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2015–2016 Tropical Cyclone Season Outlook for Tonga

Summary

The tropical cyclone (TC) activity expected in the 2015/16 TC Season to affect Tonga is likely to be higher than average. This means that Tonga could expect 2 to 3 cyclones this season with a high chance that 1 of them could be Severe (Category 3 and above classified a Severe Tropical Cyclone).

Historically, records show that in years where atmospheric and ocean conditions were similar to the beginning of this year's cyclone season (similar to 1972/73, 1982/83, 1986/87 and 1997/98), Tonga experienced above average tropical cyclone activity. At the same time a few of these cyclones were Severe Cyclones. Severe Cyclones that have occurred during those cyclone seasons included:

1972/73

- (a) Severe Tropical Cyclone "**Bebe**" – South Tonga Waters ('Ata) (19-28 Oct 1972)
- (b) Severe Tropical Cyclone "**Eleanor**" – Niuatoputapu (31 Jan to 07 Feb 1973)
- (c) Severe Tropical Cyclone "**Julliette**" – Ha'apai (03-04 Apr 1973)

1997/98

- (a) Severe Tropical Cyclone "**Ron**" – Niuafo'ou (01-08 Jan 1998)

These Severe Tropical Cyclones wreaked havoc, damaged property and in one case (**TC Julliette**) caused loss of life.

Analysis

The official 2015/16 TC Season will begin on 1st of November 2015, and will end on 30th April, 2016. It should be noted that tropical cyclones have occasionally formed outside this period e.g. Tropical Cyclone "Keli" which affected Northern Tonga in June 1997. The peak time for the occurrence of tropical cyclones in Tonga is from January to March with most events occurring in February.

Assessments of the current El Nino Southern Oscillation (ENSO) indicate that Strong El Nino conditions currently prevail in the Pacific Ocean and global models suggest the El Nino is likely to persist into the first half of 2016. Tongan temperature and rainfall patterns in the last 4 to 6 months have been El Nino like with drought conditions starting to affect some islands. The outlook for the next 6 months is for drier than normal conditions.

Traditional knowledge indicates that when drought conditions are experience ahead of the cyclone season, enhanced tropical cyclone activity is usually expected in the upcoming cyclone season. On record, about 1.88 cyclones affect Tonga during El Nino, 1.63 during La Nina and 1.64 during neutral years.

The current atmospheric and ocean conditions prevailing over the South West Pacific indicate similar characteristics to 4 tropical cyclone seasons recorded in the past (refer Table 1). The average data for these years indicates that the chance of a tropical cyclone occurring in Tonga this season is high (at least 2). It is also evident that during these years, 1 out of every 2 cyclones was Severe. It is also useful to note that during the past similarity years, there were some years that was cyclone free i.e. 1982/83 and 1986/87. This is an indication that each El Nino is not exactly the same as the other and there is no guarantee Tonga will be affected by a Tropical Cyclone this season.

Similar seasons to 2015/16	No. of cyclones that occurred in the South Pacific	No. that hit Tonga	No. that hit Tonga that were Severe (>Cat3)
1972/73	8	5	3 (Tropical Cyclone " ELEANOR ") (Tropical Cyclone " JULIETTE ") (Tropical Cyclone " BEBE ")
1982/83	14	0	0
1986/87	12	0	0
1997/98	16	1	1 (Tropical Cyclone " RON ")
Average	12	2	1

Table 1: The pre-cyclone season atmosphere and ocean conditions for 2015/16 is similar to 4 seasons in the past (1972/73, 1982/83, 1986/87 and 1997/98)

About 10 to 14 Tropical Cyclone's are expected to form this season in the South Pacific (From the Equator to 25°S and from 160°E to 120°W). Most of the systems are expected to form around the Dateline between 5° and 15° South (near Tonga). Subsequently, tracks of Cyclones likely to affect Tonga this season are likely to be from the Northwest to North direction of the Island chain. For tropical cyclones passing close to the Country, associated active cloud and rain bands may bring heavy rain and squally conditions with possible flooding and sea flooding of low-lying coastal areas. It should also be noted that tropical depressions (low pressure systems not reaching Cyclone intensity) have caused loss of life and property in the past. It is therefore critical that all communities in Tonga take heed of the warnings and alerts and act responsibly, to minimise loss.

Use of this Information

The information given here should be used for guidance only and not to be used for making decisions that would affect safety or put lives at risk. It is a 6 months outlook for the season and will contain some variances as atmosphere and ocean conditions change. Use this information as long range guidance but respond to specific cyclone events as they occur during the season.

The likely number and intensity of tropical cyclones given here is indicative only and based on past statistics. It is expected that the total number and intensity of cyclones will be in the vicinity of this forecast and not necessarily within the given range.

