CrisisReady Situation Reports on the Earthquakes in Turkey

Overview

A 7.8 magnitude earthquake struck Turkey's southeastern Kahramanmaraş province on Monday, February 6 at 4:17 a.m. local time. About nine hours later, a second 7.5 magnitude quake occurred 60 miles north of the initial quake's epicenter.
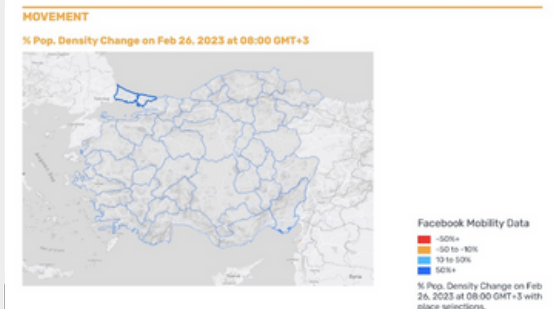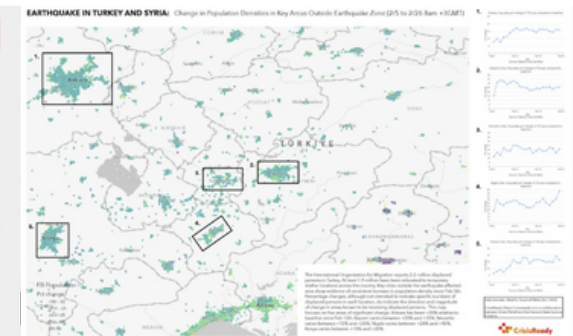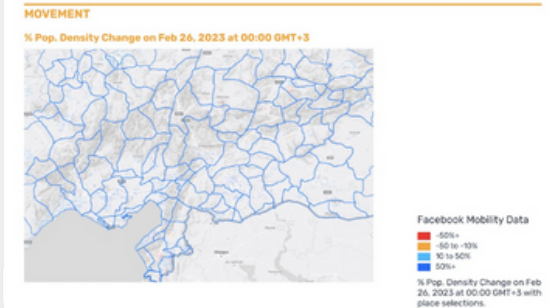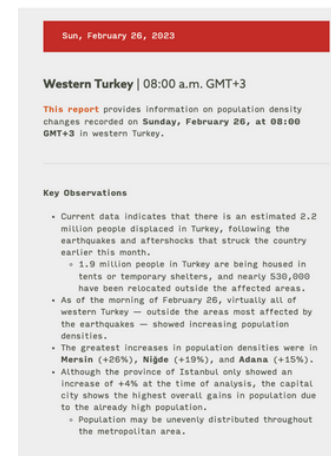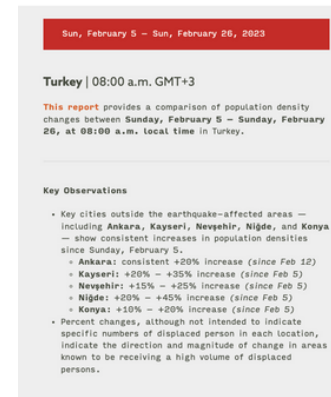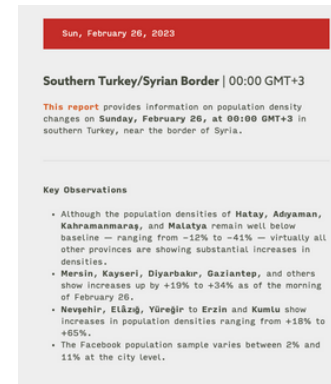
As of February 25, the earthquakes have impacted an estimated 20 million people in Turkey and 8.8 million people in Syria. The death toll of the disaster, which AFAD estimates stands at 44,218 in Turkey and 5,914 in Syria, continues to rise as search and rescue operations continue.

CrisisReady is producing periodic situation reports to monitor fluctuations in population densities across Turkey, specifically in the areas most affected by the earthquakes. The information provided in these analyses shed light on evolving population displacement dynamics as response operations continue. The reports have been used by several response organizations operating on the ground, including the World Food Programme, the International Federation of Red Cross and Red Crescent Societies, UN OCHA, and national, city, and state agencies and health departments across Turkey.

Data Sources

Each report is generated using aggregated mobility data provided by Data for Good at Meta, a program that leverages data to support disaster response around the world.

Changes in population densities, which signal population movement, were determined by calculating the percent difference between the number of users on Meta applications during the time of analysis compared to baseline values recorded 90-days before the earthquakes struck. Data from United States Geological Survey (USGS) and ESRI are also used in the reports.

View Reports Online

Southern Turkey | 00:00 GMT+3

This report provides information on population density changes recorded on **Monday, February 20, at 8:00 a.m. local time** in the regions most impacted by the earthquakes in Turkey.

Key Observations

- As of Monday, February 20, several areas that had previously shown stark declines in population densities after the earthquake were showing increasing trends, returning towards baseline population values.
- The government of Turkey currently estimates that **384,500 housing units** have been destroyed by the quakes and subsequent aftershocks.
- The International Organization for Migration (IOM) estimates that over 13 million people may have been displaced.
- According to data from Data for Good at Meta, while many areas of the most heavily-affected zones in **Kahramanmaraş, Adiyaman,** and **Hatay** continues. to see severely reduced proportions of population between −24% and −38%.
- Several cities, including **Sahinbey, Birecik, Sumbas, Dortyol, Hassa, Osmaniye,** and **Turkoglu** are now registering population densities above baseline.
- The areas of greatest reduction continue to be the cities of **Iskenderun, Kahramanmaraş,** and **Hatay,** which remains more than two-thirds reduces relative to baseline more than two weeks after the quake.
- Representativeness of the Facebook mobility data remains between 2% and 11% in the cities included in the analysis.

