Newsletter

University of Malaya-Kyoto University Secretariat

Kyoto University
Graduate School of Engineering
JSPS Asian Core Program (IWM)

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The 6th Steering Committee Meeting (SCM6) was held successfully at National Institute of Environmental Studies (NIES), Tsukuba, Japan on 27 January 2014. Ten participants from Malaysia and 19 participants from Japan attended the meeting. Photo above taken on 28 January 2014 at Japan Aerospace Exploration Agency (Jaxa), Tsukuba.

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The Steering Committee Member of ACP dinner at Tsukuba Sansuitei on 27 January 2014.

University of Malaya-Kyoto University Secretariat is an international program under:

UNIVERSITY OF MALAYA

SUSTAINABILITY SCIENCE CLUSTER

Kyoto University
Graduate School of Engineering
Asian Core Program

Research and Education Center for the Risk Based Asian Oriented Integrated Watershed Management

JSPS Asian Core Program
6th Steering Committee Meeting (SCM6)

27 January 2014

National Institute for Environmental Studies (NIES), Tsukuba, JAPAN

On 27th January 2014, Kyoto University hosted the 6th Japanese Society for the Promotion of Science Asian Core Program Steering Committee Meeting (SCM6). The JSPS Asian Core Program is an international collaboration between Japanese and Malaysian universities under the research theme of "Research and Education Centre for the Risk Based Asian Oriented Integrated Watershed Management." The JSPS-ACP Steering Committee Meeting is a bi-annual event, with Kyoto University taking turns to host the meeting. The meeting was held at Main Research Building II, National Institute for Environmental Studies (NIES), Tsukuba, Japan. A total of 29 participants (19 Japanese and 10 Malaysian delegates) comprising the coordinators and group leaders, researchers, administrators as well as students attended the meeting.

During the meeting, JSPS Asian Core Program Coordinators from both side Japan and Malaysia, Prof. Yoshihisa Shimizu and Prof. Nik Meriam Nik Sulaiman delivered their opening addresses with an overall summary of past activities until January 2014. Each group leader then gave their reports on their completed and upcoming research activities:

1. Prof. Zulkifli Yusop (G1- Hydrology, Malaysia)
2. Prof. Eiichi Nakakita (G1- Hydrology, Japan)
3. Prof. Md. Ghazaly Shabaan (G2- Water Quality Group, Malaysia)
4. Prof. Yoshihisa Shimizu (G2- Water Quality, Japan)
5. Prof. Mazlin Mokhtar (G3- Environmental Risk, Malaysia)
6. Prof. Minoru Yoneda (G3- Environmental Risk, Japan)
7. Assoc. Prof. Noor Zalina Mahmood
   (*Representative of Prof. Azizan*, G4- Governance, Malaysia)
8. Prof. Masahisa Nakamura (G4- Govenance, Japan)

NIES JAPAN

Finally, after a discussion on other matters, the meeting was adjourned and concluded with a gift exchange ceremony and photography session.

Gift exchange ceremony between the two coordinating institutions from Japan Prof. Yoshihisa Shimizu, Kyoto University and Malaysia represented by University of Malaya Deputy Vice Chancellor (Research & Innovation), Prof. Awang Bulgiba Awang Mahmud.
(A-D) Photos taken during the SCM6 at NIES.

Excursion– 28 January 2014

On 28 January 2014, steering committee members went for an excursion were organized by Kyoto University to National Institute of Advanced Industrial Science and Technology (AIST) and Japan Aerospace and Exploration Agency (JAXA), Tsukuba, Japan.

(A-B) Malaysian and Japanese steering committee members at National Institute of Advanced Industrial Science and Technology (AIST).
(C) Photo in front of the Japan Aerospace and Exploration Agency (JAXA) building and next to one of the Japan rocket.
(D) All JSPS-ACP(IWM) delegates listening attentively to an explanation presented by the JAXA staff.
(E) Opportunity to walk inside one of the Japan rocket available in JAXA exhibition hall.

Sampling and monitoring at Selangor, Langat and Johor river watersheds

17 November –14 December 2013

Selangor, Langat and Johor River, MALAYSIA

Yu Kawata
Research Center for Environmental Quality Management,
Department of Environmental Engineering,
Kyoto University

Chiemi Osada
Research Center for Environmental Quality Management,
Department of Environmental Engineering,
Kyoto University

Prof. Yoshihisa Shimizu
Research Center for Environmental Quality Management,
Department of Environmental Engineering,
Kyoto University

Messages from the Supervisor

"Water resource is limited and we need to create the ways to protect it. In order to access the water that is safe, stable and sustainable, it is necessary to understand water problems and to manage on whole watershed basis. Ms. Yu KAWATA and Chiemi OSADA have been studying three watershed conditions in Malaysia by quantitative analyses, and try to apply those data for the GIS based simulation. During their stay in Malaysia for a month, I am sure that they had fruitful and wonderful time with many supports and this is a major step toward making stronger relationship between Malaysia and Japan. I really expect that they will successfully complete their initial plan for their challenging research".