Make it a rule to check the weather forecast at least once a day this Cyclone Season!

Contact & Further information

For further information contact the Meteorology Division of the Ministry of Environment, Energy, Climate Change, Disaster Management, Meteorology, Information and Communications at Telephone 35355 or Email *metstaff@met.gov.to*. More information is also available at www.met.gov.to

Issued by:

Director
Tonga Meteorological Services
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VA'A VAKAI MATANGI

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Fakafuofua ki he fa'ahi ta'u Afā 2015–2016 ma'ae 'Otu Tonga

To'o konga lalahi

'Oku fakafuofua ko e lahi 'o e ngaahi matangi fakatalopiki mo e ngaahi Afā te ne 'ala uesia 'a e 'otu motu 'o Tonga ni 'i he fa'ahi ta'u 2015/16 'e ma'olunga ange 'i he 'avalisi angamaheni. 'Oku 'uhinga eni 'e lava ke uesia 'a Tonga 'e ha Saikolone fakatalopiki 'e 2 ki he 3 'i he fa'ahi ta'u afā ko'eni pea ko e taha ai 'e malava ke hoko ko e afā malohi (pe afā Kalasi 3 ki he 5).

'I he fakahoa koia 'o e ngaahi lekooti afā 'i he kuohili mo e tu'unga lolotonga 'o e mafana 'o e 'ea mo e 'oseni, 'oku meimei tatau 'a e tu'unga lolotonga mo e kamata 'o e fa'ahita'u afā 'e 4 'i he kuohili 'a ia ne lekooti ai ha ngaahi matangi 'oku laka hake hono fika 'i he 'avalisi anga maheni. Ko e ngaahi ta'u ko'eni 'oku kau kiai 'a e 1972/73, 1982/83, 1986/87 mo e 1997/98. Ne 'i ai mo e ngaahi afā lalahi ne tō he ngaahi ta'u koia:

1972/73

- (a) Afā Malohi ko **"Bebe"** – Potu tahi fakatonga ('Ata) (19-28 'Okatopa 1972)
- (b) Afā Malohi ko **"Eleanor"** – Niuatoputapu (31 Sanuali - 07 Fepueli 1973)
- (c) Afā Malohi ko **"Julliette"** – Ha'apai (03-04 'Epeleli 1973)

1997/98

- (a) Afā Malohi ko **"Ron"** – Niuafu'ou (01-08 Sanuali 1998)

Ko e ngaahi Matangi malohi koia ne hoko ai e maumau lahi pea 'i ai mo e mo'ui ne mole (TC Julliette).

Fakaikiiki

Ko e fa'ahi ta'u afā faka'ofisiale 'o e 2015/16 'oku kamata ia 'i he 'aho 1 Nōvema 2015 pea 'e ngata ki he 30 'Epeleli 2016. 'Oku totonu pe ke fakatokanga'i 'oku kei malava pe 'a e ngaahi saikolone fakatalopiki 'o hoko 'i tu'a 'i he fa'ahi ta'u afā hange koia na'e hoko 'i Sune 1997 'i he Saikolone Fakatalopiki ko "Keli" 'a ia na'a ne uesia 'a e ngaahi motu ki he tokelau 'o e 'Otu Tonga (Vava'u mo e Ongo Niua). Ko e vaha'a taimi 'oku lahi taha ai e hoko 'a e ngaahi afā ko Sanuali ki Ma'asi. Pea ko e mahina 'oku lahi taha ai e hoko 'a e ngaahi matangi ko Fēpueli.

'I hono fakama'opo'opo e tu'unga 'o e 'ea 'i he a'u mai ki 'Okatopa 2015 'oku mahino 'oku lolotonga 'i ai 'e fa'ahi ta'u El Nino malohi 'oku ne lolotonga uesia 'a e Pasifiki pea 'e malava ke a'u ki Sune 2016 'a e uesia 'a e fa'ahita'u El Nino ko'eni. Ku o kamata ke ha mai 'a e nunu'a 'o e El Nino ko e la'ala'a ke ngaahi 'otu motu 'e ni'ihii. 'Oku angamaheni ko e ngaahi ta'u la'ala'a ko e faka'ilonga fakanatula pe ia 'e malava ke hoko ha ngaahi matangi. 'Oku fenapasi pe eni mo e tu'u fakasaenisi. 'I he tu'u 'a e lekooti 'oku lahi taha 'a e hoko e ngaahi matangi 'i Tonga ni 'i he fa'ahi ta'u El Nino. Ko e El Nino lolotonga 'e malava ke hoko ai ha la'ala'a 'i he mahina 'e 6 ka hoko. 'I he tu'u 'a e lekooti ko e afā 'e 1.88 'oku ne uesia 'a Tonga 'i he ta'u El Nino, 1.63 'i he ta'u La Nina pea 1.64 'i he ngaahi ta'u anga maheni.

