

## SUMMARY ASSESSMENT OF DAMAGE AND NEEDS

### A. The Disaster

1. Tropical Cyclone Winston, which hit Fiji on 20 February 2016, was the most powerful tropical cyclone to make landfall over Fiji on record, reaching category 5 strength with maximum sustained winds of 295 kilometers (km) per hour. The storm affected more than 540,000 people (62% of Fiji's population of 840,000). It inflicted extensive damage on many islands and killed 44 people, mainly because of the storm surge, waves, and injuries sustained from flying debris. Housing, agriculture, education and health facilities, communications, water supply, and electricity were severely affected, with many islands and remote communities remaining isolated for many days after the storm.

### B. Government Response

2. Fiji has a strong national structure for disaster preparedness and emergency operations. This is composed of the National Disaster Management Council and National Disaster Management Office (NDMO) at the capital level, and disaster management committees at the provincial and district level. The country has developed a Natural Disaster Management Plan (1998), Natural Disaster Management Act (1998), and standard operating procedures for disaster response. In advance of the storm's arrival in Fiji, the NDMO activated the National Emergency Operations Centre in Suva, warnings were issued, and numerous evacuation shelters were opened.

3. Upon landfall of the cyclone, the prime minister declared a 30-day state of natural disaster.<sup>1</sup> In the immediate aftermath, the government mobilized the military, police, and all government agencies to respond to the disaster and assigned staff have been working continuously since the declaration of the emergency status to assist affected communities throughout the affected areas and to assess the situation. The police and armed forces have been involved in search, rescue, aid distribution, and clean up, and line agencies including the Ministries of Agriculture and Livestock, Forests and Fisheries, Health, Education, Local Government, and Housing and Environment; Fiji Electricity Authority; Fiji Roads Authority; and Water Authority of Fiji have provided staff for assessment, relief services, and to restore government operations. Agencies such as the Red Cross and national and international nongovernment organizations (NGOs) are also providing relief services. In addition, air force and navy assets and personnel from Australia and New Zealand were rapidly mobilized at the request of the government to assess the damage and assist in distribution of relief supplies. NDMO 8-hourly situation reports provided details of the status of the disaster response.<sup>2</sup>

4. The government requested international assistance on 22 February 2016. The National Cluster System was established, bringing together government ministries and a network of humanitarian actors, with United Nations agencies and international and national NGOs. As reported by United Nations Office for the Coordination of Humanitarian Assistance,<sup>3</sup> the government-led response delivered life-saving assistance to hundreds of thousands of affected people. Remaining gaps are being identified across the clusters. While humanitarian efforts are well under way to rebuild and repair houses, 131,000 people remain in need of transitional shelters. Because of a timely and coordinated response and the provision of temporary

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<sup>1</sup> The state of natural disaster was subsequently extended by 1 month, to 19 April 2016.

<sup>2</sup> NDMO situation reports are available at <http://www.ndmo.gov.fj/index.php/tc-winston/situation-report>

<sup>3</sup> UNOCHA SitRep No. 18 (as of 17 March 2016), available at <http://www.img.static.reliefweb.int/country/fji>

learning spaces, only five schools of the 99 that were completely destroyed are still closed, although there remains an urgent need for more temporary learning spaces. Food rations, seedlings, and seeds have been distributed across affected parts of the country but there remains a need for international support to ensure longer-term food security as crops are replanted. Access to safe drinking water has been restored to some 150,000 people, yet around 12% of the population remains without it.

### **C. International and Nongovernment Assistance**

5. On 4 March 2016, the United Nations (UN) Pacific Humanitarian Team launched a flash appeal for Tropical Cyclone Winston to (i) rapidly provide life-saving assistance to people affected by the cyclone and reestablish basic services; (ii) support restoration of livelihoods and self-reliance; and (iii) provide safety and protection for vulnerable women, girls, boys, and men, including provision of emergency and transitional shelter. In addition, many national and international donors have contributed assistance, both in cash and in kind. As of 29 April, NDMO advised that \$68 million had been received by the government, of which 75% was in kind and 25% was cash. International donors include Australia, Canada, France, India, Japan New Zealand, the European Commission, the People's Republic of China, the Republic of Korea, many Pacific island nations (including Tonga, Samoa, Vanuatu and Papua New Guinea), international NGOs, and the Asian Development Bank.<sup>4</sup>

