

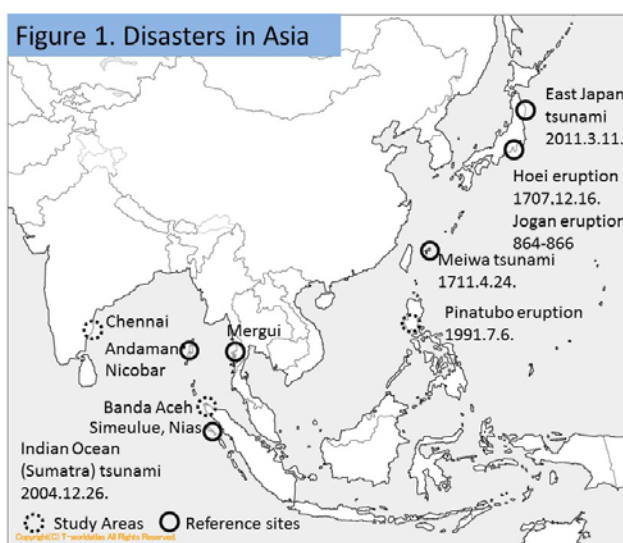
## Comment II

AKIMICHI Tomoya<sup>17</sup>

### Study Areas

First of all, I would like to express my appreciation for the excellent presentations by our speakers from the Philippines, Indonesia, and India in the preceding session today. I have learned a lot about post-tsunami resilience activities and ideas from different perspectives in anthropology. Now, I would like to present some remarks relative to the presentations using some slides before entering into a general discussion. In Figure 1, the dotted round marks show the locations that were addressed in three papers, namely the Pinatubo Eruption in the Philippines on July 6<sup>th</sup>, 1991, and Chennai, southern India, and Banda Aceh in Indonesia that were destroyed by the Indian Ocean (Sumatra) Tsunami on December 26<sup>th</sup>, 2004. The round marks are locations relevant to my discussion. In our time, in the north, the Tohoku area was destroyed by the East Japan Tsunami on March 11<sup>th</sup>, 2011. In the distant past, we know of the Hoei Eruption of Mt. Fuji, on December 16<sup>th</sup>, 1707 and the Jogan Earthquake and subsequent tsunami which covered an extensive area of the Japanese mainland between 864 and 866. In the Ryukyu Islands, the Meiwa Tsunami occurred on April 24<sup>th</sup>, 1771.

These are case study areas of Japanese disasters. Looking at parts of southern Asia, several areas are indicated as references to the Indian Ocean (Sumatra) Tsunami such as the Andaman Islands in India, the Mergui Islands in Myanmar, and the Simeulue and Nias Islands in Indonesia.



<sup>17</sup> Research Institute for Humanity and Nature Professor Emeritus/Yamanashi Prefectural Fujisan World Heritage Center Director-General

### **Three Stages of a Disaster**

First, I suggest that it is important to consider disasters from an anthropological standpoint based on three stages: pre-disaster, disaster, and post-disaster. An earthquake is often an omen of an impending disaster. In the pre-disaster stage, investigation of past events that have been recorded both as oral tradition and in historical documents about the events can explain how people recognized disasters in the past.

In the middle of a volcanic eruption and the subsequent tsunami, a large number of human and animal lives and an indescribable amount of resources and property are instantly lost, and the existing environment changes drastically and instantly. Such a combination of disasters shows how incredibly fragile human civilization is.

In the post-disaster stage, participatory aid and rescue start immediately to save as many survivors as possible. The first 72 hours after a disaster are considered critical to rescue lives. Provisions of food and water, medical care, and safe sanitation for refugees are ongoing for some time, and as time passes, people's attitudes toward external aid and support gradually changes. After the shock passes, refugees begin their own resilient activities such as searching for lost property from their houses. Often, the houses themselves have been completely destroyed. Next, their concerns may be directed to generating self-subsistence and finding work to earn their own living. Researchers and governmental officials arrive at the scene to begin investigations of the losses and destruction of cultural traditions and heritage that hold communities together. During these processes, it is essential to acknowledge that a drastic transformation happens to people's ideas and their decisions in order to provide the best post-disaster rehabilitation programs for their physical, economic, and mental conditions. Throughout these three stages, it is essential to recognize the greatly influential role of the media as Dr. Gopalan has pointed out in his case study in Chennai, India. I am reminded of my experiences, as there was a lot of false information supposedly "leaked" by the media concerning the earthquake in June this year. How much of the false information is actually misinformation due to the media failing to seek to report what is actually happening in a disaster setting?

