

SATREPS NEWSLETTER

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

Vol.1: Issued on 1st July 2016

2016 March-2016 June

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 (Science and Technology Research Partnership for Sustainable Development) on April 2015. Project period is up to April 2020 (5years).

Project is implemented by 6 working 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:

- .Development of physics model to evaluate disaster vulnerability
- .Development of scenario analysis system for assessing future disaster vulnerability
- .Support to establish Research Centre for Urban Safety in YTU to sustain and enhance research activities and human resource development
- .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

2. Summary of each group activities

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.

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.

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).



Weather observation station in Zaung Tu Wier (March)



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



Dr. Win Win Zin made presentation at AWCS2016. 2/29,2016

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.

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.

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.



Yadanarbon Bridge, Mandalay (February)



Twan Tay Bridge, Yangon (May)



Tha Khyut Bridge, Yangon (May)



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

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

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.



Team members check smart phone (May)



YTU students presented their research (May)



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



Reconstructed P-Flow by MPT sample data

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. 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.

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



Lecture by Dr. Takeuchi at YTU (March)



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



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

5) Earthquake-related Disaster Group

Workshop was conducted oin 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.

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. 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.



Workshop "Re-Discover Yangon!" (May)





Lecture by Dr. Tun Naing at YTU (May)



YTU faculties visited IIS Open House (June)

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.

(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.



Group Photo for Kick-off Meeting (March)



1st Workshop (April)

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

Vol.2: Issued on 1st December 2016

July 2016 - November 2016

1. JCC Meeting

2nd Joint Coordinating Committee (JCC) Meeting was conducted in Nay Pyi Taw on 13th September 2016. The meeting was attended by 59 participants and finished with fruitful discussion based on the reports for the proper and effective activities of the project. The discussion centered on enhancement of research activities, issues raised by each 6 groups, proper management of provided equipment and so on. Committee identified and approved the actions to be taken for the next step as to the recommendation in the 2nd JCC Meeting.



2nd JCC Meeting at Grand Amara Hotel, Nay Pyi Taw, 13th Sept.

Abbreviations

DMH - Department of Meteorology and Hydrology

DHPI – Department of Hydropower Implementatin

DWIR - Directorate of Water Resources and Improvement of River Systems

IWUMD – Irrigation and Water Utilization Management Department

JICA - Japan International Cooperation Agency

MoC - Ministry of Construction

RRD – Relief and Resettle Department

YTU - Yangon Technological University

2. Summery of each group activities

1) Water-related Disaster Group

4 weather observation stations and 4 hydro sensors was provided to YTU in September 2016. Project team had conducted coordination meetings among stakeholders such as YTU, IWUMD, DWIR, DMH and DHPI for establishment of Bago River Basin Telemetry Network on August and November at YTU. Those equipment is planned to be installed before rainy season begins next year. Project team has been trying to transfer weather observation data from weather station installed in Zaung Tu Wier on March 2016 to Project server at YTU.

4 group members of YTU has been attending on training course in Japan “Establishment of Water and Energy Budget-based Distributed Hydrological Model (WEB-DHM) in Myanmar” from 17 October to 23 December 2016. Trainees is expected to enhance capacity for using WEB-DMH for flood hazard assessment and risk evaluation research in Myanmar.



Mr. Acierto Ralph Allen is explaining about hydro sensor (Floating Type) to be installed in Bago River (Nov)



Project members and stake holders are discussing to identify locations for weather/hydro sensors to be installed in Bago River Basin. (Nov.)



Training course at Hongo Campus, Tokyo Univ. (Nov.)

2) Infrastructure Management Group

Project team had a meeting with MOC at Nay Pyi Taw on July 2016 for reporting results of survey so far and introducing simple monitoring system for bridges. After discussion with MOC, Project team conducted a survey on August 2016 for Pathein Bridge which has a possibility of collapse in the future due to inclination of suspension tower.

Fortunately, serious damage which needs urgent measures was not seen. However, Project team continues to conduct research activities and collaborate with MOC.



Meeting with MOC at Nay Pyi Taw (July)



Pathein Bridge, Pathein (August)

3) Transport and Mobility Group

Project team is going to install GPS to public buses for "Bus Location System" instead of smart phones due to occurrence of several troubles. About 200-250 GPS is planned to be installed by next April.

4 group members of YTU (3 from Transport and Mobility Group, 1 from GIS Group) attended on Asian Conference on Remote Sensing (ACRS 2016) and presented papers.



Meeting at YTY (Sep.)



Daw Kyaing, a Group leader of Transport and Mobility Group of YTU presented a paper at ACRS 2016 (Oct.)

4) Geospatial Technology Group

Project team conducted a lecture for how to use 3D laser scanner which as provided to YTU in September 2016. 3D laser scanner captures images with multiple exposure rates merging them into a single High Dynamic Range image layer. This today's most innovative equipment enables us to develop research activities such as analyzing condition/form of buildings/bridges in detail.



Lecture for how to use 3D laser scanner (Oct.)

5) Earthquake-related Disaster Group

Heritage team of group conducted a workshop in November 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 learned a simple method of seismic analysis and 3D Frame analysis.



Workshop at YTU (Nov.)

6) Disaster Management Group (DMG)

Project team had meetings with Government agencies such as YCDC, RRD, Emergency Operation Center and GAD in August and September 2016 to analyze their basic roles for disaster management. 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 activities in 2016.



Meeting with Government agencies (Aug./Sep.)