Introduction and Objectives

River water quality is affected by various kinds of point and non-point sources. Although it is very difficult to identify the source of pollution, Geographic Information System (GIS) -based simulation can estimate the source of pollution. The GIS-based simulation needs input on various data of the watersheds including elevation, land use, soil description, weather, and observed water quality/quantity parameters. The observed water quality/quantity data are difficult to obtain from literatures or website information in some watersheds. Therefore, in this sampling/monitoring activity, we observed Total Nitrogen (TN), Total Phosphorus (TP) and Suspended Solids (SS). Department of Environment (DOE) Malaysia has been monitoring river water quality throughout Malaysia and calculating a water quality index (WQI) from six general parameters (*i.e.* Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Ammonium Nitrogen (NH_3-N), Suspended Solids (SS), and pH). However, Annual Reports published by DOE show only WQI and water quality class in each river. It means that we can only know the approximate current condition of river water quality from the WQI, and we cannot scrutinize the pollution status and occurrence from the originally measured parameters. Therefore some proactive river water monitoring would be necessary to clarify the current status in our target watersheds. It is necessary to understand the watershed condition by quantitative analyses for a concrete water quality assessments and thereby towards integrated watershed management. In this river water analyses, we tried to grasp the current situation in terms of water quality, land development and occurrence of pollutants by on-site inspection, and to measure some water quality parameters throughout the Langat, Selangor and Johor river watersheds (Figures 1, 2 and 3).

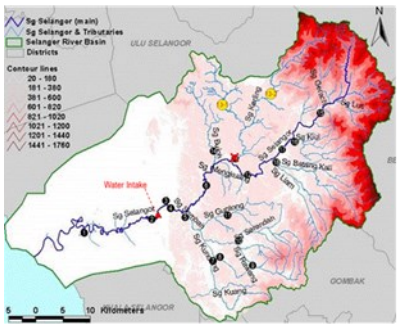


Figure 1 Sampling points in Selangor river watershed

Figure 2 Sampling points in Langat river watershed

Figure 3 Sampling points in Johor river watershed

Results and Discussion

Samples were taken from three watershed *i.e.* Sg. Selangor, Sg. Langat and Sg. Johor.

In Selangor watershed, the concentration of TP was higher than that of TN at the up and midstream. These points were covered with palm oil plantations and there were agro-based industries such as livestock. It could be considered that effluents from palm oil plantations caused by fertilisers might be affecting the river water quality.

In Langat watershed, there were some points where pH was between 2.5 and 3.0. There was peat swamp area where pyrite was found to be accumulated around these stations. It was considered that these functions may cause the pH low.

In Johor watershed, the concentrations of TP and TN were high except for middle streams of Johor River and Tengkil River. In Johor state, 80% of the land was covered with palm oil plantations. It suggested that effluents from the palm oil plantations affected these concentrations.

(A) Sampling activities at Selangor river watershed

(B) Lab works for TN and TP analyses in UM

Conclusion

From these samplings, we could find out some important factors that may affect water quality of these three rivers such as palm oil plantation and livestock. Since the TN and TP concentrations were high in those rivers, we need to measure all chemical forms of nitrogen and phosphorus to grasp the water quality details. Additionally, we need to measure more parameters such as BOD, COD and heavy metals.

"It was a great chance for us to collect data and explore Malaysia from different point of view. We would like to acknowledge the support given by University Malaya and Universiti Teknologi Malaysia. We also would like to acknowledge all the generous help and support by Professor Dr. Nik Meriam, Professor Dr. Md. Ghazaly, Professor Dr. Maketab, Dr. Ghufran, Mr. Mohd Izziuddin, Ms. Kalai and all relevant staffs in faculty of Science and Engineering of UM. We also would like to thank to Professor Dr. Salman Hussain, Dr. Zeeda Fatimah, Mr. Mohd Noor, Mr. Affan, Ms. Nadhiah Nadhirah, Mr. Mohd Redzuan, and Mr. Azizi for all their kindness and making our stay much more meaningful. Finally, we would like to say big thank you to Dr. Nobumitsu Sakai for his big support and help and also to his wife, Ms. Mika Sakai and their daughter, Ms. Ritsuki Sakai for their supports".

Water Quality Group (G2) Seminar on River Management for Sungai Johor Catchment and Book Chapter Workshop 2014

3 - 4 February 2014

University of Technology Malaysia (UTM), Johor, MALAYSIA

Prof. Dr. Md. Ghazaly Shaaban
Department of Civil Engineering
Faculty of Engineering
University of Malaya

Introduction

The seminar and workshop was successfully held on 3rd (Monday) and 4th (Tuesday) February 2014 at seminar room, V01 Faculty of Bioscience and Medical Engineering, UTM Johor. The seminar discussed about an overview of Sungai Johor current state and watershed management. In this seminar, key players from the respective national and state agencies and researchers from UTM itself, present their findings and experiences on matters of interest. The book chapter workshop was to explain, especially to the GCOE-ACP members on how to produce the book for the GCOE-ACP IWM. In total there will be 4 book series that consists of hydrology, water quality, risk assessment and governance of Integrated Watershed Management. The book contents will be on the research findings based on 3 case study rivers (Sungai Selangor, Sungai, Langat and Sungai Johor). The briefing was given by the Head of UTM press unit and it was very helpful to the GCOE-ACP members especially in transforming/transferring technical knowledge to general readers.

