cyclone Pam highlight that while the ex-post response was satisfactory, more ex-ante measures could be undertaken, including in the areas of resilient infrastructure, and improving coordination with development partners. (IMF 2018)<sup>79</sup>

<sup>79</sup> "Vanuatu 2018 Article IV Consultation", IMF April 2018, IMF Country Report No. 18/109, International Monetary Fund

4.33. In 2006 Vanuatu adopted a Disaster Risk Reduction and Disaster Management National Action Plan. This Plan has as its objective to: mainstream disaster risk reduction into economic policy making, strengthen disaster management, and contribute to capacity making in disaster risk reduction and management. While the Action Plan does not make any specific reference to trade measures, it recognizes the crucial role of maritime transport in the case of natural disasters. Vanuatu adopted the Climate Change and Disaster Risk Reduction Policy for 2016 – 2030 with the aim to enhance environment and economy resilience to the impacts of climate change and disaster risks.<sup>80</sup> In 2017, the Vanuatu Business Resilience Committee was formed as a coordinating mechanism for the government to engage with the private sector to build resilience to disasters.

4.34. "Vanuatu 2030: The People's Plan" sets five targets that will accompany the move to a strong and resilient nation in the face of climate change and disaster risks. These objectives are to: institutionalise climate change and disaster risk governance and build institutional capacity and awareness; improve monitoring and early warning systems; strengthen post-disaster systems in planning, preparedness, response and recovery; promote and ensure strengthened resilience and adaptive capacity to climate related, natural and man-made hazards and access available financing.

4.35. In the event of a natural disaster, the Director of Customs, upon the suggestion of the National Disaster Management Office, may grant duty exemptions to certain tariff lines, provided that the goods are for disaster relief, are funded by foreign states or international organizations, and are intended for free distribution for use in declared disaster areas. This was the case after Cyclone Pam struck in March 2015. As a result, fiscal revenue forgone on imports (tariffs, VAT and excise tax) due to exemptions and concessions peaked in 2015, at VT 4 billion, as compared to VT 1 billion in 2013 and VT 1.5 billion in 2014.

4.36. Upon its WTO accession to the WTO on 24 August 2012, Vanuatu committed that it would fully apply all WTO provisions, and did not require recourse to any transitional period except on intellectual property and on the publication of trade information. Vanuatu bound all its tariff lines with an average final bound rate of 40.2%. It grants at least MFN treatment to all its trading partners. Vanuatu made specific GATS commitments on 10 services sectors.

4.37. Vanuatu's tariff schedule remained broadly unchanged after TC Pam. However, following a request of a domestic producer for increased protection after being struck by the Cyclone, the tariff on chicken wings, parts and offal (HS 02071410) was increased to 30%, although bindings are at 20%.

4.38. A report by the IFRC highlights that TC Pam exceeded national disaster response capacity. The Government issued its first ever generalized appeal for international assistance, and this prompted an international response that far exceeded anything previously experienced on the island nation. Scores of international organizations, international NGOs and bilateral partners including foreign militaries flooded into the country, many with minimal knowledge of national actors, institutions and established ways of working. Against such a backdrop, coordination proved challenging among the humanitarian community, and with the national authorities.<sup>81</sup>

4.39. A specific challenge in the aftermath of Cyclone Pam was an unusually high number of consignments of "unsolicited goods", many of them donations by smaller charity groups and sometimes including goods that were not appropriate to the needs of the post-disaster situation. In this context, a representative of a major international humanitarian organization reported that this strong inflow of unsolicited goods led to substantial delays in the clearance of goods, and to the payment of considerable storage fees. To regain ownership of the response, the Vanuatu Government temporarily halted all aid distributions to ensure greater cooperation and communication. Vanuatu Red Cross was the first humanitarian agency sanctioned to distribute relief supplies.<sup>82</sup> Recognizing its capacity, the Vanuatu Red Cross has been legally established.

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<sup>80</sup> Government of Vanuatu "Vanuatu Climate Change and Disaster Risk Reduction Policy 2016 – 2030". Available at: [https://www.nab.vu/sites/default/files/nab/vanuatu\\_cc\\_drr\\_policy\\_minus\\_att4v4.pdf](https://www.nab.vu/sites/default/files/nab/vanuatu_cc_drr_policy_minus_att4v4.pdf)

<sup>81</sup>"From law to action: Saving lives through International Disaster Response Law. The case of Vanuatu, Ecuador and South Sudan", International Federation of Red Cross and Red Crescent Societies, Geneva, 2017. Available at <https://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2017/12/IDRL-Advocacy-Brochure-Final-LR.pdf>

<sup>82</sup>"From law to action: Saving lives through International Disaster Response Law. The case of Vanuatu, Ecuador and South Sudan", International Federation of Red Cross and Red Crescent Societies, Geneva, 2017.

### Box 6: Unsolicited Bilateral Donations

Unsolicited Bilateral Donations (UBDs), also called Gifts in Kind, are unsolicited material donations are goods that are spontaneously donated after a disaster. They arrive unannounced or with very short notice, often have incomplete or faulty paperwork, lack a clearly defined consignee, are nonstandard items and have incorrect packaging.

During TC Pam, Vanuatu received over 70 containers (both 20- and 40-foot containers) of UBDs. Many of these containers took up valuable wharf and storage space and placed additional pressure on an already stretched humanitarian logistics response system.

Ten months after the cyclone there were still 18 containers of UBD's on the wharf, which had accumulated approximately USD\$1.5 million dollars in storage, handling and container rental fees. The management of UBDs in Vanuatu was further exacerbated by the lack of a computerised system to receive and process cargo at the ports of entry.

Of the UBDs sent to Vanuatu, 50% of food items were expired by the time they were accessed and were destroyed at the cost of the government. As published in the Vanuatu Daily Post, a year after the cyclone, the Vanuatu National Disaster Management Office (NDMO) authorised that tonnes of food aid be dumped because they were expired, including cans of beans and tomatoes, canned fish (which take up 100 years to breakdown in landfill), packets of noodles and flour.

Moreover, a significant volume of the used clothes, shoes, bedding and other such items received in this way were inappropriate for the Vanuatu culture, living conditions and climate. These included high heels, heavy blankets, handbags and woollen knitwear amongst others. The total cost to the Vanuatu government to manage the 70+ containers is difficult to quantify, but it is acknowledged that this money would have been better spent on the response and recovery efforts of the country. Vanuatu's experience has changed its stance on UBDs. NDMO urges all donor agencies to support response efforts through cash donations rather than solicited goods.