MOVEMENT

% Pop. Density Change on Feb 20, 2023 at 00:00 GMT+3

Facebook Mobility Data
- -50%+
- -50 to -10%
- 10 to 50%
- 50%+

% Pop. Density Change on Feb 20, 2023 at 00:00 GMT+3 with place selections.

Turkey | 00:00 GMT+3

This report provides information on population density changes recorded on **Friday, February 17, at 8:00 a.m. GMT+3** in the regions most impacted by the earthquakes in Turkey.

Key Observations

- For the 11 provinces that the Turkish government has named the principal affected areas of the earthquake, six are now seeing above-baseline population densities and five continue to see significant declines in densities.
- The six provinces registering consistent increases in population densities include Kilis, Elazig, Adana, Diyarbakir, Sanliurfa, and Osmaniye.
  - These six provinces showed inclines ranging from 7% to 35%.
- The five provinces registering consistent declines in population densities includes Gaziantep, Hatay, Adiyaman, Kahramanmaraş, and Malatya.
  - These five provinces showed declines ranging from −2% to −49%.
- Facebook's data represents an overall 3% sample of the populations of the 11 affected provinces. This value ranges from a low of 1.2% in Diyarbakir and 1.9% in Sanliurfa, to highs of 4.6% in Adana and 5.1% in Kilis.

MOVEMENT

% Pop. Density Change on Feb 17, 2023 at 00:00 GMT+3

Facebook Mobility Data
- -50%+
- -50 to -10%
- 10 to 50%
- 50%+

% Pop. Density Change on Feb 17, 2023 at 00:00 GMT+3 with place selections.
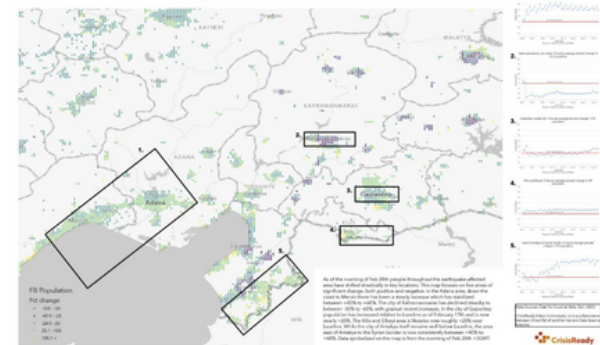

Adana, Kahramanmaraş, Gaziantep, Kilis, Antakya, Turkey | 00:00 GMT+3

This single-page report provides information on population-density changes recorded on **Monday, February 20, at 8:00 a.m. local time** in Adana, Kahramanmaraş, Gaziantep, Kilis, and Antakya, Turkey.

Key Observations

- As of the morning of Monday, February 20, populations throughout the areas most affected by the earthquake on Feb 6 have shifted dramatically in key locations. This report focuses on five areas of significant change, both positive and negative: **Adana, Kahramanmaraş, Gaziantep, Kilis,** and **Antakya.**
- In the **Adana** area, there has been a steady incline of population densities down the coast of Mersin.
  - Increases in population densities have stabilized between +40% and +60%.
- The city of **Kahramanmaraş** has shown steady declines in population density, ranging between −30% to −60%, with gradual recent inclines.
- In the city of **Gaziantep,** population densities have increased nearly +20% since the last report on Friday, February 17.
- The **Kilis** and **Elbeyli** areas also registered around a +20% incline in population densities over baseline values.
- The city of **Antakya** remained well below baseline at the time of analysis — however, the area east of Antakya, close to the Syrian border, is now showing consistent inclines between +40% and +60%.

EARTHQUAKE IN TURKEY AND SYRIA: Change in Population Densities in Key Affected Areas (2/5 to 2/20 +3GMT)

FB Population
Pct change

CrisisReady

Turkey | 7:00 a.m. GMT+3

This report provides a comparison of population density changes between **Thursday, February 9** and **Wednesday, February 15 at 7:00 a.m. local time** in the regions most impacted by the earthquakes in Turkey.

Key Observations

- Increased data points recorded by Facebook mobility data indicate a significantly higher number of tiles by February 15, which are meeting privacy protection thresholds, resulting in what appears to be a much denser population pattern overall.
- The province of Hatay saw population density increases in the corridor between Antakya and the Syrian border, which registered above 100% compared to baseline population values.
  - Similar patterns occurred outside Kahramnmaras and Osmaniye.
- Areas of downtown Gaziantep, which saw population declines between −50% and −90% on February 9, increased between 1% and 25% by February 15.

Feb 9, 2023 at +3 GMT   Feb 15, 2023 at +3 GMT

Average Pct Change in FB Pop (2/5 to 2/15)

Legend

FB Population
percent_change
- -91 - -50
- -49.9 - -25
- -24.9 - 25
- 25.1 - 100
- 100.1 - 668

(Source: Data for Good at Meta)