

[EE] Evening Poster | H (Human Geosciences) | H-DS Disaster geosciences

## [H-DS08]Natural hazards impacts on the society, economics and technological systems

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The decade between 2007 and 2017 set a record for the number and scale of natural disasters and demonstrates high vulnerability of human society. The most serious consequences have the so-called natural-technological disasters in which natural hazards trigger accidents at technology and infrastructure such as nuclear power and chemical plants, oil refineries and pipelines, buildings and roads. A distinctive feature of natural-technological events, such as of the 2011 Tohoku earthquake, is their multi-hazard and synergistic nature, which creates cascading impacts, resulting in simultaneous occurrences of myriad catastrophes. The main goal of this multidisciplinary session is to summarize case studies of relationships between natural hazards and technological disasters, their social and economic consequences; and to encourage a discussion about tools and methods to prevent disasters and to minimize their consequences, disaster reconstruction, tourism for reconstruction, Eco-DRR, and green infrastructure.

## [HDS08-P06]Comparison of disaster haiku composed after the Great East Earthquake in Kesennuma area between 2012 and 2013

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### 1.Introduction

The Great East Japan Earthquake of Magnitude 9.0, which occurred on March 11, 2011, had a great impact on people. It destroyed a large residential area and took many lives. The psychological impact on people caused by the earthquake is still going on. What is unique to Japan is that this psychological influence was reflected in haiku (Aoki & Fujita & Kumagai 2014). In the course of progressive reconstruction (photo), the area is gradually recovering from damage. While many construction workers are coming in, the population of the Kesennuma area is gradually decreasing, and this trend continues even after the disaster (Figure 1). When this reconstruction work is finished, and the construction workers and volunteers are no longer visiting, what kind of memory will remain in this area? We analyzed haiku participated in the haiku conventions, that had opened shortly after the earthquake in 2012 and 2013.

The Haiku Association of the Kesennuma region held the "National Conference of the Kesennuma Ocean Haiku" on July 29, 2012, soon after the disaster. 1753 phrases in total were collected, not only in Japan, but also from Sao Paulo in Brazil (Kesennuma Regional Haiku Association 2012). Later, on July 28, 2013, 1734 more phrases were gathered (Kesennuma Regional Haiku Association 2013).

### 2.Method of Research

The above mentioned haiku data were examined to compare the haiku of 2012 with the ones of 2013. The number of poems contributed by haiku poets was counted. Distribution of poets by area was examined as well, in order to see if their home region was close to or distant from the damaged area. Understanding of haiku is influenced by knowledge of the disaster being described, knowledge about the area, information from the mass media such as news. It also depends on knowledge about haiku. Therefore, seven people living in the Kesennuma district, the quake disaster area, and seven people from the rest of the area were questioned. We asked these respondents to read the collected haiku and select the haiku related to the disaster. After that the number of people who managed to recognize disaster haiku was summed up.

Then, we analyzed the change by the year, the difference by the residential area etc.

### 3.Results

As for the number of haiku by poets, in 2012 we can see that the first contributor composed as many as 100 haiku (Fig. 2), while most poets contributed 2-4 poems in each year. The total number of haiku was similar for both 2012 (1753) and 2013 (1734).

The analysis of spacial distribution of haiku poets (Fig. 3) shows that the most number of haiku comes from Miyagi prefecture in Kesunnuma area. What is interesting is that haiku were sent not only from different regions of Japan but also from Sao Paulo in Brazil. This demonstrates that the disaster had wider effect through the psychological networks; we can also conclude that this effect has not decreased from 2012 to 2013.

Examining the results of 14 respondents, we can see that in 2012 they selected 778 haiku as disaster haiku, and in 2013, 536 haiku were chosen. The number of disaster haiku has decreased from 2012 to 2013 in all level (Fig. 5). And the decrease of disaster haiku was observed by all respondents (Fig.6).

### 4.Contents of disaster haiku

The haiku selected by more than 11 people in 2012 contained many terms related to the disaster; the most frequent of them was &ldquo;tsunami&rdquo;, followed by such words as &ldquo;recover&rdquo;, &ldquo;damage&rdquo;, and &ldquo;disaster&rdquo;. In 2013 the most frequent word was &ldquo;recover&rdquo;, while &ldquo;tsunami&rdquo; and &ldquo;damage&rdquo; fell to the second and third places. And &ldquo;debris&rdquo;, &ldquo;temporal residence&rdquo;, &ldquo;earthquake suffer&rdquo;, &ldquo;pray&rdquo;, &ldquo;disaster&rdquo;, &ldquo;requiem&rdquo; and &ldquo;earthquake&rdquo; were decreased.

### 5.Conclusion

5.1 According to the data of haiku contest, the number of haiku has not decreased from 2012 to 2013.

5.2 The spatial distribution of haiku poets also showed no change from 2012 to 2013.

5.3 The questioning of respondents, on the other hand, demonstrated the decrease of disaster haiku from 2012 to 2013.

#### 5.4 The most frequently haiku mentioned Tsunami in 2012 and Reconstruction in 2013.

##### References

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