Source: Australian Red Cross<sup>83</sup>

4.40. TC Pam provided a stimulus for legal reform. The existing National Disaster Act needed to be updated to enable the government to be better prepared for the common legal problems related to emergencies and international assistance. Before the new law could come into effect, in early May 2017, Tropical Cyclone (TC) Donna made landfall in Torba Province of the Torres Islands, the northernmost island group in the country. Requests and provisions of international technical assistance were much more specific and coordinated during TC Donna. The Government of Vanuatu was in direct communication with the Pacific Humanitarian Team and other partners to request specific technical skills. Donors were more closely engaged and responded to needs communicated from the government based on information provided through its coordination mechanisms. Though the needs in TC Donna were not as great, the structure of the NDMO and coordination architecture from national to provincial level was in a much better position to request and absorb international support.<sup>84</sup>

4.41. Cyclone Pam also revealed capacity problems at port facilities. The ports of Port Vila and Luganville are Vanuatu's only two international maritime hubs for international passenger traffic and trade in goods. Ports in the outer islands are not equipped to receive larger vessels. A representative of a major international humanitarian organization reported that in the aftermath of Cyclone Pam the only major berth in Port Vila was frequently occupied by cruise ships, while cargo vessels with relief goods had to wait up to several days to be unloaded. However, since 2015 both ports have

Available at <https://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2017/12/IDRL-Advocacy-Brochure-Final-LR.pdf>

<sup>83</sup> "The challenges of Unsolicited Bilateral Donations in Pacific humanitarian responses", 2017, Anna Young, Australian Red Cross. Available at: <https://www.redcross.org.au/getmedia/2e9546d3-5dd9-42ba-9c8c-3b5ac380343a/161220-Report-Challenges-of-UBD-in-Pacific.pdf.aspx>

<sup>84</sup> "From law to action: Saving lives through International Disaster Response Law. The case of Vanuatu, Ecuador and South Sudan", International Federation of Red Cross and Red Crescent Societies, Geneva, 2017. Available at <https://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2017/12/IDRL-Advocacy-Brochure-Final-LR.pdf>

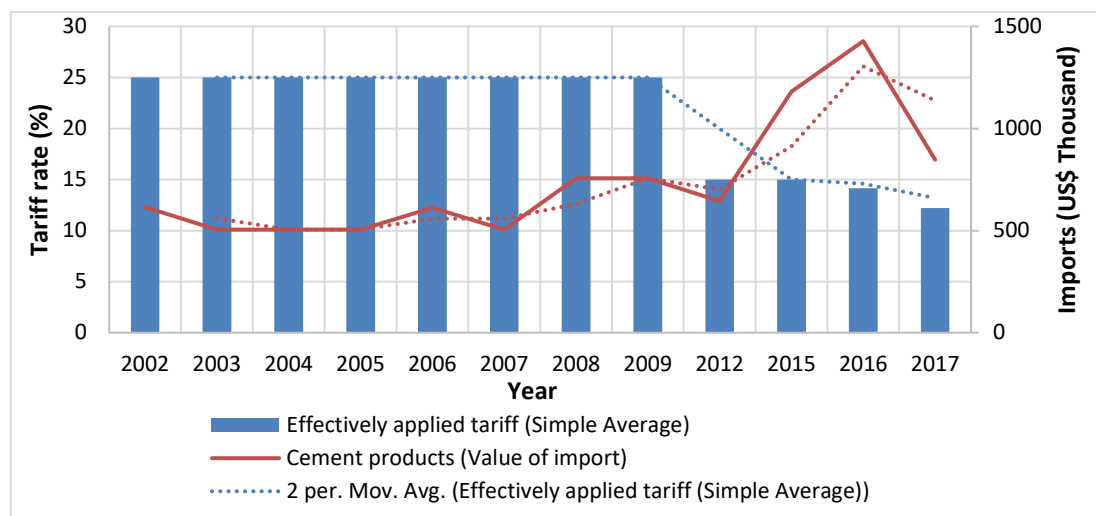
undergone significant improvements and expansion, so that in the meantime the situation has already improved in Port Vila.

4.42. While foreign ownership of vessels over 80 tons has been allowed since 1999, which contributed to significant improvements in maritime transport, cabotage is not permitted in Vanuatu. However, an exemption can be issued in case of natural disasters. This was the case in the aftermath of Cyclone Pam. The exemption allowed vessels of the Australian and New Zealand navies, which were present in the region at the time of the disaster, to be engaged in the delivery of relief goods to remote islands. The temporary lifting of the cabotage requirement and the engagement of foreign vessels was particularly useful as domestic transport capacity was very limited and some of the few places on domestic flights were taken by international media representatives that reported on the disaster.

4.43. The IMF report suggests that Cyclone Pam highlighted the need for both ex-ante and ex-post measures to contain the impact of future natural disasters. Such measures include the support by Vanuatu's authorities for households' reconstruction needs by suspending VAT and import duties on construction materials, steps taken by Reserve Bank of Vanuatu (RBV) to alleviate liquidity constraints by reducing the Statutory Reserve Deposit (SRD) requirement, and implementation of business continuity plan by banks to ensure that most households and businesses had enough physical currency. (IMF, 2018).

4.44. A policy measure that could have positive effects for resilience of infrastructure is reduction of tariffs imposed on building materials. Upon Vanuatu's accession to the WTO on 24 August 2012, tariff rates for import of stone, plaster, cement, asbestos and mica (see figure 10) were reduced from 25% and bound to 15%. Imports grew 50% from less than US\$0.8 million to US\$1.2 million. A further liberalization to 12.2% in 2016 (a year after the TC Pam) led imports to grow to US\$1.4 million. Duty free imports under the MSG Agreement and the entry into force of the PACER Plus Agreement, would support this policy objective.

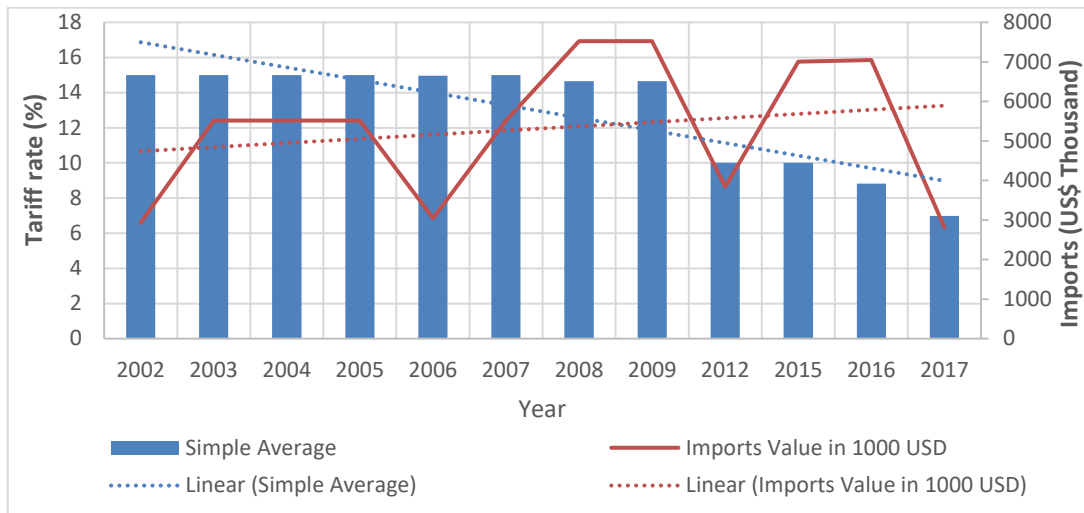
**Figure 10: Tariffs and imports of stone, plaster, cement, asbestos and mica**



