Japan-ASEAN Science, Technology and Innovation Platform
(JASTIP)
Report of JASTIP-Net Activity

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1. Research partner	Affiliated Organization Kobe University		
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	Position	Associate Professor	
	Address	1-1 Rokkodai-cho, Nada-ku, Kobe, Hyogo 657-8501, Japan Research Center for Urban Safety and Security (RCUSS), Kobe University	
2. Collaborative research	Collaborative research theme	**Disaster Prevention Joint Lab** ☐ Innovative Ideas on Disaster Prevention, Mitigation and Recovery Technologies and Policies Peculiar to Each ASEAN Country. ☐ How to Cope with Trans-Boundary Disasters in the ASEAN Region Such as Tsunami, Flood, Drought and Haze. ■ Understanding and Quantitative Evaluation of Disaster Risks Peculiar to ASEAN Countries.	
	Collaborative research title	Development of Hydroinformatics Platform for Hydrohazard Resilient Asia	
	Host core-researcher	Kenichiro KOBAYASHI, Associate Professor, Kobe University	

3. Members

Name	Yasuto Tachikawa		
Affiliation	Kyoto University	Position	Professor
Name	Takahiro Sayama		
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Affiliation	Okayama University	position	Professor
Name	Guillermo Tabios III		
Affiliation	Univ. of the Philippines	Position	Professor

4. Report of activities

1) research activities and major findings

In the Asia-Pacific regions, various hydrologic analysis methods have been applied for designs of hydraulic structures, river improvement works, rainfall-runoff predictions, flood and inundation prediction and so on. These hydrologic analysis methods have different characteristics in terms of climate, topography, development history of the catchments, etc. To develop a platform to share these hydrologic analysis methods is quite helpful to improve the ability for estimating water-related hazard risks and reduce the damage of disasters; however, most of researchers and engineers do not have knowledge of analysis methods used at the other countries and sectors in the Asia-Pacific region. To improve this situation and enhance the risk estimation ability in ASEAN research and engineering communities, we formed a research team and developed a hydroinformatics platform in the Asia-Pacific region for realizing hydrohazard resilient Asia. To enhance the ability for evaluating water-related disaster risks, we developed a first version of Catalogue of Hydrologic Analysis, CHA with the collaboration of researchers and engineers in the Asia-Pacific region.

The purpose of CHA is to collect documents and software for various hydrologic analysis methods from practical use to advanced studies for short-term rainfall prediction, rainfall-runoff prediction, flood and inundation prediction, hydrologic frequency analysis, and eco-hydrology, which will be freely accessed through the CHA home page. Developing CHA and share the knowledge through the CHA, we provide a platform to improve the ability for evaluating

water-related disaster risks, which will strengthen the cooperation among researchers, governmental agencies and private sectors; serve to reduce the damage of water-related disasters; and will be a local contribution to achieve targets of SDGs and UNESCO IHP-VIII.

CHA website is shown in Figure 1. The URL is http://hywr.kuciv.kyoto-u.ac.jp/ihp/rsc/cha.html. The left hand side figure shows the front page of the CHA while the right figure shows the list of software and program. Until now, two rainfall-runoff/inundation models and one evaporation program are introduced. CHA was positively accepted by the member countries of Asia Pacific Regions of UNESCO-IHP.

