(1) Report on the 30th IHP Training Course

International Hydrological Programme

Winter School for Applying Technology to Climate Change

Integrated Basin Management under Changing Climate

1st December – 10th December, 2020

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Objectives of the 30th IHP Online Training Course: The 30th IHP Training Course in Kyoto provided an opportunity for participants: 1) to acquire the latest knowledge on climate change impacts on water resources, water-related disasters and ecosystem services, 2) to make a practice on rainfall-runoff-inundation analysis at river basin scale, 3) to discuss effective strategies of integrated basin management based on scientific knowledge to realize a resilient society under climate change.

Registered Trainees: In total 30 trainees from various universities, research institutes and professionals originally coming from 7 countries (China, Taiwan, Cambodia, Vietnam, Philippines, Uzbekistan, Egypt). Details regarding the affiliations and statistics of trainees are summarized in Figure 1

Fig. 1 (left) Statistics and information regarding the registered trainees (right)Picture of trainees gathered at Isabela State University in the Philippines for Online training sessions.

Pre-Training Course Orientation: We invited all trainees through zoom for an orientation session for software installations and troubleshooting before IHP official starts. Furthermore, we instructed trainees regarding exercises, target basin selection, self-introduction during opening session, and report presentation. Figure 2 shows pictures during the troubleshooting & pre-training orientation.

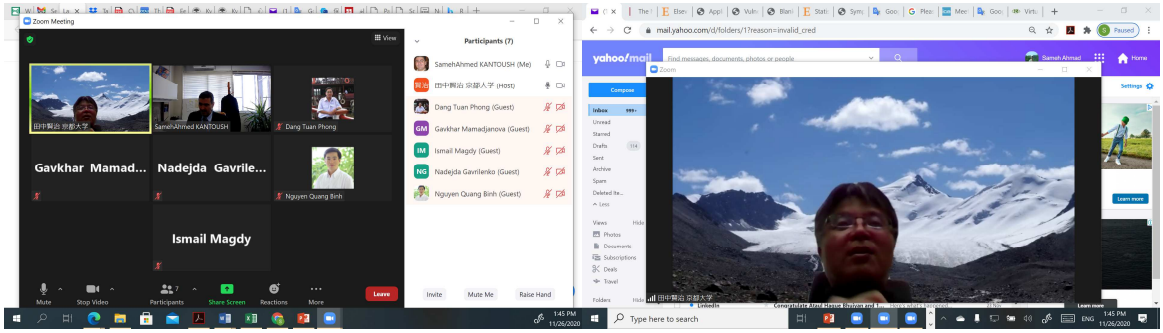

Fig. 2 Taken pictures during online sessions for software installation and instructions

Program of the 30th IHP: The IHP-TC composed of 11 lectures, 8 exercises including self-paced practicing of various software's and virtual field visit for the target river basin. I will present the daily program with some of pictures related to these activities (Figs. 3, 4, 5, 6, 7, 8)

Date		Time	Contents	Lecturer(s)
1-Dec	Tue	9:00-10:30	Opening ceremony, self-introduction and country report	T. Sumi / S. A. Kantoush
		11:00-12:30	Lecture 1: Fundamentals of land surface processes	K. Tanaka
		13:30-15:00	Exercise 1: Processing method of meteorological and geographical data (parallel session for trouble shooting)	K. Tanaka & K. Yorozu
		15:30-17:30	Exercise 2: Processing method of meteorological and geographical data (parallel session for trouble shooting)	K. Tanaka & K. Yorozu