3. Improvement of Research Environment ~Equipment support to YTU

As of November 2016, The Project has provided equipment for project office and research activities as shown in following table. Total costs of equipment are approximately 325,000 US\$.

No.	Items	Unit
1	Database system (computer, web server, etc)	1
2	3D Scanner	1
3	Printer	1
4	Portable Dynamic Measurement Strain System	3
5	Reinforcement bar-detecting machine	1
6	Electric resistance meter for concrete	1
7	Ultrasonic tester	1
8	Schmidt hammer	5
9	Infrared thermal camera	1
10	IRI calculation	1
11	Micro-tremor meter	1
12	Hydro/meteorological sensors	9
13	Desktop PC	20
14	iPhone	5
15	Video camera	1
16	Projector	1



Photos of equipment

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Vol.3: Issued on 1st May 2017

December 2016 - April 2017

1. ICSE 2016

Project members of both YTU and Japan side submitted 7 papers to 7th International Conference on Science and Engineering (ICSE) 2016 which was held on 10-11 December 2016 at YTU.

Paper titles were as follows;

1. Report of monitoring result of main tower inclination of Twantay Bridge in Myanmar
2. Development of geospatial platform (G-Space) for disaster resilience system in Myanmar
3. 3D Structure-from-motion data acquisition and processing for Twan Tay Bridge inclination assessment
4. Tentative Building Vulnerability Assessment of Yangon
5. Inclusive flood disaster risk reduction in the Bago River basin
6. The relationship between flood and poverty: The case study in Myanmar
7. Development of disaster scenario analysis system

Prof. Kimiro Meguro, Representative of Japanese experts made a presentation as a Keynote Speaker at ICSE 2016. The project exhibited a project introduction booth at ISCE and contributed to publicity of the project.



Keynote Speech by Prof. Meguro at ICSE (Dec.)



Prof. Khin Than Yu, Pro-Rector of YTU corresponding to media coverage at ICSE SATREPS booth (Dec.)



Mr. Genki Kawamura, main author of "The relationship between flood and poverty", was awarded for excellent paper presentation at ICSE. (Dec.)

Abbreviations

DHPI – Department of Hydropower Implementatin

IWUMD – Irrigation and Water Utilization Management Department

JICA - Japan International Cooperation Agency

JPCI – Japan Pre-stressed Concrete Institute

MoC - Ministry of Construction

SIP – Cross – Miniserial Strategic Innovation Promotion Program

Utokyo – The University of Tokyo

YTU - Yangon Technological University

2. Topics of project activities

1) Myanmar- Japan Joint Seminar

The Project has started to conduct Myanmar-Japan Joint Seminar bi-monthly at Project Office in February 2017.

Main aim of this seminar is to improvement of student's presentation skills and teaching skills of YTU faculty members. It is also expected that sharing progresses on project related activities will contribute to enhance improvement of their research activities.

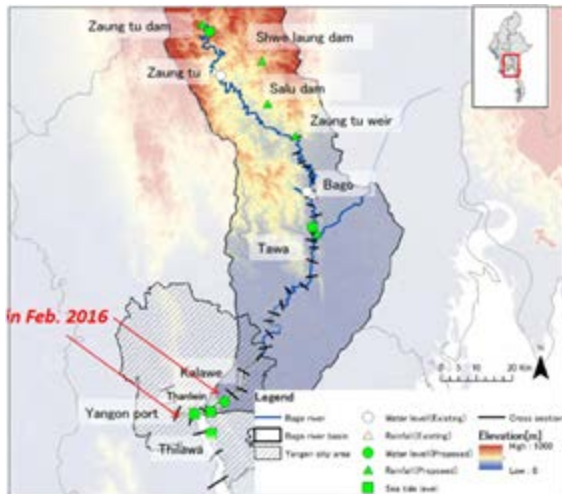


Myanmar-Japan Joint Seminar (Feb.)

2) Installation of Weather Station in Bago

Water-related disaster group installed 3 weather stations in Bago Region (Zaung Tu Dam, Shwe Laung Dam and Salu Dam).

IWUMD and DHPI set up fence and basement for weather stations by their own expenses. Observation data has been transferred to YTU by telemetry system.



Installation of weather station at Zaung Tu Dam (Mar.)

3) International Seminar for Infrastructure

Infrastructure Group conducted a seminar called "Present and Future Road Infrastructure Maintenance in Myanmar and Japan" on 15 - 16 March 2017 at YTU jointly collaborated with SIP and JPCI.

Over 160 participants from MOC, Private companies, YTU and so on attended on seminar and shared current situation and future efficient maintenance practices for proper infrastructure management.



Infrastructure seminar at YTU (Mar.)

4) SATREPS Myanmar-Japan Joint Meeting

3 YTU faculty members such as Dr. Myint Thein (Rector), Dr. Nyan Myint Kyaw (Head of Civil) and U Htay Win (Asso. Prof) were invited to Japan for Myanmar - Japan joint meeting at UTokyo from 7 - 9 March 2017. Both Myanmar and Japan side discussed about current situations and issues of the Project and agreed to enhance project activities.



Meeting at U Tokyo (Mar.)

5) Courtesy visit to Yangon Prime Minister

The Project members paid a courtesy visit to U Phyo Myint Thein, Yangon Regional Prime Minister on 15 December 2017. The Project explained overview of the project activities briefly and how those activities will contribute to development of Yangon City.