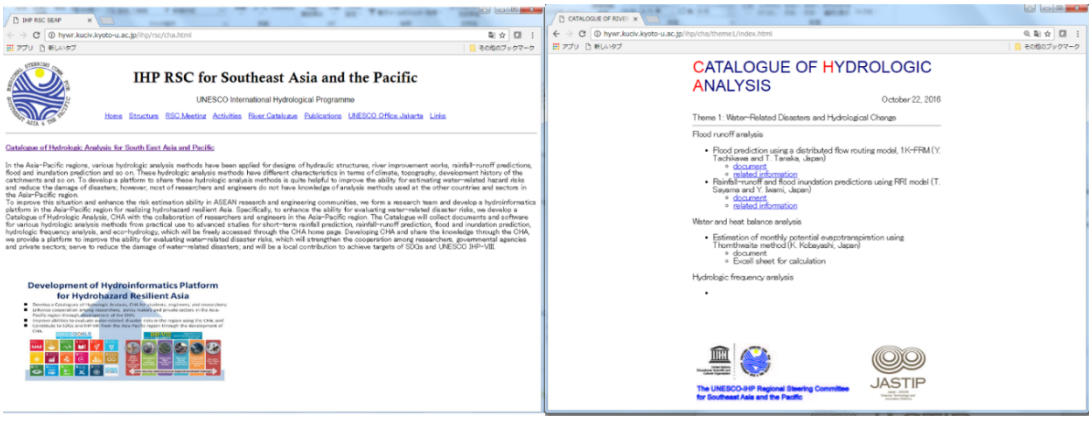

Figure 1: The website of CHA: The left figure is the front page while the right figure shows the list of the software and programme.

2) their academic and social implications

CHA was proposed at the 22nd International Hydrological Programme Regional Steering (IHP-RSC) Committee meeting in Yogyakarta, 2012. Since then the following activities were undertaken (cited by Draft report of 24th IHP-RSC meeting in Mongolia, 2014):

- In December 2013, the first regional call for contributions was made.
- At ICWRER2016, the first technical coordination meeting took place during the session with IDI and IFI and UNESCO Jakarta (June 2016).
- A Japanese coordination meeting took place in August 2016.
- The latest regional call for contributions was made at the region at Bali meeting (July 2016).
- In the 24th IHP-RSC, Ulaanbaatar, Mongolia, 24-26 October 2016, the RSC members discussed on 1) if the name "Catalogue of Hydrological Analysis" was appropriate, 2) what CHA was trying to achieve. The CHA Japanese team underlined CHA is not intended to be a Japanese initiatives but all RSC members were encouraged to participate and contribute what they can or want.
- The second Japanese coordination meeting took place in July 2017.

Based on these activities, the academic and social implications are:

- CHA includes documents and software of various hydrologic analysis according to an integrated format;
- A home page was established to widely share the contents of CHA;
- CHA will contribute to improve the abilities to estimate the risks of water-related disasters as a platform for hydrohazard resilient Asia;
- The process to develop CHA enhances the cooperation among researchers, governmental agencies, and private sectors;
- The process to make CHA contributes to strengthen the human and information network among ASEAN researchers, governmental agencies, and private sectors; and
- To develop CHA will be a local contribution to achieve targets of SDGs and UNESCO

IHP-VIII.

The schematic image of our research activity is shown in Figure 2.

Figure 2: Schematic image of the research activity

(Figures are cited from SDGs and IHP-VIII website)

5. List of publications

Catalogues of Hydrologic Analysis: http://hywr.kuciv.kyoto-u.ac.jp/ihp/rsc/cha.html, referred in Dec. 2017

6. List of oral presentations

K. Kobayashi, H. Chikamori and Y. Tachikawa：Report of the proposal for making the Catalogues of Hydrologic Analysis as the successive series of the Catalogues of rivers, 7th international conference on water resources and the environment (ICWRER), 2016（Oral Presentation）

Hidetaka Chikamori and Kenichiro Kobayashi (presenter): Post‐ Catalogue of Rivers Initiative: Updates on Catalogue of Hydrologic Analysis modules, 24th IHP‐Regional Steering Committee South East Asia Pacific meeting, Ulaanbaatar, Mongolia, 24th October 2016（Oral Presentation）

Kenichiro KOBAYASHI, Yasuto TACHIKAWA, Takahiro SAYAMA, Hidetaka CHIKAMORI and Kaoru TAKARA, Development of Hydroinformatics Platform for Hydrohazard Resilient Asia, Third JASTIP Symposium, February 5, 2017, Bangkok, Thailand (Poster presentation)