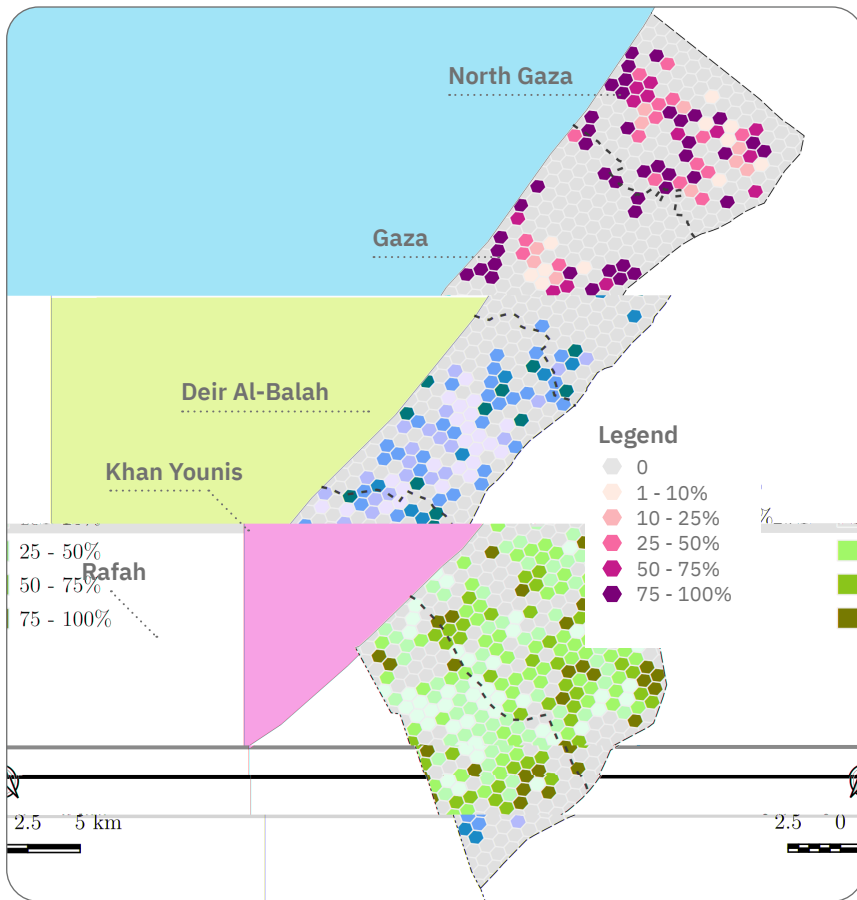


Damage to greenhouses due to the conflict in the Gaza Strip as of 31 December 2023



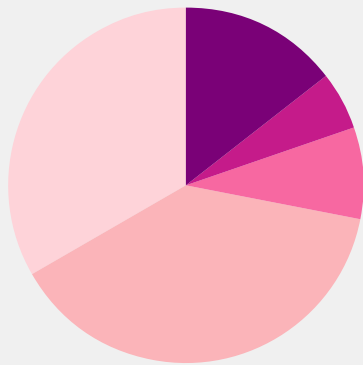
Damage to greenhouses

The damage to greenhouses was estimated using the available Sentinel 1 SAR images on October 12, 13, 24, 25, December 11, 12, 22 and 23.

This is a proxy measure of damage estimated by implementing the so-called coherence change detection (CCD) algorithm. Three image pairs were used — two pre-event sets and one post-event set.

The coherence layers were calculated for each pair to assess the changes. This damage proxy map (DPM) detects the changes in the built-up area.

The area of damaged greenhouses was calculated by overlaying the greenhouse distribution layer on the damage proxy map. The grid depicts the severity of damage in localised areas; in each tile the area of damaged greenhouses was divided by the total greenhouse area.



Damaged greenhouses area (ha) by Governorate

percent

Governorate	Total Area (ha)	Damaged Area (ha)	Percentage (%)
North Gaza	107	38	35.5%
Gaza	36	14	40%
Deir Al-Balah	149	22	14.5%
Khan Younis	426	101	23.6%
Rafah	559	87	15.6%
Total	1 277	262	20.5%



Key messages

1. 20.5% of all greenhouses have been damaged.
2. The governorate of Khan Younis had the largest area of damaged greenhouses in hectares (101 ha; 23.6% of all cropland).
3. The governorate of Gaza had the largest proportion of damaged greenhouses (14 ha; 40% of all cropland).

This assessment has been conducted based on available satellite imagery, ancillary data and remote sensing analysis for the period 7 October - 31 December 2023 without field validation. Greenhouse data from 2021 was used as baseline data due to limited availability for data collection in the area of interest and time constraints related to the nature of the report. This assessment was conducted by the Geospatial Unit at the Land and Water Division (NSL) of FAO and will be further complemented with additional field assessment and use of very high-resolution imagery. 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.