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

Vol.4: Issued on 1st June 2018

January 2018 - May 2018

JANUARY ACTIVITIES

1. SATREPS Project Workshop on Big Data and Smart City 23rd January 2018

Transportation and Mobility Group held Big Data and Smart City Workshop in YTU and discussed about big data handling and application for smart city with Myanmar Railway, Ministry of Construction, Housing Department, Traffic Police Department, Yangon Region Transport Authority and Mandalay Technology.



Presentation from Traffic Police Department

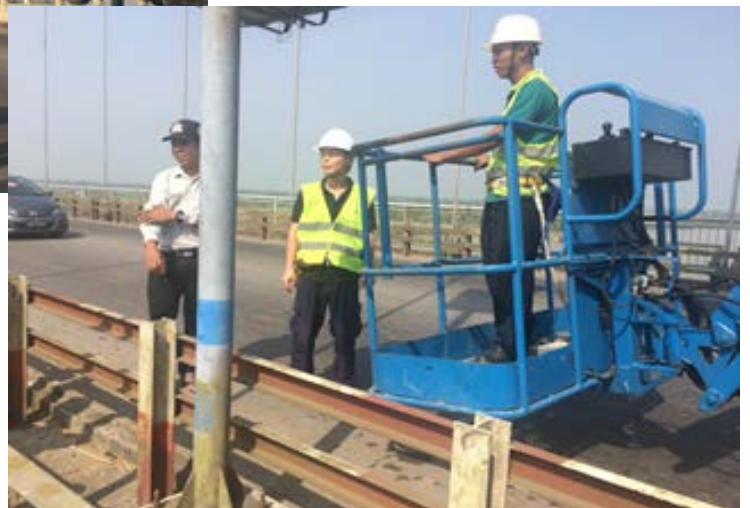
FEBRUARY ACTIVITIES

1. Installation of Inclinometer and Transducers 19th February 2018

Infrastructure Group of SATREPS Project went to Twantay bridge to install new inclinometer and transducer. They collected data from previous installed inclinometer and transducer.



Infrastructure Group Photo



Installation of the inclinometer by using boom lift

2. Timber Structure Survey 10th February 2018

Earthquake Related Disaster Group went to Dormitory of Yangon Institute of Education to make Timber structure survey.



YUOE Dormitory



Timber Structure Survey

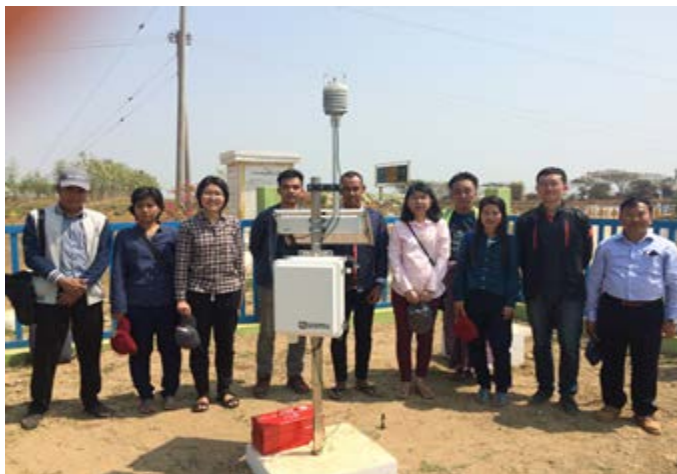
3. Investigation of Tidal Bores 16th February 2018

Water related disaster group went to Ma Mauk village and Kha Lap Su village which are located alongside of the Sittaung river (near estuaries) to investigate the tidal erosion and to measure height and velocity of tide by using pressure sensor and drones before and after coming tidal waves.



4. Checking Bago River Telemetry System 19th February 2018

Water related disaster group went to Tarwa sluice gate to check the data transfer condition between the weather station and YTU server.



Water Related Disaster Group after checking weather station

MARCH ACTIVITIES

1. Software Updating to Bago River Telemetry System 26th March 2018

Water related disaster group checked and updated the software of the weather stations in Salu Dam, Shwe Laung Dam and Zaung Tu Dam.



Water Related Disaster Group after updating the software

APRIL ACTIVITIES

1. Equipment training workshop 1 2nd April 2018

Water related disaster group held equipment training workshop for establishing Bago river basin telemetry at SATREPS Office, YTU. The officers from DWIR, DHPI, DMH and IWUMD and students from YTU were attended



Equipment Training Workshop

2. Equipment training workshop 2 3rd April 2018

For the practical session of equipment training for Bago river telemetry, the members of water related disaster group worked together in setting the equipment and updating the software with the help of Dr. Ralph. SATREPS project handed over four laptops (already installed software) to DWIR, DHPI, IWUMD and YTU in order to manage the weather station and water level station.



Handing over software installed PCs to each Government department

3. Meeting of infrastructure group 1 4th April 2018

Infrastructure Group discuss with Prorector of YTU Prof. Khin Than Yu and officers from Ministry of Construction about the collapsed Myaung Mya bridge.



Infrastructure Group Meeting about Myaung Mya Bridge

4. To install new inclinometer and transducer of infrastructure group 23rd April 2018

Infrastructure group went to Pathein bridge to install new inclinometer and transducer at the tower in Pathein site.



Explaining about the installation of the inclinometer

5. To check the stability of the setting of inclinometer of infrastructure group 25th April 2018

Infrastructure group went to Pathein bridge to install new inclinometer and transducer at the tower in Pathein site. Infrastructure group went to Twantay bridge to check the stability of the setting of inclinometer.