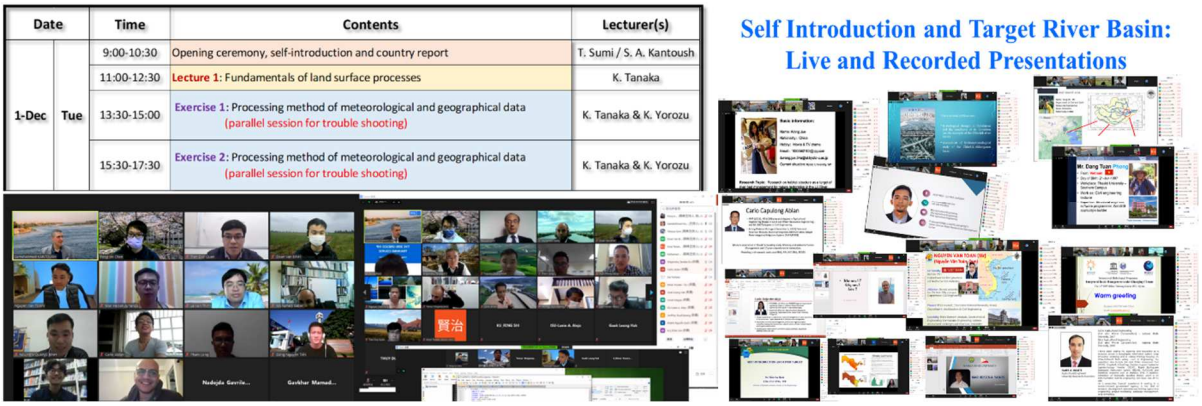

Fig. 3 Self-introduction and research presentation by trainees during opening ceremony

2-Dec	Wed	9:00-10:30	Lecture 2: Fundamentals of basin-scale hydrological analysis	Y. Ichikawa
		11:00-12:30	Lecture 3: Climate changes impact prediction on disaster environments	E. Nakakita
		13:30-15:00	Exercise 3: Statistical downscaling of GCM output	S. Kim
		15:30-17:00		
3-Dec	Thu	9:00-10:30	Lecture 4: Fundamentals of optimum reservoir operation	T. Hori
		11:00-12:30	Lecture 5: Fundamentals of rainfall-runoff-inundation modelling	T. Sayama
		13:30-15:00	Exercise 4-1: Rainfall-runoff-inundation modelling	T. Sayama
		15:30-17:00	Exercise 5-1: Self schooling and build the target basin	Trainees

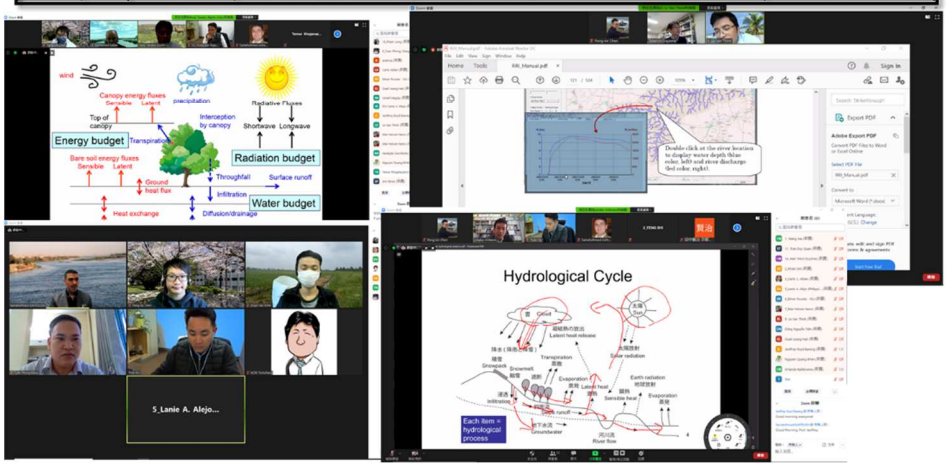

Fig. 4 Two days of fundamental lectures and exercises

7-Dec	Mon	9:00-10:30	Lecture 6: UNESCO-IHP and water resources prediction under changing climate in Asia	Y. Tachikawa
		11:00-12:30	Lecture 7: Integrated sediment management for reservoir sustainability	T. Sumi
		13:30-15:00	Lecture 8: Fundamentals of hydrological extreme analysis	S. Tanaka
		15:30-17:00	Exercise 8: Hydrological extreme analysis	
8-Dec	Tue	9:00-10:30	Lecture 9: Resilient society development under changing climate	K. Takara
		11:00-12:30	Lecture 10: Hydrological measurements of large river basins	S. A. Kantoush
		13:30-15:00	Exercise 9: Optimum operation of reservoir systems	D. Nohara
		15:30-17:00		