Source: WTO computation based on data from WITs

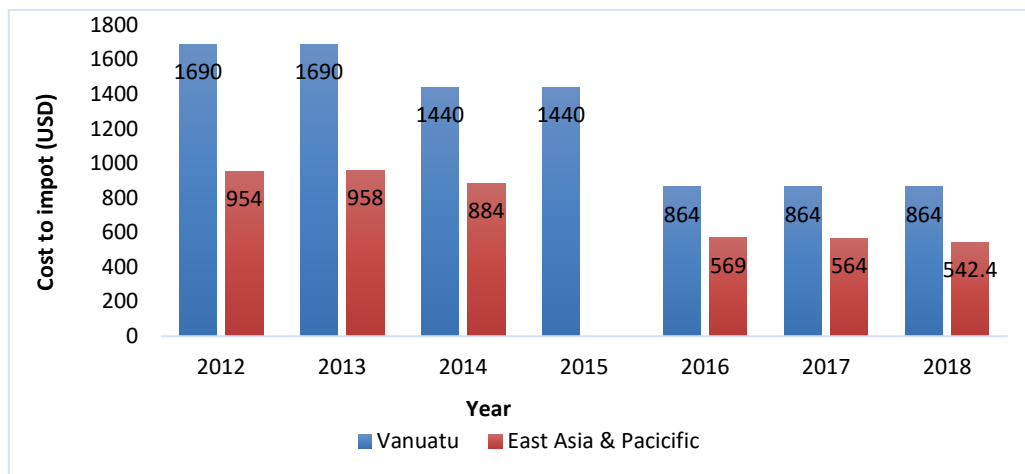
4.45. Although Figure 11 does not depict a clear relationship between taxes and import of iron and steel, the linear prediction suggests a higher volume of import at relatively low tariff rates between 2009 and 2016. Important to consider also is the expansion of infrastructure projects which have increased demand for these materials.



**Figure 11: Tariffs and imports of iron and steel in Vanuatu**

Source: WTO computation based on data from WITS

4.46. Trade facilitation will support efficient disaster response, Vanuatu has made progress towards reducing the cost of import since 2012.<sup>85</sup> The cost of import (see Figure 12) fell from US\$1,690 in 2012 to US\$864 in 2016. This reflects streamlining in customs processes, such as import documentary compliance. Figure 12 below shows that further progress could be made to reach the same level as East Asian peers.

**Figure 12: Cost to import in Vanuatu**

Source: WTO computation based on data from WITS

4.47. Two trade policy measures that Vanuatu has taken to reduce trade costs include adoption of legislation to give effect to the WTO Agreement on Customs Valuation and streamlining of customs. Recently the government has embarked on a single window project to expand reform of business processes and streamlining through system automation to non-customs agencies. Box 7 below discusses Vanuatu's implementation of the Trade Facilitation Agreement.

<sup>85</sup> World Bank Doing Business, Ease of Doing Business in Vanuatu, Available at: [http://www.doingbusiness.org/en/data/exploreconomies/vanuatu#DB\\_tab](http://www.doingbusiness.org/en/data/exploreconomies/vanuatu#DB_tab)



**Box 7: Vanuatu: Trade Facilitation Agreement commitments**

At the time of writing, Vanuatu had not deposited its instrument of acceptance of the Trade Facilitation Agreement (TFA). In January 2018, it notified to the WTO its commitments in Categories A, B, and C with indicative dates for implementation (for Categories B and C). WTO Secretariat analysis suggest that 49% of measures have been implemented with other areas measures requiring more time or technical assistance for implementation evenly split (26.1% in category B (more time) and 24.8% in category C (support)). Indicative dates for implementation of category B and C) commitments stretch to December 2022.

Vanuatu has requested assistance and support for capacity building for a total number of 12 TFA measures. These include: publication, making information available through the internet, enquiry points, notification, detention of goods, test procedures, risk management, post clearance audit, average release times, authorized operators, use of international standards and single window.

Source: WTO Trade Facilitation Agreement Database

4.48. Cyclone Pam affected Vanuatu's schedule for graduation from LDC status. Vanuatu was initially scheduled for graduation in 2017, but in December 2015 the UN General Assembly decided, on an exceptional basis, and taking into consideration the serious disruption that was caused by the Cyclone, to delay to December 2020 the country's graduation from LDC status. Though Vanuatu would lose access to LDC-specific instruments of development cooperation, it has been observed that development partners do not base their cooperation exclusively on LDC status.<sup>86</sup> The UN recognizes the importance of a smooth transition mechanism to avoid reversal of the progress made by the graduating countries.

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<sup>86</sup> "Vanuatu 2018 Article IV Consultation", IMF April 2018, IMF Country Report No. 18/109, International Monetary Fund

## 5 FIJI

### 5.1 Basic facts

5.1. Fiji is a middle-income country located in the South Pacific with a GDP per capita estimated at around US\$6,120.4 in 2018 and a population of 885,000 based on 2017 estimates. Fiji is an archipelago of 332 islands (of which approximately 110 are inhabited), spread over a land area of 18,270 km<sup>2</sup> and a geographic area of almost 50,000km<sup>2</sup>. Compared to other Pacific island countries, the economy is more diversified, with services, led by tourism (a major net foreign exchange earner), as the most important sector in terms of contribution to GDP.

5.2. World Travel and Tourism Council figures indicate that travel and tourism contributed USD1,966.3 million, (40.3% of GDP) in 2017, and was projected to increase by 1.4% in 2018, and a further increase by 5.0% pa to USD3,242.4 million (43.4% of GDP) in 2028. This includes direct contribution of (USD704.8 million (14.4% of the total GDP) in 2017, forecast of 1.4% in 2018 and 5.3% per annum between 2018 and 2028.<sup>87</sup>

5.3. The travel and tourism sector contributed 36.5% of total employment (118,500 jobs) which was expected to fall by 1.2% in 2018 (117,000 jobs) and rise by 2.7% pa to (153,000 jobs) in 2028 (43.7% of total). This include direct contribution of 42,500 jobs (13.0% of total employment) which was expected to fall by 1.2% in 2018 and rise by 3.3% pa to 58,000 jobs (16.5% of total employment) in 2028.

5.4. Visitor exports generated (USD\$1,194.8 million), 40.1% of total exports, forecast to grow by 1.1% in 2018, and 5.5% pa, (USD2,071.2 million) in 2028, (41.6% of total). Travel and tourism investment in 2017 was 24.3% of total investment (USD236.7million). It was projected to rise by 1.4% in 2018, and rise by 3.4% pa over the next ten years to USD336.1 million in 2028, 22.7% of total.<sup>88</sup> Nevertheless, Fiji's economy has a relatively narrow production structure heavily dependent on tourism, remittances, and a few merchandise products such as water, sugar, fish, and textile.