Unstable inclinometer

6. To investigate of Building Group 29th April 2018

Building group went to slum area in Dagon Seikan Township and Hlaing Thar Yar Township to investigate the resistance to disaster of timber structured-house and bamboo structured-house and then made social surveys upon household conditions.



Surveying at the slum area



Observing the construction of new bamboo house at the slum area

MAY ACTIVITIES

1. To investigate of Disaster Management Group From 9th to 18th of May, 2018

Disaster Management Group went to Hakha City in Chin state to survey land sliding. They also met and discussed with Fire Force, Red Cross and local organizations. They also conducted "LANDSLIDE DISASTER MANAGEMENT WORKSHOP" in Hakha Township assembly hall on 18th May 2018.



Using drone to check the land use



Group photo with Fire Force of Hakha City

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

Vol.5: Issued on 1st January 2019

June 2018 - December 2018

JUNE ACTIVITIES

1. Timber Structure Evaluation Workshop

Earthquake Related Disaster Group conducted Timber Structure Evaluation Workshop which is lectured by Prof. Koshihara from the University of Tokyo. The officers from Myanmar Earthquake Committee and YTU students from Civil Engineering Department and Architecture



Demonstration of the earthquake resistance of timber structure

JULY ACTIVITIES

1. Pull-down test

Earthquake Related Disaster Group made a pull-down test in YTU soccer field for Bamboo structured house and Timbered structured house which are common types of houses in slum areas of Yangon.



Pull-down testing of Bamboo structured house

AUGUST ACTIVITIES

1. Flood survey in Bago city

Bago city faces severe flooding annually during the rainy season. Water Related Disaster Group visited to Bago flooded area and conducted questionnaire survey among local people and investigated the propagation of flood during inundation.



Questionnaire survey to local people during inundation



Showing the maximum water level of this year during severe flooding by local boat man

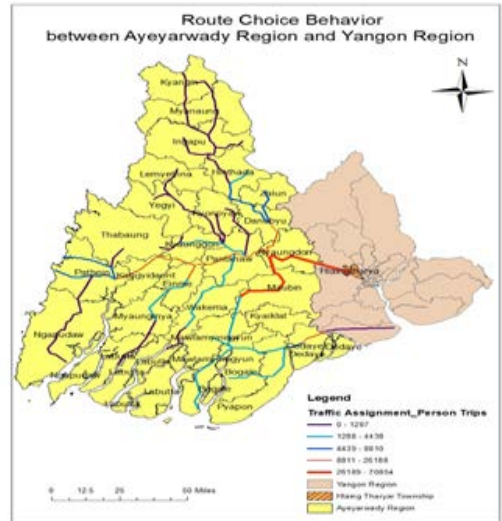
SEPTEMBER ACTIVITIES

1. Ground survey of Transportation Group

Transportation and Human Mobility Group visited around the city of Yangon to count the number of passengers by using GPS.



Surveying around Yangon City by using GPS



The map of Route choice Behavior between Ayeyarwaddy Region and Yangon Region

2. Tidal Bore observation in Sittaung River

Water Related Disaster Group visited to Sittaung River to observe the tidal bore which is assumed to be related with flooding in Bago city.



Preparation of pressure sensor which is to be installed in the river



Installation of pressure sensor in the river before coming tidal bore

OCTOBER ACTIVITIES

1. 4th Joint Coordination Committee (JCC) Meeting

4th Joint Coordination Committee (JCC) Meeting of SATREPS Project was held in Yangon Technological University. The previous achievement, progress of the project and future activities are explained by each group leader.



4th JCC Meeting

2. Remote Sensing & GIS Research Centre Launching Ceremony

As one of the achievement of SATREPS Project, Remote Sensing & GIS Research Centre was officially launched in Yangon Technological University.



Launching Ceremony of Remote Sensing & GIS Research Centre

NOVEMBER ACTIVITIES

1. Microtremor Survey around Yangon city

Earthquake Related Disaster Group visited many townships of Yangon city and made microtremor survey.



Group Discussion before microtremor survey



Microtremor surveying around Yangon city

2. Bridge inspection to Shwe Laung Bridge and Panmawady Bridge

Infrastructure Group visited to Shwe Laung Bridge and Panmawady Bridge in Ayeyarwady Region to inspect the conditions of bridges.



Inspection of anchorage condition in Shwe Laung Bridge



Overview of Panmawady Bridge and working area

3. Field survey in slum area of Yangon

Earthquake Related Disaster Group visited to slum area in Hlaing Thar Yar Township of Yangon to understand the actual standard of living condition of local people and to investigate their household conditions.



Questionnaire survey to local housewife about her household conditions

4. Checking the construction of structure for Automatic Water Level Station in Kalawe Bridge

Water Related Disaster Group visited to Kalawe Bridge to check the progress of the construction of structure for the Automatic Water Level Station which is intended to be installed in January 2019.



