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NUKU'ALOFA, TONGA

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## 2019–2020 Tropical Cyclone Season Outlook for Tonga (17 October 2019)

### Summary

The tropical cyclone (TC) activity expected in the 2019/20 Tropical Cyclone Season to affect Tonga is likely to be around average (1 to 2 cyclones on average). Historical records indicate that Tonga could expect at least 1 cyclone and at most 4 cyclones to occur with a high chance (85%) of at least 1 severe tropical cyclone occurring.

Any tropical cyclones passing close to the country, associated active cloud and rain bands may occasionally affect Tonga with marked rainfall and possible flooding, including sea flooding of low-lying coastal areas.

Tropical cyclones affecting Tonga in the 2019/2020 season should expect to be mostly coming from the NW (Fiji Area – 42%), West (29%), NE (Samoa Area – 16%), North (Wallis/Futuna – 13%).

About 5 to 8 named Tropical Cyclones are expected for the South West Pacific (Fiji Area of Responsibility) in 2019/2020 season with 2 to 4 reaching severe intensity (Category 3 to 5).

Current dynamics indicate the first tropical cyclone activity for the season in the South West Pacific could be around the beginning to mid-December 2019.

### Analysis and Outlook for Tonga

The official 2019/20 TC Season will begin on 01 November 2019, and will end on 30 April, 2020. 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.

International forecast guidance in the last few months indicate the El Niño–Southern Oscillation (ENSO) is currently neutral—neither El Niño nor La Niña. The tropical Pacific Ocean is expected to remain in an ENSO-neutral phase throughout the 2019/2020 Cyclone Season.

Cyclones that have affected Tonga in the past where current and forecast conditions are similar to the 2019/20 Cyclone Season are indicated in Table 1.

<b>Cyclone Season</b>	<b>No. of Tropical Cyclone</b>	<b>No. of Severe Tropical Cyclone</b>
1978-79	3	1
1980-81	3	0
1981-82	1	1
1989-90	2	1
1990-91	1	1
1992-93	4	1
1993-94	1	1
1996-97	3	1
2001-02	1	1
2003-04	1	1
2012-13	1	0
2013-14	2	1
<b>Average</b>	<b>1.92</b>	<b>0.83</b>

Table 1: Current sea surface temperatures patterns indicate the 2019/20 Tropical Cyclone season is expected to be similar to 12 other seasons in the past (1978/79, 1980/81, 1981/82, 1989/90, 1990/91, 1992/93, 1993/94, 1996/97, 2001/02, 2003/04, 2012/13, 2013/14).

## **Likely Sector Impacts during the 2019/20 Season**

### **1. Agriculture**

There is an elevated risk that the agriculture sector will be affected. Particularly crops prone to high winds e.g. Banana, Papaya, Breadfruit and lower than normal summer rainfall e.g. Kava, Taro and Vegetables. Seek advice from MAFFF.

### **2. Water**

Water shortages during the could be experienced in areas dependent on rain water harvesting but risk of extensive meteorological drought occurring is considered low. Smaller islands that rely on rain water should use water wisely.

### **3. Health**

Higher risk of water contamination related diseases occurring due to the higher risk of a severe cyclone occurring.

### **4. Infrastructure**

High risk of damage to poorly constructed homes due to increased likelihood of a Severe Cyclone.

## **5. Tourism**

Moderate to high risk for Tourism activities due to higher chance of a severe cyclone happening.

## **6. Fisheries**

Tuna catches should be normal due to neutral ENSO conditions. Expect low to moderate coral bleaching or algae blooms associated with changes in sea surface temperature which could expose inshore fisher folk.

## **7. Utilities**

Moderate to High risk to Communications, Water and Power utilities expected.

## **8. Transport**

Moderate risk of above than normal cancellations to ferry and aircraft operations due to tropical cyclone activity.

### **Note of caution**

It should be noted that the information provided is only to be used as guidance and the given range of tropical cyclone numbers is indicative only. It is expected that the total number of tropical cyclones could be in the vicinity of the listed values, and not necessarily within the given range. The values are the most likely number of tropical cyclones based on statistical and scientific evidence, including the influences by regional and global weather and climate variability drivers and indices.

All communities should remain alert and prepared throughout the 2019/20 Tropical Cyclone Season and take heed of tropical cyclone alerts, warnings and advisories seriously whenever it is issued to reduce the effects on life and property. All communities are urged to be vigilant and follow forecast information provided by the Meteorology Department of the Ministry of MEIDECC throughout the season.

An update to this outlook will be issued around the end of January 2020.

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