SATREPS NEWSLETTER

Project for Development of a Comprehensive Disaster Resilience System and Collaboration Platform in Myanmar

Vol.1: Issued on 1st July 2016

Introduction

Myanmar is disaster-prone country with earthquake and water-related disasters. In addition to the increase in disaster risk associated with rapid and large-scale land and urban development, uncertainties in the occurrence of these disasters will increase with global climate change. However, current infrastructure is not sufficient for disaster prevention, and institutional system, human resources, information system, etc. have challenges in disaster management.

YTU, Ministry of Science and Technology (MoST) and JICA agreed and signed Record of Discussion on 9th April 2015, and started "Project for Development of a Comprehensive Disaster Resilience System and Collaboration Platform in Myanmar" by SATREPS (**S**cience **a**nd **T**echnology **Re**search **P**artnership for **S**ustainable Development) on April 2015. Project period is up to April 2020 (5years).

Project is implemented by 6working groups such as 1) Water-related Disaster 2) Infrastructure Management 3) Transport and Mobility 4) Geospatial Technology 5) Earthquake-related Disaster and 6) Disaster Management.

Outline of SATREPS Project

Project Purpose:

YTU understands is use of scenario analysis systems to assess Myanmar's future vulnerability

Expected Outputs:

1. Development of physics model to evaluate disaster vulnerability
2. Development of scenario analysis system for assessing future disaster vulnerability
3. Support to establish Research Centre for Urban Safety in YTU to sustain and enhance research activities and human resource development
4. Development of integrated disaster response system including infrastructure maintenance management with adequate technologies

Project's Period:

April 2015 to April 2020

Project Office:

Ground Floor, Technological Research Centre (TRC) Building, YTU

Abbreviations

DMH - Department of Meteorology and Hydrology
DWIR - Directorate of Water Resources and Improvement of River Systems
ID - Irrigation Department
JICA - Japan International Cooperation Agency
MoC - Ministry of Construction
MoST - Ministry of Science and Technology
YTU - Yangon Technological University
YCDC - Yangon City Development Committee

Summery of each group activities

(March 2016 to June 2016)

1. Water-related Disaster Group

Weather observation station was installed in Zaung Tu Wier (Bago) on March 2016 in close collaboration with ID, DMH and DWIR. Data has been transferred to host computer in Japan. Data will be transferred also to YTU, and researchers of both YTU and Japan will start data analysis soon.

Weather observation station in Zaung Tu Wier (March)

4 weather observation stations and 4 hydro sensor is planned to be installed at Bago River basin and Yangon River in 3months. Project team had a series of discussion with ID, DMH and DWIR to identify installation location.

Dr. Kawasaki discussed with ID, DMH and YTU for identifying location for weather observation station and hydro sensor. (May)

3 working group members from ID, DMH and YTU were invited to Tokyo from 28 February to 4 March 2016 to attend Water-related Disaster Group Workshop and Asia Water Cycle Symposium (AWCS2016).

Dr. Win Win Zin made presentation at AWCS2016

2. Infrastructure Management Group

Inclinometer was set at Twan Tay Bridge and Tha Khyut Bridge in February 2016 to investigate the inclination of bridges. Project team collected data in April and May 2016. Inclinometer will be set until next spring, and Project team will analyze data and propose proper bridge maintenance and management system.

Twan Tay Bridge, Yangon (May)

Tha Khyut Bridge, Yangon (May)

Team also has been reviewing bridges in Mandalay. Bolts in Yadanarbon bridge are corroded and broken, and team has been analyzing data and planning to propose proper long-term maintenance system.

Yadanarbon Bridge, Mandalay (February)

Dr. Nagai is discussing with group members about report "analysis of broken bolts in Yadanarbon bridge (May)

Project received all bridge data in Myanmar (about 4,000) from MoC, and translated into English by May 2016. As the data doesn't describe latitude and longitude of bridges, project team plans to get exact location of bridges and create bridge map throughout Yangon City.

3. Transport and Mobility Group

Team has been conducting "Bus Location System" which collects GPS data from smart phones set in the buses in close collaboration with Matatha. Currently, about 35 smart phones are set, and 400 more is planned to be set within a year. Collecting and analyzing those data, operation system and user application system will be developed and proposed to Myanmar.

Team members check smart phone (May)

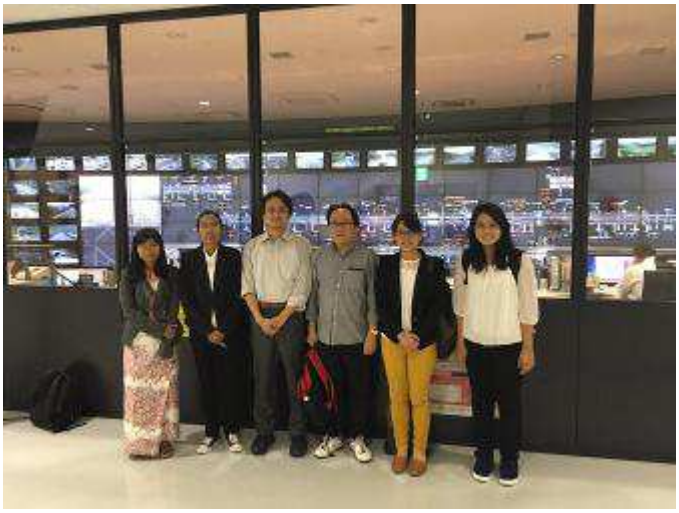
Team received mobile usage data from MPT and is analyzing People's flow (P-Flow). P-Flow was reconstructed by those sample data.

Reconstructed P-Flow by MPT sample data

Team plans to collect real-time data and reconstruct P-Flow in order to grasp people's major flow and utilize for rapid response in the event of disaster.

