

- TG ACTIVITY REPORT -

TGI

ASIA WATER CYCLE INITIATIVE (AWCI)

DR. MAMORU MIYAMOTO

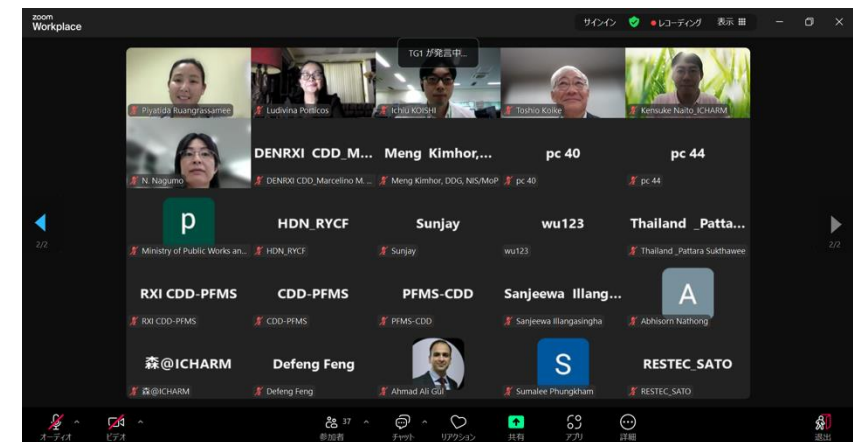
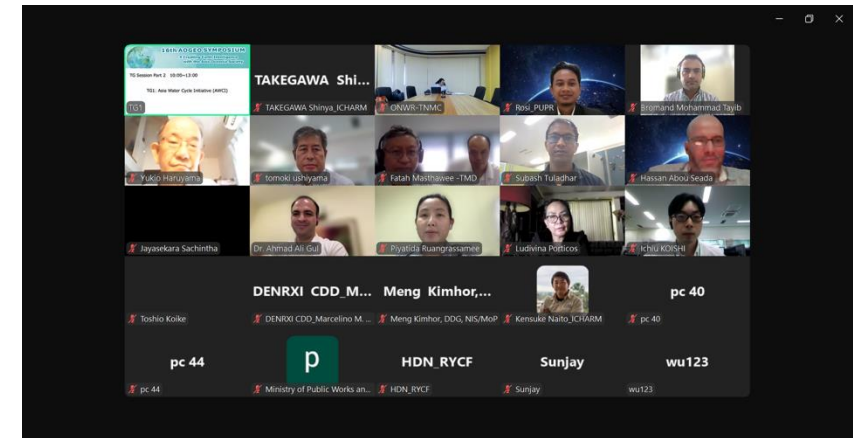
INTERNATIONAL CENTRE FOR WATER HAZARD AND RISK MANAGEMENT (ICHARM)

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OVERVIEW

TGI:Asia Water Cycle Initiative (AWCI) Session

- Participants: **62** (24 onsite , 38 online) in maximum
- Moderator: Mamoru Miyamoto, ICHARM



Online Participants

I. OPENING

- Special Speech Prof. KANTOUSH Sameh Ahmed, Kyoto University

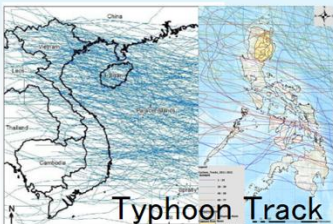


Flood and Sediment Disasters in High-Risk Areas under Climate and Anthropogenic Impacts



Smart River Management from the Mountain to the Sea

Professor
KANTOUSH Sameh



Water Resources Research Center
Disaster Prevention Research Institute
Kyoto University, JAPAN

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Flood and sediment disaster management

- Middle East & North Africa
- Philippines
- Vietnam

2. COUNTRY REPORT

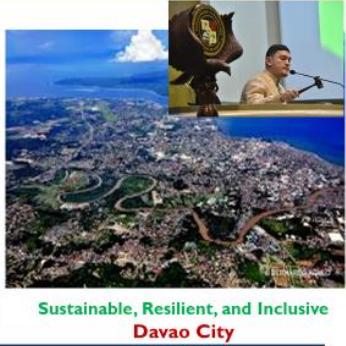
Philippines

Platform for Water Resilience and Disaster in Davao River Basin, Philippines

OSS Deployment and Sustainability
Policy Support/Institutional Commitment/Sustainability of "Facilitators" / Finance and Infrastructure

OSS Facilitators
e-learning sessions/Cascading Sessions

Knowledge and Tools for Decision Making
Integration/Early Warning/Economic Assessment/ Climate Change Communication/Contingency Plans



Sri Lanka

PLATFORM ON WATER RESILIENCE AND DISASTERS IN SRI LANKA

IFI promotes an integrated approach to flood management to take advantage of the benefits of floods and use of flood plains while minimizing the social, environmental and economic risks through collaboration among international organizations.