When I was staying at the Mt. Fuji World Heritage Center in Yamanashi Prefecture, an emergency warning suddenly rang out around five o'clock in the evening. When the warning sounded, everybody ran out of the building, but it seemed as if nothing had happened. Had the Mt. Fuji volcano erupted? In this case, it was a false alarm from the information center in Tokyo. They said that an earthquake had happened, and that the magnitude was 7.0. Later, it was revealed that the warning was based on false media information. I am very pleased for Dr. Gopalan's remarks about the role and influence of media reporting around the issues of disasters.

Historically, before a disaster strikes, (pre-disaster stage), oral and documented records provide useful information and important lessons from traditions of the past. For example, in the Sandai-Jitsuroku, a national historical text completed in 901, there are 15 volumes that

describe events surrounding disasters such as this excerpt, “The port roared like thunder. Big waves ascended the river rapidly and reached the Taka castle. Waves covered an area of a few hundred square kilometers wide. All the fields and roads sank under the water and changed to the sea, and thousands of people became victims. All the houses and agricultural fields, and crops were totally lost, and nothing was left behind.” These words reflect what I refer to as discrete stages surrounding disasters like earthquakes, volcanic eruptions, and tsunamis.

### **Perceptions of Disasters from Ancient Japan**

It should be noted that in ancient Japan, such disasters as earthquakes and volcanic eruptions were thought to be caused by anthropogenic agencies and not by natural causes. For instance, in the case of Mt. Fuji’s eruption during the ninth century, the shaman in the Court of Kyoto, the capital of Japan, addressed an oracle and pronounced that the eruption of Mt. Fuji was the result of the Mountain God’s anger because local priests in charge of the Mt. Fuji area had ignored the god. In other words, the reason for the eruption was the laziness and incompetence of shrine staff at the Sengen shrine who had not performed the rituals properly and the result was the prevalence of sickness and death of local people. In 864, the Court ordered a new shrine to be constructed to honor the Sengen God in the Kai country for worshipping the God of Mt. Fuji, as they perceived that the Kawaguchi Sengen Shrine and the Ichinomiya Sengen Shrine had been successful in their protection of the people.

### **Local Legends and Lessons about Tsunamis**

On April 24<sup>th</sup>, 1771 (Meiwa 8, March 3<sup>rd</sup>), there was a huge earthquake and subsequent tsunami that affected the island of Ishigaki and nearby islands in the southern area of Ryukyu, Okinawa. Due to the tsunami, a vast number of people who had dwelled along coastal zones were lost. A landslide of big coral stones was driven toward the beach and lowland areas. This slide shows the tsunami rocks found at Ohama, which is 9m above sea level. Initially, the rock was thought to be deposited there by a big wave from the Meiwa Tsunami, but later, it was determined that it had been driven ashore over 2,000 years before, far earlier than the Meiwa Tsunami.

After the Meiwa Tsunami, a local legend gradually spread in the Ishigaki Island. It was a lesson on how to avoid the tragedy caused by tsunamis by observing nature for a particular message from nature. In the legend, a captured dugong informed local fishermen of an oncoming attack by a tsunami. One version says that three local fishermen from the Shiraho village in the Ishigaki Island happened to catch a dugong in a net and tried to bring it back to the village as food. The dugong appealed to the fishermen to save its life in human language, “If you let me go free, I can tell you an important message.” The fishermen consulted carefully on the dugong’s request, and finally decided to release it. The dugong told the fishermen that a huge tsunami would come on the following day. Then the animal escaped into the sea. The

fishermen reported that a tsunami was coming to local officials, but they did not believe in the forecast. The three fishermen and their family members evacuated to safety. When the tsunami did arrive the following day, many people perished in the Shiraho village.