Ko e tu'unga lolotonga 'o e 'ea pea mo e tahi 'i he Pasifiki 'oku meimei ke fai tatau mo e kamata 'o e fa'ahi ta'u afā 'e 4 'i he kuo hili (vakai ki he Tepile 1). Ko e 'avalisi 'o e lahi e ngaahi matangi ne tō 'i he ngaahi ta'u ko'eni 'oku ma'olunga (Afā 'e 2). 'Oku 'aonga pe foki ke tokanga'i ko e afā 'e 1 taha 'i he afā 2 kotoa pe lolotonga 'a e ngaahi ta'u koia ko e afā malohi. 'Oku totonu foki ke tau toe fakatokanga'i ne 'iai pe mo e ngaahi ta'u ne 'ikai hoko ai ha matangi hange ko e fa'ahi ta'u afā 'o e 1982/83 mo e 1986/87. 'Oku mahino heni, ko e El Nino kotoa pe 'oku kehe hono natula.

Fa'ahi ta'u afā 'i he kuohili 'oku meimei fai tatau mo e 2015/16	Lahi 'o e ngaahi Afā ne hoko he Pasifiki Suata	Ngaahi Afā ne uesia ai ha konga 'o Tonga	Lahi 'o e ngaahi Afā ne hoko 'i Tonga ne a'u 'o Afā mālohi (>Kalasi 3)
1972/73	8	5	3 (Afā Mālohi ko "ELEANOR") (Afā Mālohi ko "JULLETTE") (Afā Mālohi ko "BEBE")
1982/83	14	0	0
1986/87	12	0	0
1997/98	16	1	1 (Afā Mālohi ko "RON")
'Avalisi	12	2	1

Tepile 1: Ko e tu'unga lolotonga 'o e 'ea pea mo e tahi 'i he Pasifiki 'oku meimei ke fai tatau mo e kamata 'o e fa'ahi ta'u afā 'e 4 'i he kuo hili (1972/73, 1982/83, 1986/87, 1997/98)

'Oku fakafuofua ko e Afā 'e 10 ki he 14 'e ala ke ne uesia e ngaahi fonua 'o e Pasifiki Tonga 'i he fa'ahi ta'u afā 2015/2016 ('Elia mei he 'ekueta kihe 25°S pea mei he 160°E ki he 120°W). Ko e lahi taha e ngaahi matangi ngalingali 'e fa'ufa'u 'i he latitude 5° ki he 15° Fakatonga ofi he 'elia 'o Fisi, Ha'amoā pea mo Tonga. 'Oku 'iai 'a e tui 'e lahi mo e ngaahi 'alotamaki 'e hoko 'aia 'oku fiema'u ke fai ha tokanga mavahe kiai ke fakasi'isi'i 'a e mole 'a e koloa mo e mo'ui 'aia kuo hoko 'i he kuo hili.

Fakapapau'i 'oku ke ma'u 'a e fakamatala'ea tu'o taha 'i he 'aho 'i he fa'ahi ta'u afā 2015/16!

Anga hono ngaue'aki 'a e fakamatala ko'eni

Ko e fakamatala ko'eni ko e fakafuofua 'i he mahina 'e 6 kimu'a pea 'oku fiema'u ke ngaue'aki fakapotopoto ko e fakafuofuo kihe me'a 'e ala hoko he faha'i ta'u afā ko'eni he 'e 'iai pe 'a e ngaahi liliu ia he anga e tu'u 'a e 'ea he lolotonga e fa'ahi ta'u afā 'e kehe mei he fakamatala 'oku 'oatu ko'eni.

'Oku mahau'inga kihe tokotaha kotoa ke ne ma'u 'a e fakamatala'ea tu'o taha he 'aho lolotonga e fa'ahi ta'u afā 'o e ta'u ni ke ma'u ai 'a e fakamatala tonu taha he taimi 'e hoko ai ha matangi.

Fetu'utaki & Faka'eke'eke

Ki ha to e fakaikiiki, kataki fetu'utaki ki he Va'a Vakai Matangi 'o e Potungaue 'Atakai, Ma'u'anga Ivi, Feliliuaki e 'Ea, Ngaahi Fakatamaki Fakaenatula, Fakamatala'ea, Ma'u'anga Fakamatala mo e Fetu'utaki he Telefoni ko e 35 355 pe 'imeili ki he metstaff@met.gov.to pe vakai kihe uepisaiti www.met.gov.to