Under IFI scheme, for strengthening Water-related Disasters Resilience and Enabling Sustainable Development in Sri Lanka, the Platform on Water Resilience and Disasters was established with the support of ICHARM in 2017.



Thailand

LAUNCH OF PLATFORM IN THAILAND

Kick-off meeting of Platform on Water Resilience and Disasters in Thailand (25 March 2024)



- 81 Participants from 16 agencies**
- Office of National Water Resources (ONWR)
 - Royal Irrigation Department (RID)
 - Thai Meteorological Department (TMD)
 - Thailand Department of Disaster Prevention & Mitigation (DDPM)
 - Department of Mineral Resources (DMR)
 - Electricity Generating Authority of Thailand (EGAT)
 - Department of Climate Change and the Environment (CCE)
 - Geo-Informatics and Space Technology Development Agency (GISTDA)
 - Public Relations Department (PRD)
 - Hydro-Informatics Institute (HII)
 - Chulalongkorn University
 - Kasetsart University
 - ESCAP
 - JICA/Thai
 - Nagoya Institute of Technology
 - ICHARM

Indonesia

PLAN : MACHINE LEARNING

CRISP-DM

BMKG (Rainfall, Climate, etc)

PUPR (Historical Flood Inundation, etc)

JRC HISTORICAL FLOOD

JRC Global Surface Water and Soils (Satellite Data Analysis)

Satellite Data Extraction

Flood Inundation Mapping

DATA DRIVEN

Date	In Flood Inundation (m)	Satellite Area (km ²)	Number of Pixels	Flood Assessment
01/11/2018	0.000000	0	0	0
01/11/2018	0.000000	0	0	0
01/11/2018	0.000000	0	0	0
01/11/2018	0.000000	0	0	0
01/11/2018	0.000000	0	0	0
01/11/2018	0.000000	0	0	0

MACHINE LEARNING

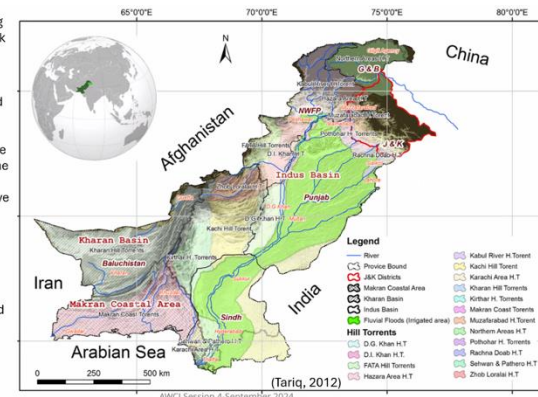
KNN XGBOOST RANDOMFOREST

LIGHTGBM SVM Decision Tree

Pakistan

Major riverine flooding poses an intensive risk of widespread damages, similar to the floods of 1973, 1976, 1988, 1992, and 2010.

Many flash flood prone arid catchments on the right bank of Indus River pose an extensive risk. Climate induced changes in monsoon patterns are causing more intense storms events in south-western Pakistan resulting in pluvial and hill-torrent flooding similar to 2011 and 2022.



