

This analysis looks at the two most recent cyclones TC Ana (January 2021) and TC Yasa (December 2020) and visualizes the impacted areas based on two indicators - rainfall and wind speed. The analysis uses globally available datasets from reputable sources such as Global Disaster Alert Coordinating system (GDACs) to analyze patterns and geographically represent the areas that have been impacted by TC Ana and TC Yasa. It is important to note these visualizations should not replace locally available datasets on cyclones and rainfall data, however with the absence of such here, these maps can be used as an estimate of areas most affected that would need immediate prioritization for various sector level responses including food security and cash assistance.

Below is a short description of each of the maps that were produced for the purpose of this analysis:

- 1. 7-days Past Rainfall Accumulation**
- 2. 14-days Past Rainfall Accumulation**
- 3. Tropical Cyclone Wind Speed Analysis**
- 4. Wind Speed Overlay**

1. Past Rainfall Accumulation for 7-days

The first two maps of rainfall accumulation summarize the total rainfall received over a 7-day period, the 7th day being the actual day in which the tropical cyclone made landfall. There are two examples of this dataset for both tropical cyclones (TC Ana and TC Yasa) and something that is clear in both maps is the South East direction that both cyclones are traveling.

Rainfall distribution for TC Ana reached a maximum of 500mm of rainfall. The extent of the rainfall and high precipitation is easily recognizable on the map with the whole of the Northern division receiving between 250-500mm of rainfall as well as major parts of Viti Levu, island groups of Yasawa, Lomaiviti and Lau. Maximum rainfall for TC Yasa reached 250mm for the 7-day period showing the highest precipitation amount where TC Yasa initially made landfall on Vanua Levu.

2. Past Rainfall Accumulation for 14-days

The third past rainfall accumulation map looks at a combined precipitation analysis for both TC Ana and TC Yasa. This precipitation map does not account for rainfall between the period of the cyclones being from 18 Dec 2020 – 24 Jan 2020 but simply identifies the cumulative precipitation for the country during the periods of 11-17 Dec 2020 and 25-31 Jan 2021.

Therefore, it is a 14-day past rainfall accumulation for the country as both tropical cyclones 7-day periods have been added together. Important to note that Rakiraki, Lomaiviti, Rotuma, parts of Bua, Cakaudrove and Macuata have the highest amounts of rainfall (500+mm) resulting in a compounded effect for these areas in terms of rainfall accumulated.