5.5. Over the last years, Fiji has improved its human development indicators, achieving broad coverage in the provision of basic services, with declining poverty levels even though progress in rural areas has proved more stubborn to realize. Fiji ranks 88th (out of 187 countries) on the latest UNDP Human Development Index. In 2013, the last year for which figures are available, 28.1% of the population lived below the national poverty line. Life expectancy is about 70 years while adult literacy is above 95%. Percentage change in year-on-year inflation rate in 2018 was 3.3% whereas unemployment rate as percentage of the labour force has remained 4.5% since 2017.

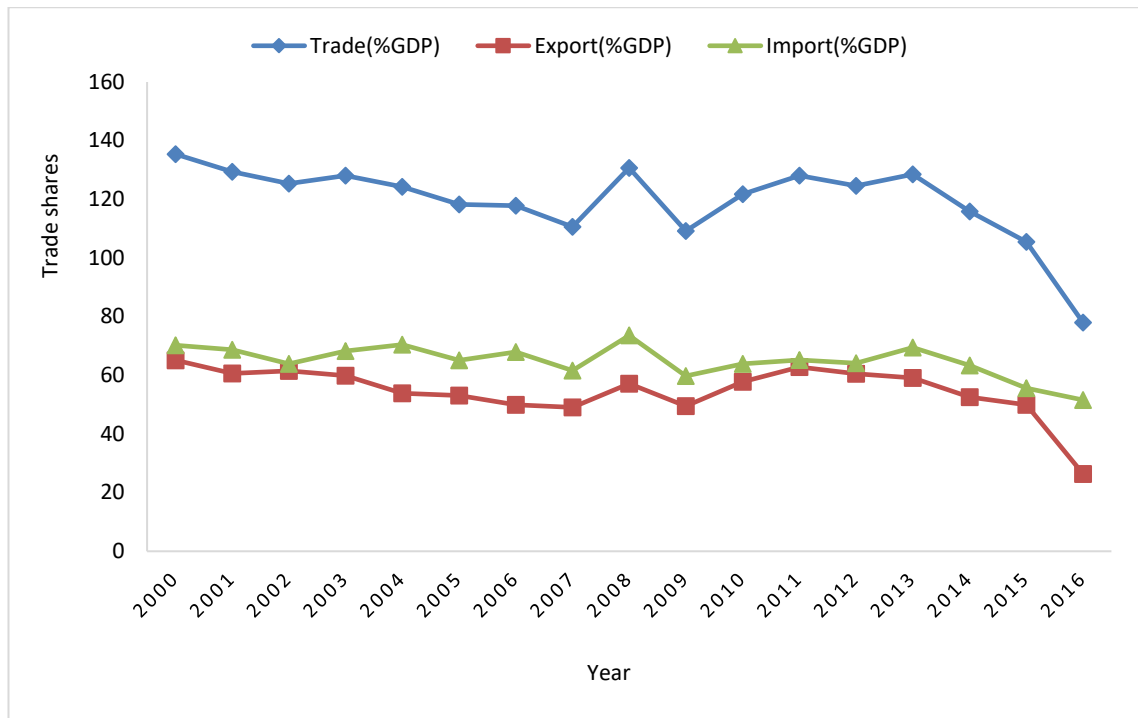
5.6. Fiji's trade as a share of GDP (see Figure 13) was negatively impacted by the two cyclones (Evan and Winston) which hit the country in 2012 and 2016. Tropical Cyclone (TC) Winston had a more severe impact than that of TC Evan. Total trade as a share of GDP decreased by 3.3 percentage point from 128.0% in 2011 to 124.7% in 2012. However, the decrease was 27 percentage points from 105.5% in 2015 to 78.0% in 2016. On both occasions, the fall in export as share of GDP has been considerably higher than import as share of GDP.

5.7. While TC Evan contributed to a decrease in import as share of GDP by 1 percentage point (from 65.2% to 64.2%), export as share of GDP decreased by 2.3 percentage points from 62.8% in 2011 to 60.5% in 2012. Similarly, import as share of GDP decreased by 4 percentage point from 55.6% in 2015 to 51.6% in 2016. This unequal decrease in export and import as shares of GDP reflect the worsening trade balance (see Figure 13).

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<sup>87</sup> [World Travel & Tourism Council \(2018\). Travel & Tourism Economic Impact 2018 Fiji. Available at https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/fiji2018.pdf](https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/fiji2018.pdf)

<sup>88</sup> [World Travel & Tourism Council \(2018\). Travel & Tourism Economic Impact 2018 Fiji. Available at https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/fiji2018.pdf](https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/fiji2018.pdf)

**Figure 13: Trade as a share of GDP**

Source: WTO Secretariat

## 5.2 Disaster Risk profile of Fiji

5.8. Fiji is located in a tropical cyclone belt and is prone to frequent storms with damaging winds, rain and storm surges. In the South Pacific region from the equator to New Zealand in latitude and from Indonesia to east of Hawaii in longitude almost 1,000 tropical cyclones with hurricane-force winds were spawned in the last 60 years, with an average of about 16 tropical storms per year. Fiji has been affected multiple times by devastating cyclones in the last few decades. Tropical Cyclone (TC) Kina and TC Ami, in 1993 and 2003 respectively, caused about 40 fatalities. Strong winds and widespread coastal flooding damaged homes, infrastructure and crops in the main islands of Viti Levu and Vanua Levu with about USD 200 to 300 million in losses that weakened the local economy. Since 2010, Fiji has been hit by multiple cyclones. In 2012, Fiji experienced severe flooding in January and March, and Tropical Cyclone (TC) Evan in December.

5.9. Fiji is situated in a relatively quiet seismic area, albeit surrounded by the Pacific Ring of Fire which aligns with the boundaries of the tectonic plates. These boundaries are associated with extreme seismic activity, volcanic activity, earthquakes and tsunamis. Fiji's geographical location makes it more susceptible to extreme events associated with climate variability, including sea-level rise, temperature extremes and droughts.

5.10. The effects of natural disasters have been far reaching for Fiji, negatively impacting on, among other sectors, agriculture, housing, transport infrastructure, tourism and primary industries. Since 1980, disaster events in Fiji have resulted in average annual economic damage of around F\$35 million and impacted around 40,000 people each year. In the same period, at least 186 people have been killed by flooding and storm events alone. The three events that hit Fiji in 2012 caused an estimated total damage of F\$146 million (US\$78 million) (Government of Fiji, 2013).

5.11. Fiji is expected to incur, on average, F\$158 million (US\$85 million) per year in losses. In the next 50 years, Fiji has a 50% chance of experiencing a loss exceeding F\$1.5 billion (US\$806 million), and a 10% chance of experiencing a loss exceeding F\$3 billion (US\$1.6 billion). However, these

figures may increase once the impacts of climate change are taken into consideration (Government of Fiji, 2016)<sup>89</sup>.

5.12. The country is especially vulnerable to floods and tropical cyclones, which already have significant impacts on the economy and population. The average asset losses due to tropical cyclones and floods are estimated at more than F\$500 million per year, representing more than 5% of Fiji's GDP. (Government of Fiji, 2016)<sup>90</sup>.

