



Media Release

26 October 2020

## National Statement on Climate and Tropical Cyclone Seasonal Outlook for 2020/2021

- Vanuatu to have at least 2 to 4 Named Tropical Cyclones.
- La Niña Likely to continue through TC Season 2020/2021

### Key Messages

1. At least **2 to 4** named tropical cyclones will pass in the Vanuatu's tropical cyclone area of responsibility (**Fig 1**) this tropical cyclone season, from 1<sup>st</sup> November 2020 to 30<sup>th</sup> April 2021.
2. The cyclone risk for Vanuatu for the upcoming cyclone season 2020/2021, compared to all other cyclone seasons (all cyclone seasons) is **“normal to normal -elevated risk”**.
3. Historically, the peak Tropical Cyclone season for Vanuatu is usually from **January to March**. On Average, Vanuatu receives about 2 to 3 cyclones every year.
4. The official tropical cyclone season for Vanuatu is from 1st November to 30th April. However, Vanuatu has experienced cyclones forming outside this period (E.g. TC Liua in Sept of 2018 and TC Donna May 2017). All communities shall remain vigilant and well prepared.
5. With the current La Niña Conditions, Vanuatu will expect **wetter than average** conditions for much of the country for the next **3 to 6** months.

### Vanuatu Tropical Cyclone Seasonal Outlook

At least **2 to 4** named tropical cyclones will pass in Vanuatu Area of Responsibility this 2020/2021 tropical cyclone season. The cyclone risk for Vanuatu for the upcoming cyclone season 2020/2021, compared to all other cyclone seasons (all cyclone seasons) is **“normal to normal - elevated risk”**.

Vanuatu and New Caledonia typically experience the greatest activity, with an average of about 2 or 3 tropical cyclones passing close to the islands each year<sup>1</sup>. In general, a likelihood of reduced activity during the early season (from November to December 2019) and increased activity during the late season (from January to March 2021). This upcoming cyclone season is expected to emulate past cyclone seasons that are similar background climate conditions to the present (2020/2021). Five identical cyclone seasons (analogue cyclone seasons) have been identified; and this outlook is based on statistical analysis of these analogue seasons. The analogue seasons include cyclones season **1970/71; 1995/96; 2005/06; 2007/08** and **2017/18**. Even though tropical cyclone activity is expected to be average to slightly above average risk this cyclone season, potentially at least one or two cyclones may reach category 3 status. The historical analysis of analogue cyclone seasons identical to the upcoming cyclone season suggest occurrence of a Category 4 or 5 is low; however, the occurrence of those types of storm systems have occurred in the past and cannot be ruled out.

### Climate Conditions for November 2020 to April 2021.

La Niña conditions likely to continue through wet season. Warmer than average Sea Surface Temperature (SSTs) are forecasted for the waters of Vanuatu. Above normal rainfall is forecasted for Vanuatu for the next 3 to 6 months. A southward displacement of the South Pacific Convergence Zone (SPCZ or **Kload Nasara**) is typically observed during La Niña and the model guidance is supportive of this shift. The predicted SST and rainfall distribution suggest a more active SPCZ than normal is possible from near the Solomon Islands, northern Vanuatu to Fiji. Increased frequency and more intense TC activity can be expected during the Madden Julian Oscillation<sup>2</sup> (MJO) in the Southwest Pacific as well .

Mean sea level pressure (MSLP) is forecast to be below normal from Papua New Guinea to the Gulf of Carpentaria, across the Coral Sea region, near New Caledonia and Vanuatu, and southward toward northern New Zealand, consistent with La Niña conditions. Past research on TC research has indicated tropical cyclone track sinuosity reduces during La Niña<sup>3</sup>. This means that some tropical cyclone tracks for the coming season, if La Niña fully matures, may have straighter trajectories than normal.

### Potential impacts

Tropical cyclones affecting any islands of Vanuatu will bring significant rainfall, extreme damaging winds, hazardous marine conditions and coastal damages that are possible. With current La Niña condition, landslide, flooding including flash flooding and mudflow are expected over larger islands of Vanuatu.

These events can cause a great deal of damage to properties and human lives. Past experiences have shown that the impact of La Niña and Tropical cyclones are detrimental to social and economic lives of Vanuatu. Therefore, all communities should remain alert and well-prepared

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<sup>1</sup> Climate Change in the Pacific: Scientific Assessment and New Research. Volume 1: Regional Overview. Volume 2: Country Reports

<sup>2</sup> Diamond, H.J., A.M. Lorrey, and J.A. Renwick, 2013. A Southwest Pacific tropical cyclone climatology and linkages to the El Niño–Southern Oscillation. *Journal of Climate*, **26** (1): 3-25. doi:10.1175/JCLI-D-12-00077.1.