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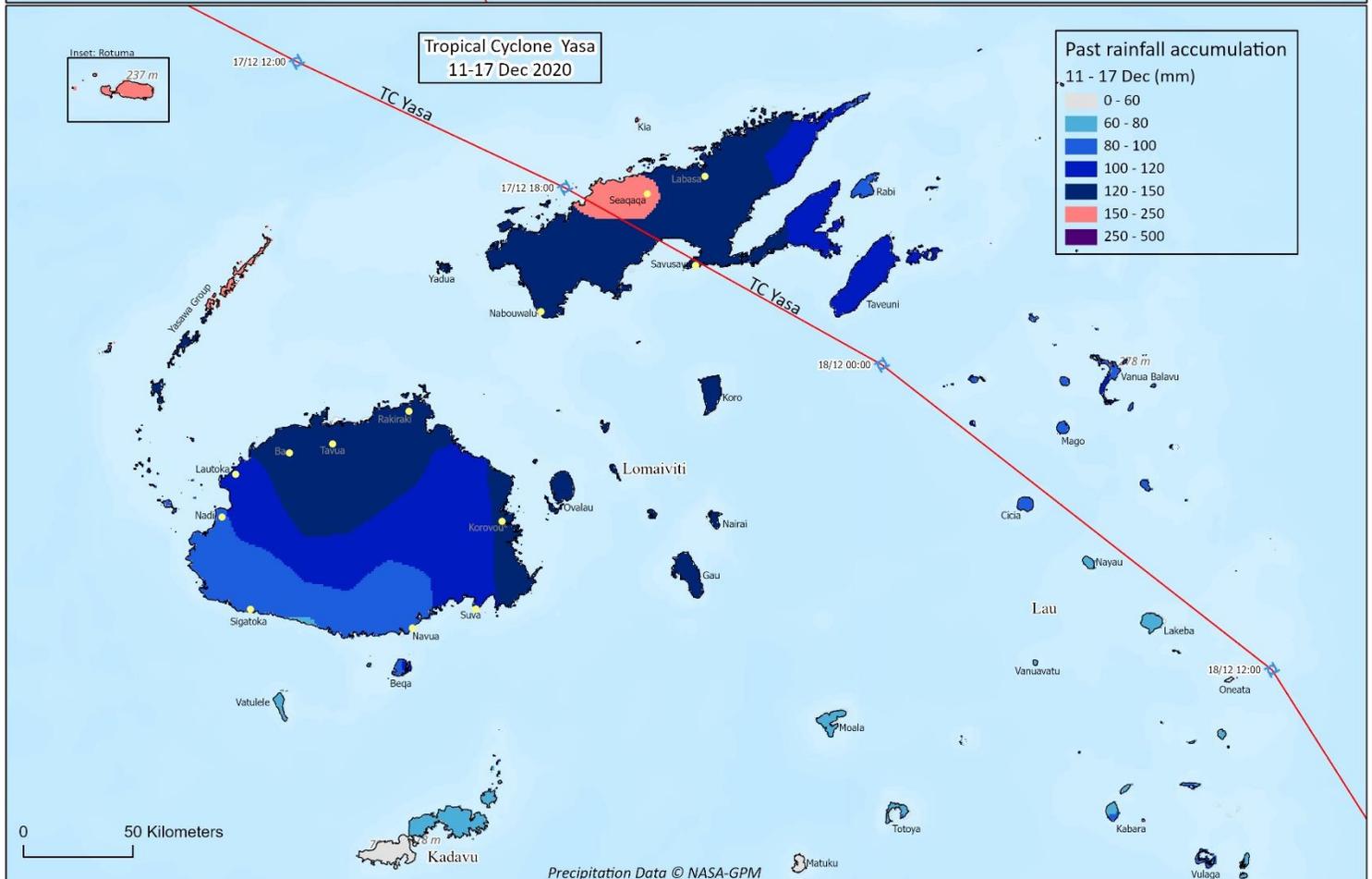
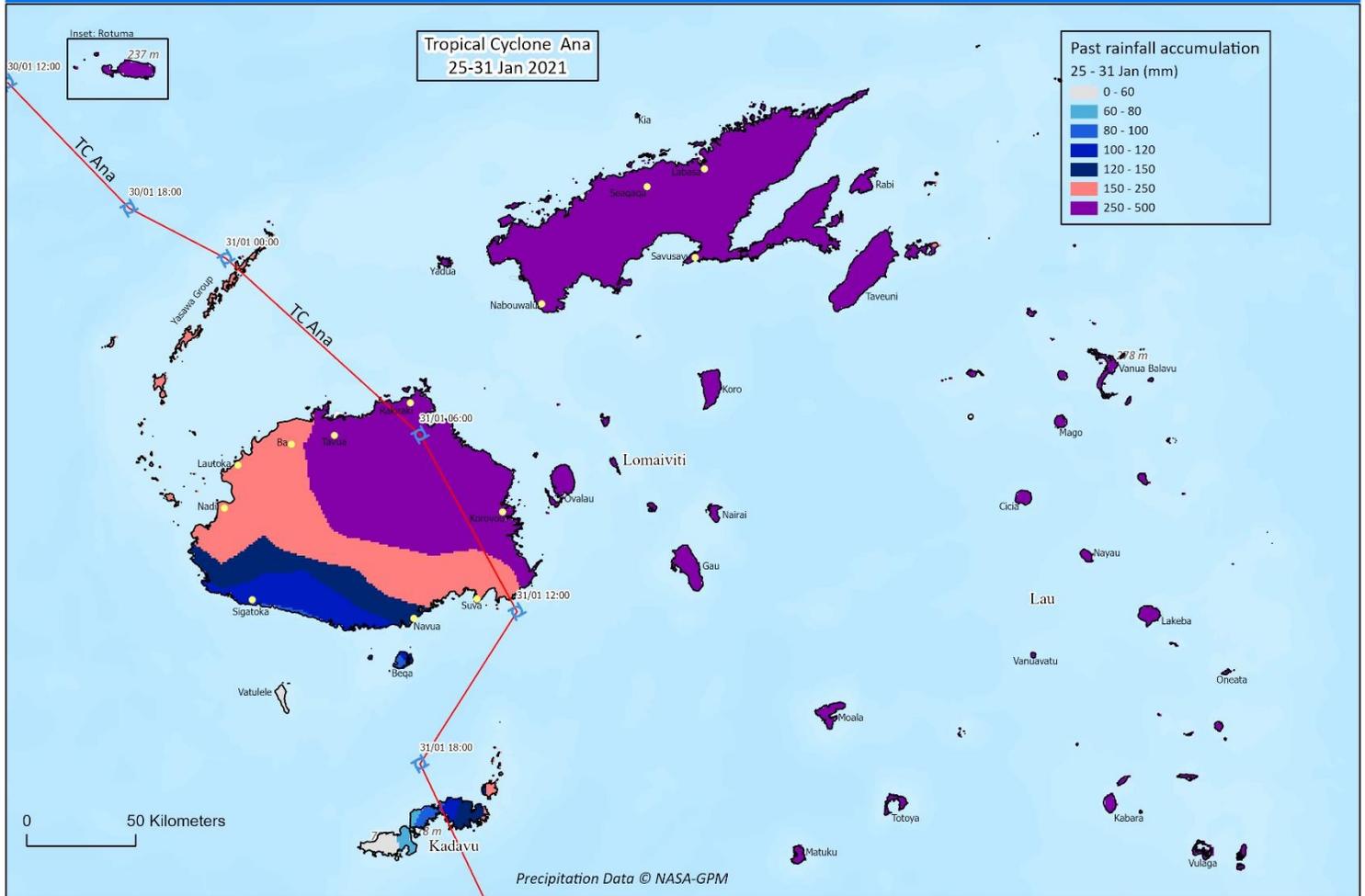
1. Fiji Islands