5.13. Much larger losses are experienced after rarer events. For instance, a 100-year fluvial flood could cause asset losses in excess of F\$2 billion. Asset losses are particularly large for the transport sector and for buildings (46% and 44% of the total respectively, excluding agricultural asset losses). Other natural hazards—such as drought and landslides—could not be quantified in this study but add to these risks. For instance, the economic losses caused by Fiji's 1998 drought were estimated at between F\$275 million and F\$300 million. (Government of Fiji, 2016)<sup>91</sup>.

5.14. The World Risk Report ranks Fiji 10th out of 171 countries that are most at risk from natural disasters<sup>92</sup>. Exposure to cyclones, earthquakes, floods, landslides and droughts, frequent natural disasters, coupled with high transportation costs due to the small size of its economy represent a major constraint to Fiji's growth prospects.

5.15. Since 1985, Fiji has experienced several disasters which caused deaths and damages worth millions of dollars to properties. Although the number of casualties due to disasters (see Table 6) was higher in the 1990s, the frequency of the disasters and number of people affected have increased in recent years. This trend can be partly ascribed to the worsening climatic conditions amidst cumulative impact of policies aimed at improving resilience and sensitization of the populace.

**Table 6: Distribution of disasters and their effects in Fiji**

Period of disaster	Number of disasters	Total population affected	Total deaths
1985-89	6	218600	34
1990-99	11	73500	60
2000-09	15	302792	51
2010-14	6	225654	8

Source: Adapted from Johnston (2015).

### 5.3 Economic impact of tropical cyclones

5.16. Tropical Cyclone Evan, a Category 4 cyclone, hit Northern Vanua Levu and Western Viti Levu on 16-17 December 2012, causing damage equivalent to 2.6% of GDP. The impact of Evan compounded the damage experienced by some of the same communities and businesses in the wake of the Western Floods of January and March 2012. In February 2016, Tropical Cyclone Winston followed - the first Category 5 cyclone to directly impact Fiji and the most intense cyclone on historical record to have hit the island. This storm affected over 62% (540,400) of Fiji's population causing damage and losses estimated at 31% of GDP.<sup>93</sup>

<sup>89</sup>Government of Fiji (2016): Post-Disaster Needs Assessment, Tropical Cyclone Winston. Available at <https://reliefweb.int/report/fiji/fiji-post-disaster-needs-assessment-may-2016-tropical-cyclone-winston-february-20-2016>

<sup>90</sup>Government of Fiji (2016): Post-Disaster Needs Assessment, Tropical Cyclone Winston. Available at <https://reliefweb.int/report/fiji/fiji-post-disaster-needs-assessment-may-2016-tropical-cyclone-winston-february-20-2016>

<sup>91</sup>Government of Fiji (2016): Post-Disaster Needs Assessment, Tropical Cyclone Winston. Available at <https://reliefweb.int/report/fiji/fiji-post-disaster-needs-assessment-may-2016-tropical-cyclone-winston-february-20-2016>

<sup>92</sup>World Risk Report 2018 Available at <https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskReport-2018.pdf>

<sup>93</sup> Government of Fiji (2017) "Climate Vulnerability Assessment – Making Fiji Climate Resilient", Available at: <http://documents.worldbank.org/curated/en/163081509454340771/pdf/120756-WP-PUBLIC-nov-9-12p-WB-Report-FA01-SP.pdf>

5.17. While TC Evan reduced economic growth by 0.1 percentage points, the impact of TC Winston was far more pronounced at 2.5 percentage points. The estimated value of disaster effects arising from TC Winston in Fiji was F\$1.99 billion (US\$0.9 billion), including F\$1.29 billion (US\$0.6 billion) in damage (i.e., destroyed physical assets) and F\$0.71 billion (US\$0.3 billion) in losses. The combined value of the destroyed assets and disruptions in the production of goods and services was equivalent to about 20% of Fiji's 2014 gross domestic product. TC Winston caused a contraction in labour demand, resulting in the loss of 14,4 million workdays (equivalent to approx. 50,000 full-time jobs) and F\$351.5 million in personal income across the economy. The agricultural sector suffered 57% of these losses, commercial and manufacturing activities 17% and 10% respectively and tourism and transport 8%.

5.18. The government's fiscal deficit increased from 3.8% in 2015 to 5.5% in 2016 due to the need for increased expenditure on disaster relief and early recovery activities, specifically for social welfare programmes and food ration distribution. In terms of impacts on revenue, income from value added tax and Service Turnover Tax declined due to losses in the tourism sector. The Central Bank's accommodative stance helped prevent disorderly liquidity drain after the disaster and facilitated the recovery. Although headline inflation temporarily increased, to over 5%; the jump was mainly a reflection of the slow recovery of food production.

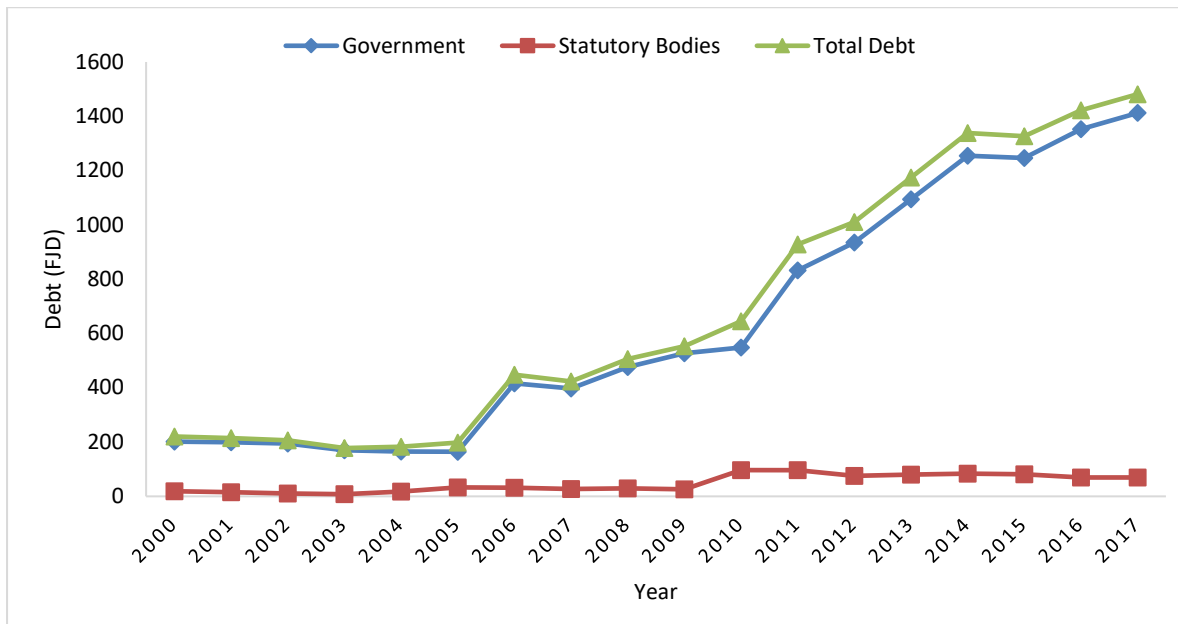
5.19. TC Winston reduced economic growth by 2.5 percentage points relative to the 2016 pre-cyclone forecast, bringing the growth rate down from 3.8% to 1.3%. Both storms had similar impacts at the sectoral level, agriculture, forestry, commerce, hotels and restaurants accounting for 87% of total losses. Reduced agriculture sector production and lower revenues in the hotels and restaurants sector caused by lower visitor arrivals were the main effects. Infrastructure, including transport, electricity, communications, government buildings and housings suffered comparatively less damage.