There are not only narratives to warn people to evacuate before a tsunami arrives, but also messages about tsunami incidences, such as how far inland a tsunami will reach, and how to evacuate from tsunamis engraved on stone monuments that have been left from the past. For instance, after a tsunami in 1933 in the Tohoku area, various kinds of stone monuments or Kaisho-hi, were constructed and engraved with warnings and instructions as follows; (1) In case of an earthquake, be aware of a tsunami to follow. (2) Don't go to the coast. (3) Don't live at lower elevations.

In Aneyoshi village located on the Omoe peninsula near Miyako city, the people have suffered through two tsunamis in 1896 and 1933. The height of the waves of the tsunamis reached 18.3m in 1896, 75 people died and only two survived, and in 1933, the wave rose to 12.4m killing 96 people and leaving only four alive. The lesson taken by the people of Aneyoshi from these two tsunamis were to never to live at lower elevations. This lesson was then engraved on a stone monument constructed at a site that is at least 60 m above sea level, indicating that houses for future generations should be built at much higher elevations than in the past. Their legacy is, "Don't forget the tsunami disaster and never build houses below this monument." By following this local knowledge, all of the residents of Aneyoshi were able to escape the tsunami of 2011 (Figure 2).



**Figure 2. Tsunami Monuments at Otsuchi Town (left), Aneyoshi area (Right).**

In the Otsuchi monument, the engraved message is, "(1) in case of an earthquake, please be aware of the tsunami to follow. (2) Don't go to the coast. (3) Don't live at lower elevations." The Aneyoshi monument warns, "Don't forget the tsunami disaster and never

build houses below this monument.”

Despite the wise warnings engraved on these stone monuments, several people ignore the instructions and move to lower elevations and live close to the coast. This is partly because of increases in population and limited residential space higher up along coastal areas, and inaccessibility to coastal water, particularly for fishermen. Another issue is social enforcement for second and third sons to live independently outside of the eldest son's residence, a common traditional practice in the Tohoku area known as the *maki* custom (Akimichi 2016a).

### **Indian Ocean Tsunami Relief**

In Japan, coastal villages suffer from these disasters, but in the Indian Ocean tsunami of 2004, coastal resort areas in southern Thailand, where gorgeous hotels and mansions were densely distributed, suffered terrible destruction. Areas like this have been converted to world-famous tourist destinations developed by western capitalism, depriving local inhabitants of living space, as Bandana Shiba pointed out. Areas prone to such disasters all suffer from these types of development programs and resorts built and promoted by development capitalism as biopiracy (Shiba 1999, 2005).

In other areas around the Andaman Sea and Sumatra Island, local inhabitants experienced different types of responses to the destruction. For instance, in the Andaman Islands, where the dwellings of the Andamanese people had been totally destroyed, the government wanted to relocate them to Port Blair, a main city in the Andaman Islands. However, the islanders refused to accept external governmental aid and decided to move to another site in their own way.

In the Aceh, located at the northwestern-most part of Sumatra Island, it is known that political struggles have continued between the Aceh Kingdom and colonial Dutch government since the nineteenth century. After the establishment of the independence of Indonesia in 1945, the Aceh continued to confront the Indonesian government. Since then, GAM (Gerakan Aceh Merdeka) has controlled the area. Even though a Peace Treaty was forged in 2002, it was denounced in 2003, and martial law was proclaimed. The 2004 tsunami put a temporary stop to the fighting, but GAM moved to a higher place and the fighting resumed. The governmental aid did not reach the Aceh people as their priority was confrontation against the government, rather than focusing on becoming resilient after the tsunami. The islanders on Nias, one of a chain of islands located offshore of Sumatra Island, took a different approach as they chose to continue to live in the same houses after they were repaired and reformed or built on a pile of rubble, as many houses were only partly damaged by the tsunami.

