



International Hydrological Programme

## **Risk Management of Water-related Disasters under Changing Climate**

The Twenty-fifth IHP Training Course

30 November - 11 December, 2015

Kyoto, Japan

Water Resources Research Center, Disaster Prevention Research Institute,  
Kyoto University  
Hydrospheric Atmospheric Research Center, Nagoya University

Supported by  
Disaster Prevention Research Institute, Kyoto University



## **Outline**

A two-week training course on risk management of water-related disasters under changing climate is programmed for participants from Asian-Pacific regions as a part of Japanese contribution to the International Hydrological Program (IHP). The course composed of a series of lectures, practice sessions, and technical visits to the Yodo River Basin will be held mainly at the Disaster Prevention Research Institute (DPRI), Kyoto University during the two weeks from 30 November to 11 December 2015.

## **Objectives**

The number of human losses and economic damages linked to human practices has been exacerbated by water-related extreme events. Water-related risk might further increase for a number of reasons. The probability of extreme events which cause high impacts to society is expected to increase because of human activities and/or as a result of climate variability and change. On the other hand, increasing population and economic growth lead to intensive urbanization, often in flood prone areas. Frequent disaster will prevent from developing or exhaust society. Poor water governance coupled with lack of adequate emergency management institutions and infrastructures reduces society's capacity to cope with extreme events and therefore increases the risk to life and property. In order to realize sustainable development, appropriate risk management of water-related disasters is indispensable.

In light of the Focal Area 1.1 "*Risk management as adaptation to global change*" under the Theme 1 "*Water related disasters under hydrological change*" of the IHP-VIII, the 25th IHP training course is focused on three major objectives: (1) to acquire the latest knowledge on risk management on water-related disasters under changing climate at river basin scale, (2) to make practice on methodologies for risk assessment, and (3) to discuss alternatives of risk management at river basin scale.

## **Dates**

30 November to 11 December, 2015

## **Venue**

Disaster Prevention Research Institute, Kyoto University, Uji, Japan

## **Conveners**

Convener: TANAKA, Shigenobu (Disaster Prevention Research Institute, Kyoto University)

Chief assistant: NOHARA, Daisuke (Disaster Prevention Research Institute, Kyoto University)

