SHARE-CET, the SHARE earthquake catalogue for Central and Eastern Turkey complementing the SHARE European Earthquake Catalogue (SHEEC)

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Introduction

Following the requests of SHARE, in October 2011 the SHARE earthquake catalogue for Central and Eastern Turkey has been compiled in order to complement SHEEC, the SHARE European Earthquake Catalogue (Stucchi et al., 2013; *http://www.emidius.eu/SHEEC*).

The SHARE earthquake catalogue for Central and Eastern Turkey refers to the Area Sources (AS), as assessed in the framework of the SHARE and EMME Projects, that cover the Turkish territory from 32°E to 45°E and from about 35° N to the South, including the Cyprus area (Fig. 1). The time span is 1000-2006; the total number of entries is 6170. The format of the catalogue is presented in Table 1. The catalogue is available at: *http://www.emidius.eu/SHEEC/.*

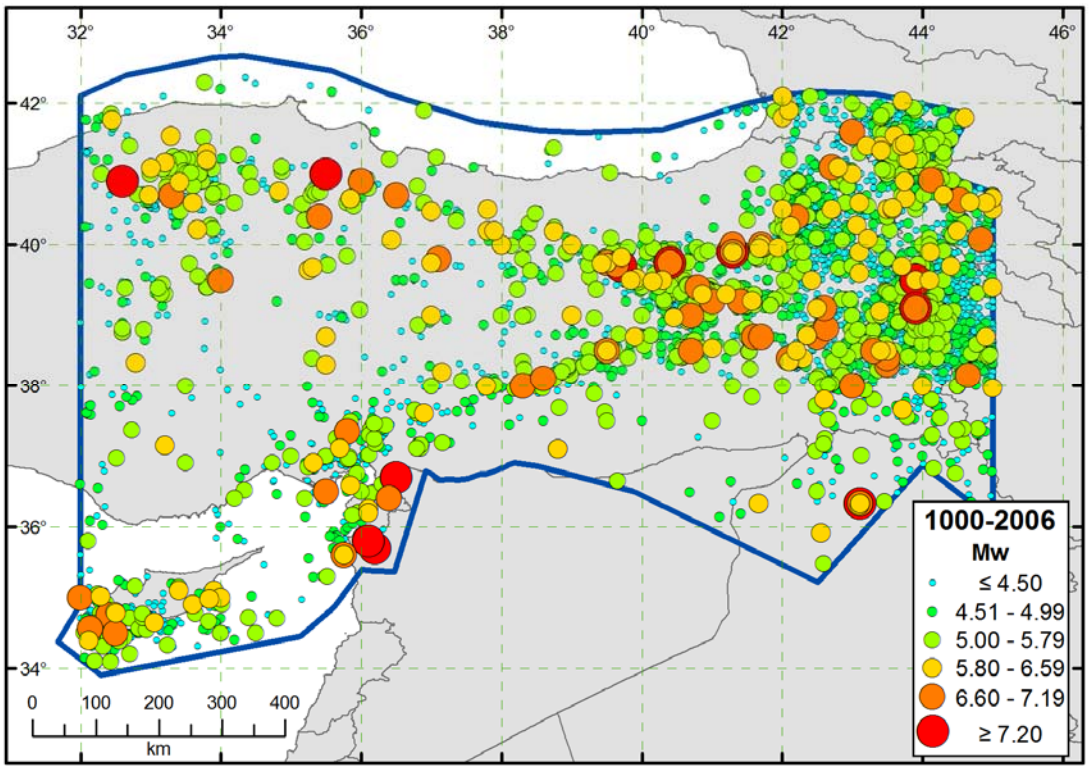

Fig. 1. Area covered and earthquakes in the SHARE earthquake catalogue for Central and Eastern Turkey (1000-2006).

