



Japan’s Disaster Management Expertise Aids Southeast Asia: Strengthening Partnerships with Natural Disaster Countermeasures -The Shared Future of Asia and Japan-

Japan is, unfortunately, known as a “disaster-prone country” due to repeatedly being hit by natural disasters like earthquakes, tsunamis, typhoons and torrential rains. However, the countless losses and damages have spurred the advancement of disaster countermeasures and technologies. Japan’s disaster management (BOSAI) initiatives have been led by both the public and private sectors and have spread beyond the national border to help mitigate damages in Southeast Asian countries facing similar threats.



Flooded streets in Marikina City, in the eastern part of the Manila metropolitan area, Philippines.

This September, Indonesia launched the Disaster Prevention Information System (DPIS). When the country's meteorological agency releases emergency information on a disaster, such as a tsunami or earthquake, the DPIS delivers it simultaneously to disaster management organizations and media stations nationwide to ensure the people's safety and security. Prior to the implementation of this system, Indonesia did not have a proper method for relaying information to its people, which was a pressing concern. NTT DATA, a leading Japanese IT service company, was in charge of this project, from design to development. It based the DPIS on know-how drawn from Japan's disaster information sharing system L-Alert. Working as a team with engineers on the Indonesian side, they completed a system that is suited to the current state of Indonesia. This project was part of the Japanese government's Official Development Assistance (ODA), aiming to spread Japan's disaster management technologies overseas. It marked the first time the L-Alert was implemented outside the country.

Disaster management partnerships between Japan and Southeast Asia are not new. For example, the Japan International Cooperation Agency (JICA) has been working with the Philippine government for half a century on flood countermeasures. One of the most prominent projects is the flood mitigation efforts along the Pasig-Marikina River running through the center of Metro Manila. It has been ongoing for over 30 years. Increased precipitation is increasing the risk of floods every year in the metropolitan area, where the population is growing rapidly. Yen loans from Japan have been used for infrastructure development, such as improving the Manggahan Floodway, a tributary that allows Marikina River's flood water to flow into Laguna Lake, and repairing the Marikina River itself. This can reduce flood damage along the river and also help maintain the city's functions. In fact, when Typhoon Vamco (Ulysses) hit in 2020, it is believed that damages were greatly reduced thanks to the floodway and river repairs. Japan and the Philippines share a lot in common in terms of terrain and population distribution, with 75% of Japan being mountains and half the population living along rivers. This is one example of how the scientific countermeasures against flooding that Japan has developed over many years are helping to mitigate flood risks in the Philippines.

In Japan, over 5,000 people died or went missing during the 1959 Isewan Typhoon (Typhoon Vera). The Great Hanshin-Awaji Earthquake in 1995 killed over 6,000 people, many of whom were crushed to death under destroyed buildings. Then in 2011, the Great East Japan Earthquake triggered a giant tsunami that hit various regions, leaving 18,000 people dead or missing.

Natural disasters are occurring frequently in regions across the Association of Southeast Asian Nations (ASEAN) as well. The 2004 Indian Ocean Earthquake and Tsunami resulted in 220,000 victims across countries along the coast of the Indian Ocean. Damages caused by other natural disasters have followed, such as the 2008 cyclone in Myanmar and Super Typhoon Haiyan (Yolanda) in the Philippines in 2013. Japan has provided a broad range of assistance to various ASEAN countries to date, such as formulating disaster management plans, improving infrastructure and training human resources. In recent years, such efforts have been growing beyond bilateral cooperation.

In October 2023, JICA signed a memorandum with the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) to promote joint disaster response efforts. The AHA Centre was established in Jakarta, Indonesia, in 2011 to share disaster-related information among ASEAN countries and coordinate emergency relief. The conclusion of the memorandum aims to strengthen Japan-ASEAN partnerships to respond to disasters. It will assist in the operation of the disaster information management system that oversees ASEAN as a single region and the construction of a disaster management network.

In addition to these international partnerships, Japan is also putting greater effort into exporting disaster management technologies, led by both the public and private sectors. Research and development on disaster management and mitigation using artificial intelligence (AI) technology is progressing in Japan. For example, a system is being developed that uses AI, instead of people, to automatically analyze satellite image data when a disaster occurs and instantly identify the areas that will be affected. These systems under development will be able to swiftly extract the data necessary for local governments to make evacuation notice decisions, assist in making decisions for each of the affected areas and support evacuation guidance. Once they are practically implemented, they will be able to help reduce damages in advance and tie into swift recovery work.

