Overview of the Special Issue

“Local Records of Natural Disaster Events: A Wealth of Spatiotemporal Information for Future Use”

Masaki IWAFUNE*, Toshikazu TAMURA**, Keisuke MATSUI*** and Takashi TODOKORO****

Any natural disaster consists of various natural and human-related events that occur successively following a source geophysical process and affecting human lives in many ways. Each event varies in terms of spatial scale, initiation time, and duration, and affects human activities differently across several disaster phases. Therefore, the reports of a disaster need to record each event’s spatiotemporal occurrence and relationships between events. Among the various kinds of disaster report, those focusing on local areas are particularly expected to carefully record the information mentioned above. Ten years after the beginning of the 2011 Great East Japan Earthquake Disaster, many survey reports from various perspectives have described this huge and complex disaster. This special issue focuses on local reports of the 2011 disaster and other natural disasters.

The contents of local reports of a natural disaster vary depending on publishing bodies, report writers, informants, etc. Although residents of an affected area are often important witnesses to various disaster events on a personal and local scale, they are in many cases inexperienced in recording with spatiotemporal accuracy. Practical support from experienced researchers or journalists, using appropriate maps and photos, can effectively extract and organize the residents’ observations and personal experiences as primary sources of the event’s occurrence in the local area (Iwafune, 2018; Iwafune and Tamura, 2018). Such information on the occurrence of events and how they interrelate in a local area applies to other areas and future ages.

The article by Tamura and Iwafune (2021) reviews numerous reports of large tsunami disasters on the Sanriku Coast, Northeastern Japan, since the late 19th century. Most reports of 1896, 1933, and 1960 tsunami disasters were prepared by local intellectuals in the affected areas supported, in some cases, by municipalities. After the 2011 tsunami, most stricken municipalities published reports with financial assistance from the national government. Some of them received reporting and editing assistance from outside experts, including scholars and journalists. Based on a critical analysis of the above, this special issue aims to identify useful information that can be found in personal- and local-scale disaster records and to propose an effective report-creation system.

Disaster archives provide an effective means for managing and disseminating disaster-related materials and information. Suzuki (2021) traces the history of disaster archives on repeated tsunami disasters in the Sanriku coastal area. Then, she looks at archive management projects developed in recent years in various areas of Japan and points out problems in collecting, organizing, preserving, and uti-
lizing materials. These issues impact the utilization of disaster archives not only as a basis for the residents’ actions in future disaster prevention and mitigation, but also in specialized research and administrative measures.

Actual damage from various natural disasters frequently depends on an area’s geomorphic conditions. Kuroki (2021) conducts a comparative investigation of previous disaster reports on geomorphic changes caused during disasters and geomorphic conditions that induce, amplify, mitigate, or prevent damage. The investigation reveals differences in the presentation of geomorphic information among reports. Some reports indicate important information about damage on maps, while others show only simple geographic locations. Kuroki suggests that geomorphic information is useful for damage mitigation and prevention and how the information can be presented clearly. In addition, he argues that some bureaucratic factors hinder the smooth communication of appropriate geomorphic information using suitable maps.

Although evacuation life records contain a wealth of knowledge for the response phases of future emergencies, they tend to be discarded officially or privately, citing the need to protect personal information as the reason. At a few evacuation shelters in Yamada Town on the mid-Sanriku coast, which was severely damaged by the 2011 tsunami, some resident leaders kept records out of personal consideration and these are valuable primary sources of the disaster. Tamura and Iwafune (2021) briefly introduce an example of a nutritional analysis based on the menu record of meals supplied by neighbor residents at a small shelter in a fisher settlement. Abe et al. (2021) provide a demographic study of 4,011 evacuees in the town center area using both detailed lists of 830 evacuees at two big shelters and records officially announced by the municipality. The study reveals the characteristics of entrance-exit behavior, the relations between residence and refuge locations, family composition, etc.

Within the various activities taking place at shelters and temporary housing that allow life to continue in affected local areas, the systems for supplying and distributing food and daily necessities require a particularly swift response and recovery. This is necessary not only to resume commercial activities but also to maintain and rebuild daily life in communities. Komaki et al. (2021) trace the revival and reorganization processes of retail shops and shopping centers based on a spatial analysis of the records of a shopkeepers’ association in Yamada Town. The results are compared to cases of recovery and reconstruction from other disasters.