Checking the progress of construction of Automatic waterLevel Station at Kakawe Bridge

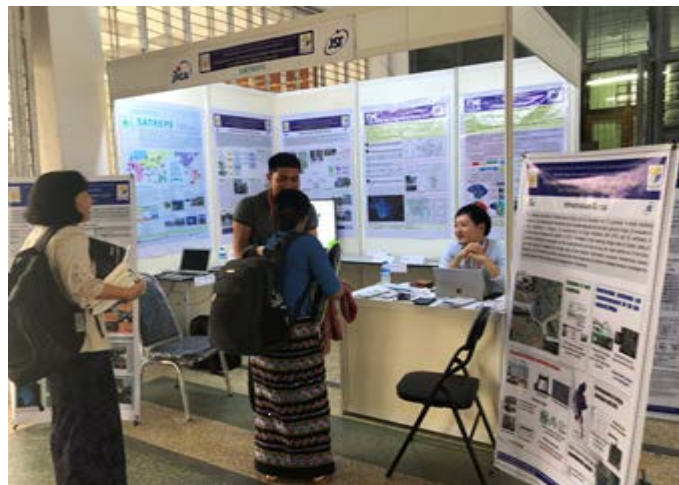
DECEMBER ACTIVITIES

1. 9th International Conference of Science and Engineering

Project members of both YTU and Japan side submitted 10 papers to 9th International Conference on Science and Engineering (ICSE) which was held on 8-9 December 2018 at YTU.



Opening Ceremony of 9th International Conference on Science and Engineering



Exhibition Booth of SATREPS Project

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

Vol.6: Issued on 1st March 2019

January 2019 - February 2019

JANUARY ACTIVITIES

1. Inspection of Twantay and Pathein Suspension Bridge

Infrastructure Group inspected Twantay and Pathein Suspension Bridge together with Japan Ministry of Construction and Nippon Koei Company Limited. The Group also collected the data from the inclinometers that installed in the towers and transducers under the deck.



Excavation work to check the pile cap condition



Data collection from inclinometer and Displacement Transducer

2. Urban Planning Workshop

Earthquake Related Disaster Group conducted workshop in Yangon Technological University and Yangon City Development Committee.



Urban Planning workshop at YTU



Urban Planning workshop at Yangon City Dept. Committee

1. Flood survey in Bago by YTU students

YTU students from Water Related Disaster Group went to Bago City to collect the required data for the assessment of house damage during 2018 flood.



Flood survey around Bago City



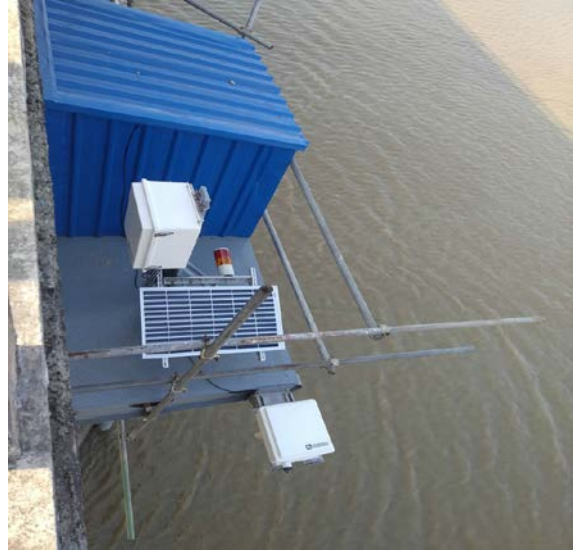
Flood survey in slum area of Bago City

4. Installation of Automatic Hydrologic Station (AHS) at Yangon-Thanyin No.2 Bridge (Kalawe Bridge)

Water Related Disaster Group has to installed 3rd AHS in Bago River Basin, The group already installed first AHS in Tarwa Sluice Gate. They installed second AHS at Yangon-Thanyin No.2 Bridge (Kalawe Bridge) with the Support of Department of Bridge and Department of Water Re-sources and improvement of River Systems to get the required water level data. AHS included two types of sensors 1. floating type, 2. Rader Tyle.



Preparation for the setting of solar panel



Setting of automatic hydrologic station

FEBRUARY ACTIVITIES

1. Data Integration and Analysis System (DIAS) Training

Water Related Disaster Group together with International Centre for Water Hazard and Risk Management (ICHARM) conducted DIAS Training at YTU.



Opening speech by Pro Rector Khin Tan Yu in DIAS Training

2. SATREPS Project Consortium Preparation Meeting

Water Consortium Preparation Meeting was conducted for the future collaboration among government, institutions and private sectors.



Discussion for future collaboration

3. Capacity Building Training for Disaster Risk Reduction at Government Administration Department (Mingalardon)

Disaster Management Group conducted first workshop for Disaster Risk Reduction Training at Government Administration Department (Mingalardon)



Speech by officer from Government Administration Dept.



Training time

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

Vol.7: Issued on 1st June 2019

March 2019 - June 2019

MARCH ACTIVITIES

1. Flood survey

Students from Water Related Disaster Group led by Dr. Akiyuki Kawasaki conducted flood survey in Dala Township and Tharkayta Township of Yangon Region and in Bago city.



Flood Survey at Thar Kay Ta Township, Yangon



Flood survey in inundated area of Bago

2. Courtesy call meeting (1), (2)

Water Related Disaster Group's leader Dr. Akiyuki Kawasaki, Dr. Daisuke Komori, Mr. Hayato Nakamura from JICA Myanmar Office and students met with Chief Minister of Bago Region and discussed about the water related issues in Bago city and its surroundings (1) and met with Director from Department of Disaster Management and Bago Township Administrator to discuss about the flood problems in Bago City (2).