Code	Description
En	Earthquake number
Year	Origin time: year
Mo	Origin time: month
Da	Origin time: day
Ho	Origin time: hour
Mi	Origin time: minutes
Ax	Epicentral area
Lat	Epicentral latitude
Lon	Epicentral longitude
LatUnc	Epicentral latitude uncertainty
LonUnc	Epicentral longitude uncertainty
H	Depth
Io	Epicentral intensity
TIo	Epicentral intensity type
Mw	Moment magnitude
MwUnc	Moment magnitude uncertainty
TMw	Moment magnitude type: co: from the regional catalogue cc: from the regional catalogue, converted Io or another Type of M nd: not determined

Tab. 1. SHARE-CET format

1. Time-window before 1900

This time-window contains 241 earthquakes (Fig 1). The majority of the events (151) are taken from the Turkish catalogue by Soysal et al. (1981). It covers the time-window 2100 BC to 1900 AD and mainly relies on previous parametric or descriptive catalogues; it provides epicentral location, epicentral intensity and in some cases a brief list of affected localities.

The time constraints of the project prevented a careful check of the reliability of the background information and the re-assessment of earthquake parameters as performed for SHEEC. For this reason, out of the 241 events, only 164 have been parameterised; the other 76 have been considered not sufficiently reliable and, therefore, they have been included in SHARE-CET without parameters.

Soysal et al. (1981) does not assess magnitude, for this reason Ms has been first determined from epicentral intensity with the regression by Kalafat et al. (2007):

$$Ms = 1.39 + 0.60 * Io$$

and the obtained Ms values have been then converted to Mw with the relations developed in the framework of the EMME project using regional data (Zare, 2012, EMME project internal report).

$$Mw = 2.1117 + 0.6633 * Ms \qquad (2.8 \leq Ms \leq 6.1)$$

$$Mw = 0.4491 + 0.9307 * Ms \qquad (6.2 \leq Ms \leq 8.2)$$

More information on the database and the conversion models can be found in Erdik et al. (2012).