Shifting location is an important choice for many settlements damaged severely by a tsunami. Tamura and Seto (2021) conduct a comparative study on the location and relocation behaviors of three neighboring settlements south of Yamada with similar geomorphic settings and similar histories of repeated tsunami damage. After a geomorphological investigation of the piedmont gentle slopes and coastal lowlands utilized as settlement locations and retracing tsunami damage and location/relocation history, the study infers the reasons for the different recognitions and evaluations of given geomorphic resources depending on settlement and tsunami event. The differences are considered to be greatly influenced by the different weights and influences that fishing and farming have on livelihood, as well as changing fishing harvests, in each tsunami-sensitive settlement.

Egawa and Mori (2021) introduce “Indexes for Recovery and Reconstruction Following the Great East Japan Earthquake” devised by the Nippon Institute for Research Advancement (NIRA) to evaluate the progress of recovery and reconstruction of the three affected prefectures: Iwate, Miyagi, and Fukushima. This approach is applied in the implementation of “evidence-based policymaking (EBP).” A comparison of these indexes and compiled statistical data that were retained and provided by the respective afflicted municipalities shows the state of various indicators and their pre-disaster levels quantitatively and indicates the recovery status.
This study is an experiment that attempts to connect local-scale and regional-scale data.

The Great East Japan Earthquake Disaster of 2011 is an unprecedented natural disaster in Japan because it consists of not only direct damage caused by destructive seismic vibration and tsunami flooding, but also various ongoing physical and social damage due to pervasive and long-term radioactive contamination from the nuclear accident at the Fukushima Daiichi Power Station. The nuclear disaster is still ongoing. In preparation for a more comprehensive report on the nuclear disaster, Seto (2021) introduces issues that became clear in the process of collecting, preserving, and exhibiting disaster materials at the newly established nuclear disaster memorial museum. The study emphasizes major differences compared to conventional historical disaster materials, such as diversity of materials, copyrights, and consideration of type of medium.

In the process of recording a disaster, primary sources are easily discarded, and valuable information and experience of various events that occurred during the disaster are lost with the people concerned. Sometimes reports that intend to summarize a disaster converge complex disaster events into a few prominent ones. The overlooked events will often attract attention in a following complex disaster with similar causes in posterity, as illustrated by Tamura (1997). Such overlooked or forgettable events are recorded in some local disaster reports. They provide valuable information on the events and their spatiotemporal relationships. Since 2003, the Special Investigation Committee on the Succession of Disaster Lessons at the Central Disaster Prevention Council has conducted thorough investigations and has utilized local records of famous former disasters (Central Disaster Prevention Council HP). The emphasis seems to be on reconstructing the events’ physical processes with more detail and accuracy.

Regarding the Great East Japan Earthquake Disaster 2011, many affected municipalities published disaster reports with financial support from the national government. Their contents, composition, and expression vary depending on intention, editing processes, and other factors, and even inconsiderate routine handling is occasionally found in their composition and descriptions (Tamura and Iwafune, 2021). Many municipalities seem to consider rather restrictively the publication of reports as a tool for preserving memories of a disaster for future residents in administrative areas. On the other hand, some natural disaster researchers tend to ignore local reports as research materials. For more efficient and wise use of public funds and publication opportunities, and for a more comprehensive and accurate understanding of the complex characters of natural disasters, it is imperative to discuss a system for planning, editing, disseminating, and analyzing local reports. This special issue promotes such a debate.

Notes
1) Central Disaster Prevention Council HP (http://www.bousai.go.jp/kyoiku/kyokun/kyoukunnokeishou/ [last viewed on February 6, 2021]).

References

Kuroki, T. (2021): The role of landform information in disaster records of local scale areas focusing on geospatial characteristics. *Journal of Geography (Chigaku Zasshi)*, 130, 197–212. (in Japanese with English abstract)


*Journal of Geography (Chigaku Zasshi)*, 130, 177–196. (in Japanese with English abstract)


* Title etc. translated by M.I.