



Government of Samoa

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

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2ND MEDIA RELEASE

DECLARATION OF METEOROLOGICAL DROUGHT

A Meteorological Drought is now in effect for Samoa.

Over the course of the last three months, the Samoa Climate Early Warning System (CLEWS) managed by the Samoa Meteorological Division has recorded below 'normal' rainfall in some areas of the country, while other areas mainly to the southern sector of the islands received 'average or normal' rainfall.

The 'dryness' phenomenon covers about 60 % of the country and is mainly to the north. Indicators now show that the rainfall deficiencies in these areas have reached the threshold of a **meteorological drought**.

The north and central region of Upolu Island, from Saoluafata to Apia and Vaimoso to Mulifanua, Manono and Apolima islands and eastern region of Savaii Island from Maota to Tuasivi, Puapua to Falelima are now **declared** to be under a Meteorological Drought. This is based upon assessment of the monthly rainfall climate observational data.

Other areas that includes the south (Safata and Siumu), south east of Upolu Island (Falealili and Aleipata) and south of Savaii (Palauli to Salailua) are still classified 'average' or above average rainfall. However, they are more prone to extended dry conditions, if the current event continues they may experience similar drought conditions.

The impacts of a **meteorological drought** include; likely temporary growth failure of certain weed and grass species due to precipitation deficiency, reduced ground water recharge, reduced surface water flow and water availability, increase risk of forest and bush fires, increased surface dryness such as dusty conditions due to increased evaporation and transpiration, greater sunshine exposure due to less cloud cover. (Refer to Table 1 for detail)

Therefore, the public is advised to conserve, store and manage water in a sustainable manner, and reduce water usage and wastage. It is also highly recommended for the public to refrain from open burning of rubbish in grassy or forest areas.

Agencies and authorities are also requested to take precautionary measures to minimise the potential impacts of this current ENSO phenomenon.

A *Meteorological Drought* is the first of the four levels of drought severity. It is defined on the basis of the degree of dryness, in comparison to “normal” or average levels, over the duration of a dry period which in this case is three consecutive months. The continuous low rainfall over the northern areas of the country is associated with the current dry season, compounded by the current phase of the El Nino Southern Oscillation.

The consensus scientific view point is that the current El Nino 2015-16 will reach a strong to severe El Nino event in the coming months similar to the El Nino event back in 1997/98.

As stated by the Samoa Meteorology Division, “the atmosphere and ocean are fully coupled as indicated by the sea surface temperature (SST) and the southern oscillation index (SOI) well into El Nino thresholds which is fuelled by the substantial warming of the sub-surface ocean in the eastern equatorial region”.

Regular updates will be made available on the Samoa Meteorology Division website - www.samet.gov.ws or our facebook page www.facebook.com/SamoaMeteorologicalServices .

For further information pertaining to the above please contact Mulipola Ausetalia Titimaea, Assistant CEO , Meteorology Division, Ministry of Natural Resources and Environment on telephone +685 20855.

Additional information: Impacts related to El Nino event, Rainfall data and Drought Assessment of Samoa and the Four types of Droughts

Table 1: Impacts related to El Nino event.

IMPACTS	OBSERVATIONS
<ul style="list-style-type: none"> - Greater sunshine exposure due to less cloud cover thus, temporary growth failure of certain weed and grass species due to precipitation deficiency - Increase surface dryness such as dusty conditions due to increased evaporation and transpiration 	<p>The most critical areas observed span from Maota to Tuasivi, Pu’apu’a to Falelima in the north western parts of Savaii. The north and central region of Upolu, from Mulifanua to Apia and Matautu to Saoluafata, are also affected.</p>
<p>Higher than normal temperatures</p>	<p>August 25th recorded the highest maximum temperature from most climate station ranging from 30.5^oC - 32.5^oC. The highest max registered at Alafua was 33.2^oC.</p>
<p>Lowest minimum temperatures</p>	<p>September 7th recorded the lowest minimum temperature across Samoa. Afiamalu recorded the lowest of 8.6^oC whereas other stations vary from 14^o - 16^oC.</p>
<p>Increase risk of forest and bush fires</p>	<p>A number of bush fires were reported recently from Samalaeulu, Tafaigata and Solosolo mainly started off due to careless acts. Dryness of the environment and windy conditions have extended it to other vulnerable areas.</p>
<ul style="list-style-type: none"> - Reduced ground water recharge - Reduced surface water flow and water availability 	<p>Samoa Water Authority has implemented water rationing in some areas of the country due to reduced water availability at the reservoirs.</p>

Figure 1: Rainfall Status in August 2015.

