

**Japan-ASEAN Science, Technology and Innovation Platform
(JASTIP)**

Report of JASTIP-Net Activity

Date: 2017/12 04/

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| 1. Research partner | Affiliated Organization | |
| | Name | Natt Leelawat |
| | Affiliation | Department of Industrial Engineering, Faculty of Engineering, Chulalongkorn University |
| | Position | Lecturer/Dr. |
| | Address | Department of Industrial Engineering, Faculty of Engineering, Chulalongkorn University, Phayathai Road, Pathumwan, Bangkok 10330 Thailand |
| 2. Collaborative research | Collaborative research theme | <p>Headquarters</p> <p><input type="checkbox"/> To Develop Operational Linkages and Human Resources among Academic Sector, Government Agencies, and Private Sectors in ASEAN countries and Japan.</p> <p><input type="checkbox"/> To Introduce Various STI Collaborations for Effectively and Efficiently into the Society based on the three joint laboratories' activities.</p> <p>Energy & Environment Joint Lab</p> <p><input type="checkbox"/> Studies on Rural/Community Renewable Energy.</p> <p><input type="checkbox"/> Development of Renewable Energy Technology adapted to the ASEAN region.</p> <p><input type="checkbox"/> Studies on Energy Policy/Security in the ASEAN region.</p> |

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| | | <p>Bioresources & Biodiversity Lab</p> <p><input type="checkbox"/> Studies on Biodiversity in the ASEAN Region Contributing to the Improvement of Identification, Collection and/or Information.</p> <p><input type="checkbox"/> Sustainable Utilization of Bioresources for Biorefinery, Bioremediation, Wood Construction, Food or Medicine.</p> <p><input type="checkbox"/> Plant Improvement for Agroforestry Systems and Carbon Sequestration Contributing to the Mitigation of and/or Adaptation to Climate Change.</p> <p>Disaster Prevention Joint Lab</p> <p><input checked="" type="checkbox"/> Innovative Ideas on Disaster Prevention, Mitigation and Recovery Technologies and Policies Peculiar to Each ASEAN Country.</p> <p><input type="checkbox"/> How to Cope with Trans-Boundary Disasters in the ASEAN Region Such as Tsunami, Flood, Drought and Haze.</p> <p><input type="checkbox"/> Understanding and Quantitative Evaluation of Disaster Risks Peculiar to ASEAN Countries.</p> |
| | Collaborative research title | ICT Use in Disaster Evacuation of ASEAN Citizens: Lessons Learned from the 2011 Great East Japan Earthquake and the 2016 Kumamoto Earthquakes |
| | Host core-researcher | |

3. Members

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|-------------|--|----------|---|
| Name | Anawat Suppasri | | |
| Affiliation | IRIDeS, Tohoku University, Japan | Position | Associate Professor, Dr. |
| Name | Fumihiko Imamura | | |
| Affiliation | IRIDeS, Tohoku University, Japan | Position | Professor, Dr. |
| Name | Abdul Muhari | | |
| Affiliation | Ministry of Marine Affairs and Fisheries, Indonesia | Position | Head of Coastal Disaster Mitigation Division, Dr. |
| Name | Mongkonkorn Srivichai | | |
| Affiliation | Rajamangala University of Technology Lanna, Thailand | Position | Lecturer, Dr. |
| Name | Elsie Benedict Jaimin | | |
| Affiliation | Malaysian Meteorological Department, Malaysia | Position | Assistant Director, Ms. |

4. Report of activities

4.1 Research Activities and Major Findings

We seek to understand an evacuation operation according to the experience of people and organizations based on the 2016 Kumamoto Earthquakes and the 2011 Great East Japan Earthquake. At first, we conducted semi-structured interviews. Interview data and archival data from social media were collected. We interviewed related officers from

the Royal Thai Embassy, Tokyo, and the Thai Students' Association in Japan under the Royal Patronage; as well as some Thai survivals.

As it can be seen in Fig. 1, we also visited Kumamoto Prefecture to interview some survivals on the site, both Thai and Indonesian.



Fig. 1 Site Visit and Data Collection at Kumamoto Prefecture, Japan. Reprinted from *The 2016 Kumamoto Earthquakes Recovery and Reconstruction Observation and Interview Surveys, Kumamoto (2017/03/15-16)* (p. 1), by N. Leelawat, 2017, March 15-16, Miyagi: IRIDeS.

Since we would like to explore related disaster education and evacuation issues in other ASEAN countries, we visited Chiang Rai, a province experienced many earthquakes in the Northern Thailand. Moreover, we visited Jakarta, Indonesia, to conduct a meeting discussion and interviews. As shown in Fig. 2, we visited the Ministry of Marine Affairs and Fisheries (KKP), Indonesia. Dr. Natt Leelawat had a meeting and discussion with Dr. Hendra Yusran Siry (Deputy Director for Coastal Disaster Mitigation and Climate Change Adaptation) and Ms. Irina Ragliana (Executive Secretary of the International Center for Interdisciplinary and Advance Research (ICIAR) from the Indonesian Institute of Sciences (LIPI)), together with Dr. Abdul Muhari (JASTIP-Net Research Team Member). The meeting was primarily about the collaboration and lessons learned from the disaster education and evacuation in Indonesia.