### **D. Initial Damage Assessment**

6. Virtually all of the population in the immediate path of the storm was affected. Fiji's Eastern Division was the first to be struck by Tropical Cyclone Winston, with many islands sustaining catastrophic damage. Entire communities were destroyed and approximately 52,000 people required immediate humanitarian assistance. Koro Island sustained severe damage, with schools destroyed and many structures losing their roofs. A total of 788 homes were destroyed and 234 were damaged across Koro Island, rendering more than 3,000 people homeless. Kade village was leveled, with nearly all structures destroyed. Significant damage was also reported across Ovalau and Taveuni islands (722 homes were destroyed and 837 were damaged, the two main ports were severely damaged, and a bridge destroyed). On Viti Levu, strong winds destroyed many homes in Waidamu and Drauniivi villages and around Rakiraki town. At the peak of the disruption, on 26 February, 52,000 people were housed in about 900 temporary evacuation centers across all divisions.

7. The estimated damage and loss from the cyclone amounts to \$1.42 billion, equivalent to 31% of gross domestic product. Ministries recording the greatest estimates of damage and loss are Local Government, Housing and Environment, Agriculture (including damage reported by the Fiji Sugar Corporation), and Infrastructure and Transport (Table 1).

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<sup>4</sup> A partial list is available at <https://fts.unocha.org/pageloader.aspx?page=emerg-emergencyDetails&appealID=1135>

**Table 1: Damage and Production Losses (as of May 2016)**  
(\$ million)

<i>Item</i>	<i>Damage</i>	<i>Loss</i>	<i>Total</i>
<b>Productive sectors</b>	<b>115.69</b>	<b>284.66</b>	<b>400.15</b>
Agriculture, livestock, forestry, and fishing	38.89	220.43	259.32
Commerce and manufacturing	34.84	33.45	68.30
Mining	5.51	9.55	15.06
Tourism	36.45	21.03	57.48
<b>Social sectors</b>	<b>453.41</b>	<b>19.14</b>	<b>472.56</b>
Education	90.4 <sup>a</sup>	3.53	93.93
Health	3.68	2.99	6.67
Housing	359.33	12.63	371.96
<b>Infrastructure sectors</b>	<b>99.57</b>	<b>19.27</b>	<b>118.85</b>
Electricity	15.78	3.89	19.66
Water and sanitation	8.09	3.73	11.82
Transport and communication	75.17	11.66	87.36
<b>Crosscutting sectors</b>	<b>114.67</b>	<b>315.59</b>	<b>430.26</b>
Culture	2.45	0.13	2.58
Disaster risk management	0.97	14.11	15.08
Environment	111.25	301.35	412.60 <sup>b</sup>
<b>Total</b>	<b>783.34</b>	<b>638.47</b>	<b>1,421.81</b>

<sup>a</sup> Initial estimates of education damages of \$33 million have been revised upwards based on subsequent substantive assessments carried out by the Fiji Institute of Engineers.

<sup>b</sup> The estimate of environmental damage and loss includes valuation of ecosystem functions and other indirect effects that are not included in the official national accounts.

Source: National Disaster Management Office: Post-Disaster Needs Assessment.

8. **Agriculture, livestock, fisheries, and forests.** The strong winds, together with waves and storm surges, caused considerable damage to crops, livestock, and infrastructure (including agricultural buildings, offices, and staff housing). Approximately 45,000 farmers were affected. Cassava, breadfruit, and vegetables for household use, and dalo, yaqona, and coconut for export, were particularly affected. Milk production and poultry, pigs, sheep, goats, and bees suffered damage. In the fisheries and forestry sector there are reports of damage to many boats and fishing gear, and damage to commercial forest stands. The Fiji Sugar Corporation estimates damage of \$24 million to its four mills in Lautoka, Rarawai, Penang, and Labasa, and overall sector damage of \$58 million. The total damage and loss to the agriculture, livestock, forestry, and fisheries industries is currently estimated to be \$259.3 million.

9. **Transport.** Major land transport routes were cleared of debris and opened to traffic within days of the cyclone. Over the longer term, repairs are required to stabilize washouts and slips, repair bridges and crossings, and repair island wharves and jetties. Maritime transport was also disrupted with damage to landings and grounding of ferries, but there was limited damage in the aviation sector. The total damage and loss to the transport sector is currently estimated to be \$61.9 million.

10. **Water, sanitation, and hygiene.** Water and sanitation facilities were seriously affected, with at least 532 village water supplies damaged, requiring repair of diversion and storage facilities, pipes, and domestic connections. Although the outbreak of waterborne diseases was a major initial concern, 57,000 people received sanitation or hygiene kits, and access to safe water was restored to almost 150,000 people and major issues resolved. The Water Authority of Fiji reported that, as of 18 March 2016, 474 systems had been repaired and all but one of

the remainder was in progress. The total damage and loss to the sector is currently estimated to be \$11.8 million.

