

Analysis of Earthquake Risk Zones with Geographic Information Systems in Konya/TURKEY

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SUMMARY

Earthquakes, floods, landslides, rock falls, drought, snow avalanches are leading natural hazards. Since the beginning of the 20th. Century about 87.000 people has lost their lives and a further 210.000 people have been injured due to natural disaster. Natural hazards and disasters can have significant impacts on the economic and social development of Turkey. Turkey is one of the countries with high seismic risk on the world. When Turkey's statistics on natural disasters are examined, earthquakes are cause many casualties than the other natural hazards.

There are many methods which is developed for the identification of such disasters. Among these methods, Geographic Information System (GIS) is an effective tool for natural hazard management. GIS is a systematic means of geographically referencing a number of "layers" of information to facilitate the overlaying, quantification, and synthesis of data in order to orient decisions.

The earthquakes research which is made in Turkey are only limited for settlements areas, but earthquakes are affected not only the city center, it also affects the towns and villages. Earthquake hazard and seismic risk studies should contain the places which is covering in the whole province. Therefore, in this study, Earthquakes in boundaries of the Konya province are examined with fault line and earthquake epicenter point between the years 1900-2015 by using GIS. As a results of this study; the northwest part of Konya Province is determined as hazardous area. These hazardous areas in Konya Province are Akşehir, Tuzlukçu, Ilgın, Doğanhisar and Hüyük districts. According to the Kernel Density Analysis, it has been observed that there are consistent results between maps which are separately generated for earthquake epicenter points and fault lines. In addition, this study is performed separately with open and closed source software, it has been revealed comparison and differences between maps which are generated with these software.

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