Fig. 2 Research Meeting and Data Collection at the Ministry of Marine Affairs and Fisheries, Indonesia. Reprinted from *IRIDeS member visited Ministry of Marine Affairs and Fisheries, Jakarta, Indonesia (2017/03/20)* (p. 1), by N. Leelawat, 2017, March 20, Miyagi: IRIDeS.

Mainly at this stage, we found many encountered problems of the affected people, solutions, process management by related organizations, as well as many lessons learned.

4.2 Academic and Social Implications

Our team focused on both academic and social contribution. In addition to only conducting research at Chiang Rai, Dr. Natt Leelawat also gave a special lecture on disaster education and building damage analysis to civil and environmental engineering students at Rajamangala University of Technology Lanna (*see Fig. 3*).

Dr. Natt Leelawat presented his research and lessons learned based on this research at the Bilateral Joint Research Seminar between Japan and Korea- Smart Design Tourism- at Okinawa, Japan (*see Fig. 4*).



Fig. 3 Dr. Natt Leelawat gave a special lecture to engineering students at Rajamangala University of Technology Lanna, Chiang Rai, Thailand. Reprinted from *IRIDeS member has been invited to give a special lecture at Rajamangala University of Technology Lanna Chiang Rai Campus, Thailand (2017/02/06)* (p. 1), by N. Leelawat, 2017, February, 6, Miyagi: IRIDeS.



Fig. 4 Dr. Natt Leelawat was invited to give a presentation at the Bilateral Joint Research Seminar (BJRS) between Japan and Korea- Smart Design Tourism -, Okinawa, Japan. Reprinted from *Bilateral Joint Research Seminar (BJRS). Between Japan and Korea- Smart Design Tourism -, Okinawa (2017/02/18-21)* (p. 1), by N. Leelawat, 2017, February 18, Miyagi: IRIDeS.

Moreover, Dr. Natt Leelawat and Dr. Mongkonkorn Srivichai joined the Third JASTIP Symposium at Bangkok, Thailand. Dr. Natt Leelawat presented our JASTIP-Net research at the symposium (*see Fig. 5*).



Fig. 5 Dr. Natt Leelawat and Dr. Mongkonkorn Srivichai and their poster in the Third Symposium – ASEAN-Japan STI Collaboration for SDGs –, Bangkok, Thailand. Reprinted from *Third JASTIP Symposium – ASEAN-Japan STI Collaboration for SDGs* – (p. 1), by N. Leelawat, 2017, February 5, Miyagi: IRIDeS.

Lastly, Assoc. Prof. Dr. Anawat Suppasri and Dr. Natt Leelawat joined the 2nd Symposium on JASTIP Disaster Prevention International Cooperation Research (JASTIP-WP4 Symposium) at Kyoto, Japan. As shown in Fig. 6, they also presented their research at the symposium.



Fig. 6 Assoc. Prof. Dr. Anawat Suppasri and Dr. Natt Leelawat presented their research in the 2nd Symposium on JASTIP Disaster Prevention International Cooperation Research (JASTIP-WP4 Symposium), Kyoto, Japan. Reprinted from *The 2nd Symposium on JASTIP Disaster Prevention International Cooperation Research (JASTIP-WP4 Symposium), Kyoto (2017/03/22-23)* (p. 1), by A. Suppasri and N. Leelawat, 2017, March 22, Miyagi: IRIDeS.

In addition, based on our findings, we proposed the guidelines for tourists, especially for overseas traveling. They include “Register at the citizen database”, “Follow the embassy’s SNS”, “Inform relatives”, “Check the rule of evacuation”, “Check the emergency exit and evacuation area”, “Prepare the communication device”, and “Confirm your safety” (Leelawat et al., 2017, pp. 674-675).

List of publications

Natt Leelawat, Anawat Suppasri, Panon Latcharote and Fumihiko Imamura, “The evacuation of Thai citizens during Japan’s 2016 Kumamoto earthquakes: An ICT perspective,” *Journal of Disaster Research*, 12(sp), 669-677, 2017

5. List of oral presentations

Leelawat N, Suppasri A, Imamura F, Muhari A, Srivichai, and Jaimin E B. ICT use in disaster evacuation of ASEAN citizens: Lessons learned from the 2011 Great East

Japan earthquake and the 2016 Kumamoto earthquake. JASTIP-WP4 Symposium, Kyoto, Japan, 22 March 2017.

Leelawat N. Disaster and safety management in Japan: A focus on tourism and ICT. Bilateral Joint Research Seminar (BJRS) between Japan and Korea, Okinawa, Japan, 18-21 February 2017.

Leelawat N, Suppasri A, Imamura F, Muhari A, Srivichai, and Jaimin E B. ICT use in disaster evacuation of ASEAN citizens: Lessons learned from the 2011 Great East Japan earthquake and the 2016 Kumamoto earthquake. The Third JASTIP Symposium-ASIAN-Japan STI Collaboration for SDGs, Bangkok, Thailand, 5 February 2017.

Leelawat N, Suppasri A, Latcharote, Yasuda M, and Imamura F. Evacuation of Thai citizens during the 2016 Kumamoto earthquakes. The 8th Thailand-Japan International Academic Conference, Tokyo, Japan, 29 October 2016.