Kimio Takeya, a specially appointed professor at the International Research Institute of Disaster Science, Tohoku University, who has been involved in disaster recovery aid around the world for many years, stresses that, "Out of all developed nations, Japan is the only country that has drawn on its own history of experiencing disasters to develop, correct and refine its disaster management technologies. We have been using them ourselves, which allows us to confidently present and have them be used around the world." He points out that,

“Among natural disasters, floods cause the greatest economic harm, and earthquakes cause the highest dead toll, but rarely do Europe and the United States experience these disasters.” Takeya explains that Asian countries share some regional characteristics: settlements historically developed along rivers to farm rice, which placed cities in their current locations and made them vulnerable to flood damages, and earthquakes are also frequent occurrences. This makes Japanese technologies appealing, because they were developed based on experience.

Takeya is known as a leading figure who made the concept of “Build Back Better” a global standard in the world of disaster management. The concept encourages people to enhance countermeasures during recovery efforts to prevent the recurrence of similar damages. Investing in disaster readiness is what Takeya emphasizes most now. While early warning systems can save lives, that is not enough. He stresses that regional economies must not be repeatedly destroyed. It is important, he says, for the leaders and finance ministers of each country to recognize that investing in flood prevention measures is far less costly than covering damages from disasters when no countermeasures are in place.

On June 5, 2024, the Ministerial Meeting on Strategy relating to Infrastructure Export and Economic Cooperation was held in the Small Hall on the second floor of the Prime Minister's Official Residence in Nagatacho, Tokyo. There, the framework for the Infrastructure System Overseas Promotion Strategy 2030 was agreed upon, as a policy for Japan's further expansion into the global infrastructure market. This included the export of disaster management infrastructure systems. Chief Cabinet Secretary Yoshimasa Hayashi, who chaired the meeting, summarized it by saying, “The public and private sectors must go beyond conventional infrastructure concepts and form partnerships in new fields to contribute to our country's and the world's sustainable growth while also elevating the existence of Japanese companies.”

The Ministerial Meeting on Strategy relating to Infrastructure Export and Economic Cooperation was established in 2013 by the then - Shinzo Abe Cabinet to support Japanese companies in expanding into the global infrastructure market. This was around the time when Xi Jinping's government began to actively advance into infrastructure construction in nearby countries and launched the Belt and Road Initiative, which aims to create a massive economic zone. A Japanese government official who had knowledge of the situation at the time explained that “the Abe government decided it was necessary for Japan to counter China by becoming a prominent presence in Asia as well.” By strengthening partnerships

with ASEAN countries through BOSAI, Japan hopes to not only help protect the lives and assets of many people from disasters but also strengthen economic and foreign diplomacy partnerships as well.

By Akio Yaita

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Press Kit DATA



Flooded streets in Marikina City, in the eastern part of the Manila metropolitan area, Philippines.

4 December 2023 (c) Jiji Press



Debris and destruction covers a large area of land in Natori, Miyagi Prefecture, on March 14, 2011. after a quake-tsunami disaster that is feared to have killed more than 10,000 people. AFP PHOTO / Toru YAMANAKA (c) AFP



Late Prime Minister Shinzo Abe (third from left) at The Ministerial Meeting on Strategy relating to Infrastructure Export and Economic Cooperation (c) Jiji Press



A general shot shows a view of downtown Tacloban, Leyte province on December 9, 2013. Philippine President Benigno Aquino is to seek more aid when he meets with Japanese Prime Minister Shinzo Abe this week, more than a month after a monster typhoon killed thousands and left millions homeless. AFP PHOTO/NOEL CELIS (c) AFP



Kimio Takeya

Distinguished Technical Advisor on Disaster Risk Reduction at JICA / Specially Appointed Professor (guest faculty) at the International Research Institute of Disaster Science, Tohoku University (c) Kimio Takeya



Typhoon Vera

Flooded schoolyard in south Nagoya offers evidence of record rainfall which accompanied typhoon Vera as it struck Japan on September 26th. About thousands remained stranded on the rooftops small dots of land as water continued to recede very slowly in wake of worst storm ever recorded in Japan. Official USAF Photo (c) Jiji Press