YTU students presented their research (May)

4 group members were invited to Japan from 9 to 28 May 2016 to discuss among group members and study data visualization with mobmap & GGIS, and so on.



Group members observed Control Center of NEXCO (Nippon EXpressway COmpany Ltd) (May)

4. Geospatial Technology Group

3days lecture " Photogrammetry and remote sensing" was conducted by Dr. Takeuchi at YTU in March 2016. 20-25 YTU students participated in the training and they were enabled to understand how to generate 3D terrain and building map , and carry out field data collection to validate 3D terrain and building map from remote sensing.

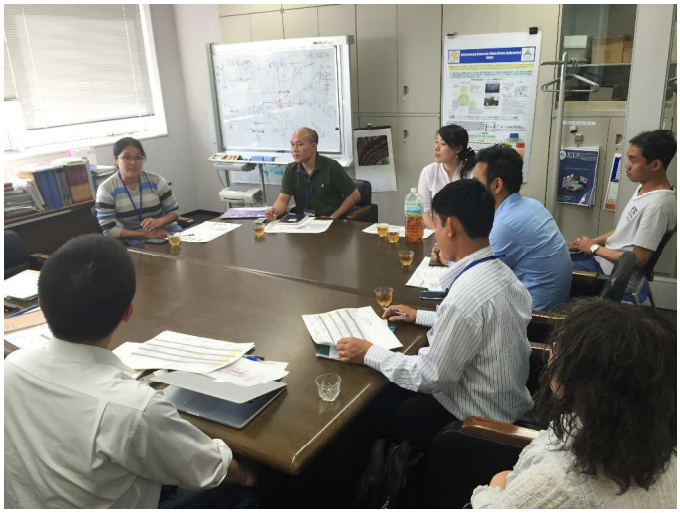
Lecture by Dr. Takeuchi at YTU (March)

Participants are studying 3D terrain and building data visualization with GIS. (March)

Large-scale data processing LINUX server and 20 desktop PC will be provided to YTU. It will be the core data processing system of the project, and training course for server installation, network construction, construction of GIS data base, and server maintenance and data use is planned to be conducted.

Dr. Takeuchi is explaining progress of group activities at YTU (March)

A group leader attended on training course "Establishment of database for Disaster Management Platform" in Japan from 1 to 21 June 2016.



Briefing at University of Tokyo (June)

5. Earthquake-related Disaster Group

Workshop was conducted on April and May 2016. The main purposes of workshop are to 1) Understand the characteristics of streetscape in Yangon, 2) Understand cultural background and value of architecture in Yangon and 3) Discuss ideal city/streetscapes in the future. Participants built a physical model of 6 urban blocks in CBD (Central Business District) area to learn 1) model building for the purpose of discussion, 2) method of conducting building survey and 3) a way to study and think about city by using a model.

Workshop "Re-Discover Yangon!" (May)

Team has been conducting a survey for "Typology of the building structure" in CBD area.

The project will provide micro tremor to YTU for research activities. Lecture for "Acquisition of Ground Information Data in Yangon based on Micro tremor surveying and boring data" was conducted from 19-23 May. This was the first lecture from a series of lectures to be provided by Dr. Tun Naing from Dawei University. Approx. 10-15 trainees from YTU, YCDC and MoC participated and learned about how to use the microtremor equipment and site response analysis will be conducted to create a series of maps such as Peak Ground Acceleration (PGA) map and Peak Ground Velocity (PGV) map which will be useful for the project.

Lecture by Dr. Tun Naing at YTU (May)

Three trainees from the Building Group came to Japan to participate in a short-term training for three weeks in June. They had some lectures, exercises and field visits in and around Tokyo.

6. Disaster Management Group (DMG)

(1) Kick-off Meeting

At the kick-off meeting held on the 12th of March, 2016, participants from Myanmar and Japan have shared the objectives of the project and its research approaches. Prof. Meguro gave a general introduction to the project and explained about the idea of disaster management system that will be developed for this project.

As for the schedule of the activities of DMG, in 2016, the team will conduct workshops and interviews in order to get information about the roles and responsibilities during the disaster of various stakeholders at township, national and international level during the disaster.

In 2017, DMG will define the system design to build the Disaster Management System (DMS) according to the job descriptions of each stakeholders acquired through the activities in 2016.

Based on the system design developed in 2017, DMG will develop a prototype of DMS in 2018. In 2019 a prototype of DMS will expand its application to be used by the Disaster Research Center which will be established in YTU.

Group Photo for Kick-off Meeting (March)

(2) Lecture by Prof. Meguro at YTU

Prior to the kick-off meeting, Prof. Meguro gave two lectures about the Disaster Management to approximately 30 students and faculties from YTU on 12th of March, 2016.

The lecture provided a basic idea of a comprehensive disaster management cycle.

The importance of how to manage mitigation and reduction of disaster risk was clearly explained with discussing of management of total disaster knowledge.

The disaster management matrix was shown to compare the current conditions and ideal structures.

Ideas about disaster management manual, disaster imagination capacity, disaster response flows and information management were introduced and these ideas will support the discussion about ideal or future disaster management system in Myanmar.

(3) 1st Workshop -5th of April, 2016-

DMG conducted its first workshop consists of two parts (seminar and discussion) with stakeholders such as Ministries, YCDC and UNHABITAT. The seminar included lectures by representative stakeholders to share information and understand the general condition of the current disaster management system in Myanmar. The group discussion engaged all participants concerning disaster management to discuss about several themes related to the roles and responsibilities as well as the current issues of disaster management to share among all stakeholders.

DMG will analyze the basic roles of the ministries as well as all concerning organizations in the disaster management in Myanmar as a final output of the activities in 2016.