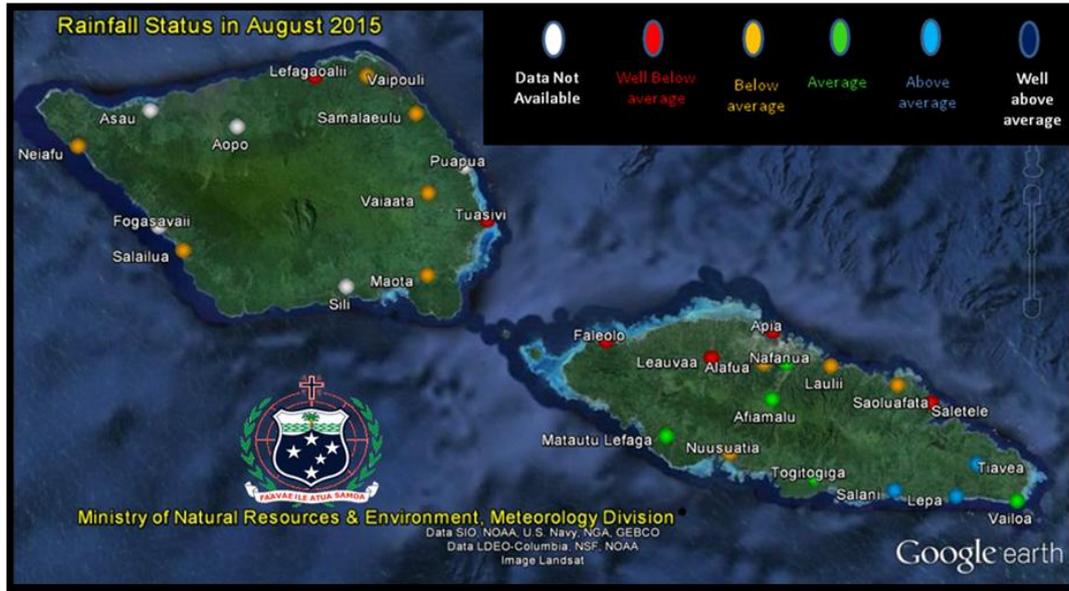
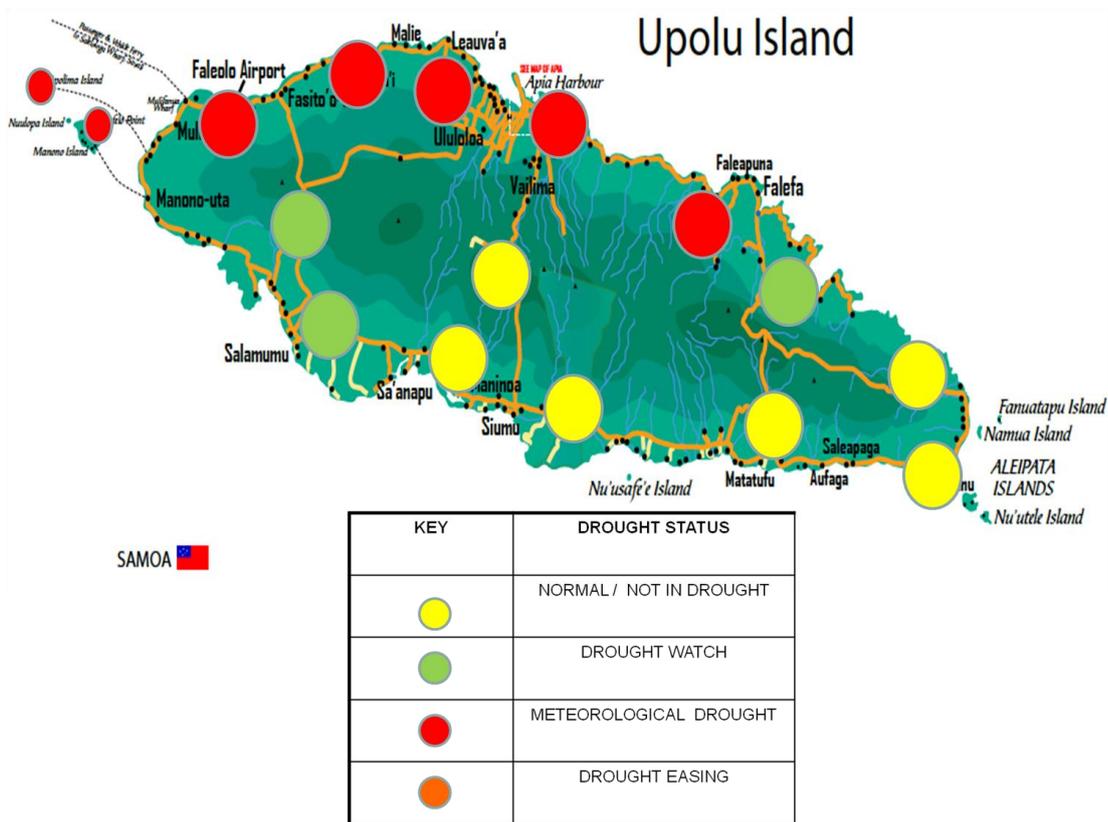
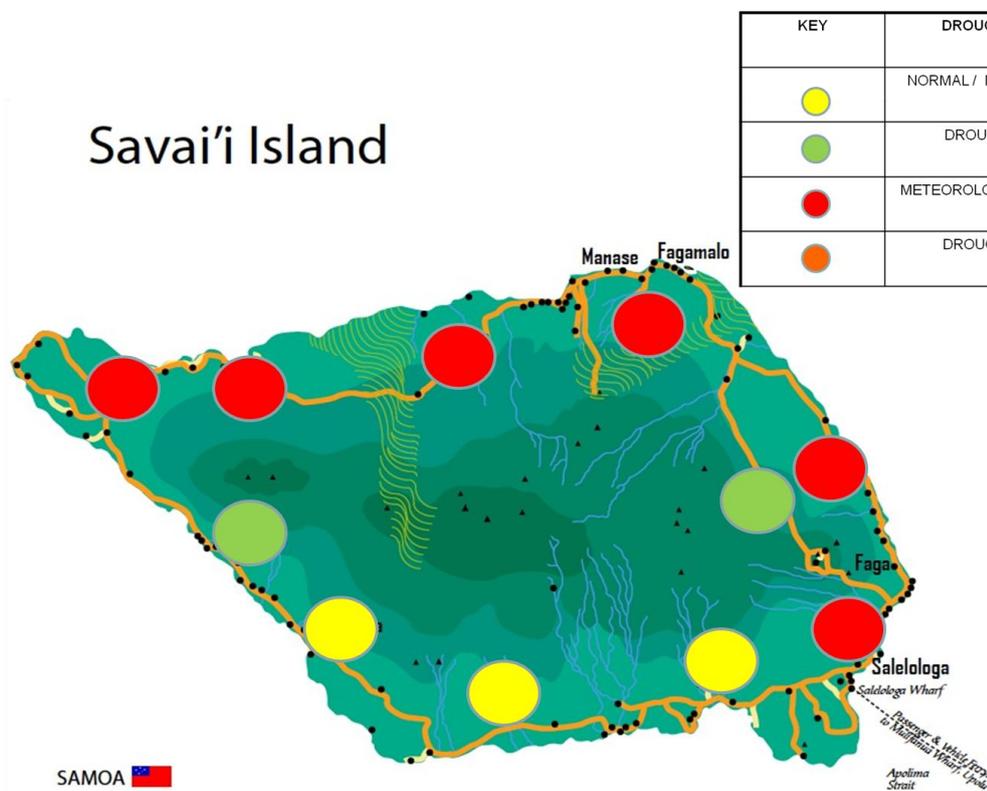