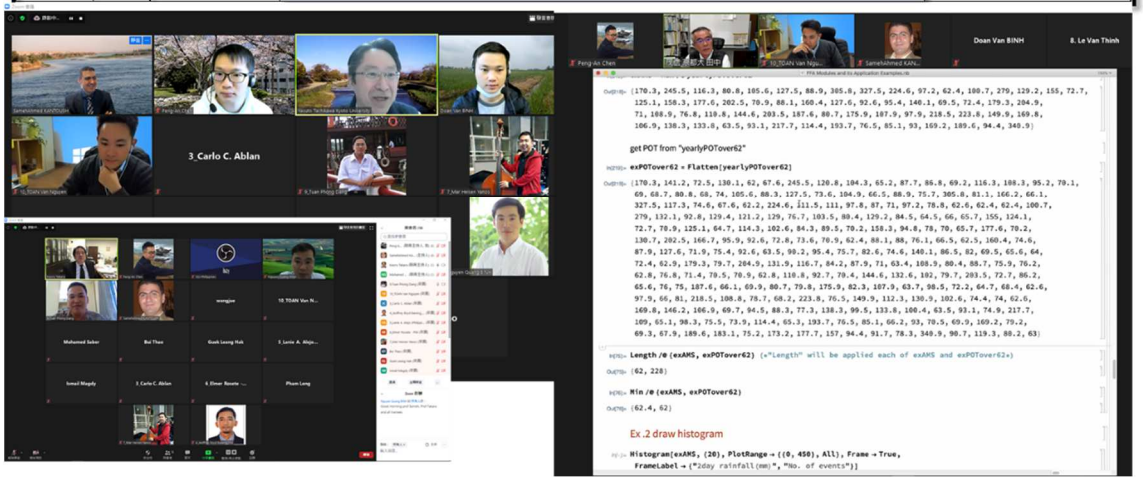

Fig. 5 Fully charged two days with 5 lectures and exercises

9-Dec	Wed	9:00-10:30	Lecture 11: Management of river ecosystem under changing climate	Y. Takemon
		11:00-12:30	Exercise 10: Follow-up of exercises with Q&A session (parallel session for each exercise)	K. Tanaka S. Kim T. Sayama D. Nohara
		13:30-15:00		
		15:30-17:00		
10-Dec	Thu	9:00-10:30	Report presentation by each participant	T. Sumi / S. A. Kantoush
		11:00-12:30		
		13:30-15:30		
		16:00-16:30	Closing ceremony	T. Sumi / S. A. Kantoush