Objective

To have a clearer picture on river management of Sungai Johor catchment areas and discuss potential application to rivers at other states. Results and findings will be documented in the form of book chapters, in which further discussions are carried out through the book chapter writing workshop so that the knowledge can be transferred to the public for good use.

Participation of agencies

MNS - Malaysian Nature Society
SAJ – Syarikat Air Johor
BAKAJ – Badan Kawal Selia Air Johor
JAS – Jabatan Alam Sekitar

Delegates (UM)

1. Prof. Dr. Md. Ghazaly Shaaban
2. Assoc. Prof. Dr. Faridah Othman
3. Dr. Ghufran Redzwan
4. Dr. Fathiah Mohamed Zuki
5. Dr. Nobumitsu Sakai
6. Mohd. Izziuddin Ab. Malek
7. Nadhiah Nadhirah
8. Sadek Uddin Chowdurry
9. Hanun Fatini Rasdi
10. Haslina Solha Hassan

Prof. Maketab Mohamed (UTM) presented his research findings during the seminar

Delegates (UKM)
1. Jasni Yaakub
2. Raden Puteri Khairani Khirotdin

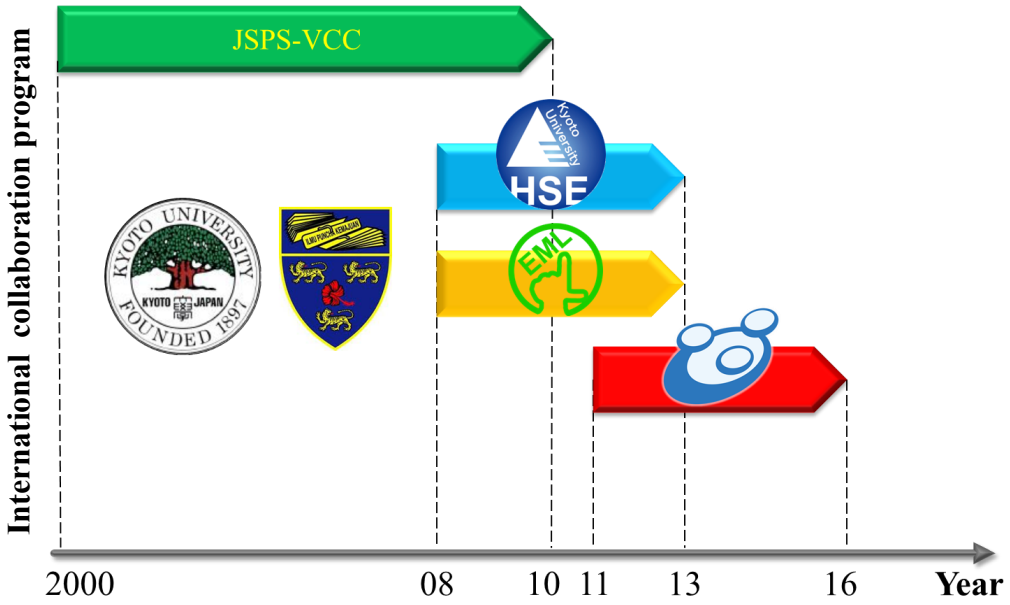
There were 30 participants from UTM side attended the seminar. Only Group 2 members and those who are highly involved in book chapter writing attended.

Meeting and group discussion outcomes:

- The involvement of state's or parliament representative is highly recommended in future seminars on watershed/river basin management to increase awareness of the people to safeguard our water resources for sustainability.
- NGO's should be invited to share their point of views.
- Title of the book chapters will be changed. The title needs to be brief and attractive to the potential readers.
- There is a need to make timelines for book chapters, include activities and river basins presentation during workshops.
- Next video conference (VC) meeting will be on 4th March 2014 (Tuesday) at 2.30-4.30 pm. The main agenda is to have an update on the book chapters writing by the G2 members. The VC meeting tentatively will be held every month
- Next GIS hands-on workshop will be in either UTM or UKM. Will be decided in the upcoming VC meeting.
- UKM or UTM to prepare costing for workshops and seminars on GIS modelling, which tentatively will be held somewhere in June 2014.
- Dr. Nobumitsu Sakai will contact his Japanese counterparts whether they can help with the ArcGIS modelling workshops, especially in providing trainers.
- Next activity will be the Steering Committee Meeting 7 on 26th May 2014 will be held in Malaysia. The next Comprehensive Seminar 4 will be scheduled tentatively in early November 2014 in Malaysia.

Representative from the Department of Environment (DOE), Mohd. Yunos Rais explained the laws and regulations regarding to the water resources management.

Associate Professor Mohd. Shafie Mohd. (UTM) presented the theory and concept of GIS mapping and applications



Programs and its duration under international collaboration between Kyoto University and University of Malaya

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