7-Day Past Rainfall Accumulation

Pacific Multi-Country Office

Date Released: 18 Feb 2021

TC Ana | TC Yasa



2. TC Ana and TC Yasa - Rainfall Accumulation

14-Day Past Rainfall Accumulation



Map produced by:

World Food Programme

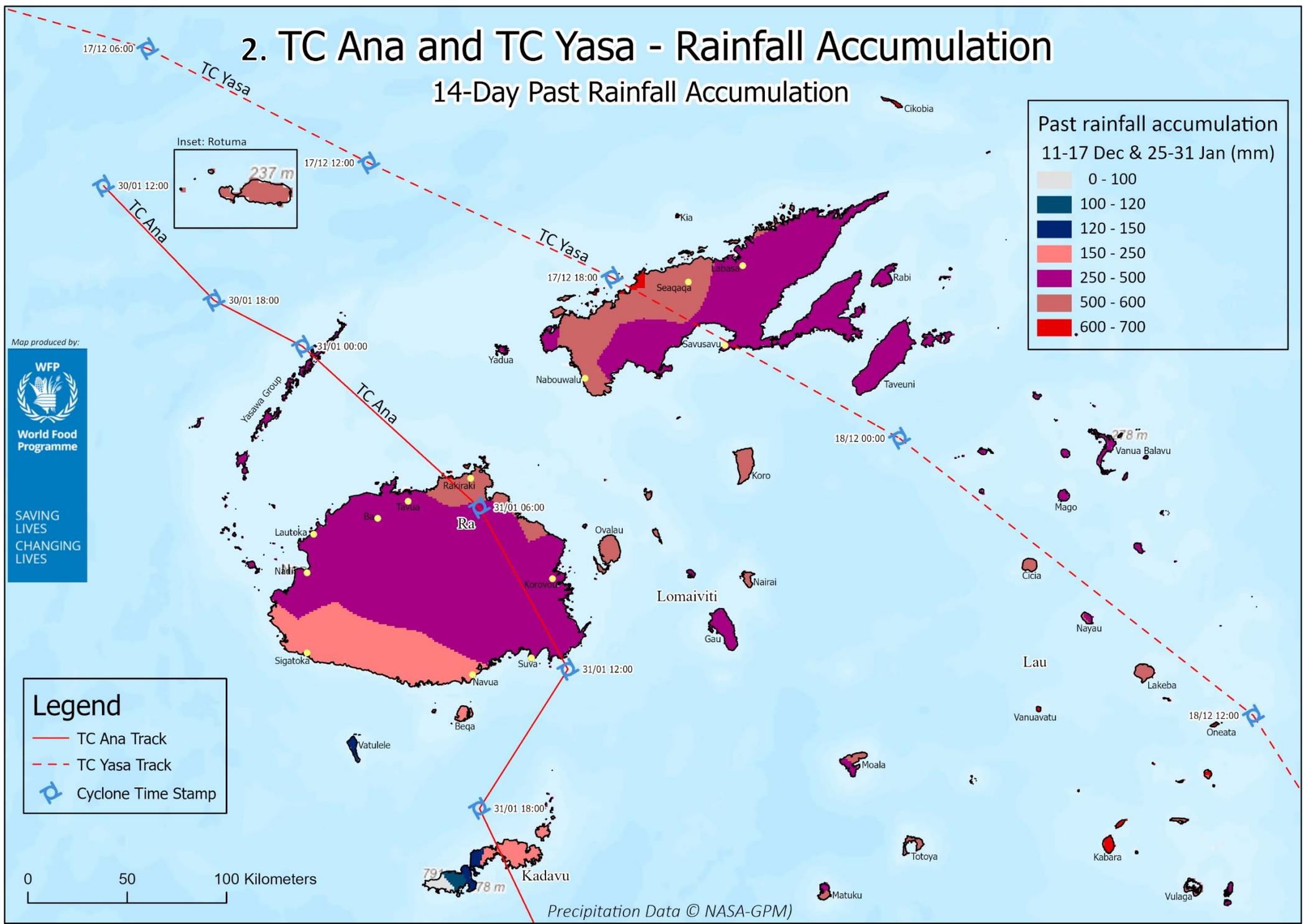
SAVING LIVES
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Legend