Courtesy Call Meeting with Chief Minister of Bago Region



Courtesy Call Meeting with DDM Director

3. Evidence-Based Flood Risk Reduction Policy and Plan in Bago Workshop

"Evidence-Based Flood Risk Reduction Policy and Plan in Bago" Workshop led by Water Related Disaster Group's leader Dr. Akiyuki Kawasaki, Professor Win Win Zin and Dr. Disuke Komori was held in Oak Thar Kyaw Hotel, Bago. Professor Khin Ni Ni Thein (Secretary of Advisory Group, National Water Resources Committee) gave the presentation also. Officers from government departments, and students from YTU and UTokyo are attended and discussed about how to reduce flood risk and how to implement policy and plan for that in Bago.



Water Related Disaster Reduction Workshop in Bago

4. Pull-down Test

Earthquake Related Disaster Group made a Pull-down test in 17th Ward of Dagon Seikkan Township. The group tested common types of houses in slum areas of Yangon.



Pull-down test experiment in slum area of Yangon

5. Disaster Management Training

Disaster Management Training was held in Training school for administrators (Mingalardon). Prof. Kimiro Meguro, Prof. Osamu Murao, Dr. Muneyoshi Numada and Prof. Tun Naing gave the lectures about Disaster Management to government officers.



Disaster Management Training at Training School for administrators

6. Consultation Meeting for Consortium

Consultation Meeting for Consortium was held at Park Royal (Nay Pyi Taw). Prof. Kimiro Meguro, Professor Khin Than Yu and group leaders discussed with Department of Higher Education and Strategic Partner Departments about implementation of the consortium.



Consultation Meeting for Consortium in Nay Pyi Taw

APRIL ACTIVITIES

1. Maintenance of Telemetry Station

Project Assistant Professor Dr. Ralph Allen Acierto, Project Researcher Seemanta Bagavati, YTU students, officers from IWUMD, DHPI and DWIR visited to 5 Automatic Weather Stations and 3 Automatic Hydrologic Stations which are installed within the Bago River Basin for maintenance purposes.



Maintenance of AWS at Tarwa Sluice Gate



Maintenance of AHS at Dagon Bridge

MAY ACTIVITIES

1. Disaster Management Training

Disaster Management Training for officers from Government Administration Department (Lan Ma Taw, Latha and Pabedan Townships) was conducted. Dr. Muneyoshi Numada and Professor Tun Naing gave the Disaster Management lectures to officers.



Disaster Management Training at Basic Education High School, Lan Ma Taw Township



Disaster Management Training at Basic Education High School, Latha Township

2. Heritage Building Survey

Professor Koshihara, Professor Pwint and Project Researcher Tomoko Matsushita conducted Heritage Building Survey Workshop to YTU 3rd year undergraduate students in SATREPS office and then visited to old heritage buildings in downtown Yangon. They used 3D scanner so that could measure that timber heritage residential building.



Inspection of anchorage condition in Shwe Laung Bridge



Inspection of anchorage condition in Shwe Laung Bridge

3. Micro tremor survey

Professor Ikeda and students from YTU and UTokyo visited many places throughout Yangon City and measured micro tremor data as the part of Earthquake Related Disaster Group's Activities.



Micro tremor surveying in Kha Naung To Township



Micro tremor surveying in Ma Yan Gone Township

SATREPS NEWSLETTER

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

Vol.8: Issued on 28th November 2019

June 2019 - August 2019

JUNE ACTIVITIES

1. Water Related Disaster Group students' workshop at YTU

The students from the University of Tokyo and Yangon Technological University conducted the workshop "How Technology and Knowledge of Civil Engineering could contribute to achieving the sustainable development goals" together at SATREPS office. They discussed about relation with flood and poverty of resident in the workshop.



Presentation by Utokyo student



Group discussion after presentations

2. Flood survey in Yangon and Bago City

Dr. Akiyuki Kawasaki and Utokyo students, YTU visited to East Dagon Township in Yangon City and flooded wards in Bago City to interview the local people about flood and their livelihoods. They also measured and collected flood depth, flood duration and amount of damages.



Interview to local resident

3. Remote Sensing and GIS Workshop

Prof. Wataru Takeuchi gave lectures to YTU students on "Mapping Regional Foundation with Spaceborne L-Band" and "Mapping Air Pollution Using Pocket PM 2.5 Sensor". They found that YTU campus is very clean in terms of air quality.



Air quality mapping of YTU campus

1. Satellite Rainfall Product (GSMaP) and Probabilistic Rainfall Density Evaluation Workshop

Dr Daisuke Komori from Tohoku university gave lecture about "Satellite Rainfall Product (GSMaP) and Probabilistic Rainfall Density Evaluation" to officers from Department of Meteorology and Hydrology, Irrigation and Water Resources Utilization Management Department, Directorate of Water Resources and Improvement of River Systems and the students from YTU.



Lecture by Dr. Komori

2. Near Real Time Inundation Analysis System Meeting

Dr. Akiyuki Kawasaki, Project Researcher Dr. Seemanta Bagavati and Prof. Win Win Zin conducted meeting of "Bago River Near Real Time Inundation Analysis System" at Yangon TTU and explained about the system to strategic partner Government departments. And they requested each departments to use the system and to give the feedbacks and suggestions about the system.



Explanation about Near Real Time Inundation Analysis System by Dr. Kawasaki

3. Operation Model Analysis using Microtremor and U-Doppler Workshop Measurements

Project Associate Professor and Dr. Chaitanya Krishna Gadagammar from Uotkyo gave training on "Operation Model Analysis using Microtremor and U-Doppler Measurements" to Government departments, Myanmar Earthquake Society and YTU students.