11. **Electricity.** Power to both urban and rural areas was lost during the cyclone but was restored relatively quickly to the main urban centers except Rakiraki and Ba, which took 2–3 weeks. Rural transmission lines were particularly badly damaged and repair crews from New Zealand, Australia, and Tonga are being brought to Fiji to supplement local crews to replace power poles and lines serving remote communities. By end of March, 20.0% of transmission lines in affected communities had been restored in Western Division, 80.0% in Central Division, 8.3% in Northern Division (Savusavu), and 9.9% in Eastern Division (Levuka). Total damage and loss to the electricity sector is estimated to be \$19.7 million.

12. **Communications.** Communications with many affected areas were intermittent or cut during the first 24 hours following the cyclone, and communications remained an issue for several days following the disaster. However, commercial mobile telephone operators restored services relatively quickly, and by March, most areas had mobile phone coverage. The Flash Appeal provided funds to establish temporary communications in the hardest hit areas. Total damage and loss to the communications sector is currently estimated to be \$25.5 million.

13. **Education.** Nationwide, 495 schools were damaged and 99 destroyed. The university and colleges were also damaged. Classes were suspended in all schools for 1 week but schools were reopened as soon as practical. Although considerable assistance has been provided to resume classes through the erection of temporary learning spaces, rebuilding schools to a greater standard of disaster resilience and providing necessary utilities such as power, water, and sanitation will take considerable time. Total damage and loss to the education sector is currently estimated to be \$90.4 million.

14. **Health.** Initial assessments indicated that 88 health facilities, or 38% of health facilities in the country, were severely or moderately damaged, and medications and vaccines lost through power outages. More detailed engineering assessments are required but repairs to damaged facilities are under way and will continue for many months, and most services have been restored. Medications and vaccines are being replaced through international partners. Total damage and loss to the health sector is currently estimated to be \$6.7 million.

15. **Housing.** Over 18,380 homes were partially damaged and 11,989 destroyed, with the Western Division, being the most populous, accounting for the majority of damage. The extent of damage is considerable, and while repair and rebuilding is going on by communities themselves, many challenges remain. Key issues include the relocation of many at-risk communities to safer locations (particularly on Koro Island), and improving the resiliency of the housing stock. Detailed engineering and damage assessments are being conducted by the Fiji Institute of Engineers to improve future designs and refine damage estimates. The preliminary estimate of total damage and loss to the housing sector is currently \$372.0 million.

#### **E. Sector Assessment: Public Sector Management (Social Protection Initiatives)**

16. In 2012, Fiji ranked 22nd among 35 countries in Asia and the Pacific on the Asian Development Bank (ADB) Social Protection Index. The government has a range of programs which provide social assistance in the form of cash payments, food vouchers, housing assistance, and assistance for education to the primary group including the poor, the elderly, sole parents, and homeless families, primarily administered by the Ministry of Women, Poverty and Social Welfare. These programs are as follows:

- (i) Family assistance scheme, which provides an allowance of F\$60–F\$100 per month to destitute families to supplement income.
- (ii) Care and protection allowance, which targets needy people with children deemed to be at risk.
- (iii) Poverty alleviation scheme, which targets low-income earners. The program provides housing to people living in poverty and inadequately housed. Funds can also be used to improve conditions of existing homes.
- (iv) Food voucher program, where monthly food vouchers are issued for spending at approved vendors. It is targeted at people over 70 years of age who don't receive any form of government assistance, those incapable of working because of disability, expectant mothers in rural areas, and mothers of infants outside the eligibility criteria for receiving Family Assistance and Care and Protection program beneficiaries.
- (v) Home ownership scheme, which provides an interest subsidy on monthly payments to the Housing Authority. It targets people earning no more than F\$6,500 per annum, and has a 50% female quota.
- (vi) Housing assistance and relief trust, which provides for accommodation for destitute and poor families in Fiji, with rents pegged at F\$0.50–F\$5.00 per week.
- (vii) Public rental board housing assistance, which provides rental properties through the Housing Authority for low-income families.
- (viii) Education assistance, which provides a free bus fare program for school children.

17. The sole social insurance program is the Fiji National Provident Fund. The fund, which requires a mandatory contribution from formal sector workers and employers, provides a retirement income at age 55 (either lump sum or pension). Workers in the informal sector can choose to make voluntary contributions to the fund, but only a very small number (around 1%) do.

