



Contribution ID: 5

Type: **not specified**

Global disasters: a historical analysis and prediction

Thursday, 1 June 2023 10:35 (20 minutes)

The world is still experiencing a number of natural disasters that have had a serious impact on people's lives and the environment. In recent years, mainly through climate change and global warming, the scale and frequency of such phenomena has been increasing. Examples from recent years include the China earthquake in 2008 (magnitude of 7.9 on the Richter scale struck on the Sichuan province) or Hurricane Sandy in 2012 (more than 80,000 people died, one of the largest hurricanes ever to hit the east coast of the United States, estimated damages cost have been more than \$70 billion).

This paper analyses 8 natural disasters over the last 60 years (1960-2018) divided by the continents, the number of natural disasters in relation to population and the number of natural disasters per continent area. In addition, the prediction of the number of individual natural disasters was determined using polynomial analysis for next 20 years. Figure 1 shows the distribution of natural disasters on continents per 1 million citizens and per 1000 square kilometres. It shows a great advantages of areas and people affected in the less developed countries.

Fig. 1. Distribution of natural disaster among continents per people and per are.

Authors in detail analysed distribution of each natural disaster on the continents and created a cartodiagrams based on 5-class classification for each disaster separately. Figure 2 shows example distribution of the floods in the analyzed period. It in a simple way showing a countries affected during 60 years by each disaster most.

Fig. 2. Numbers of floods distributed by countries

Except spatiotemporal distribution authors also prepared a 20-years forecasting of the appearances of the disaster globally. Figure 3 shows number of storms in analysed period with a 20-years forecast.

Fig. 3. Disasters charts from 1960-2018 with forecasts for the next 20 years.

As result authors showed a number of appearances of each disaster in each continent, countries affected by it most and a future trends.

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Track Classification: Geodynamics and Geospatial Research 2023