

Shelter and Settlements Risk Profile ShelterCluster.org

Coordinating Humanitarian Shelter

HISTORIC EVENTS (ReliefWeb)

Dec 2012 **Tropical Cyclone Evan** 1. Tropical Cyclone Evan (TC Evan) – a Category 4 cyclone, wind speeds of 210 km/h (130 mph), impacted Northern Vanua Levu and Western Viti Levu on 17 December 2012, is considered one of the worst to ever hit Fiji in recent history. Approximately 60% of the total population were affected in the post-disaster period. The Northern division recorded the highest percentage of affected population (52%) as a proportion of their total population, followed by the Western Division (38%) and the Central and Eastern divisions (23%). March

2012

2. Fiji: Floods

Severe flooding in the areas of Ra, Tavua, Ba, Lautoka, Nadi, Nadroga, Sigatoka, and Rewa in January 2012 The Government of Fiji estimated that damage from the 2012 floods was at approximately F\$71 million. This suggests that Fiji experienced damage of F\$146 million in 2012 alone.

Jan 2012	3. Fiji: Floods
March 2010	4. Fiji: Cyclone Tomas
Dec 2009	5. Fiji: Cyclone Mick
Jan 2009	6. Fiji: Floods
Jan 2008	7. South Pacific: Tropical Cyclone Gene
Dec 2007	8. Fiji: Cyclone Daman
Feb 2007	9. Fiji: Floods
Sept 2005	10. Fiji: Floods
April 2004	11. Fiji: Floods
Jan 2003	12. Fiji: Cyclone Ami
Dec 2001	13. Tonga: Tropical Cyclone Waka
March 2001	14. Vanuatu: Tropical Cyclone Paula
Dec 2000	15. Fiji: Floods
Jan 1999	16. Fiji/Vanuatu:Tropical Cyclone Dani
Sept 1998	17. Fiji: Drought
March 1997	18. Fiji: Cyclone Gavin
Jan 1993	19. Fiji: Cyclone Kina

The Republic of the Fiji Islands is made up of approximately 332 islands - of which roughly 110 are inhabited - encompassing about 1.3 million square kilometers of the South Pacific Ocean. The majority of the population live on the two main islands of Viti Levu and Vanua Levu. Fiji is exposed to a variety of hazards including tropical cyclones (which trigger both floods and storm surges, as well as earthquakes,



KEY DEVELOPMENT INDICATORS	
Full Name:	Republic Of The Fiji Islands
Population:	862,333 (UN, 2012)
Annual Growth Rate:	0.5%
Capital:	Suva
Population In Urban Areas:	52.90%
Area:	18,376 Sq Km(7,095 Sq.mile)
Major Languages:	English, Fijian, Hindi
Major Religions:	Christianity, Hinduism, Islam
Life Expectancy: (UN)	67 Years (M)/72 Years (W)
Monetary Unit:	1 Fijian Dollar = 100 Cents
Main Exports:	Sugar, Clothing, Gold, Processed Fish, Timber
GNI Per Capita:	US \$3,720 (WB) 5,390 (FS)
Human Development Index:	0.688 ¹
Rainfall In Capital (Mm):	3040
Temperature In Capital City ° C:	22.2/28.7
Average Family Size:	5
Total Housing Stock:	169,940

RISK TABLE DISTASTERS: (worldriskindex, 2012)					
Global Risk Index: 13.69% (Rank 15)					
Exposure to Natural Hazards:	27.71%				
Global Vulnerability:	48.9%				
Most Susceptible To Harm And Loss:	26.19%				
Lack Of Coping Capacity:	75.32%				
Lack OF Adaptive Capacity:	46.67%				



NATURAL DISASTERS FROM 1980 - 2010 (PreventionWeb) No of events: 36 No of people killed: 221

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Average killed per year:	7
No of people affected:	1,152,658
Average affected per year:	37,183
Economic Damage (US\$ X 1,000):	529,733
Economic Damage per year (US\$	17,088
X 1,000):	



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TYPOLOGY OF FIJI HAZARDS (WFP, 2012)