18. **Social protection programs for Tropical Cyclone Winston.** In the immediate aftermath of Tropical Cyclone Winston the government announced a targeted initiative to assist people who are most vulnerable to falling into poverty. The sum of \$10.0 (F\$20.0 million) was allocated as a form of immediate relief assistance to be paid out over a 3-month period to 44,169 households assisted through the main three social protection programs (Table 2).

**Table 2: Expanded Social Protection Program Benefits and Post-Disaster Payments**

<b>Scheme</b>	<b>Number of Beneficiaries</b>	<b>Ordinary Benefit (Monthly)</b>	<b>Post-Disaster Benefit</b>
PBS	23,035 households	F\$30 per person (for up to four household members) plus F\$50 food voucher	F\$200 x 3 months (paid as F\$600 lump sum)
SPS	17,232 people	F\$50 or F\$50 food voucher	F\$100 x 3 months (paid as F\$300 lump sum)
CPS	3,902 households	F\$110 (maximum; actual amount depends on number and school grade of children) plus F\$50 food voucher	F\$100 x 3 months (paid as F\$300 lump sum)

CPS = Care and Protection Scheme, PBS = Poverty Benefits Scheme, SPS = Social Pension Scheme  
Source: Government of Fiji: Disaster Recovery Framework

19. **Housing.** The total damage bill from Tropical Cyclone Winston is estimated to be \$1.42 billion, of which approximately 26% is housing related. The government's Disaster Recovery Framework estimates that the total cost of recovery of the housing stock will be around \$88.0 million. Government estimates point to approximately 11,989 houses being completely destroyed and a further 18,380 houses partially damaged by the cyclone. For the first transition phase of the housing recovery efforts, which will see people move out of temporary shelters, the government has launched the Help for Homes initiative and has allocated \$34.5 million to this program in the current financial year. Recipients will be provided with housing vouchers to the value of F\$7,000, F\$3,000, or \$1,500 depending on the extent of damage sustained. These will be available to households with an annual income below F\$50,000, which is considered by the government to be too low to afford significant housing repair or reconstruction work. The total budgeted recovery cost of the 3-year initiative is \$88.0 million (Table 3).

20. The government's Disaster Recovery Framework estimates that \$294 million of budget support is needed in 2017–2018 to fill the financing gap and to implement the DRF. (Table 3).

**Table 3: Disaster Recovery Framework Budget**  
(\$ million)

Item	Total Budget 2016–2018	Government	Donor	Financing Gap
<b>Priority 1: Rebuilding homes</b>	<b>88.0</b>	<b>34.5</b>	<b>0.0</b>	<b>53.5</b>
Housing (public and private)	88.0	34.5	0.0	53.5
<b>Priority 2: Restoring livelihoods</b>	<b>114.2</b>	<b>50.3</b>	<b>4.7</b>	<b>59.2</b>
Agriculture, livestock, forestry, and fisheries	24.2	1.3	4.5	18.5
Commerce and industry	25.3	4.3	0.0	21.0
Tourism	3.5	0.0	0.0	3.5
Employment, livelihoods, and social protection	61.0	44.7	0.0	16.3
Household and community livelihood	0.3	0.0	0.3	0.0
<b>Priority 3: Repairing and strengthening critical infrastructure</b>	<b>220.5</b>	<b>46.5</b>	<b>5.8</b>	<b>169.9</b>
Education	90.4 <sup>a</sup>	34.2	5.8	50.4
Health	14.4	0.0	0.0	14.4
Transport	85.1	1.3	0.0	83.8
Water and sanitation	11.4	0.0	0.0	11.4
Electricity	6.8	0.0	0.0	6.8
Communication	9.3	9.3	0.0	0.0
Environment (solid-waste management)	3.1	0.0	0.0	3.1
<b>Priority 4: Building resilience</b>	<b>11.4</b>	<b>0.0</b>	<b>0.0</b>	<b>11.4</b>
Culture and heritage	1.3	0.0	0.0	1.3
Disaster risk reduction and management	7.0	0.0	0.0	7.0
Environment (restoration of ecosystem)	3.1	0.0	0.0	3.1
<b>Total: Priorities 1–4</b>	<b>434.1</b>	<b>131.3</b>	<b>10.5</b>	<b>294.0</b>

<sup>a</sup> The initial cost in the PDNA was based on initial damage assessments. These costs have been revised upwards based on substantive assessments carried out by the Fiji Institute of Engineers

Source: Government of Fiji.