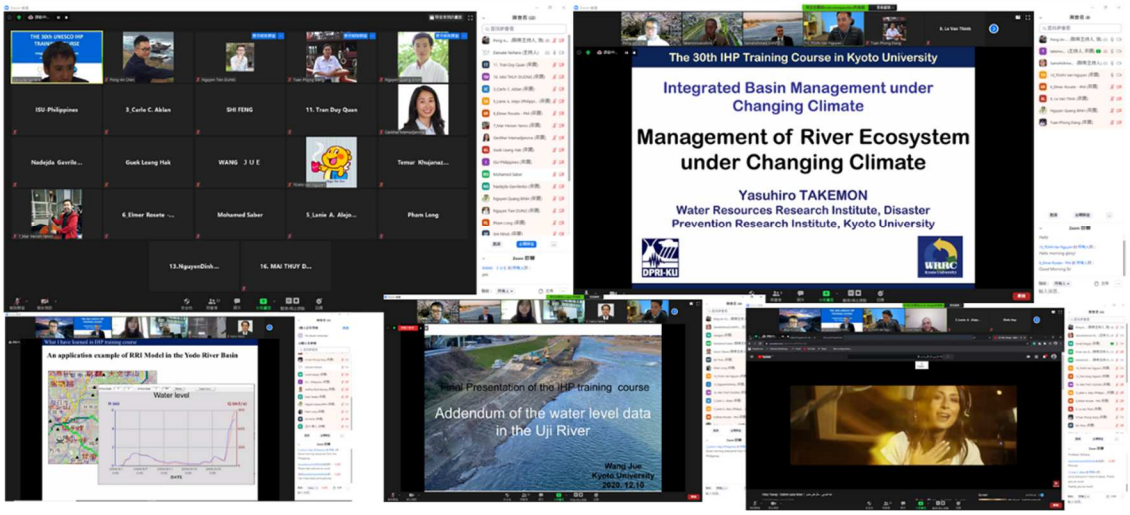

Fig. 6 Report presentations and closing ceremony

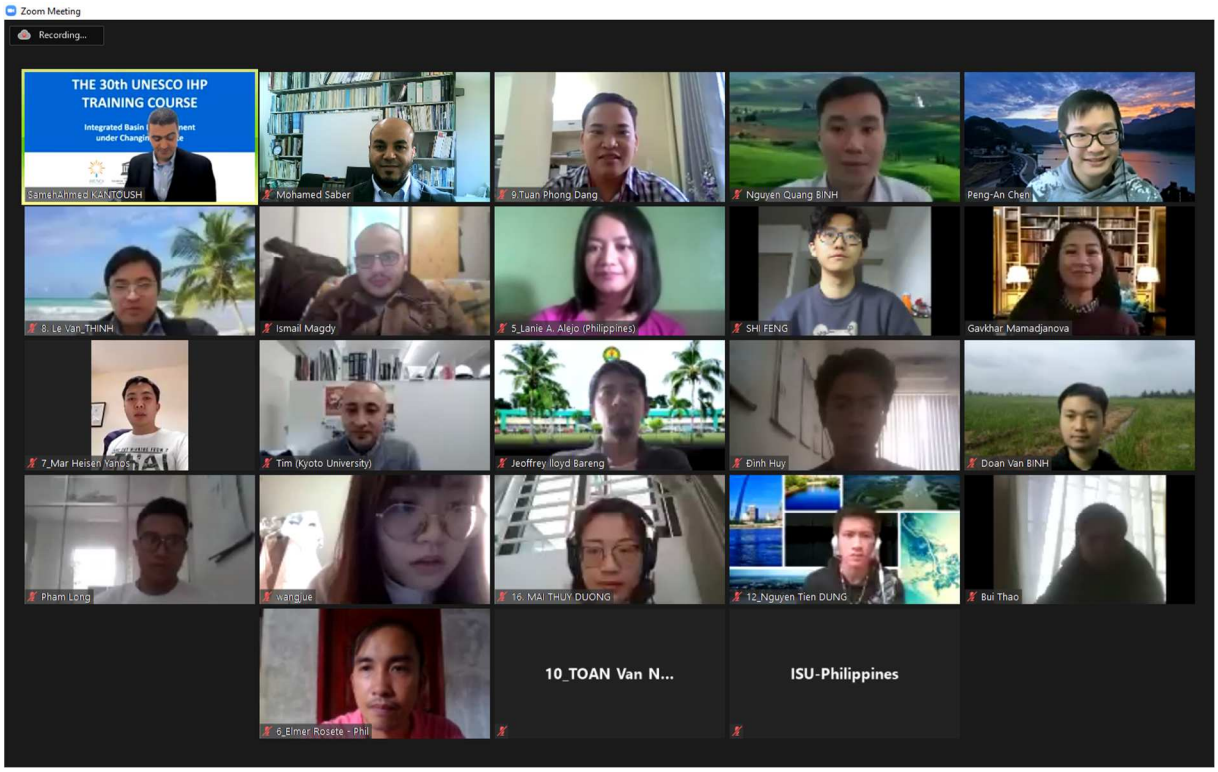

Fig. 7 Report presentations and closing ceremony

Fig. 8 Impressions by trainees and selfie-pictures with IHP-certificates

<u>The Way-Forward:</u> IHP – TC (Hybrid System) will continue for Integrated Basin Management under Changing Climate. Facilitating sustainable development in ASEAN through education. Common Challenges in ASEAN Countries: for instance, in the River Basin Management (Flood and Sediment) in The Philippines and Vietnam, JASTIP, SIP, and APN project.