5.20. The impact of TC Winston on the balance-of-payments (see Figure 2) was substantial. Export growth in 2016 declined to 3.5% relative to pre-cyclone forecasted levels of over 17%. Across individual sectors, sugar exports were most affected. Sugar cane production fell by 25% from 1,845 tonnes in 2015 to 1,387 tonnes in 2016 – leading to a drop of 44% reduction in exports of sugar. Foreign exchange from export of sugar decreased from US\$76.9 million in 2015 to US\$52.3 million in 2016. TC Evan in 2012 also depressed sugar production by 26% and molasses manufacture by 60%. Other exports severely affected by the cyclones included molasses, timber, fish, fruit and vegetables, coconut oil, gold, garments and mineral water.

5.21. Successive tropical cyclones have aggravated a worsening debt situation created by the global financial crisis of 2008-9. Government debt as a percentage of GDP is projected at 47.3 by the IMF in 2018.<sup>94</sup>

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<sup>94</sup> Republic of Fiji, IMF Article IV public consultation, IMF Country Report No. 18/34, February 2018. Available at: <https://www.imf.org/en/News/Articles/2018/12/17/pr18479-imf-staff-completes-2018-article-iv-visit-to-fiji>

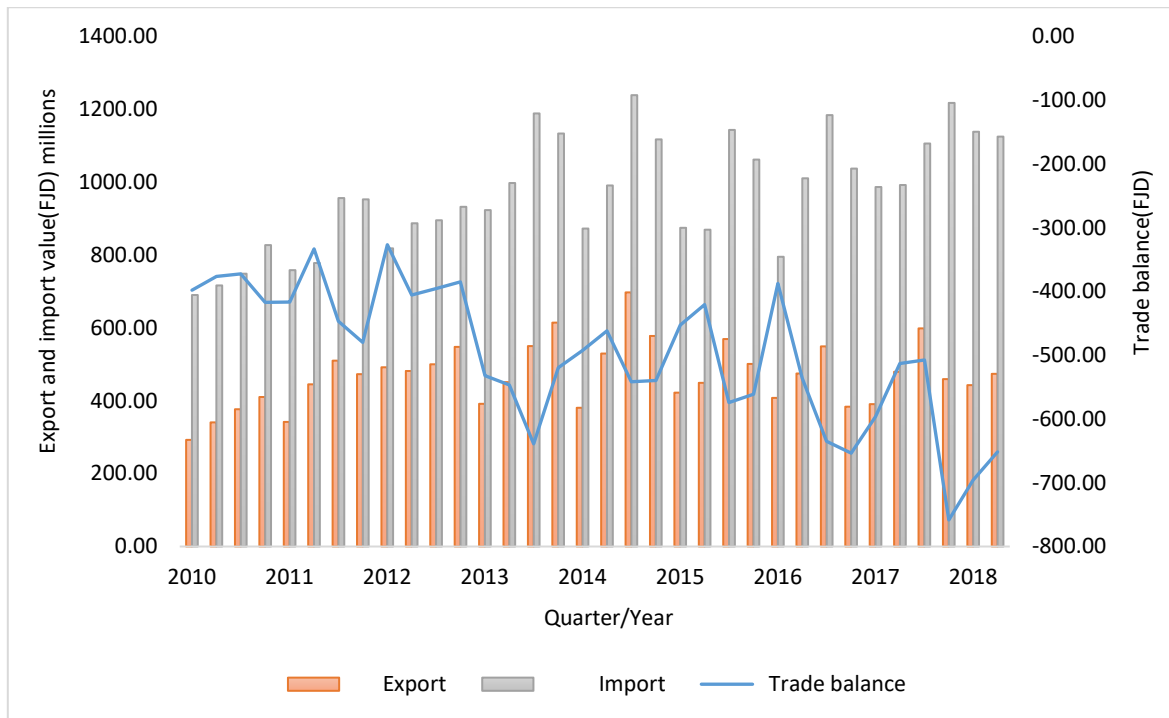
**Figure 14: External general government debt**

Source: WTO computation based on data from the Reserve Bank of Fiji<sup>95</sup>

5.22. Import growth surged 11.3 percentage points in the wake of TC Winston in 2016, mostly due to the need of reconstruction material and higher food imports due to the loss of locally grown produce. However, a few product categories experienced a decline in imports, such as mineral fuels. At the same time, the cyclone had only a small impact on the tourism sector, with a short-term drop in international arrivals. The current account deficit widened from 3.6% of GDP in 2015 to 5% in 2016. Fiji's external debt (see Figure 14) increased significantly and have remained higher than the pre-disaster period.

<sup>95</sup> The data from the Reserve Bank of Fiji is available at <https://www.rbf.gov.fj/Statistics/e-GDDS>

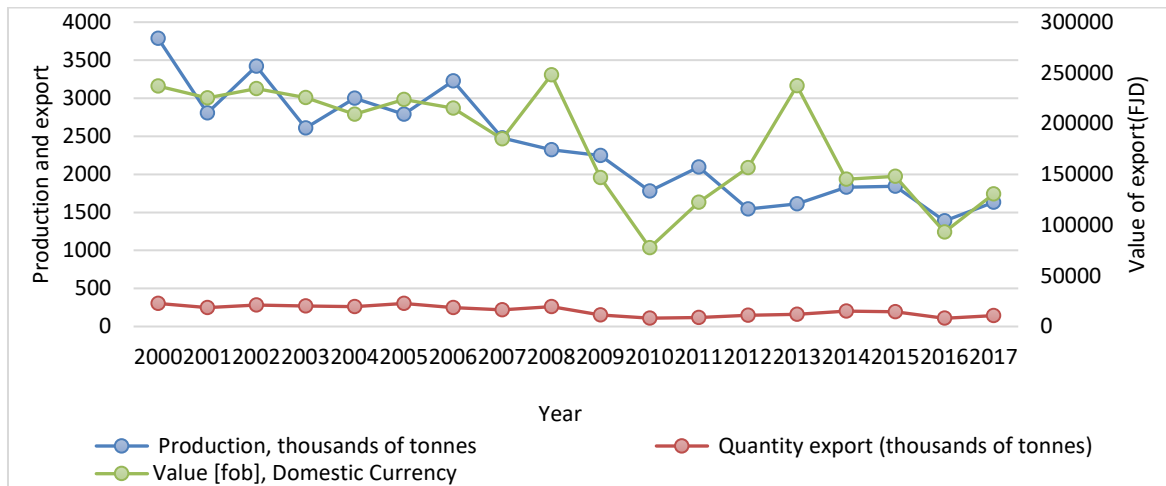
**Figure 15: The trend of merchandise trade and trade balance in Fiji**



Source: WTO computation based on data from the Reserve Bank of Fiji<sup>96</sup>

5.23. The sugar industry contributes about 5% to Fiji's economy. The onset of TC Winston contributed to a fall in the quantity of sugar production (see Figure 16) by about 26% from 2,096 tonnes in 2011 to 1,546 tonnes in 2012. The production of sugar has remained consistently lower than pre-disaster values reflecting in a lag effect on its quantity and value of export in the post-disaster period. (Government of Fiji, 2016)<sup>97</sup>.