SPECIAL LECTURE ON WATER & POVERTY



Water and Poverty moderated by Prof. Toshio Koike
 Keynote: Prof. KAWASAKI Akiyuki, The University of Tokyo
 Panelist: Mr. Leon Vin , The University of Tokyo
 Mr. Hote Hassan Haren, ICHARM

THEMATIC PRESENTATION

-WATER-FOOD-ENERGY NEXUS-



- “Smart water management for agriculture and hydropower”,
Ms. Giang Thanh Binh, DWRM, MONRE, Vietnam



- “Water resources planning under climate change”,
Mr. Illangasingha Sanjeewa Punsiri Bandara, Mahaweli Authority, Sri Lanka



- “A Seamless Modeling Framework for Efficient Flood Management, Agricultural Productivity, and Hydropower Generation under Climate Change”,
Prof. Abdul Wahid Mohamed RASMY, ICHARM

Asian Water Cycle Initiative (AWCI) Session,
The 16th AOGEO Symposium
4 September 2024, Tokyo, Japan

WATER-FOOD-ENERGY NEXUS

POLICY-MAKING FOR COMPREHENSIVE WATER RESOURCES MANAGEMENT IN **“THAILAND”**

“MS. NILOBOL ARANYABHAGA”
THE NATIONAL WATER COMMAND CENTER
ONWR

- “Policy-making for comprehensive water resources management in Thailand”,
Ms. Nilobol Aranyabhaga, ONWR, Thailand -online-

DISCUSSION

- Interdisciplinary approach with DIAS
- Importance of local data e.g. ground gauge
- Engagement of multi-stakeholders and local communities including young and Indigenous
- Gap between scientific approach and real-world socio-economic activities
- How to alleviate poverty?
- Guideline to deploy
- Social aspect even in modeling
- Linkage and contribution
- Way forward



STATEMENT

Since 2005, the Asian Water Cycle Initiative (AWCI) has developed key functions of data archiving, data and model integration, early warning, climate change impact assessment, and water-food-energy nexus in collaboration with its member countries based on the Data Integration and Analysis System (DIAS). AWCI has also promoted the cross-sectoral coordination by supporting activities of the "Platform on Water Resilience and Disasters (Platform)". Based on its experience, AWCI will further expand the scope of the cross-cutting and consolidated Platform, and promote transdisciplinary collaboration among water-related disaster risk reduction, sanitation, poverty, health, and peace to achieve resilience, sustainability, and inclusiveness.

- **Achievements:** (5-6 sentences)
- Asian Water Cycle Initiative (AWCI) has continued to advocate the importance of developing the "Online Synthesis System for Sustainability and Resilience (OSS-SR)", fostering "Facilitators", and accelerating the "End-to-End Approach" based on the activities of the "Platform on Water Resilience and Disasters (Platform)", such as in the Philippines, Sri Lanka, and Indonesia. These key directions have been fully endorsed at a series of globally important events related to water management, including the 4th Asia-Pacific Water Summit held in Kumamoto in April 2022, the 9th International Conference on Flood Management (ICFM9) held in Tsukuba in February 2023, the UN Water Conference held in New York in March 2023, and the 10th World Water Forum and the Bandung Spirit Water Summit held as part of the Forum in Bali in May 2024. Accordingly, the Platform initiatives have been adopted in the UN Water Action Agenda as the "Water Cycle Integrator (WCI)", which integrates knowledge, capacities, and processes related to water management.

STATEMENT

■ Ongoing Issues: (5-6 sentences)

AWCI has deployed activities of the Platform on Water Resilience and Disasters to other areas in the country and has ripple effects on other countries; Thailand has officially launched the Platform, Vietnam is moving forward with establishing the Platform, and Pakistan is starting the discussion to renew suspended efforts. Through the activities on the OSS-SR development and Facilitator fostering, the Platforms have reaffirmed the importance of;

- local ground data for bias correction of global datasets and satellite data
- filling the gap between scientific approach and real-world socio-economic issues
- generating ownership of multi-stakeholders and local communities, including young generation and Indigenous people, for the social disaster risk reduction
- value chains of actionable insights in the water-food-energy nexus and evidence-informed decisions in water disaster risk management.

■ Way forward for post-2025: (5-6 sentences)

Through DIAS, AWCI will advance the activities it has undertaken since its inception in 2005, including data archiving, data and model integration, early warning, climate change impact assessment, and the water-food-energy nexus.

To achieve resilience, sustainability, and inclusiveness, AWCI will further accelerate the implementation of WCI with Earth Intelligence in the cross-cutting and consolidated Platforms. As the future objective, AWCI will evolve its scope to collaborate with sanitation, poverty, health, and peace, as highlighted in the Bandung Spirits Water Summit. The innovation brought by locally implemented Earth Intelligence will contribute to future prosperity by creating value chains that make ordinary and extraordinary seamless.

THANK YOU FOR YOUR ATTENTION!