

1.1 Samoa Humanitarian Background

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Capacity and Contacts for In-Country Emergency Response

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Natural Disasters		
Type	Occurs	Comments / Details
Drought	Yes	In 1997 and 1998, lengthy droughts occurred, with one lasting over six weeks on Savai'i, extending over some 200 km ² . This caused massive fires, and destroyed 80% of food crops. A Level One meteorological drought was declared in 2015. Impacts of a meteorological drought include the likely failure of certain weed and grass species due to precipitation deficiency, reduced ground water recharge, reduced surface water flow and water availability, and the increase risk of forest and bush fires. Prolonged drought causes failure of water intakes in rural areas. A lack of adequate water trucks means water supply to these areas is limited. Private contractors' water trucks are used at significant cost. Crops fail and there are significant economic losses. The environmental impact is high as streams dry up, compounded by needing to take water from them to augment town supply. Villages suffer, as there is limited water storage.
Earthquakes	Yes	In 1917, a magnitude 8.5+ earthquake occurred some 200 km southwest of Samoa. A repeat of an event of this size is likely to generate peak ground accelerations of 0.1 to 0.2g and correspond with a local felt intensity of Modified Mercalli (MM) VII to VIII. This is likely to cause land sliding and damage to unreinforced buildings. A small tsunami may be generated (as it was for the 1917 event). No major infrastructure damage or loss of life is anticipated. Crops not affected (cf. tsunami or cyclone).
Epidemics	Yes (historic)	In 1918, approximately 8500 people (one-fifth of the population) died of influenza.
Extreme Temperatures	No	
Flooding	Yes	Flooding associated with cyclones and earthquakes (storm surges, tsunamis) has been a source of damage in recent years. Flooding due to other causes (in particular, heavy rainfall) was not a major concern in the past, but it is now occurring with increased frequency, presumably as a result of long-term changes in weather patterns.
Insect Infestation	Yes	Taro beetle causing Leaf Blight which seriously affects Samoa's staple crop, taro, placing domestic food supply and exports at risk. Eradication is difficult and expensive.
Mudslides	Yes (minor risk)	Landslides in Samoa are usually caused by heavy rainfall. Earthquakes can also trigger landslides. Landslide hazard zones and soil instability areas have been mapped for the whole of Samoa. If landslides occur, it is highly likely that major damage to infrastructure such as roads, water pipes, electricity, and communication would occur. They are unlikely to cause fatalities as most unstable areas are away from human settlements. There is a lot of quarrying activities which may cause soil instability in the future.
Volcanic Eruptions	No (but possible)	Explosive eruption on the east-west or north rift zones on Savai'i within the next 50 – 100 years is predicted. It is more likely that areas on the northern half of Savai'i will be more vulnerable to the consequent effects. Damage will be greatest on adjacent flora and fauna, infrastructure, tourism, subsistence agriculture and fisheries, and general property damage. The airport would be closed for prolonged periods (due to ash). No loss of life is anticipated. Some villages may have to be permanently relocated.
High Waves / Surges	No (but possible)	A tsunami with a mean run-up of between 7 and 9 metres has a return period of between 50 and 100 years based on a probability analysis of historical records. Significant damage to unprotected coastal areas will occur. Subsistence crop loss and damage to coastal infrastructure. Fishing industry affected. Significant property damage. Loss of life would be expected for both tsunami generated some distance away (e.g. Chile-Peru region) despite warning of approximately 13 hours, and more significantly for tsunami generated in the region (e.g. Tonga-Kermadec trench) as warning periods will be much shorter.
Wildfires	Yes	In drought situations. Large scrub fire threatening one or more villages. Unlikely to cause fatalities as it won't be that fast moving due to fuels being normally fairly moist. Loss of crops likely. Few structures affected. Fire service resources used to protect villages but no capability to fight fire in rural areas. Potential for it to get out of control, particularly on Savai'i
High Winds	Yes	Cyclones have been the worst external threat to Samoa. Since 1981, there have been over 15 major cyclones with wind speeds ranging from "gale force" (8 events) through "storm force" (2 events) to "hurricane force" (5 events). Three hurricanes (Ofa in 1990, Val in 1991, Heta in 2004) caused massive devastation. In addition to wind damage, cyclones have often resulted in tidal surges, which also caused serious damage. Cyclone Gita in 2018 caused extensive flooding, rivers burst their banks and houses were inundated. More than 200 people needed emergency shelter. . A state of disaster was declared.