- TC Ana Track
- - - TC Yasa Track
- ⊠ Cyclone Time Stamp



Precipitation Data © NASA-GPM)



3. Tropical Cyclone Track Analysis

The maps for this analysis show two specific regions that identify areas which had been directly impacted from TC Yasa and TC Ana based on wind speed data released by the GDACs. Another area is the hatched region which shows where both cyclones have overlapped and have a combined impact on the population, infrastructure, and land features in those areas.

As a Category 5, TC Yasa had minimum wind speeds of 240km/h closer to the “eye wall” of the cyclone. It is important to understand that the 120km/h buffer area simply describes the minimum sustained wind speeds away from the “eye wall” to the extent mapped. It is within this buffer area that the most destructive winds are experienced.

TC Ana’s wind speed buffer area was at 90km/h and had sustained wind speeds of at least a 100km/h around the “eye wall” that was experienced from this category 2 cyclone. TC Ana also managed to cover a larger extent due to the precipitation as well as the slower wind speeds in comparison to TC Yasa.

TC Yasa remained a category 5 cyclone whilst making landfall in Vanua Levu and reduced to a category 4 before leaving Fiji waters. TC Ana however became a category 1 cyclone whilst on its approach to the Yasawa group and upon making landfall in Ra, north Viti Levu became a category 2 cyclone.

4. Wind Speed Overlay

The overlapping wind speed area is where both cyclones most devastating impacts were experienced in terms of wind speed. The highlighted red area indicates TC Yasa wind speed buffer of 120km/h and the orange area is TC Ana’s wind speed buffer of 90km/h.

The overlay map clearly shows how both cyclones covered opposite ends of Viti Levu and Vanua Levu respectively. The areas in which both wind speed buffers overlap is marked in the hatched area and includes parts of the Yasawa group, Bua, parts of Macuata and Cakaudrove, Nairai, Koro in Lomaiviti.

Below is a description of the population by Tikina that are within the overlapping wind speed area:

Admin 1 Division	Admin 2 Province	Admin 3 Tikina	Population
Western Division	Ba	Yasawa	2207
Northern Division	Bua	Bua	6157
Northern Division	Bua	Vuya	4816
Northern Division	Bua	Wainunu	4493
Northern Division	Cakaudrove	Nasavusavu	12796
Northern Division	Cakaudrove	Vaturova	4221
Northern Division	Cakaudrove	Wailevu	6069
Eastern Division	Lomaiviti	Koro	2935
Eastern Division	Lomaiviti	LomaiOther	158
Northern Division	Macuata	Macuata	9398
Northern Division	Macuata	Sasa	5047
Eastern Division	Lomaiviti	Nairai	483