**Figure 16: Sugar industry production and export**



Source: WTO computation based on data from the Reserve Bank of Fiji

5.24. Cyclones Evan and Winston imposed the highest production losses on the agricultural sector. High winds, flooding and storm surges imposed substantial damage to permanent plantations. Produce for fruit and vegetable export sustained considerable damage. The sub-sector of agriculture

<sup>96</sup> The data on all the indicators obtained from the Reserve Bank of Fiji can be accessed at <https://www.rbf.gov.fj/Statistics/e-GDDS>

<sup>97</sup> Government of Fiji (2016): Post-Disaster Needs Assessment, Tropical Cyclone Winston. Available at <https://reliefweb.int/report/fiji/fiji-post-disaster-needs-assessment-may-2016-tropical-cyclone-winston-february-20-2016>



most affected by TC Evan was crops (67% of damage and loss in the agriculture sector). In the forestry sub-sector, the timber industry in the Western Division suffered from high winds damage to infrastructure and trees – accounting for the remaining 14 percent. Agricultural production is not expected to return to pre-disaster levels for five to 10 years. (Government of Fiji, 2016)<sup>98</sup>.

5.25. Cyclone damage to mangrove forests and coral reefs, which provide a habitat for fish species, forced the fish to migrate leading to a reduction in the volume of fisheries and slowdown in the activities of workers in that sector. Table 7 below gives an overview of the sectoral impact of TC Winston.

**Table 7: Summary of the sectoral effects of TC Winston**

	Disaster effects (F\$ million)			Share of disaster effects (%)	
	Damage	Losses	Total	Public	Private
Productive Sectors	241.8	594.5	836.3	12	88
Agriculture	81.3	460.7	542	7	93
Commerce and Manufacturing	72.9	69.9	142.8	49	51
Tourism	76.1	43.9	120		100
Mining	11.5	20	31.5		100
Social Sectors	827.9	40	867.9	12	88
Education	69.2	7.4	76.6	100	
Health	7.7	6.2	13.9	100	
Housing	751	26.4	777.4	2	98
Infrastructure Sectors	208.2	40.4	248.6	84	16
Transport	127.1	2.4	129.5	98	2
Water and Sanitation	16.9	7.9	24.8	100	
Electricity	33	8.1	41.1	100	
Communications	31.2	22	53.2	30	70
Cross-Cutting Issues	239.6	660.1	899.7	4	96
Environment	232.5	629.8	862.3		100
Culture and Heritage	5.1	0.8	5.9	23	77
Disaster Risk Management	2	29.5	31.5	100	
Total (Excluding Environmentc)	1,285.00	705.2	1,990.20	78	22
Grand Total	1,517.50	1,335.00	2,852.50	84	16

Source: Estimations by PDNA Assessment Team.

- A breakdown of the public/private ownership for damage and loss (rather than the cumulative breakdown for disaster effects) is provided in Annex 1.
- Estimation of environmental losses include ecosystem service losses for 2016-18 for native forests, mangroves and coral reefs. Total recovery time may stretch beyond this timeframe.
- These figures exclude the environment sector, as environmental assets and flows of environmental services are not included in the national accounts.

5.26. The service sector is the backbone of Fiji's economy. Growth of trade in services has been robust and resilient to both internal and external shocks since 2010. Trade in service has remained a buffer against shocks in merchandise trade. The surplus in trade in services has grown from FJD 1.032 billion in 2010 to a FJD 1.717 billion in 2017.

5.27. The impact of TC Evan on the tourism industry was considerable. Most of the structural damage to hotels and resorts was minimized due to the high building standards. Insurance plays a vital role in this sector with most of the seriously affected hotels/resorts relying on those funds to repair or rebuild without relying on the Government for financial assistance. While TC Evan caused some damage to infrastructure and the environment, the reaction of the national authorities through

<sup>98</sup>Government of Fiji (2016): Post-Disaster Needs Assessment, Tropical Cyclone Winston. Available at <https://reliefweb.int/report/fiji/fiji-post-disaster-needs-assessment-may-2016-tropical-cyclone-winston-february-20-2016>

the Tourism Disaster Committee to mitigate and subdue any negative impact on future tourist arrivals effect was a key feature of the resilience within the tourism industry.

5.28. The biggest loss from TC Winston came from the damage to houses where only 12% of the adult population had some form of insurance. Most households had to bear the rebuilding cost and lack of liquidity was a major challenge for most households hit by the disaster. To overcome liquidity constraints, the Fiji National Pension Fund allowed members to withdraw up to 30% of their pension savings account balance. Fiji has not scheduled any GATS commitments for insurance services.

5.29. TC Evan affected approximately 5% of the total housing stock in Fiji. This translated into a total number 8,497 affected houses of which 2,094 were destroyed, while the remaining 6,403 suffered some degree of damages. The total value of damage and loss for the Housing sector has been estimated at just over F\$50 million (see box 8).

#### **Box 8: Post-disaster needs assessments**

Fiji has undertaken two post-disaster needs assessments, one in 2012 after the passage of TC Evan and another after TC Winston in 2016. Learning from the previous experience, the government of Fiji extended the 2016 PDNA data beyond immediate recovery planning to finalize a multiyear strategic national development plan that was being prepared when the disaster occurred.

The government facilitated a rapid and timely conduct of the 2016 PDNA by providing considerable staff and operational support. The entire PDNA exercise and official adoption of the assessment report was completed within little more than a month. One reason for the rapid completion of the assessment was to present damage estimates to participants attending the World Humanitarian Summit in Istanbul in May 2016. This timely arrangement succeeded in raising more than \$150 million from nearly 20 countries and four international or intergovernmental organizations.

Source: Post- Disaster Needs Assessment PDNA: Lessons from a Decade of Experience 2018<sup>99</sup>

#### **5.4 Policy issues**

5.30. Fiji's disaster management arrangements are covered under the Natural Disaster Management Act 1998 and the National Disaster Management Plan 1995. The Act instituted the National Disaster Management Council and Office and a Preparedness Committee. In the aftermath of Cyclone Winston, the National Disaster Management Office coordinated the government's short-term response (food security support, cash transfers) and the support from the international community. Prior to Cyclone Winston making landfall, the disaster management machinery was set in motion with the activation of the emergency and evacuation centres. Fiji's existing National Climate Change Policy, Green Growth Framework, Fiji National Development Plan and the National Determined Contribution Implementation Roadmap are also part of Fiji's policy efforts to combat the impact of climate change and the loss and damage caused by the natural disasters.<sup>100</sup>

5.31. In the aftermath of TC Winston, the government implemented a range of social protection programmes to support households, including the provision of additional funds to households via the Poverty Benefit Scheme, the Food Voucher Programme and the Help for Homes initiative, which provided affected households with vouchers for housing rehabilitation and reconstruction. Also, the "Build Back Safer" program was launched aiming to teach residents how to rebuild homes more resilient to natural disasters.