## Lecturers

GOURBESVILLE, Philippe

Polytech Nice-Sophia, University of Nice-Sophia Antipolis

HAMAGUCHI, Toshio

Disaster Prevention Research Institute, Kyoto University

HORI, Tomoharu

Disaster Prevention Research Institute, Kyoto University

KANTOUSH, Sameh Ahmed

Disaster Prevention Research Institute, Kyoto University

KAWASAKI, Akiyuki

Graduate School of Engineering, University of Tokyo

KHAN, Shahbaz

Regional Science Bureau for Asia and the Pacific, UNESCO

NAKAKITA, Eiichi

Disaster Prevention Research Institute, Kyoto University

NOHARA, Daisuke

Disaster Prevention Research Institute, Kyoto University

ONO, Yuichi

International Research Institute of Disaster Science, Tohoku University

SATO, Yoshinobu

Faculty of Agriculture, Ehime University

SAYAMA, Takahiro

Disaster Prevention Research Institute, Kyoto University

SUMI, Tetsuya

Disaster Prevention Research Institute, Kyoto University

TACHIKAWA, Yasuto

Graduate School of Engineering, Kyoto University

TAKEMON, Yasuhiro

Disaster Prevention Research Institute, Kyoto University

TAKEUCHI, Kuniyoshi

International Center for Water Hazard and Risk Management

TANAKA, Kenji

Disaster Prevention Research Institute, Kyoto University

TANAKA, Shigenobu

Disaster Prevention Research Institute, Kyoto University

TATANO, Hirokazu

Disaster Prevention Research Institute, Kyoto University

## Lectures

Keynote 1	Resilience and urban floods management strategies	P. Gourbesville
Keynote 2	Water-related disaster risk, resilience and building back better	K. Takeuchi
Keynote 3	Role of data in flood modeling, flood management and Pakistan project	S. Khan
Lecture 1	Projected future meteorological environment - Heading to adaptation strategy -	E. Nakakita
Lecture 2	Fundamentals of basin-scale hydrological analysis	Y. Tachikawa
Lecture 3	Fundamentals in rainfall-runoff-inundation modelling	T. Sayama
Lecture 4	Data Integration and Analysis System (DIAS) for water-related disasters	A. Kawasaki
Lecture 5	Fundamentals in flood frequency analysis	S. Tanaka
Lecture 6	Efforts to develop disaster statistics in the world	Y. Ono
Lecture 7	Fundamentals in river basin modelling	Y. Sato
Lecture 8	Fundamentals in optimum operation of reservoir systems	T. Hori
Lecture 9	Wadi flash floods risk management under changing climate in the arid regions	S.A. Kantoush
Lecture 10	Flood risk assessment toward flood risk management	H. Tatano
Lecture 11	Integrated sediment and floating debris management	T. Sumi

## Practices

Exercise 1	Self-introduction and country report on risk management of water-related disasters	(All participants)
Exercise 2	Fundamentals of data processing	T. Hamaguchi
Exercise 3	Data analysis of GCM and historical data	K. Tanaka
Exercise 4	Flood frequency analysis	S. Tanaka
Exercise 5	Rainfall-runoff-inundation modelling	T. Sayama
Exercise 6	Optimization of reservoir operation	D. Nohara

## Technical visit and field workshop

Lake Biwa, Katsura River, Yodo River and Hiyoshi Dam

## Program (30 November to 11 December, 2015)

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30 Nov. (Mon.)	Registration & Guidance (morning)	
	Exercise 1 (morning)	All participants
	Keynote lecture 1 (afternoon)	P. Gourbesville
	Welcome party (evening)	
1 Dec. (Tue.)	Keynote lecture 2 (morning)	K. Takeuchi
	Keynote lecture 3 (morning)	S. Khan
	Exercise 2 (afternoon)	T. Hamaguchi
2 Dec. (Wed.)	Lecture 1 (morning)	E. Nakakita
	Lecture 2 (afternoon)	Y. Tachikawa
3 Dec. (Thu.)	Lecture 3 (morning)	T. Sayama
	Lecture 4 (afternoon)	A. Kawasaki
	Lecture 5 (afternoon)	S. Tanaka
4 Dec. (Fri.)	Exercise 3 (morning)	K. Tanaka
	Lecture 6 (afternoon)	Y. Ono
	Exercise 4 (afternoon)	S. Tanaka
5 Dec. (Sat.)	Technical visits to the Lake Biwa and the Yodo River	Y. Takemon
6 Dec. (Sun.)	Technical visits and cultural exchange with students at the Katsura River	
7 Dec. (Mon.)	Exercise 5 (morning)	T. Sayama
	Lecture 7 (afternoon)	Y. Sato
8 Dec. (Tue.)	Lecture 8 (morning)	T. Hori
	Exercise 6 (afternoon)	D. Nohara
9 Dec. (Wed.)	Field workshop at the Katsura River and the Hiyoshi Dam	D. Nohara
10 Dec. (Thu.)	Lecture 9 (morning)	S. A. Kantoush
	Lecture 10 (afternoon)	H. Tatano
	Lecture 11 (afternoon)	T. Sumi
11 Dec. (Fri.)	Report presentation by each participant (morning)	
	Completion ceremony of the course (morning)	
	Farewell party (afternoon)	

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### **Downloading the Textbook for Participants from the Net**

The textbook of “the 25<sup>th</sup> IHP Training Course”, which is converted in PDF style, will be prepared and be put on the IHP Nagoya forum website of “[www.ihpnagoyaforum.org](http://www.ihpnagoyaforum.org)”. The participants are requested to download the PDF file from the website in advance as a preparation to the lectures of the training course. The textbook will include one page abstracts and presentation materials of the lectures.

### **Web Broadcasting the Lectures**

The lectures except exercises and technical visits will be webcasted to some universities in Asia via the UNESCO Office Jakarta and with other technology through DPRI facilities. The slide materials will be distributed to the participants from the Net in advance. Some materials may be excluded from web broadcasting when copyrights apply.