

Preface

The International Conference on the Water Crisis in the Asia-Pacific Region was held at Kagawa University, Takamatsu, Kagawa, from 10 to 12 February 2015. The Conference was a kick-off event for the Water Research Center, which will be launched at Kagawa University in the near future. The Research Center will conduct intensive international research to address the water crisis that the Asia-Pacific region is challenged with under the changing climate.

The Sanuki region, in which Kagawa University is located, has a long history of struggles against water shortage. Frequent droughts have historically compelled people to improve local water supply systems. It has been proved that Manno-ike, one of the biggest reservoirs in ancient Japan, was first constructed more than 1,300 years ago. Since then, long-time efforts to improve irrigation systems especially for paddy fields have created a beautiful landscape of more than 14,000 reservoirs. However it was not until the construction of the Kagawa Canal in 1974 that the scarcity of a fresh water supply was resolved.

Today, lessons from this history can provide us with a strong intellectual basis for taking technological approaches towards water resource management and constituting natural, social and cultural capital that will contribute to the sustainable development of Asia-Pacific societies currently challenged with water crises of this century.

We invited a wide range of researchers specializing in water-related issues to join the Conference. In the main symposium on 10 February, we had two keynote speeches and five research presentations. In the workshop held on 12 February, two parallel sessions were organized, followed by a poster session. Wide varieties of excursions were also conducted and participants enjoyed international exchange with people outside the university.

The Conference addressed the global water resource crisis that we humans are faced with in the current century due to increasing water demand and climate change. I have high expectations that we will have further research collaborations following this successful Conference and its fruitful discussions on this critical theme.



Toshifumi Itano,
Vice-President,
Kagawa University.

International Conference on the Water Crisis in the Asia-Pacific Region

Program

9 Feb. 2015

ICEDS Reception funded by the Suntory Foundation / 9 Feb. 2015, 17:00-21:00

Venue: Hotel Lobby, Takamatsu Tokyu Inn / Gyoji, Kamei-cho, Takamatsu

10 Feb. 2015

Water Crisis Symposium / 10 Feb. 2015, 13:30-16:00

Venue: Kagawa University Olive Square

Opening Address

10 minutes

Prof. Seigo NAGAO President, Kagawa University

Keynote Speeches

40 minutes

Dr. Md. Sayeedul Islam KHAN Chairman, GRAM Bangla

20 minutes

Prof. Toshifumi ITANO Vice-President, Kagawa University

Research Presentations

10 minute presentations

Gangalal TULADHAR Climate change and natural disasters in the Himalaya

Subashisa DUTTA Ground-surface interaction of the Ganga River with changing human intervention

Gantsetseg BATDELGER Impact of climate on rainfed wheat yield in central agricultural region of northern Mongolia for thirty years

Masaki TORIMURA Integration of water treatment and water analysis technology -Introduction of AIST Water

Satoshi MURAYAMA Environmental topography for the future: registration of nature, culture, and humanity

11 Feb. 2015

Public Symposium for the general public / 11 Feb. 2015, 13:30-16:00

Venue: Kagawa University Olive Square

Excursions

E-1 Naoshima / 9:00-18:20. Hosted by Prof. Naoyuki HARA (Kagawa University)

Starting from the Hotel (Lobby / Takamatsu Tokyu Inn)

E-2 Shikoku Mountains / 9:00-18:20. Hosted by Prof. Shuichi HASEGAWA (Kagawa University)

Starting from the Hotel (Lobby / Takamatsu Tokyu Inn)

12 Feb. 2015

Parallel Sessions on Water Crisis / 12 Feb. 2015, 9:00-18:00
Venue: Kagawa University Joint Research Building

Each 20 minute presentation will be followed by 5 minutes of discussion.

Room A: Understanding the characteristics of water-related nature, society and culture

- 9:00-10:40** **Chair: Dr. M. TANOUE**
- A-1 Climate, Rainfall and Hydrology**
Odgarav JIGJSUREN
Atsuko NONOMURA
Masahiro TANOUE
Masahiko EBARA
- An application of the HBV model to the Kharaa river basin of Mongolia
Impact of mid-high rise buildings on summer air temperatures in Takamatsu plain.
Relationship between water vapor origin and precipitation ratio in Bangladesh
Peculiar orographic precipitation system in Shikoku caused by typhoon
- <coffee break>
- 10:55-12:10** **Chair: Dr. W. SHINOHARA**
- A-2 Water, Microbes, and Plants**
Wataru SHINOHARA
Motoki NAGURA
Masahiro HASHIZUME
- Evidence for adaptive evolution of an alpine dwarf of *Lysimachia japonica* endemic to Yakushima, Japan
SST variability off Bangladesh
Ocean climate and cholera in Bangladesh
- <lunch break>
- 13:10-15:15** **Chair: Dr. H. ASADA**
- A-3 Water and Society**
Gantsetseg BATDELGER
Prasanta BHATTACHARYA
Laitpharlang CAJEE
Haruhisa ASADA
Md. Sayeedul Islam KHAN
- Impact of climate on rainfed wheat yield in central agricultural region of northern Mongolia for thirty years
Problems of drinking water in the cities of developing country: the case of Guwahati
Water crisis management during the dry season in the most humid southern slopes of the Meghalaya Plateau
Livelihood strategies under climate change in Assam Valley, India
Life and livelihood adaptation to climate change
- <coffee break>
- 15:30-17:10** **Chair: Prof. T. MIZOGUCHI**
- A-4 Topography and Action Research**
Shuichi HASEGAWA
Kazuhiro YUHORA
Toru TERAQ
Naoyuki HARA
- Concept and plan towards Sanuki Geopark
Concept of Global Geopark Network and Muroto Global Geopark
Wind-driven rainfall distribution and local climate characteristics around Yashima Mountain
"Sato-Umi" movement in the Seto Inland Sea and promotion of fish-eating
- 17:20-17:45** **Chair: Dr. M. ISHIZUKA**
- S Lectures on Excursions**
Kenji TANAKA
Toru TERAQ
Naoyuki HARA
Shuichi HASEGAWA
- Severe landslide occurred at suburban area of Hiroshima City
Kagawa Canal and the water system in Sanuki
Agricultural and fishing workers house-inns in Kochi Prefecture
Geological structures of Shikoku and Shodoshima Islands