% Population exposed Risk				
Cyclones	15.69%			
Earthquakes	0.32%			
Tsunami	7.05%			
Landslide/Land Movement	0.13%			

Other Hazards - 40 Floods since 1970 and Droughts

FIJI CYC	LONE INTE	NSITY	EARTHQUAK RETURN	E MEAN
Storm Category	Wind Speed (km/h)	Mean Return (yrs.)	Magnitude	Mean Return Period (yrs.)
≥1	119-153	3	M ≥5	14
≥2	154-177	4	M ≥6	34
≥3	178-249	12	M ≥7	244
≥4	210-249	169	M ≥8	-

Figure 1: Tropical Cyclone Activity since 1945

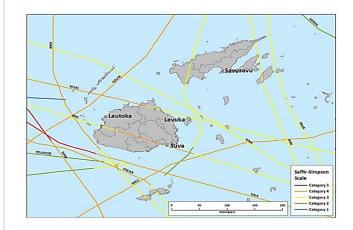
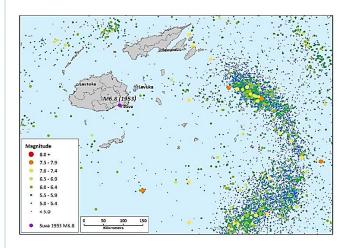


Figure 2: Earthquake Activity since 1900





HOUSING NEEDS (HFHF)

- Poverty and inequality are on the rise in Fiji.
- The non-renewal of sugar-cane leases in rural areas has contributed to rapid urban migration.
- Over two-thirds of the urban population lives in slums and squatter settlements, which continue to grow.
- Many people in both rural and urban areas lack secure tenure, which often prevents access to water and sanitation services, public services.
- Discrimination against women and Indo-Fijians prevents equitable access housing markets. 50% of population are Indo-Fijians
- Growth in squatter settlements in Fiji has remained a critical challenge for Government
- Customary law favours men in inheritance women have less access and rights to land and housing
- An estimated 140,000 population currently live in substandard housing conditions.
- 30,000 new houses required over the next 15 years.
- 31% of the population live in poverty, social services estimates that figure at 60% or half a million people (HFHF).

URBANISATION (UN)							
67.8% - Urban Population live in Slums (UN-							
280,000	Habitat:189-91, 2005)						
82,350	Live in 182 squatter settlements land						
	title to land and housing (Government,						
2006:2)							
30%	Lack of access to safe water and services						
	in urban areas (UNESCAP:28, 2003)						
72-85%	Do not have access to sewage treated						
	facilities (UNESCAP:28, 2003)						
22,000	Non- renewal of agricultural leases						

HOUSEHOLDS LIVING IN SQUATTER SETTLEMENT

Central Division:	57%
Western Division:	36%
Northern Division:	9%
Eastern Division:	1%

Most affected by Cyclone Evan-Western Division From Sigatoka To Tavua. (DDA 2013)				
Western District # of Settlements				
Sigatoka 2				
Nadi 18				
Lautoka 11				
Ba 5				
Tavua 5				
Total 41				



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DISASTER MANAGEMENT INSTITUTIONS (UN-Portal)

-Fiji Disaster Management Office (NDMO)

- Fiji National Fire Authority (NFA)

- Fiji Seismology Section of the Mineral Resources Department (MRD)

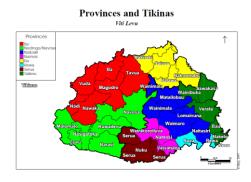
- Fiji Forest Department

Fiji Department of the Ministry of Public Utilities
Fiji Land Information System of the Department of Land and Survey (FLIS)

- Fiji South Pacific Applied Geoscience Commission

(SOPAC)

- UN-OCHA – Regional Office for Asia and the Pacific



FIJI SETTLEMENT TYPOLOGIES

- 1. Legal Owner Occupiers, Urban & Rural men and women who own and occupy their own house
- 2. Legal Tenants, Urban & Rural men and women who are renting legal dwellings
- 3. **Settlers, Urban & Rural** men and women living in settlements that are recognised by the GoF as being legal (this includes Vacavanua settlers)
- 4. Informal Settlers men and women who are:
 - Living with Legal Tenure they are renting land from the owner but have no government approval to dwell there
 - **Living with Illegal Tenure** occupying land they have no right to do so, whether private or public land