5.32. In response to a strong desire for improved coordination and private sector engagement, the Fiji Business Disaster Resilience Council was formed in July 2016. The Council (1) provides a coordination mechanism for private sector to engage with government and partners on resilience building, response and recovery activities, (2) supports businesses, in strengthening their resilience by providing training, tools and guidelines; (3) integrates the private sector into national disaster management and resilience plans and processes, and (4) identifies and engages private sector

<sup>99</sup> "Post- Disaster Needs Assessment PDNA: Lessons from a Decade of Experience 2018". Evaluation Report prepared by Terry Jeggle, lead writer, and Marco Bogger Available at: [https://reliefweb.int/sites/reliefweb.int/files/resources/Final\\_PDNA\\_Evaluation\\_Report.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/Final_PDNA_Evaluation_Report.pdf)

<sup>100</sup> Government of Fiji. Available at: <http://www.economy.gov.fj>

capacities to respond to emergencies, pre-position agreements in preparation for emergencies and match capacities to humanitarian needs before, during and after emergencies.

5.33. Following TC Winston, the government of Fiji instituted an exemption of fiscal duty and excise duty in March 2016, leading to a fall in the revenue from these duties in that year. As shown in Table 8, this contributed to a fall in fiscal duty and total duty, despite a marginal increase in import VAT.

**Table 8: Import duty, fiscal duty and import VAT**

Year	Value of Imports (FJD mil)	Fiscal duty (FJD mil)	Customs Import VAT (FJD mil.)	Total duty (FJD mil.)	Fiscal duty (% of imports)	Customs import VAT (% of imports)	Total duty (% of imports)
2010	3,464,614	252,417	328,534	580,951	7.3	9.5	16.8
2011	3,913,571	246,500	424,618	671,118	6.3	10.8	17.1
2012	4,030,678	258,632	436,824	695,456	6.4	10.8	17.3
2013	5,198,924	310,952	524,613	835,565	6	10.1	16.1
2014	5,012,583	365,083	560,155	925,238	7.3	11.2	18.5
2015	4,756,824	392,324	572,763	965,087	8.2	12	20.3
2016	4,839,186	397,641	444,333	841,974	8.2	9.2	17.4
2017	4,977,532	419,276	468,886	888,162	8.4	9.4	17.8

Source: WTO computation based on data from the Fiji Bureau of Statistics, 2018

5.34. The relief and recovery phase after Cyclone Winston brought with it an influx of unrequested products. Many of these unsolicited goods hindered disaster relief efforts and ended up in landfills. According to newspaper reports, Fiji received the equivalent of 33 Olympic swimming pools of unsolicited goods in the aftermath of Cyclone Winston (The Guardian, 15 January 2017).

#### **Box 9: Fiji: Trade Facilitation Agreement Commitments**

In May 2017, Fiji deposited its instrument of acceptance of the Trade Facilitation Agreement (TFA). It also notified to the WTO its commitments in Categories A, B, and C with indicative dates for implementation (for Categories B and C). In June 2018, Fiji notified to the WTO definitive implementation dates for its category B commitments. WTO analysis suggests that 62.6% of measures have been implemented with other measures requiring more time or technical assistance for implementation, 5.0 % in category B (more time) and 32.4% in category C (capacity building support). Indicative implementation dates for categories B and C stretch to 2021.

Fiji has requested assistance and support for capacity building for a total number of 10 TFA measures. These include: publication, information available through the internet, advance rulings, procedures for appeal or review, test procedures, risk management, average release times, authorized operators, formalities and single window.

Source: WTO Trade Facilitation Agreement Database

<https://www.tfadatabase.org/uploads/notification/NFJI1.pdf>

5.35. Fiji is making important efforts to build resilience to climate change. As the first small states country presiding international talks on Climate Change (COP 23), Fiji has pledged to transition completely to renewable energy sources by 2030 and adopted a reforestation policy intended to store carbon from freshly planted trees. Fiji is also one of the three countries in the world that issued a sovereign green bond to finance projects that help build resilience to climate change. In addition, the "Build Back Safer" program was launched after Winston aiming to teach local residents how to rebuild homes more resilient to natural disasters. Future policies could include a careful consideration of infrastructure projects resilient to natural disasters and the exploration of ways to expand insurance to natural disasters.<sup>101</sup>

<sup>101</sup> Republic of Fiji, IMF Article IV public consultation, IMF Country Report No. 18/34, February 2018. Available at: <https://www.imf.org/en/News/Articles/2018/12/17/pr18479-imf-staff-completes-2018-article-iv-visit-to-fiji>

5.36. Fiji undertook recent commitments to reduce the vulnerability to natural disasters. Several policy actions were adopted, including the Fiji National Adaptation Plan, Fiji Low Emission Development Strategy and the Planned Relocation Guidelines.<sup>102</sup>

5.37. In response to international commitments and national needs to build resilience of all Fijians, the Fijian Government developed Fiji's National Adaptation Plan (NAP). The NAP's goal is to achieve a climate-resilient development pathway, which enables Fiji to anticipate, reduce, and manage environmental and climate risks caused by climate variability. The NAP will be the main overarching process through which the Fijian Government addresses national adaptation needs. This will be achieved through building adaptive capacity and resilience, and integrating climate change adaptation, into policies, programmes, and processes across all relevant sectors and scales.

5.38. The Fijian Government submitted its Intended Nationally Determined Contributions in 2015, which was confirmed as its Nationally Determined Contributions (NDC) upon ratification of the Paris Agreement in 2016. In 2017, the Fijian Government launched its NDC Implementation Roadmap focusing on emission reductions in the energy sector. In 2018, the Fijian Government launched Fiji's 2050 strategy known as the Low Emission Development Strategy (LEDS). LEDS has been adopted as Fiji's blueprint for a low carbon future. Fiji and the Marshall Islands have become the first two nations in the Pacific region to commit to raising the NDC by 2020 and to reach net zero emissions by mid-century.

5.39. The Planned Relocation Guidelines (PRG) has been developed to assist and direct relocation efforts at the local level. Through this, Fiji has become one of the first nation States to develop a national framework that guides the relocation process. The PRG ensures that the relocation of any local community is carried out in a manner that guarantees its long-term survival, has viable options for economic activity, and provides support and services for those being relocated. The PRG focuses to ensure that the relocation of any local community is carried out in a manner that guarantees its long-term survival, has viable options for economic activity, and provides support and services for those being relocated. The Guidelines also contain provisions to ensure the well-being and safeguard the rights of vulnerable members of any community being relocated.

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<sup>102</sup> Government of Fiji. Available at: <http://www.economy.gov.fj>