Room B: Water-related management and response technologies

- 9:25-10:40
B-2 Disaster Management
Gangalal TULADHAR
Ranjan Kumar DAHAL
Subashisa DUTTA
Chair: Prof. S. DUTTA
Climate change and natural disasters in the Himalaya
Monsoon rainfall and landslides in the Himalaya
Land use effect on flood hydrology from plot to basin scales: field measurement and hydrologic modeling
- <coffee break>
- 10:55-12:10
B-2 Disaster Management
A.T.M Shakhawat HOSSAIN
Keizou INOKUMA
Patchara YONGDIMITRAPAP
Chair: Prof. A. T. M. S. HOSSAIN
Modeling short term rainfall induced hydro-meteorological river bank stability hazards of the west bank of Jamuna River, Bangladesh-Balighugri, a case study
Large-scale flood measures in the Doki River
Flood analysis using distributed hydrological models - Case study for Doki and Yoshino Rivers in Shikoku Island
- <lunch break>
- 13:10-14:00
B-4 Integral Approaches
Mika MERVIÖ
Tomohiro AKIYAMA
Chair: Dr. M. MERVIÖ
International cooperation to alleviate water security issues in East Asia: An analysis of goals, options and prospects
Perspectives on sustainability assessment: an integral approach to historical changes in social systems and water environment in the Ili River Basin of Central Eurasia, 1900-2008 (tentative)
- <coffee break>
- 14:30-17:00
B-1 Water Quality Management
Yumi TABUCHI
Tatsuya FUKUDA
B-3 Drinking Water Production
Qi FENG
Koichi AWAZU
Masaki TORIMURA
Akinari SONODA
Chair: Prof. Q. FENG
Generation of monoclonal antibody producing hybridoma for microcystin survey in environmental water by ic-ELISA
Organic pollution by phytoplankton of the Shin River in Kagawa Prefecture, Japan
Development of water purification and seawater desalination systems based on materials science and technology
Rapid detection of microorganisms in water using optical disk technology
Integration of water treatment and water analysis technology -Introduction of AIST Water Health hazard reduction in drinking water using inorganic ion exchangers
- P Poster Session**
Wataru TAKESHITA
Hiroshi TANIMOTO
Kuninao TADA
Masahide ISHIZUKA
Study on the remedial measures and the estimation of landslide dam discharge applying airborne laser survey
Atmospheric composition and the Asian summer monsoon initiative (ACAMI): a jointly sponsored IGAC/SPARC activity
Decrease of surface water nutrient concentration and nutrient flux from the sediment in Harima-Nada, Eastern Seto Inland Sea
How to control nutrient load from domestic sources in the Sea of Harima-nada catchment?

Banquet / 18:00-19:30

Venue: Cafe SoRaMi, Kagawa Univ. Coop

13- Feb. 2015

Excursions

E-3 Kagawa Canal and the Pacific Ocean / Hosted by Prof. Toru TERAO and Dr. Masahide ISHIZUKA

- 13 Feb 8:20 Departure from Hotel (Lobby / Takamatsu Tokyu Inn)
9:30 Manno-Ike Reservoir
10:00 Kagawa Canal Museum
12:00 <lunch>
13:00 Honen-Ike Reservoir
14:30 Ikeda Dam
18:00 Fishing Workers House-Inn "Kaisei Maru" (Kuroshio Town, Kochi Pref.)
<dinner, hot spa>
- 14 Feb 7:30 <breakfast>
9:00 Observation of the Pacific Ocean
11:00 Hirome-Market in Kochi City
<lunch>
14:30 Takamatsu Tokyu Inn

E-4 Hiroshima Landslide Site / Hosted by Prof. Toru Terao and Dr. Masahide Ishizuka

- 15 Feb 8:20 Departure from Hotel (Lobby / Takamatsu Tokyu Inn)
9:00 Yoshima Island
11:30 Hiroshima City
<lunch>
13:00 Landslide Site (Asa-minami-ku, Hiroshima)
Hosted by Dr. Kenji TANAKA (Hiroshima Institute of Technology)
15:30 Hiroshima Peace Site

(Okayama Team / Attended by Prof. T. TERAO)
19:30 Hotel / JR Okayama St. / Okayama Univ.

(Hiroshima Team / Attended by Dr. M. ISHIZUKA)
17:30 Hotel

- 16 Feb 9:00 Departure from Hotel
10:30 Shimanami Highway
11:30 Observation of Solt Processing Industry
<lunch>
Observation of Median Tectonic Line
16:00 Arrival in Takamatsu

E-5 Geology of Shodoshima, Shikoku / Hosted by Prof. Shuichi HASEGAWA

- 13 Feb. - 17 Feb.
Shikoku mountains and Matsuyama

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