



The Regional Network Office for Urban Safety (RNUS)

Monthly Report (March 2024)

Report to STE/SET

Prepared by RNUS

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1.1 Summary

This report summarizes the activity done in the month of March 2024. Progress has been made on the following fronts:

- 1) RNUS outreach activities:

- the inaugural session of the RNUS student seminar series took place on 8th of March (see section 1.2).
- 2) RNUS webpage was updated with the support of Mr. Makoto Kuno (Technical Staff, Kuwano Lab, IIS, UTokyo). Ms. Metta is monitoring website content changes and updating news. Please go through this link for RNUS updated webpage [Regional Network Office for Urban Safety - RNUS \(ait.ac.th\)](http://RegionalNetworkOfficeforUrbanSafety-RNUS.ait.ac.th)
 - 3) RID visit (see section 1.3)
 - 4) Support in RIMES's DDPM/NDWC Project (see section 1.4)
 - 5) Research activities:
 - Support in STE's Student Research (see section 1.5)
 - Progress on Study on post-disaster recovery dynamics (see section 1.6)

1.2 RNUS Seminar Series -1st Session

The inaugural session of the RNUS student seminar series took place on 8th of March at the Milton E. Bender Jr. Auditorium (MEB) in AIT. The number of attendees was 38 people; many of whom registered beforehand. A database of interested attendees has been compiled for informing about future events under the same series.

Presentations were conducted by:

- Prof. Takeuchi on *“Introduction to RNUS Office – Ongoing Projects and Future Works”*
- Dr. Khin on *“Structural health monitoring with Remote Sensing Techniques”*





Fig-1 1st RNUS Seminar 8th March 2024

With many Q&A interactions, positive feedback regarding RNUS's activities was received from attending researchers and students. The 2nd RNUS Seminar event is planned for June 2024.

1.3 RID visit

RNUS research team visited Royal Irrigation Agriculture Experiment Station 5 (Mae Klong Yai) in Nakhon Pathom on 7th March 2024 and met with RID's team for further research collaboration on the topic "Monitoring of Alternative Wetting and Drying (AWD) over rice paddy fields in Asia with remote sensing and IoT devices". Prof. Takeuchi briefly introduced about the research theme, background information and previous initiatives. Head of RID and irrigation engineer agreed to proceed this research and they allowed to fly drone over RID rice paddy field.

RID team:

- (1) Mr.Sornchai Sittirak (Head of Royal Irrigation Agriculture Experiment Station 5, Mae Klong Yai)
- (2) Mr.Piya Korkuson (Irrigation Engineer)
- (3) Other team members

RNUS research team:

- (1) Prof.Takeuchi Wataru (IIS, UTokyo)
- (2) Dr.Khin Myat Kyaw (IIS, UTokyo)
- (3) Miss Metta (Secretary, RNUS office)
- (4) Miss Yoshimoto Eiko (Secretary, IIS, UTokyo)
- (5) Miss Thitimar Chongtaku (AIT Doctoral student, RS/GIS)
- (6) Mr.Kuno Makoto (Technical staff from Kuwano lab, UTokyo)

With the suggestion of RID team, Rynan sensors and Farmo sensors were relocated to another places where AWD technology will be applied in the coming cropping calendar.

Rice growing season is twice per month, starting in March and August. So, drone flying is scheduled to be started in August cropping season.

Location of RID paddy field: Irrigation Water Management Experiment Station 5 (MaeklongYai), Rural Rd ๓๓ 3020, Thung Khwang, Kamphaeng Saen District, Nakhon Pathom 73140, Thailand.



Fig-2 Water Level Sensors Installation and meeting with RID on 7th March 2024

1.4 Support in RIMES's DDPM/NDWC Project

Prof. Takeuchi is supporting RIMES's project on remote sensing-based flood inundation mapping. RIMES project is the developing the Decision Support System (DSS) customized

for Flood Impact-Based Forecasting (IBF) and Ocean Advisory Service with selected case studies. Prof. Takeuchi met with RIMES team on 6th March 2024 and further discussion is ongoing through email communication. As of now, Prof. Takeuchi contributed geotiff files of flood maps by Sentinel-1 satellite from 2022 Jan to 2024 March over TaChang area and waiting for feedback and inquiries from RIMES team.

1.5 Support in STE's Student Research

Dr. Khin is currently helping Ms. May Chue Nyeint (STE Master student) in her research on "Numerical Study to Evaluate and Use Sub-Structure Method to Retrofit A Case Study School Building in Dhaka". While Dr.Khin is out of RNUS office from 13th March 2014 to 29th April 2024, online communication is ongoing as necessary.

1.6 Recovery Simulation Seminar

Progress on the research theme *Study on post-disaster recovery dynamics* was presented as part of the Architectural Institute of Japan (AIJ) Open Research Symposium on Recovery Simulation (公開研究会「復興シミュレーション研究の活用」by :都市計画本委員会 災害対策・復興の新技术構築小委員会) conducted at the AIJ Conference Center, Tokyo, Japan on 18th March 2024. The invited online presentation was conducted by:

- Dr. Yasmin on "State of Recovery Simulation Modelling Research and its Use" in Japanese (国際的な復興モデル研究とその活用).

プログラム :

趣旨説明

越山 健治 (関西大学)

話題提供

【能登半島地震の情報】 能登半島地震のまちづくり復興に関する現況
(講師調整中)

【復興シミュレーション】 海外における復興シミュレーションの実践活用
東京大学 大津山 堅介

【復興シミュレーション】 国際的な復興モデル研究とその活用
東京大学 バタチャリヤ・ヤスミン

【復興シミュレーション】 復興期を見据えた仮住まい・住宅再建の想定
専修大学 佐藤 慶一

意見交換

進行 越山 健治 (関西大学)

まとめ

竹谷 修一 (建築研究所)

Fig-3 Presentation program of event (accessible
<https://www.aij.or.jp/event/detail.html?productId=692358>)

The progress on ongoing work of recovery model development received considerable interest from experts in the field of urban planning who endorsed its need for informing future recovery planning.

In relation to this, an earlier symposium paper presented at the AIJ by Dr. Yasmin was also discussed at this session:

- Bhattacharya, Y., Nakamura, H. (2023). Capturing Residents' Recovery Decision-making Processes in Agent-based Models validation with cases from Japan and Nepal (復興マルチエージェントモデルにおける住民意思決定プロセスの捉え方の妥当性の検証 - 日本とネパールの事例をもとに). Architectural Institute of Japan, Sep, 2023. Panel Discussion session paper.

1.7 Plans

- 1) To aid with the research of Dr. Yasmin, three student assistants from AIT are being hired who will begin work from April 1 on the following three topics:
 - Development of Land-use optimization tool
 - Nepal recovery research
 - Bangladesh recovery research

The monthly report will include hours worked on each project from the next issue.

- 2) To further proceed with the *Study on post-disaster recovery dynamics*, a sub-research topic: *The Dynamics of Post-Disaster Recovery, Relocation, and Return - A Study on the Case of the 2011 Canterbury Earthquakes* funded by the Obayashi Foundation is being pursued by Dr. Yasmin for which New Zealand based data analysis will be carried out and reported on in the coming months.