FIJ	I EXPECTED SHELTER CASELOADS	
•	Vulnerable Groups – Informal Settlements	YES
•	<u>NON-DISPLACED</u> - HHs living in significantly damaged housing (including renters).	<u>YES</u>
•	<u>NON-DISPLACED -</u> HHs living in makeshift shelters (or tents) on the plots of their totally destroyed house (including renters)	<u>YES</u>
•	<u>DISPLACED</u> - Evacuation Centres -242 typically either schools or public halls	<u>YES</u>
•	<u>DISPLACED -</u> HHs living with host families	<u>YES</u>
•	<u>DISPLACED</u> - displaced HHs living in spontaneous settlements in makeshift shelters or tents	<u>YES</u>
•	<u>NON-DISPLACED</u> - HHs living in partially damaged houses (including renters	<u>YES</u>
•	NON-DISPLACED HHs living in makeshift shelters	YES

• <u>NON-DISPLACED</u> HHs living in makeshift shelters <u>YES</u> on the plots of their totally destroyed house

TABLE 1: HOUSE TYPE, DIVISION AND PROVINCE- FIJI BUREAU OF STATISTICS POPULATION CENSUS 2007

WESTERN				NORTHERN			EASTERN	
Make	BA	Navosa/Nadroga	RA	BUA	MACUATA	CAKAYDROVE	KADAVU	TOTAL
Concrete	23041	5,362	1520	169	2262	1438	642	34434
Wood	7696	1443	967	898	7970	5394	875	25242
Tin/iron	17599	4771	3128	1729	4862	2523	667	35319
Bure materials	670	422	403	136	174	342	45	2192
Makeshift materials	291	115	88	30	90	133	3	752
other	167	101	78	32	141	79	2	600
	49,464	12,154	6,184	2,99 4	l 15,499	9 10,009	2,236	
Total		67,802			28,502	2	2,236	98,540



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FIJI SHELTER AND SETTLEMENT VULNERABILITIES- Contributing factors							
Vulnerability Factors District # Affected Vulnerability Factors District # Affected							
 FLOOD VULNERABILITY Location of settlements on floodplains Lack of awareness of flooding hazard Reduction of absorptive capacity of land (erosion, concrete) Unprotected livestock and food crops 			 CYCLONE VULNERABILITY Settlements located in low lying coastal areas (direct impact) Settlements located in adjacent areas (heavy rains, floods) Poor communications or warning systems 				
 EARTHQUAKE VULNERABILITY * Location of settlements in seismic fault lines * Lack of resilience of structures to seismic activity * Urban Density of structures and occupancy * Lack of access to information and preparedness activities for earthquakes 			 TSUNAMI VULNERABILITY Settlements located in low lying coastal regions Lack of tsunami resilient buildings poor timely warning systems lack of evacuation plans Lack of awareness of destructive forces of tsunamis 				
 LANDSLIDES VULNERABILITY Settlements built on steep slopes, at the foot of slopes and vulnerable locations Soil typography Poor communication infrastructure in mountainous areas Lack of understanding of landslide hazard 			 DROUGHT VULNERABILITY * Location where dry conditions are increased * Farming on marginal lands, subsistence farming * Lack of agricultural inputs to improve yields - Lack of seed reserves * Areas dependent on other weather systems for water resources * low soil moisture retention 				
Common contributing factors hazard vulnerabilities: * Impact on Livelihoods (Fishing boats and maritime industries) and economic activity * Risk damage to infrastructure * Lightweight structures, poor quality construction techniques, non-resilient buildings increase vulnerability and exposure for damage * Lack of information and adequate communication							

Information Gaps for Shelter risk profile:

Information on housing types: common structures and construction methods Shelter typologies

Seismic fault information in relation to districts and towns (map)