For the Moken or Sea Gypsies, a tsunami is called a laboon or man-eating waves, and is believed to become aroused by sea spirits. Once the ancestral spirit burns with anger, he instantly sends waves. The Moken also believe that when a tsunami has been aroused, the

cicadas stop singing. Tsunamis are thought of as supernatural powers of these spirits, rather than as a natural phenomenon.

On the island of Simeulue, an offshore island of Sumatra Island, it is noteworthy that most of the islanders were safely evacuated from the tsunami. These people connected the pending disaster to a previous tsunami on Jan. 4<sup>th</sup>, 1907. As the lesson learned from the 1907 tragedy, the Simeulue islanders invented a “quatrain” stanza, a complete poem consisting of four lines. Versions have been handed down orally as cradlesongs. At the time of the earthquake and tsunami in 2004, inhabitants sought refuge on hillsides. They were following the orally transmitted strategy. On Simeulue Island, a tsunami is called a *smong*.

### **Holistic Approaches after Disasters**

As we have seen, volcanic eruptions and tsunami disasters can be analyzed from various approaches like the three stages mentioned here: pre-disaster, in the middle of a disaster, and post-disaster. In the pre-disaster stage, documents, oral traditions, and monuments bearing messages and lessons on how to avoid injury or death from a disaster can come from the past or the present. Yet, there are few cases that demonstrate that many of these lessons were actually functional as evacuation measures, except in the case of Simeulue in Indonesia.

Behaviors of resilience vary according to the attitudes toward disaster, which are associated with particular areas and are differentiated due to ecology, culture, society, and politics. For instance, fisheries sectors have been seriously affected by tsunamis, both in the past and in the present. Yet, in the course of rehabilitating their communities, different types of policies and investments have been implemented. As I have clarified in my book, the fishing center for tuna and skipjack moved from Phuket to Sri Lanka. Owing to foreign aid, the number of fishing vessels were largely increased in India and Thailand fishery sectors that brought about over-fishing. Also, due to a high density of cage culture fishing in the Andaman Sea in Thailand applied as a relief measure for small-scale fishermen, fingerlings of grouper were overfished, which eventually caused resource depletion. For appropriate marine resource management, the role of fishery leaders in Indonesia, i.e., Pangrima Laut, was evaluated rather than the government making decisions to manage the resources. Overall, it became evident that flexible policy-making is definitely important depending on the degree of risk and local conditions (Akimichi 2016b).

Cultural perceptions toward volcanic eruptions and tsunamis are not uniform and religious and ritual observances regarding disasters must be taken into account for community recovery. As demonstrated by the stories recounted here, indigenous people do not always regard the cause of a disaster as a natural phenomenon; some still believe in an anthropogenic cause. This was verified in cases related to the eruption of Mt. Fuji in ancient Japan, and the Moken’s perception toward Indian Ocean tsunamis.

In the post-disaster stage, we should carefully examine local perceptions and reactions

if they must relocate residential areas or move to higher or safer places. Transmigration in the post-disaster stage needs a time-series observation. Socio-cultural factors may decide if the locals move to a higher elevation, remain in the same place due to a lack of land and inconvenience for fishermen, or other enforcements derived from social structures. Job opportunities, lack of funds, family, and children's education are also variables that affect people's decision-making.

Also of importance is the impact on ecosystems, which must be carefully examined in the recovery process. Changes in an ecosystem are not like human-oriented programs as the speed and content of ecosystem change are distinct. Factors relevant to ecosystem degradation and change in land and coastal areas such as acidification in mud-flats, sedimentation of debris on the sea bottom, and volcanic ash covering mountain slopes are complex in nature. Therefore, a long-term program with possibly high costs and labor intensiveness such as building anti-wave banks or mangrove transplanting need to be carefully implemented so as to integrate both ecological and socio-cultural resilience as a set. Finally, discussion and consideration must be given if a full retreat from areas that are vulnerable to recurring disasters become serious possible solutions.

I would like to congratulate all of the speakers for their thoughtful presentations, and I hope my comments serve as a useful source for future work to develop more anthropologically holistic approaches, which I believe will be indispensable for the analysis of ecological and social issues such as disasters.

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