Other Comments	<p>Sea level rise: The phenomenon of sea level rise is a long-term issue for Samoa, as virtually all dwelling and economic activity is located along the low-lying coastal belts of Upolu and Savai'i, where serious inundation is likely to happen as a result of any modest rise in the sea level. Related adverse impacts are the erosion of beaches, the destruction of coastal villages and farm land, and damage to coastal roads and other infrastructure. This effect has as yet had no measurable influence, but it is likely to cause socio-economic disturbances in the future.</p> <p>Other Comments: Samoa is exposed to a number of hazards, some of which are seasonal, such as tropical cyclones, floods and droughts, whilst other present an ever present threat, such as earthquakes, volcanic eruption, tsunamis, epidemics, industrial hazards, and exotic plant diseases.</p>	
Man-Made Issues		
Civil Strife	No	
International Conflict	No	
Internally Displaced Persons	No	
Refugees Present	No	
Landmines / UXO Present	No	
Other Comments		

For a more detailed database on disasters by country, please see the [Centre for Research on Epidemiology of Disasters Country Profile](#).

Seasonal Effects on Logistics Capacities

Seasonal Effects on Transport		
Transport Type	Time Frame	Comments / Details
Primary Road Transport	November - April	Paved and sealed road are generally OK through the wet season. Nevertheless, rains on the main roads could make driving a hazard. During the wet season, floods, flash floods and landslides may happen, resulting in roads, crossroads or bridges closures. Wet / cyclonic season last from November to April. Power lines running along road verges occasionally cause blockages when brought down by high winds.
Secondary Road Transport	November - April	The secondary roads network is often not in a perfect condition and may be quickly affected by rainfall, making them temporarily impassable. During the wet season, floods, flash floods and landslides may happen, resulting in roads, crossroads or bridges closures.
Rail Transport	N/A	
Air Transport	November - April	Generally reliable all year. Heavy rain falls / cyclones occasionally impact air transport operations, resulting in delays, flights cancellations and temporary airports/airstrips closures. The secondary airstrips may be unusable at times during the wet season.
Waterway Transport	November - April	Interislands waterways transport may be affected during the wet / cyclonic seasons. Main Port of Apia is affected by swells (Oct. – March) resulting in delays to berthing and unloading.

There are generally no seasonal constraints or pinch points. Heavy rainfall and high winds during the cyclonic season are the likely issues.

Seasonal Effects on Storage and Handling
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Activity Type	Time Frame	Comments / Details
Storage	November - April	During the wet / cyclonic seasons, days of torrential rain may flood roads, cut power and water supplies, closing accesses to transport and storage infrastructures, impacting handling / packaging operations and making access of manpower problematic. Nevertheless, it is very difficult to forecast and anticipate those constraints.
Handling	November - April	As above
Other		<p>During the wet / cyclonic seasons, days of torrential rain may flood rivers, bridges and roads, cut power and water supplies, closing accesses to villages or even small towns and triggering a state of emergency.</p> <ul style="list-style-type: none"> • Bridges and crossings may be closed. • Authorities regularly issue safety warnings or authorize access to roads networks only to 4-wheels drives. • During torrential rain events, there are real risk of flash floods throughout low-lying areas of Samoa, making all land movements hazardous. • Coastal areas and roads are increasingly dangerous during the wet season. <p>There are no other seasonal affects than the weather related ones .</p>

Capacity and Contacts for In-Country Emergency Response

GOVERNMENT

The Government has been proactive in working toward a coordinated emergency management programme involving all response agencies to deal with emergencies and disasters. It has emergency response plans in place to deal with rapid onset disasters. The Ministry for Natural Resources and Environment (MNRE) has oversight for The National Disaster Management Office (NDMO), which works with National Emergency Services and Response Agencies such as Police, Fire and Ambulance in addition to humanitarian agencies including United Nations organisations and other NGO's to increase the capacity and capability of the country to respond and recover from disasters.

Government organisations also coordinate with NZ and Australian Military Forces through the NDMO if their assistance is required. National organisations have monthly coordination meetings and at least bi-annually conduct national response exercises.

For more information on government contact details, please see the following link: [4.1 Government Contact List](#)

HUMANITARIAN COMMUNITY

There are a number of humanitarian organisations present; Red Cross, Adventist Disaster Relief Association, Caritas, and the UN agencies; UNICEF, WHO, FAO.

Their activities are coordinated through the NDMO.

For more information on humanitarian agency contact details, please see the following link: [4.2 Humanitarian Agency Contact List](#)