Lecture by Dr. Chaitanya

4. 13th Student Seminar

YTU students presented their research progress, on going activities and future scenarios to their group leaders and research members in 13th Student seminar at SATREPS office.



Presentation by YTU Ph. D students

5. Preparatory Meeting for consortium Guidelines

Prof. Kimiro Meguro, Prof. Myint Thein, the Rector of Yangon Technological University and Prof. Khin Than Yu discussed about the guidelines of the consortium with strategic partners Government departments.



Discussion about consortium guidelines

AUGUST ACTIVITIES

1. AHS and AWS maintenance

Project Assistant of SATREPS project and YTU students visited to Zaung Tu Dam, Salu Dam and Tarwa Sluice Gate with officers from Irrigation and Water Resources Utilization Management Department and Department of Hydropower Implementation for the maintenance of Automatic Hydrologic Station (AHS) and Automatic Weather Station (AWS). They checked the physical condition and software of the stations. They also calibrated the water level data of AHS at Zaung Tu Dam.



Checking Bago-03 AWS at Salu Dam

3. Micro tremor survey

Professor Ikeda and students from YTU and UTokyo visited many places throughout Yangon City and measured micro tremor data as the part of Earthquake Related Disaster Group's Activities.



Micro tremor surveying in Kha Naung To Township



Micro tremor surveying in Ma Yan Gone Township

SATREPS NEWSLETTER

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

Vol.9: Issued on 24th December 2019

November 2019 - December 2019

NOVEMBER ACTIVITIES

1. Remote Sensing/GIS Group and Transportation Group Workshop

Prof. Wataru Takeuchi and Project Associate Professor Dr. Ko Ko Lwin conducted lecture about "Application of Geospatial Database for Infrastructure Monitoring" to officers from Yangon City Development Committee (YCDC) and teachers and students from YTU at Remote Sensing/GIS centre in YTU.



Lecture by Prof. Takeuchi

2. Donor Equipment Demonstration of Infrastructure Group

Project Associate Professor Dr. Punnyawat Jiradilok explained about the Non-Destructive Test Equipment to teachers and students from YTU. And then he demonstrated the uses of Schmidt Rebound Hammer, Ultrasonic Pulse Velocity Tester, Electrical Resistance Meter for Concrete, Reinforcement Bar Detection Machine, Air Permeability Tester and Infrared Thermal Imaging Camera at SATREPS office.



Dr. Punnyawat is explaining the uses of equipment

3. Maintenance of AWS in Bago River Basin

Project Assistant and students from YTU went to Shwe Laung Dam and Salu Dam with the officers from Irrigation and Water Resources Utilization Management Department (IWUMD) to change the new batteries of Automatic Weather Station at the said dams. After changing the batteries, they checked the physical conditions and transmission data to the servers.



IWUMD officers are checking AWS at Shwe Laung Dam

DECEMBER ACTIVITIES

1. Microtremor Measurement

Professor Takaaki Ikeda from Nagaoka University of Technology, Dr. Hideomi Gokon and the students from NUT and YTU visited around Yangon City and measured natural frequency of the ground using microtremor equipment for six days.



Microtremor measurement in Thingangyun Township

2. Earthquake Related Disaster Group Workshops

Project Associate Professor Dr. Chaitanya Krishna conducted two kinds of workshop at SATREPS office in a month. The first workshop is "Data Processing and Analysis of Vibration Measurements" and the second one is "Earthquake Resistant Design and Condition Assessment of Reinforced Concrete Buildings". In the workshops, he conducted lectures to teachers and students from YTU and officers from Department of Highway, Yangon City Development Committee (YCDC) and Myanmar Earthquake Committee.



Lecture by Dr. Chaitanya

3. Maintenance of AWS and AHS

Project Researcher Dr. Seemanta Bhagabati and students from YTU visited to Zaung Tu Dam and Zaung Tu Weir to change the new batteries of Automatic Weather Station and Automatic Hydrologic Station with the officers from Irrigation and Water Resources Utilization Management Department (IWUMD). After changing the battery, they checked the physical conditions and software of the stations. They also visited to Salu Dam for the maintenance.



Dr. Seemanta is checking data from weather sensor at Salu Dam

4. 18th International Symposium on New Technologies for Urban Safety of Mega City in Asia (USMCA 2019)

On 9-10th December, the 18th USMCA international symposium is held in YTU. Most of the members from the project submitted papers and presented their papers at the symposium.



USMCA2019 group photo

SATREPS NEWSLETTER

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

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January 2020 - February 2020

JANUARY ACTIVITIES

1. Mobility Data Collections and Utilization in Urban and Transport Planning Workshop

Associate Professor Yoshihide Sekimoto from the University of Tokyo and Associate Professor Kyaing form Yangon Technological University conducted “Mobility Data Collections and Utilization in Urban and Transport Planning Workshop” in HRD Building at Yangon Technological University. The officials from related governmental departments attended and discussed about the transportation system and traffic control plan for Yangon City.



Discussion about Data Sharing policy issues.

FEBRUARY ACTIVITIES

1. The Utilization of Disaster Management System

Dr. Muneyoshi Numada from UTokyo and Prof. Tun Naing from YTU explained about “The Utilization of Disaster Management System” to related governmental departments and teachers and students from YTU at Remote Sensing and GIS Research Centre at YTU.