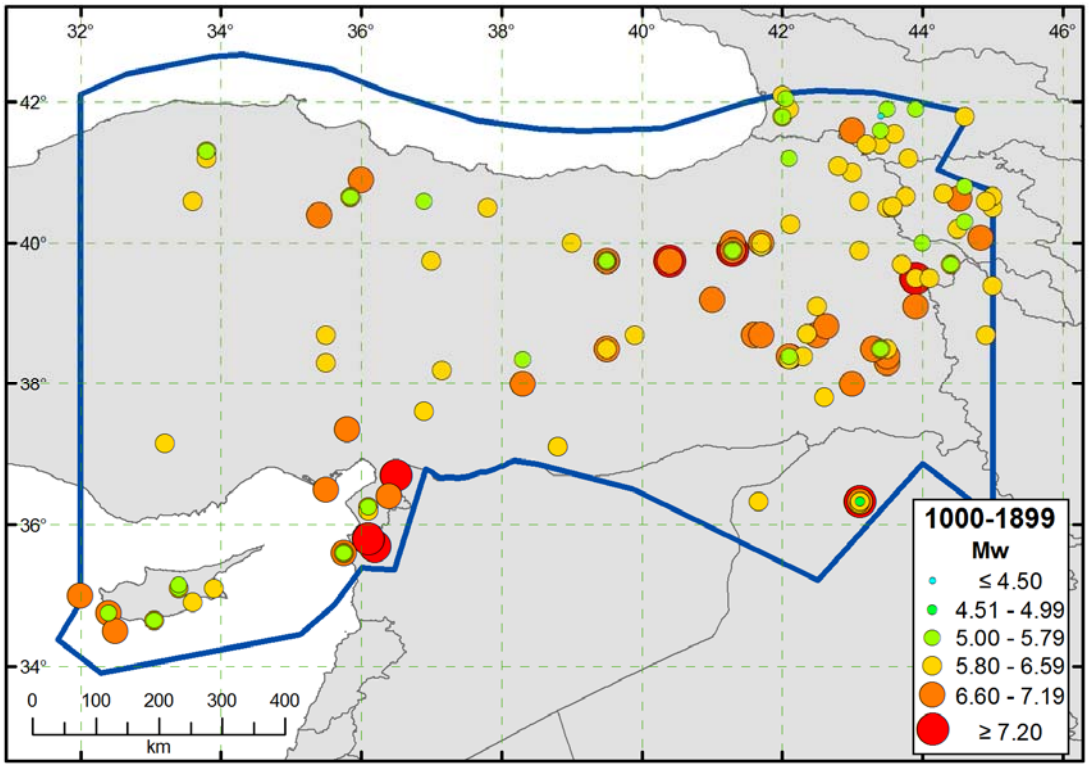

Fig. 2. Earthquakes in the SHARE earthquake catalogue for Central and Eastern Turkey in the time-window 1000-1899.

2. Time-window after 1900

This time-window contains 5929 events (Fig. 3). The main data sources for this time window are the catalogue for Turkey by Kalafat et al. (2007) and the ISC catalogue, complemented with entries from other regional and global catalogues. Ambraseys and Jackson (2002) has been used to check the epicentre and magnitude information of large events that occurred in Turkey especially for the first half of the time window after 1900.

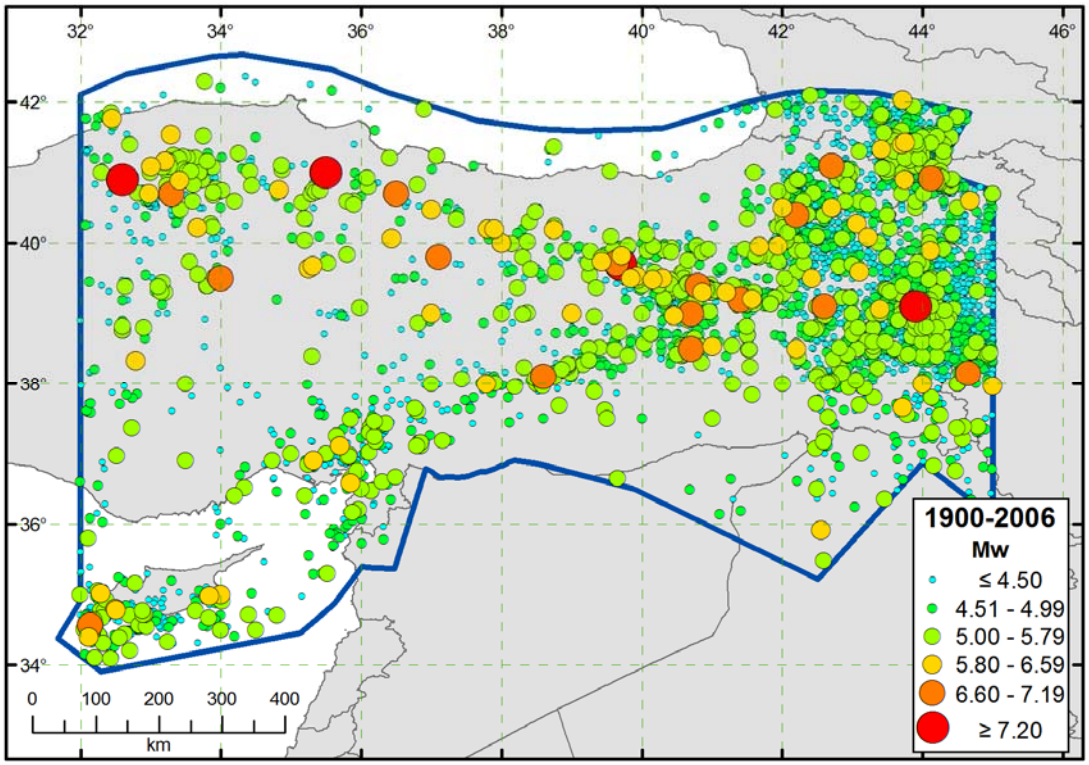

Fig. 3. Earthquakes in the SHARE earthquake catalogue for Central and Eastern Turkey in the time-window 1900-2006.

References

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