Figure 2: Drought assessment for Samoa - September 2015.



Savai'i Island



The Four types of Droughts:

Meteorological drought

This is defined usually on the basis of the degree of dryness, below “normal” or average amount for the consecutive 3 months. Meteorological drought is the first of four levels of severity or definitions. The more severe drought definitions are Agricultural Drought, Hydrological Drought and Socio-economic Drought.

Agricultural Drought

An Agricultural drought links various characteristics of meteorological, or hydrological, drought to agricultural impacts, focusing on precipitation shortages, differences between actual and potential evapotranspiration, soil water deficits, reduced groundwater or reservoir levels, and so forth.

Hydrological Drought

Hydrological drought is associated with the effects of periods of precipitation shortfalls on surface or subsurface water supply such as stream flow, reservoir and lake levels, groundwater. The frequency and severity of a hydrological drought is often defined on a watershed or river basin scale. Although all droughts originate with a deficiency of precipitation, hydrologists are more concerned with how this deficiency plays out through the hydrologic system. Hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural droughts. It takes longer for precipitation deficiencies to show up in components of the hydrological system such as soil moisture, stream flow, and groundwater and reservoir levels. As a result, these impacts are out of phase with impacts in other economic sectors.

Socioeconomic Drought

Socioeconomic definitions of drought associate the supply and demand of some economic good with elements of meteorological, hydrological, and agricultural drought. It differs from the aforementioned types of drought because its occurrence depends on the time and space processes of supply and demand to identify or classify droughts. The supply of many economic goods, such as water, forage, food grains, fish, and hydroelectric power, depends on weather. Because of the natural variability of climate, water supply is ample in some years but unable to meet human and environmental needs in other years. Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related shortfall in water supply.