Lecture “How to utilize Disaster Management System” by Dr. Numada and Prof. Tun Naing

2. Joint Meeting of Government, Academic Sector, International Advisors and YTU

Prof. Tun Naing from YTU, officials from governmental departments and international advisors discussed about the landslide disaster mitigation and measures in Myanmar at SATREPS Project Office.



Landslide mitigation lecture by Prof. Tun Naing, YTU

3. Joint Seminar on Remote Sensing & GIS for Environment and Disaster Monitoring Issues in Collaboration with YTU, MTU and UTokyo

Prof. Sao Hone Pha from YTU and Prof. Wataru Takeuchi from UTokyo conducted joint seminar at Mandalay Technological University. Teachers and students from both universities gave presentations about their RS/GIS activities and then they discussed about the future collaborations between YTU, MTU and UTokyo.



"Advance Remote Sensing Technology" presented by Prof. Takeuchi.

4. Investigation for Urban Planning in Yangon City

Prof. Osamu Murao from Tohoku University and a student visited to Yankin Township, Bahan Township, Kyeemyintdine Township, Dawbon Township, Tharketa Township, Dagon Seikkan Township and South Dagon Township to check ground survey for urban planning.



Ground survey by Prof. Murao and his student

5. Maintenance of Telemetry Stations in Bago River Basin

Project Researcher Dr. Seemanta Bhagabati, Utokyo and students from YTU went to Tarwa Sluice gate to reinstall Automatic Weather Station (AWS) and to calibrate water level at Automatic Hydrologic Station (AHS). And then they visited to AWS and AHS at Shwe Laung Dam, Zaung Tu Weir and Dagon Bridge to update software.



Re-installation of weather sensor at Tarwa Sluice Gate

6. Meeting with Director Generals from Water Related Departments

Prof. Akiyuki Kawasaki and the group visited to Irrigation and Water Resources Utilization Management Department (IWUMD), Department of Meteorology and Hydrology (DMH), Department of Hydropower Implementation (DHPI) and Directorate of Water Resources and Improvement of River Systems (DWIR) and discussed with Director Generals, Deputy Director Generals and Directors about the future collaborations.



Meeting at IWUMD office at Nay Pyi Taw

7. Flood Risk Reduction Plan for Socioeconomic Development Workshop

Prof. Akiyuki Kawasaki from the University of Tokyo and Prof. Win Win Zin from Yangon Technological University conducted "Flood Risk Reduction Plan for Socioeconomic Development Workshop" at Kanbawza Hinthar Hotel, Bago. The officials from water related government department attended and discussed about the flood risk reduction activities in Bago River Basin. Prof. Kawasaki also shared the outcomes of Water Related Disaster Group during the project period.



Explaining about Bago River Telemetry System by Prof. WinWinZin

8. Courtesy call meeting with Chief Minister of Bago Region

Prof. Akiyuki Kawasaki from UTokyo, Prof. Win Win Zin from YTU, Mr. Hayato Nakamura from JICA Myanmar Office and the Group visited to Bago Regional Government office and discussed with Chief Minister of Bago Region for flood risk reduction activities in Bago River Basin and future collaborations for flood risk mitigation.



Re-installation of weather sensor at Tarwa Sluice Gate

9. Socioeconomic Preliminary Survey

Students from the UTokyo visited to slum areas of Hlaing Tharyar Township in Yangon for preliminary survey of socioeconomic issues of residents in these areas.



Questionnaire survey collection by UTokyo students

SATREPS NEWSLETTER

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

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March 2020

MARCH ACTIVITIES

1. Installation of Telemetry Weather Stations

Staffs from SATREPS Project, students from YTU, officials from Irrigation and Water Utilization Management Departments and staffs from Shwe Chan Tha Company installed four weather stations in Ma Zin Dam, Moe Yun Gyi Sluice Gate, Shwe Hlay Sluice Gate and YTU Campus.



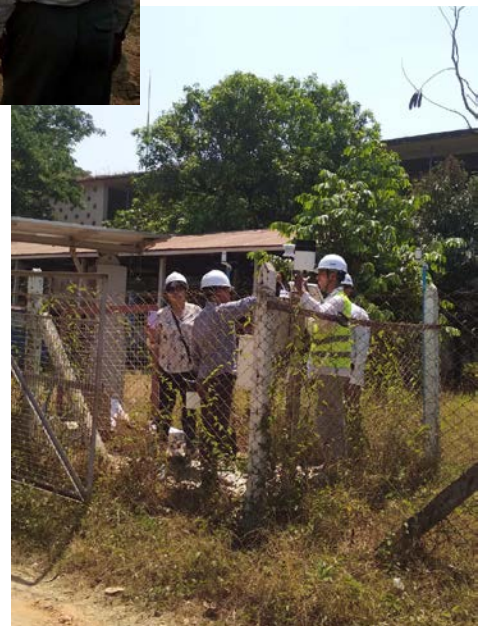
Installation of telemetry weather station and soil moisture sensor at Ma Zin Dam



Installation of telemetry weather station at Shwe Hlay Sluice Gate



Group Photo after installation of telemetry weather station at Moe Yun Gyi Sluice Gate



Installation of telemetry weather station in YTU campus

2. Meeting for discussion about equipment

Rector, Group Leaders from each group and SATREPS Project staffs discussed about managing and maintenance of donor equipment in SATREPS office.



Discussion about managing and maintenance of equipment