<sup>3</sup> Malsale, P. 2011. Analysis of tropical cyclone track sinuosity in the South Pacific region using ARCGIS. Unpublished MSc Thesis, University of the South Pacific, 155 Pages.

for La Niña and potential severe tropical cyclone events. Communities should be vigilant, weather-ready and take all necessary precautionary measures; and follow forecast updates provided by Vanuatu Meteorology and Geo-Hazards Department (VMGD).

## Tropical Cyclone and ENSO Updates

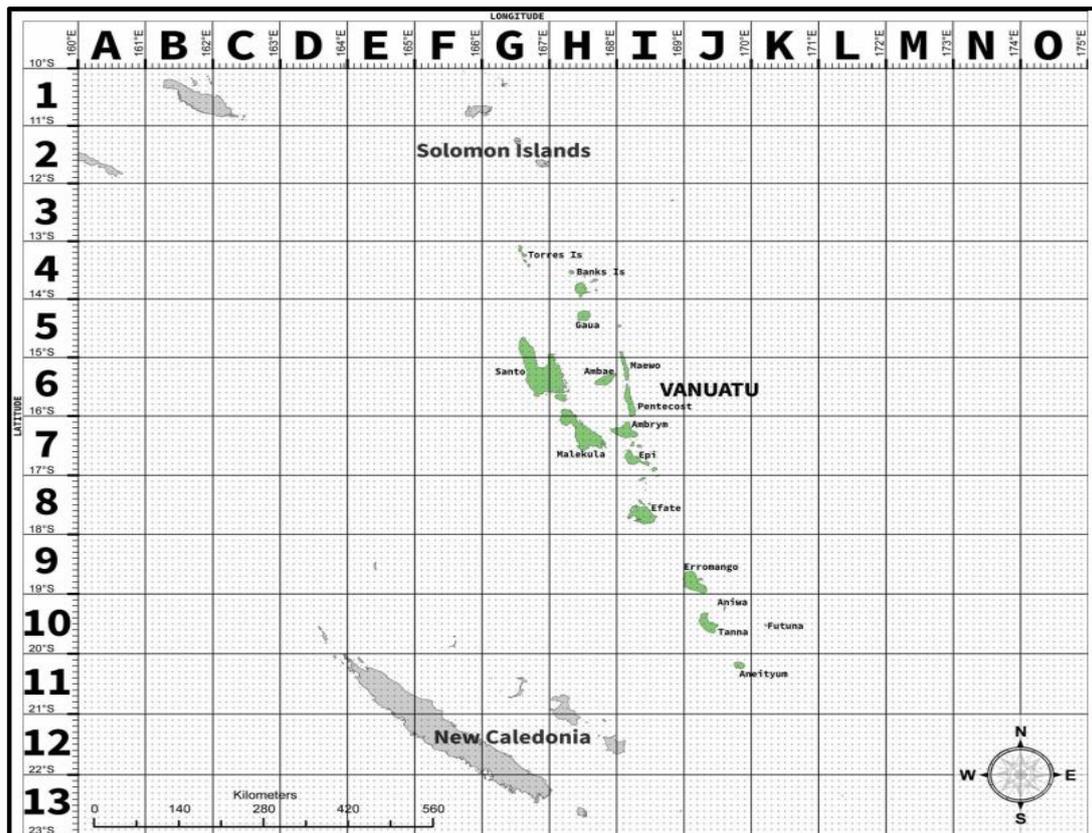
VMGD will continue to monitor the progress of El Niño Southern Oscillation (ENSO) and tropical cyclone (TC) activity, if the La Niña conditions change over the coming months then the tropical cyclone outlook will be updated.

**Note:** Studies have shown that Traditional Knowledge (Local Knowledge) based on behaviour of certain Fauna (animals) and Flora (plants) can be used as indicator for immediate onset of developing or approaching tropical cyclone in some islands of Vanuatu.

### For more Information:

Mr. Allan Rarai, **Acting Director**, Vanuatu Meteorology and Geo-Hazards Department (VMGD)

**Figure 1:** Vanuatu Tropical Cyclone Area of Responsibilities (10° - 23° South and 160° -175° East)



(To contact VMGD Divisions directly)

<b>Observations:</b>	Ph: 22433   Email: <a href="mailto:observers@meteo.gov.vu">observers@meteo.gov.vu</a>	<b>Climate:</b>	Ph: 23866   Email: <a href="mailto:climate@meteo.gov.vu">climate@meteo.gov.vu</a>
<b>Forecast:</b>	Ph: 22932   Email: <a href="mailto:forecast@meteo.gov.vu">forecast@meteo.gov.vu</a>	<b>Geo-Hazards:</b>	Ph: 24686   Email: <a href="mailto:geohazards@meteo.gov.vu">geohazards@meteo.gov.vu</a>
<b>Climate Change:</b>	Ph: 22331   Email: <a href="mailto:pccap@vanuatu.com.vu">pccap@vanuatu.com.vu</a>	<b>ICT and Engineering:</b>	Ph: 24686   Email: <a href="mailto:helpdesk@meteo.gov.vu">helpdesk@meteo.gov.vu</a>