Total Population Affected 58,780



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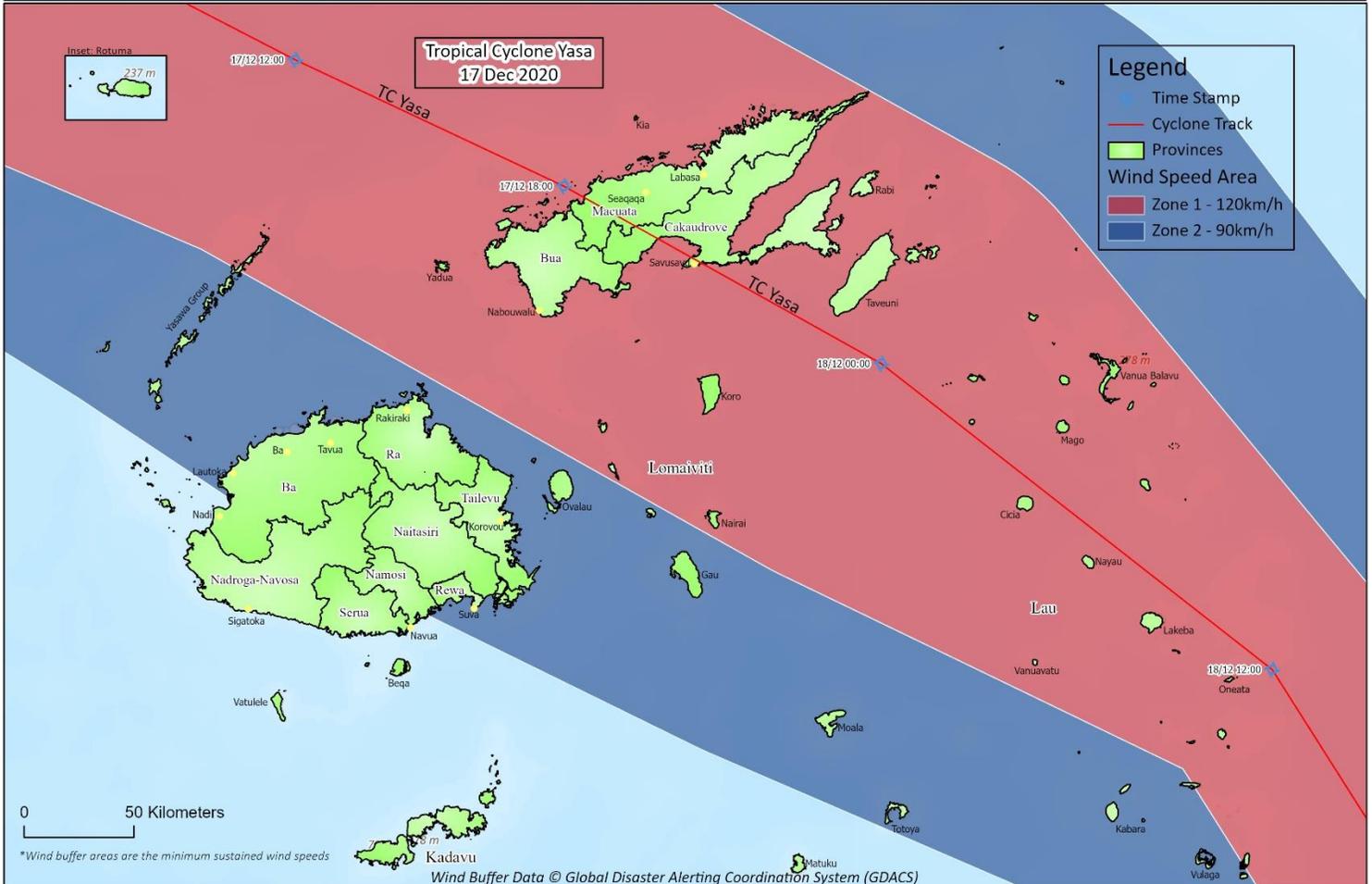
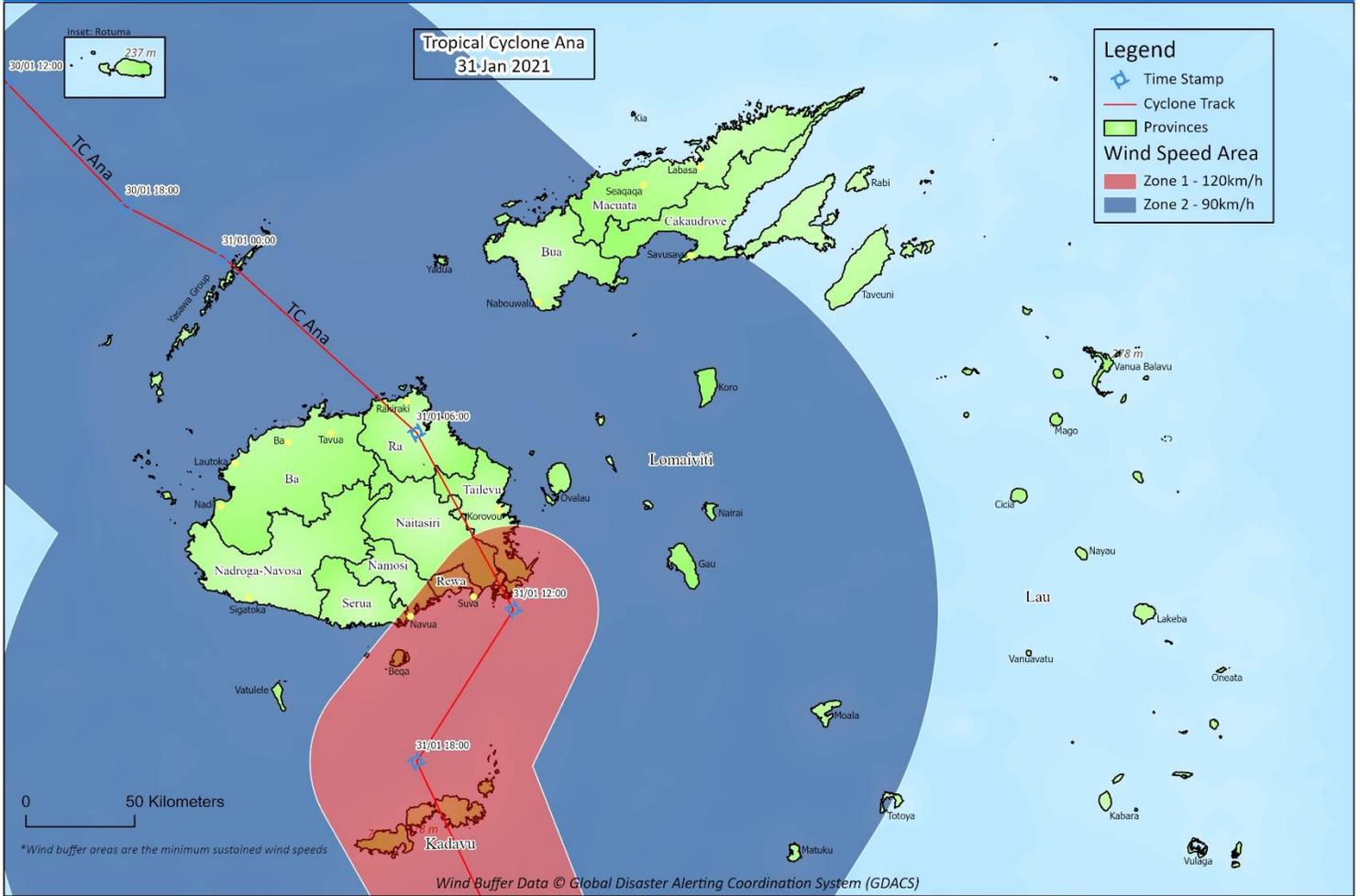
3. Fiji Islands

Tropical Cyclone Wind Speed Analysis

Pacific Multi-Country Office

Date Released: 18 Feb 2021

TC Ana | TC Yasa



4. TC Ana and TC Yasa - Windspeed Overlay

Legend

- TC Ana Track
- TC Yasa Track
- Provinces
- Cyclone Time Stamp

Wind Speed Area

- TC Yasa - 120km/h Wind Area
- TC Ana - 90km/h Wind Area
- Cyclone Overlap Area



Map produced by:

World Food Programme

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*Wind buffer areas are the minimum sustained wind speeds

Wind Buffer Data © Global Disaster Alerting Coordination System (GDACS)

