

Source: UN, 2020. Map of the world [online]. [Cited January 2022]

The Tonga-Hunga Ha'apai volcano began to erupt on the 14<sup>th</sup> January 2022 and reached a powerful peak on the 15<sup>th</sup> January 2022. The eruption released massive amounts of ash and caused a tsunami, resulting in the potential inundation of areas across the region. In this assessment, four key Areas Of Interest (AOIs) have been identified and these are 1) Tongatapu, 2) Eua, 3) Ha'apai and, 4) Vava'u, based on the administrative boundaries from Global Administrative areas (GADM) to evaluate flooded cropland following the eruption.

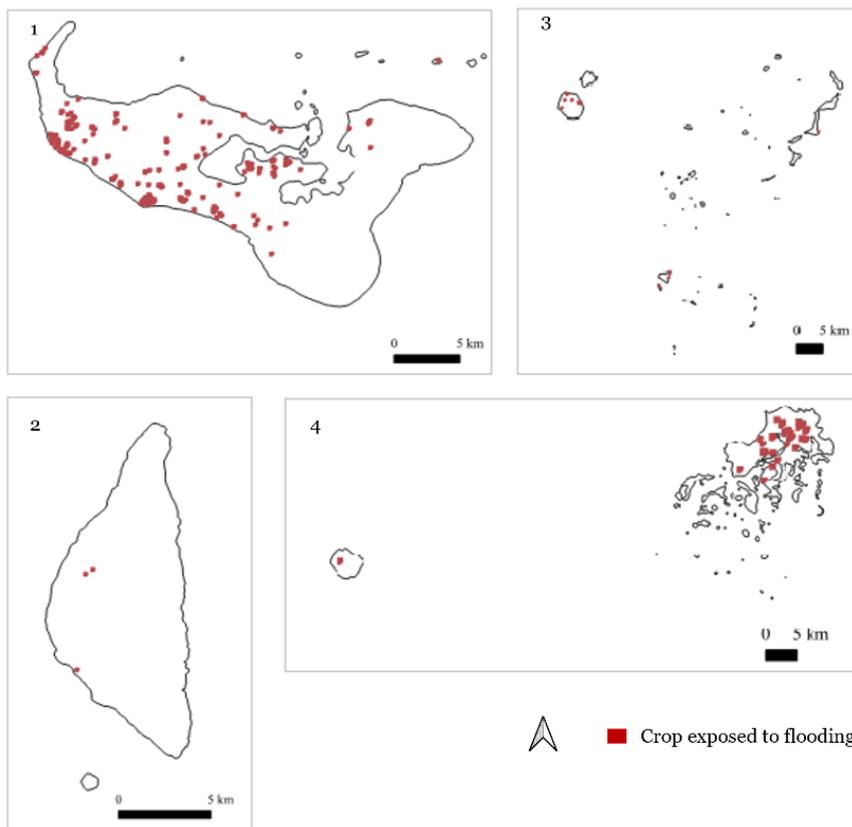


Figure 1: Spatial extent of flooding in cropland in four divisions (1. Tongatapu, 2. Eua, 3. Ha'apai, 4. Vava'u) of Tonga<sup>1</sup>

Table 1: Flooded cropland in Tonga (ha (%))

Division	Total cloud free crop area	Total flooded crop area	Impacted crop area (%)
Tongatapu	2 497	31	1.24
Eua	91	<0.01	<0.01
Ha'apai	200	16	8.00
Vava'u	184	11	5.97
<b>Total</b>	<b>2 972</b>	<b>58</b>	<b>1.95</b>

A rapid flood impact assessment was conducted by the FAO Geospatial Unit at Land and Water Division (NSL) using radar and optical imagery to estimate the damages to cropland caused by the Tonga-Hunga Ha'apai volcanic eruption in Tonga on 14<sup>th</sup> January 2022.

**Data Used:**

- Sentinel-1 SAR image (10m),
- Sentinel-2 image (10m – 60m), and
- 2021 Land cover map (10m).

**Key Findings:**

Total of **58 ha** (2%) flooded cropland in Tonga:

- 31 ha (1%) in Tongatapu,
- 300 m<sup>2</sup> (<0.01%) in Eua,
- 16 ha (8%) in Ha'apai, and
- 11 ha (5.97%) in Vava'u.

<sup>1</sup> **GADM**. The boundaries and names shown, and the designations used on these map(s) do not express any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement.