

# NATIONAL REPORT ON IHP-RELATED ACTIVITIES

## Japan

Various activities of UNESCO have been implemented under the support of the Japanese National Commission for UNESCO with financial contribution in the form of Fund-in-Trust (JFIT) for the Promotion of Science for the Sustainable Development. Japanese National Committee for IHP of UNESCO is expected to solve complex global challenges through following activities with a cross-cutting approach in collaboration with all the studies including social and human sciences, in addition to changing value. The following summary includes the activities of Japanese National Committee for IHP of UNESCO undertaken during June 2012 to May 2014.

### 1. ACTIVITIES UNDERTAKEN IN THE PERIOD JUNE 2012 – MAY 2014

#### 1.1 Meetings of the IHP National Committee

##### 1.1.1 Decisions regarding the composition of the IHP National Committee

The composition of the Japanese IHP National Committee is as follows:

Members of the IHP National Committee as of June 2014.

	Name	Position	E-mail
Chair *	TAKARA Kaoru	Prof., DPRI, Kyoto Univ.	<a href="mailto:takara.kaoru.7v@kyoto-u.ac.jp">takara.kaoru.7v@kyoto-u.ac.jp</a>
*	UEMATSU Mitsuo	Director and Prof., CICAORI, Univ. of Tokyo.	<a href="mailto:uematsu@aori.u-tokyo.ac.jp">uematsu@aori.u-tokyo.ac.jp</a>
*	KURODA Reiko	Prof. Tokyo Univ. of Science	<a href="mailto:rkuroda@rs.tus.ac.jp">rkuroda@rs.tus.ac.jp</a>
	ISHIZAKA Joji	Prof., HyARC, Nagoya Univ.	<a href="mailto:jishizak@hyarc.nagoya-u.ac.jp">jishizak@hyarc.nagoya-u.ac.jp</a>
	OKI Taikan	Prof., IIS, Univ. of Tokyo	<a href="mailto:taikan@iis.u-tokyo.ac.jp">taikan@iis.u-tokyo.ac.jp</a>
	KAZAMA Futaba	Prof., Yamanashi Univ.	<a href="mailto:futaba@yamanashi.ac.jp">futaba@yamanashi.ac.jp</a>
	KAWAMURA Akira	Prof., Tokyo Metropolitan Univ.	<a href="mailto:kawamura@tmu.ac.jp">kawamura@tmu.ac.jp</a>
	SUZUKI Atsushi	Vice Director, ICHARM, PWRI	<a href="mailto:At-suzuki@pwri.go.jp">At-suzuki@pwri.go.jp</a>
	TACHIKAWA Yasuto	Prof., Kyoto Univ.	<a href="mailto:tachikawa@hywr.kuciv.kyoto-u.ac.jp">tachikawa@hywr.kuciv.kyoto-u.ac.jp</a>
	TANIGUCHI Makoto	Prof., RIHN	<a href="mailto:makoto@chikyu.ac.jp">makoto@chikyu.ac.jp</a>
	TSUJIMURA Maki	Prof., Univ. of Tsukuba	<a href="mailto:mktsuji@geoenv.tsukuba.ac.jp">mktsuji@geoenv.tsukuba.ac.jp</a>
	NAKAYAMA Mikiyasu	Prof., Univ. of Tokyo	<a href="mailto:nakayama@k.u-tokyo.ac.jp">nakayama@k.u-tokyo.ac.jp</a>
	HARUYAMA Shigeko	Prof., Mie Univ.	<a href="mailto:haruyama@bio.mie-u.ac.jp">haruyama@bio.mie-u.ac.jp</a>
	HORI Tomoharu	Prof., WRRRC, DPRI, Kyoto Univ.	<a href="mailto:horitomoharu.3w@kyoto-u.ac.jp">horitomoharu.3w@kyoto-u.ac.jp</a>
	WATANABE Tsugihiko	Prof., Kyoto Univ	<a href="mailto:nabe@kais.kyoto-u.ac.jp">nabe@kais.kyoto-u.ac.jp</a>

#### Notes:

- \* Member of the Japanese National Commission for UNESCO;
- CICAORI: Center for International Collaboration, Atmosphere and Ocean Research Institute;
- DPRI: Disaster Prevention Research Institute, Kyoto University;
- HyARC: Hydrospheric Atmospheric Research Center, Nagoya University;
- ICHARM: The International Centre for Water Hazard and Risk Management (UNESCO Category II Centre);
- PWRI: Public Works Research Institute;
- IIS: Institute for Industrial Sciences, University of Tokyo;
- RIHN: Research Institute for Humanity and Nature; and
- WRRRC: Water Resources Research Center.

#### Secretariat of the Japanese National Committee for IHP, UNESCO:

c/o Mr. NODA Takao

Japanese National Commission for UNESCO,

Ministry of Education, Culture, Sports, Science and Technology (MEXT)

3-2-2 Kasumigaseki, Chiyoda-ku, Tokyo 100-8959, Japan

E-mail: "Natcom Japan" <[jpnatcom@mext.go.jp](mailto:jpnatcom@mext.go.jp)>

TEL: +81-(0)3-6734-2585 / FAX: +81-(0)3-6734-3679, <http://hywr.kuciv.kyoto-u.ac.jp/ihp/japan/>

##### 1.1.2 Status of IHP-VII activities

Various activities relating to IHP-VII (2008-2013) Themes have been implemented since 2008 as follows.

## **THEME 1: Adapting to the Impacts of Global Changes on River Basins and Aquifer Systems**

### **FA 1.1 – Global changes and feedback mechanisms in hydrological processes in stressed systems**

- Global water cycle assessment: IHP contribution to GEOSS [Univ. of Tokyo]  
There are number of activities led by Prof. Koike (Univ. of Tokyo) and others as:  
*in Asia*

- International Coordination Group (ICG) Meetings on the Global Earth Observation System of Systems (GEOSS) and Asian Water Cycle Initiative (AWCI) (GEOSS/AWCI/ICG)
  - 2nd GEOSS/AWCI/ICG Meeting, Tokyo, Japan, 16-17, April 2008
  - 3rd GEOSS/AWCI/ICG Meeting, Beijing, China, 6 November 2008
  - 4th GEOSS/AWCI/ICG Meeting, Kyoto, Japan, 6-7, February 2009
  - 5th GEOSS/AWCI/ICG Meeting, Tokyo, Japan, 15-18, December 2009
  - 6th GEOSS/AWCI/ICG Meeting, Bali, Indonesia, 13 March 2010
  - 7th GEOSS/AWCI/ICG Meeting, Tokyo, Japan, 5-6, October 2010
  - 8th GEOSS/AWCI/ICG Meeting, Seoul, South Korea, 6-8 October 2011
  - 9th GEOSS/AWCI/ICG Meeting, Tokyo, Japan, 29-30 September 2012
  - 10th GEOSS/AWCI/ICG Meeting, Tokyo, Japan, 26-30 May 2014

#### *in Africa*

- 1<sup>st</sup> African Water Cycle Symposium, Tunis, Tunisia, 6-8 January, 2009.
  - 1st Task Team meeting in preparation of the Second GEOSS African Water Cycle Symposium, Geneva, Switzerland, 23-24 September 2009
  - 2<sup>nd</sup> African Water Cycle Symposium, Addis Ababa, Ethiopia, 6-8 January, 2011.
  - GEO-UNESCO Joint Workshop on Earth Observation and Capacity Development for IWRM at River Basins in Africa, Nairobi, Kenya, 12 - 14 January 2012.
  - 3<sup>rd</sup> African Water Cycle Symposium, Libreville, Gabon, 27-29 February, 2012.
  - The GEOSS JOINT Asia-Africa Water Cycle Symposium, Tokyo, Japan, 25-27 November, 2013
- Interaction between hydrological cycle and physical/biochemical oceanography by cooperation between IHP and IOC [JAMSTEC, The Univ. of Tokyo, Kyoto Univ.]
  - IHP-IOC sessions are organized at the meetings of Japan Geoscience Union (JpGU) at Makuhari Messe in May 2011 and in May 2012.

### **FA 1.2 – Climate change impacts on the hydrological cycle and consequent impact on water resources**

- Innovative Program of Climate Change Projection for the 21<sup>st</sup> Century: MEXT Kakushin Program (2007-2012). <http://www.jamstec.go.jp/kakushin21/eng/index.html>
- Program for Risk Information on Climate Change: MEXT Sosei Program (2012-2016). <http://www.jamstec.go.jp/sousei/eng/index.html>
- GWES (Groundwater in Emergency Situations).  
Great Eastern Japan Earthquake and Tsunami showed the importance of groundwater use in emergency situation during disasters.
- UNESCO Chair on Sustainable Groundwater Management in Mongolia at the Institute of Geoecology, Mongolian Academy of Sciences and the University of Tsukuba, Japan.  
The chair activity has been continued actively focusing on the monitoring of the groundwater and the surface water interaction and the consultant on the sustainable groundwater resources governance in Ulaanbaatar, capital city of Mongolia.
- Climate change research under the MEXT KAKUSHIN program “Innovative Program of Climate Change Projection for the 21<sup>st</sup> Century” was intensively conducted from 2008 to 2012.
- Climate change research under the MEXT SOSEI program “Program for Risk Information on Climate Change” is intensively conducted from 2012 to 2016

### **FA 1.3 – Hydro-hazards, hydrological extremes and water-related disasters**

- A Global Center of Excellence (GCOE) Program at Kyoto University “Sustainability/Survivability Science for a Resilient Society Adaptable to Extreme Weather Conditions” adopted for 2009-2014. Interdisciplinary research and education at Ph.D. level is implemented at Kyoto University for extreme weather and water conditions [Takara, Tachikawa and others].
- Improving the predictability of hydrological extremes in ungaged or poorly gaged basins using new measurement technology and promoting the local use of satellite information for improved river basin management in partnership with GEOSS.
- The predictability of the large flood at the Yodo River basin in 2013 was examined to verify the performance of a hydrologic model for predictions of extreme events [Kyoto University].
- Collaborative joint research for hydrologic prediction between Yangon Technological University has been launched since 2014. [Kyoto Univ.]
- Space Application for Environment (SAFE), Asia-Pacific Regional Space Agency Forum (APRSA) [Koike]  
*Demonstration projects:*
  - Hong River, Viet Nam, 2008-2010
  - Sangker River, Cambodia, 2009-2012
  - Indus River, Pakistan, 2010-2012
- Case studies on human security and water-related disasters.
- Japan has experienced very severe water-related disasters in 2010-2012. Especially, the Great East Japan Earthquake and Tsunami (GEJET) damaged Japan very much, causing the tsunami disasters in wider coastal zones and its aftermath including radioactive contamination issues from nuclear power plants in Fukushima.
- Best practices on water risk management
  - \* ICHARM has started a UNESCO funded project “Strategic Strengthening of Flood Warning and Management Capacity of Pakistan” in response to the unprecedented Indus river flood disaster (2012-2014).
  - \* ICHARM had announced a flood inundation forecast of Chao-Phraya river basin to help local people in emergent operation(2011-).
  - \* Flood forecasting and management [ICHARM, PWRI, IFNet, JMA and universities] under the MEXT Kakushin Program from 2007 to 2012 and MEXT SOSEI Program from 2012 to 2017, changes of water-related disasters and water resources under global warming were investigated.
- Committee on Hydrosience and Hydraulic Engineering, JSCE, launched the subcommittee on flood risk management in 2013, which is in charge of field survey of actual flood cases (the subcommittee is chaired by Hori). The subcommittee conducted the field survey in five large flood and geo-hazards which occurred in 2013.

### **FA 1.4 – Managing groundwater systems’ response to global changes**

- Groundwater resources assessment under the pressure of humanity and climate change (GRAPHIC) [Research Institute for Humanity and Nature (RIHN)]  
UNESCO-GRAPHIC organized several international activities including symposiums and training courses to evaluate the effects of climate change and human activities on groundwater resources. Many case studies are synthesized by books including “Groundwater System Responses to Changing Climate (eds.: Taniguchi and Holman)” and “Climate Change Effects on Groundwater Resources: A Global Synthesis of Findings and Recommendations (eds.: Treidel et al.)”, from Taylor and Francis.
- Publishing "Model estimates of sea-level change due to anthropogenic impacts on terrestrial water storage" in *Nature Geoscience*, **5**, 389-392 in 2012. [The Univ. of Tokyo, etc.]

### **FA 1.5 – Global change and climate variability in arid and semi-arid regions**

- Hydrological and ecological impact assessment of long-term global warming on river basins in the world [Kyoto Univ.]  
DPRI initiated the Japan Egypt-Hydro Network (JF-HydroNet) with the coordination with three Egyptian Institutions under the umbrella of GCOE-ARS project at Kyoto Univ. for a joint research and education project on the water resources and environmental problems of the Nile Delta of Egypt [Prof. Tetsuya Sumi, WRRC, Kyoto Univ.].
- Valorization of Bio-resources in Semi- arid and Arid Land for Regional Development [Univ. Tsukuba]  
Univ. Tsukuba has performed an international collaboration research on the relationship between the bio-resources and surface water/ groundwater resources in semi-arid regions in Tunisia funded by SATREPS (Science and Technology Research Partnership for Sustainable Development) of the Japan International Cooperation Agency (JICA) and the Japan Science and Technology Agency (JST).

## **THEME 2: Strengthening Water Governance for Sustainability**

### **FA 2.1 – Cultural, Societal, and scientific responses to the crises in water governance**

To share the knowledge of hydrologic modeling techniques and enhance the understanding of hydrologic predictions, CommonMP (Common Modeling Platform for water-material circulation analysis) was developed at the National Institute for Land and Infrastructure Management [NILIM].

### **FA 2.2 – Capacity development for improved governance; enhanced legislation for wise stewardship of water resources\***

- Research on “virtual water”  
Developed inventories of the virtual water/water footprint of industrial commodities [The University of Tokyo]  
Dispatched an expert for the ISO/TC207/SC5/WG8 Waterfootprint and supported developing the community draft [The University of Tokyo]
- Collaboration with IHP-LAC for Rio de La Plata Basin Workshops  
Preparatory Meeting for 6th International Workshop of Regional Approach of Development and Management of Reservoirs in La Plata River Basin [Dr. Yosuke Yamashiki, Kyoto Univ.]
- Relative impact evaluation in water resources dynamics and social systems with large development in river basins [Kyoto Univ.]
- Promoted UNESCO’s “IWRM Guidelines at river basin level (IWRM Guidelines)” by NARBO (Network of Asian River Basin Organizations) through technical workshop of the 2<sup>nd</sup> Asia-Pacific Water Summit in May, 2013
- Implementation of NARBO IWRM training programme by using IWRM Guidelines as a main text book in November 2012, and November 2013 in Sri Lanka and May 2014 in Philippines
- Preparation for Educational material of IWRM guidelines for UNESCO by Japan Water Agency, secretariat of NARBO.
- “The United States Water Law – an Introduction – by J.W.Johnson (CRC Press)” was translated into Japanese by a researchers group in Disaster Prevention Research Institute, Kyoto University, and was published by Nippon Hyoron Sha Co. Ltd. in 2013. The translation helps especially practitioners to understand and to know comparatively the legislation system for water governance.
- International Environment Leaders Training Program funded by Ministry of Education, Culture, Sports, Science and Technology (MEXT) [Univ. Tsukuba, Kyoto Univ., Univ. Tokyo, Kumamoto Univ., et al.]

## **THEME 3: Ecohydrology for Sustainability**

### **FA 3.1 – Ecological measures to protect and remediate catchments process**

- Participation in ecohydrology research development

- Disaster Prevention Research Institute (DPRI), Kyoto University hosted the 23rd IHP Training course entitled of “Ecohydrology for River Basin Management under Climate Change” on Dec. 2-13, 2013. Organizer invited Prof. M. Zalewski, European Regional Centre for Ecohydrology, UNESCO, I. D. A. Sutapa, Asia Pacific Centre for Ecohydrology, UNESCO and S. Khan, Regional Science Bureau for Asia and the Pacific, UNESCO to made invited lectures. The training course participants are 24 trainees in total. 14 trainees from foreign countries consist of five students supported by UNESCO, seven students supported by MEXT (Official Development Assistance Grants for UNESCO Activities) and two students supported by JSPS Mega-Delta Project. Their background is quite diverse. They are six from universities and the other eight are working at national weather/hydrological/water resources/environmental institutes. Other ten trainees are from Kyoto University including eight graduate school (master or Ph. D.) students and two visiting researchers supported by GCOE-ARS. Home countries of all trainees are also diverse from eastern Asia to Middle East (Mongolia, China(2), Malaysia, Vietnam(2), Lao PDR, Thailand, Indonesia, Papua New Guinea, Vanuatu, Myanmar (4), Sri Lanka, India, Nepal, Uzbekistan, Iran, Libya and Egypt(3)).
- Ecohydrology workshop and Steering Committee for IHP-VIII [Takemon]  
A workshop on “Ecogydrology for Sustainable Development “ and Steering Committee Meeting for IHP-VIII were held at UNESCO Headquarters in Paris on 20-21 May 2014. Dr. Takemon (Water Resources Research Center, DPRI, Kyoto Univ.) attended the meeting and joined the discussion. As a result of discussion the committee proposed six target subjects in Ecohydrology for IHP-VIII: 1)Ecohydrologic technologies- green infrastructure, 2)Ecosystem services quantification and evaluation, 3)Ecohydrologic dynamics from basin scale to global scale, 4)Environmental flow regime science and management, 5)Hazards function and adaptation, and 6) Governance, morality and traditional knowledge.

### **FA 3.2 – Groundwater-dependent ecosystems identification, inventory and assessment\***

- Frontier of sustainable groundwater management systems based on groundwater flow process in arid/semi-arid region in cooperation with China and Mongolia [Univ. of Tsukuba, Hiroshima Univ., Kumamoto Univ.]
- A research project on the impact of the forest thinning on the groundwater recharge funded by CREST Program of the Japan Science and Technology Agency (JST). [Univ. Tsukuba, Kyoto Univ., Univ. Tokyo, Kyushu Univ., ...]

## **THEME 4: Water and Life Support Systems**

### **FA 4.1 – Achieving sustainable urban water management**

- Hydrogeological and sociological survey on development processes of East-Asian cities co-existing with floods [Kyoto Univ.]

### **FA 4.2 – Achieving sustainable rural water management\***

- Development of a new flood management method utilizing paddies into river management against global warming [National Institute for Rural Engineering (NIRE), Univ. of Tsukuba, Univ. of Tokyo]

## **THEME 5: Water Education for Sustainable Development**

### **FA 5.1 – Tertiary water education and professional development**

### **FA 5.2 – Vocational education and training of water technicians**

### **FA 5.3 – Water education in schools**

### **FA 5.4 – Water education for communities, stakeholders and mass-media professionals**

- Nagoya University/Kyoto University Training Courses: The 22nd and 23rd Training Courses have been conducted by Nagoya University and Kyoto University, respectively, with collaboration of Japan Aerospace Exploration Agency (JAXA) and National Institute of Information and Communications Technology (NICT), etc.
- Kyoto University implemented Global COE Program “Global Centre for Education and Research on Human Security Engineering for Asian Mega Cities” supported by MEXT and JSPS (2008-2013) [Shimizu, Hori.
- Kyoto University implemented Global COE Program “Sustainability/Survivability Science for a Resilient Society Adaptable to Extreme Weather Conditions” supported by MEXT and JSPS (2009-2014) [Takara].

- Kyoto University is implementing a Leading Graduate Schools Program “Inter-Graduate School Program for Sustainable Development and Survival Societies” (2011-2018) [Takara, Hori, Tachikawa].
- Wisdom of Water (Suntory) Corporate Sponsored Research Program, Organization for Interdisciplinary Research Project, The University of Tokyo, 2008-2013. Special lectures of water education in elementary school for approximately 20 times for more than 1000 students in 5 years, special courses of water education for fresh students in The University of Tokyo, publishing educational materials on water for elementary school students, more than 10 times of press release for mass media on water issues, and on mass-media approximately 40 times
- ICHARM Training Programmes and a one-year Master Degree Program on water-related risk management in cooperation with the National Graduate Institute for Policy Studies (GRIPS) supported by JICA.
- ICHARM has been jointly conducting a three-year doctoral course, “Disaster Management”, with GRIPS since October 2010.
- Six short-term training courses have been conducted about Early Warning System, June 2012-May 2014 [ICHARM].

Other regional and cross-cutting themes activities include:

**(1) Catalogue of Rivers:** The Catalogue of Rivers for Southeast Asia and the Pacific, Vol. 6 was published on March 2012. This volume contains seven rivers from seven countries with the inclusion of first time contributions from Korea (D.P.R.), Mongolia and Myanmar, and brings the total number of rivers catalogued in the region, including those in volumes I to VI, to 121. The information of previous five volumes locates at:

<http://hywr.kuciv.kyoto-u.ac.jp/ihp/japan/riverCatalogue.html>

**(2) Asian Pacific FRIEND:** With the dissemination of information from the SEAP region it is hoped that there will be better understanding and co-operation on matters related to water resources within each country as well as regionally. Of particular importance was the establishment of the Asian Pacific FRIEND, a UNESCO-IHP regional collaborative project, and the Asian Pacific Water Archive (APWA) that archives and makes available hydrometeorological and related data for Asian Pacific FRIEND projects and other IHP related activities in the region. Japan has been contributing to Asian Pacific FRIEND since its first Technical Sub-Committee (TSC) meeting in Kuala Lumpur in May 1997.

**(3) Hydrology for Environment, Life and Policy (HELP):**

No activities during this period.

**(4) Prediction in Ungauged Basins (PUB) by IAHS:**

PUB-Japan members attended IAHS 90th anniversary PUB Symposium, Delft, the Netherlands, on 23-25 October 2012 [Takeuchi, Tani, Takara, Sayama, Hishinuma].

ICHARM Director Kuniyoshi Takeuchi was awarded “2012 IAHS International Hydrology Award” at this meeting.

**(5) International Flood Initiative (IFI), International Sediment Initiative (ISI) and International Programme on Landslides (IPL):**

- Contribution to IFI as secretariat

ICHARM has been serving as the secretariat of the International Flood Initiative (IFI), a joint initiative with international organizations such as UNESCO (IHP), WMO, UN/ISDR, UNU, IAHS and IAHR. ICHARM manages the IFI website (<http://www.ifi-home.info/>) and compiles inputs, materials and tools provided by member agencies, while also providing its own outputs. ICHARM launched the IFI flagship project to support benchmarking flood risk reduction at the side event of Special Thematic Session on Water and Disasters during the High-Level Expert Panel on Water and Disasters (HELP/UNSGAB) convened by the UN Secretary-General H.E. Mr. Ban Ki-moon at the UN Headquarters in March 2013. The flagship project was included into IHP-VIII under Theme 1 Water-related disasters and hydrological change at IHP-VIII implementation workshop held in Nairobi in September 2013.

- Kyoto University hosted the 12th International Symposium on River Sedimentation (ISRS2013) on 3-5 September 2013 with coordination with World Association for Sedimentation and Erosion Research (WASER) and International Research and Training Center on Erosion and Sedimentation

(IRTCES). During the symposium, organizer invited Professor Manfred Spreafico (Univ. of Berne, Switzerland), the leader of ISI, and organized the Workshop on the International Sediment Advancements (WISA).

- (6) UNESCO Chair on Sustainable Groundwater Management in Mongolia: The UNESCO Chair Program performed a field research campaign and a training lecture for engineers and policy makers on surface water/ groundwater resources in Tuul River Watershed, Ulaanbaatar under a collaboration between the Institute of Geo-ecology, Mongolian Academy of Sciences and the University of Tsukuba.

## 1.2 Activities at national level in the framework of the IHP

### 1.2.1 National/local scientific and technical meetings

- (1) IHP Training Course Task Forth Meetings in Nagoya, and Kyoto and Working Group Meetings in Tokyo (Prof. Uyeda, Prof. Nakamura, Prof. Takara, Prof. Ishizuka and Prof. Sumi) were held several times to discuss the organization of the Training Courses, the plan for the 23rd and 24th Training Course, future direction, and the reviews.
- (2) The 28th IHP National Committee meeting was held at MEXT on 7 May 2012 to discuss various issues relating to the 20th Session of IHP Intergovernmental Council (June 2012) and IHP-VIII (2014-2021).
- (3) The Japanese National Committee for IHP, UNESCO and the Japanese National Committee for IAHS, the Science Council of Japan organized an Open Discussion Conference “Japan Water 2012: International Research and Education Activities on Water in Japan -Career Paths for Young Scientists and Japan Initiative-” at MEXT on 15<sup>th</sup> Oct 2012.
- (4) The Japanese National Committee for IHP, UNESCO and the Japanese National Committee for IAHS, the Science Council of Japan organized a Special Session on “Issues and Perspectives for Water Education in the Graduate Level and Career Paths” in the Japanese Geophysical Union (JpGU) Meeting at Makuhari, Chiba, Japan on 21<sup>st</sup> May, 2013.
- (5) The 29th IHP National Committee meeting was held at MEXT on 4 June 2014 to discuss various issues relating to the 22nd Session of IHP Intergovernmental Council (June 2014), IHP-VIII (2014-2021), etc.

### 1.2.2 Participation in IHP Steering Committees/Working Groups

#### **Regional Steering Committee (RSC) for IHP in Southeast Asia and the Pacific (SEAP):**

- (1) The 20<sup>th</sup> RSC was held in Langkawi, Malaysia in conjunction with UNESCO-IHP and the 2<sup>nd</sup> International Conference on Water Resources (ICWR2012) “Sharing Knowledge of Issues in Water Resources Management to Face the Future” *Langkawi, Malaysia, 5-9 November 2012*. The RSC Secretariat Assoc. Prof. Tachikawa was re-elected for 2012-2014. [Takara, Kawamura, Tachikawa, Kobayashi]
- (2) The 21<sup>th</sup> RSC was held in Gyeongju, Republic of Korea in conjunction with UNESCO-IHP and the 2<sup>nd</sup> Nakdong River International Water Week/International Water Forum 2013 (Na-Ri IWW/IWF 2013), Geongju, Republic of Korea, 30 September - 4 October 2013. [Takara, Chikamori, Tachikawa, Kobayashi]
- (3) The 1<sup>st</sup> Meeting of the Implementation Working Group UNESCO International Hydrological Programme (IHP), 10-12 December 2012, Koblenz [Tachikawa]
- (4) The 8th Steering Committee meeting of IWRM Guidelines at River Basin Level Initiative at UNESCO Jakarta office on 20th March 2013. [Mr.Otsuki, a steering committee member]

### 1.2.3 Research/applied projects supported or sponsored

- MEXT Kakushin Program “Innovative Program of Climate Projection for the 21<sup>st</sup> Century” 2007-2012 [ICHARM, PWRI, IFNet, Kyoto Univ., Univ. Tokyo and others]
- MEXT Sosei Program “Climate Change Risk Information” 2012-2016 [ICHARM, PWRI, IFNet, Kyoto Univ., Univ. Tokyo and others]
- Global COE Program “Sustainability/Survivability Science for a Resilient Society Adaptable to Extreme Weather Conditions” 2009-2014 sponsored by MEXT-JSPS [PL: Prof. Kaoru Takara]
- JSPS-Asian Core Program, " Research and Education Center for the Risk Based Asian Oriented Integrated Watershed Management," 2011-2015 [PI: Prof. Yoshihisa Shimizu].
- Program for Leading Graduate Schools “Inter-Graduate School Program for Sustainable Development and Survivable Societies” 2011-2018 sponsored by MEXT-JSPS [PC: Prof. Kaoru Takara]
- Grant-in-Aid for ODA UNESCO activities, 2013 sponsored by MEXT [Kyoto University]
- Precise Impact Assessments on Climate Change” supported by the SOUSEI Program of the Ministry of Education, Culture, Sports, Science, and Technology (MEXT). [T. Oki, The Univ. of Tokyo]
- Research Project “Integrated Study Project on Hydro-Meteorological Prediction and Adaptation to Climate Change in Thailand (IMPAC-T)” supported the Science and Technology Research Partnership for Sustainable Development, JST-JICA, Japan. [T. Oki, The Univ. of Tokyo]
- Research Project "Developing an Integrated Water Cycle Model for Sustainability Assessment of World Water Resources" supported by Grant-in-Aid for Scientific Research of The Japan Society for the Promotion of Science. [T. Oki, The Univ. of Tokyo]
- Research Project “A tracer simulator of fallout radionuclides for safe and sustainable water use” Core Research for Evolutional Science and Technology (CREST), the Japan Science and Technology Agency (JST). [T. Oki, The University of Tokyo]

### 1.2.4 Collaboration with other national and international organizations and/or programmes

The Japanese IHP National Committee has been closely collaborating with:

- (1) Some committees in the Science Council of Japan (SCJ), including the Sub-Committee on IRDR (Integrated Research on Disaster Reduction) of ICSU (International Science Union).
- (2) The national government and its branches relating to hydrology and water resources administration,
- (3) Nagoya University and Kyoto University for IHP Training Courses and Graduate School and other universities and research institutes,
- (4) The Japan Water Forum (JWF),
- (5) World Meteorological Organization (WMO), and
- (6) International NGOs/NPOs such as the International Association of Hydrological Sciences (IAHS), the International Water Resources Association (IWRA), the International Association for Hydro-Environment Engineering and Research (IAHR), the Asia Pacific Association of Hydrology and Water Resources (APHW), Asia Oceania Geosciences Society (AOGS) and the International Consortium on Landslides (ICL).
- (7) Contribute as one of coordinating lead authors with Dr. Blanca Jimenez-Cisneros, Director of the Division of Water Sciences, Secretary of the International Hydrological Programme (IHP), UNESCO, for the Chapter 3 “Freshwater Resources” of the 5<sup>th</sup> Assessment Report (AR5) of the Working Group II of the Intergovernmental Panel on Climate Change (IPCC). [Oki]

### 1.2.5 Other initiatives

**ICHARM:** International Centre for Water Hazard and Risk Management under the auspices of UNESCO was established in Tsukuba, Japan in March 2006, after getting accreditation by the



member states of UNESCO at the 33<sup>rd</sup> General Conference of UNESCO. Dr. Kuniyoshi Takeuchi, the former chairman of the Japanese National Committee for UNESCO-IHP, was assigned as the founding Director of ICHARM. In its inception, ICHARM has been playing core roles in research, training, and information networking activities on water-related disasters at global levels. The activities are expected to contribute in the prevention and reduction of water-related disasters, focusing on flood related disasters at the initial stage.

On 23 July 2013, the Ambassador of Japan to UNESCO, H.E. Mr Isao Kiso and the Director-General of UNESCO, Irina Bokova, signed an agreement for the renewal of ICHARM at the UNESCO Headquarters in Paris. The agreement, which entered into force upon its signature, grants ICHARM the status of an international centre under the auspices of UNESCO (Category 2) for a second six-year term.

It is important to cooperate with existing UNESCO water Centers such as IHE in the Netherlands, HidroEX in Brazil, IRTCES in China, HTC in Malaysia and RCUWM in Iran, etc. The outline of ICHARM is as follows.

1) Mission: The mission of the Centre is to serve as the Global Centre of Excellence for Water Hazard and Risk Management by, inter alia, observing and analyzing natural and social phenomena, developing methodologies and tools, building capacities, creating knowledge networks, and disseminating lessons and information in order to help governments and all stakeholders manage risks of water-related hazards at global, national, and community levels. The hazards to be addressed include floods, droughts, landslides, debris flows, tsunamis, storm surges, water contamination, and snow and ice disasters. The Centre envisions a Center of Excellence housing a group of leading people, superior facilities, and a knowledge base which enables conducting i) innovative research, ii) effective capacity building, and iii) efficient information networking. Based on these three pillars, ICHARM will globally serve as a knowledge hub for best national/local practices and an advisor in policy making.

2) Functions:

(i) to promote scientific research and to undertake effective capacity-building activities at the institutional and professional levels;

(ii) to create and reinforce networks for the exchange of scientific, technical and policy information among institutions and individuals;

(iii) to develop and coordinate cooperative research activities, taking advantage particularly of the installed scientific and professional capacity of the IHP networks, WWAP, the IFI/P and relevant programmes of non-governmental organizations, international institutions and networks;

(iv) to conduct international training courses for practitioners and researchers on the global level; and

(v) to organize knowledge and information transfer activities including international symposia or workshops, and to engage in appropriate awareness-raising activities;

3) Structure: The center is established as a part of the Public Works Research Institute (PWRI) and operated under the responsibility of its Chief Executive.

Based on the renewed agreement between the UNESCO and the Government of Japan on ICHARM, the Governing Board was established. The first Governing Board meeting was held on February 25, 2014, and examined and adopted the “Rule of Procedure”, “ICHARM Long-term (around 10 years) and Mid-term (around 5 years) Programmes” and the “ICHARM Work Plan (From April 2014 to March 2016)” that describes the detail of activity plan. Also reviewed is the “ICHARM Activity Report” dated from October 2010 to March 2014 (including the plan for February and March 2014). Following members are designated as the Governing Board Members from February 25, 2014 to the next board meeting;

Takashi Shiraishi, President, National Graduate Institute for Policy Studies (GRIPS)

Johannes Cullmann, Chairperson, International Hydrological Programme Intergovernmental Council

Margareta Wahlström, Special Representative of the Secretary-General for Disaster Risk Reduction (UNISDR)

Akihiko Tanaka, President, Japan International Cooperation Agency (JICA)

Toshiyuki Adachi, Vice Minister for Engineering Affairs, Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

Taketo Uomoto (Chairperson), Chief Executive, Public Works Research Institute (PWRI)

Irina Bokova, Director-General, United Nations Educational, Scientific and Cultural Organization (UNESCO)

See other information at: <http://www.icharm.pwri.go.jp/html/about/index.html>

The events related to the ICHARM are summarized as below:

- (1) The Forum on Science, Technology Innovation for Sustainable Development as a Rio+20 side event organized ICSU, UNESCO and others, on 11 June 2012, Rio de Janeiro, Brazil
- (2) Signing Memorandum of Understanding to promote institutional cooperation with HidroEX, on 19 June 2012, Frutal, Minas Gerais State, Brazil
- (3) International Workshop on Accuracy and Reliability of Flood Forecasting Models by Use of Remote Sensing Techniques, organized by UNESCO, Pakistan Meteorological Department, Government of Japan and JICA, on 17-18 June 2012, Lahore, Pakistan
- (4) UNESCO-ICHARM Training Course on the Integrated Flood Analysis System (IFAS), on 20-22 June 2012, Hanoi, Vietnam
- (5) The 4th Davos International Disaster and Risk Conference, on 27-31 August 2012, Davos, Switzerland
- (6) ADB-TA 7276-Reg. Capacity development training program for flood risk management, organized by ICHARM, the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and Asian Development Bank (ADB) on 26-28 September in Metro Manila and on 2-4 October in Tuguegarao City, Philippines
- (7) ICHARM Director, Dr. Kuniyoshi Takeuchi was awarded “International Hydrology Prize” on 23 October 2012 at the conference on International Association of Hydrological Sciences (IAHS) 90th Anniversary –Prediction in Ungaged Basins (PUB) Symposium 2012
- (8) ADB –TA-7276-Reg. Training on Development and Utilization of Flood Vulnerability Indices in Cambodian Floodplain, organized by ICHARM, the Mekong River Commission Secretariat (MRCS), the Cambodia National Mekong Committee and ADB on 11-13 December 2012 in Phnom Penh, Cambodia
- (9) 45th Session of the UNESCAP/WMO Typhoon Committee session on 29 January- 1 February 2013 in Hong Kong, China
- (10) Seminar on Sediment Hydraulics and River Management on 13-14 February 2013 in Dhaka, Bangladesh, with cooperation from the Bangladesh Water Development Board
- (11) UN General Assembly Special Session on Water and Disaster on 6 March 2013 in New York, USA, as a member of the High-Level Expert Panel on Water and Disaster (HELP/UNSGAB)
- (12) The High-Level Meeting on National Drought Policy organized by the World Meteorological Organization (WMO), the Food and Agriculture Organization (FAO) and the United Nations Convention to Combat Desertification (UNCCD) on 11-15 March 2013 in Geneva, Switzerland
- (13) ADB –TA-7276-Reg. Final project report submitted to ADB on 12 March 2013, which completed the entire implementation of the project
- (14) ICHARM Special Session “closing gap between research and practice in water resources and disaster management” during the Conference on Sri Lanka-Japan Collaborative Research on 29-31 March 2013 at the University of Peradeniya in Sri Lanka.
- (15) Signing Memorandum of Understanding to promote research exchange and technical cooperation with the Iran Water and Power Company (IWPC), on 12 April 2013
- (16) ICHARM Researcher, Dr. Takahiro Sayama was awarded the 2013 Young Scientists’ Prize, officially known as the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (MEXT), Japan on 18 April 2013
- (17) The Focus Area Session on water risks and resilience organized by ICHARM prior to the 2nd Asia-Pacific Water Summit held on 19-20 May 2013 in Chiang Mai, Thailand
- (18) A workshop “Capacity Development for Integrated Flood Risk Management in Pakistan” from 28 May to 6 June 2013 at ICHARM, as part of a flood management project organized by UNESCO
- (19) Field survey for floods and droughts on the “Program for Risk Information on Climate Change”, called SOUSEI program by MEXT in Pampanga River Basin, the Philippines on 16-22 June 2013
- (20) International conference on “Regulation of Hydraulic Structures for Flood Management, Islamabad” organized by the Pakistan Water Partnership in collaboration with the International Centre for Integrated Mountain Development (ICIMOD), the Japan International Cooperation Agency (JICA) and UNESCO on 24-26 and 28-29 June 2013 in Islamabad, Pakistan
- (21) ICHARM’s Rainfall-Runoff-Inundation (RRI) Model was awarded the 15th Infrastructure Technology Development Award presented by Minister of Land, Infrastructure, Transport and Tourism (MLIT), Japan on 5 July 2013
- (22) Signing Memorandum of Understanding for potential research collaboration among the State Hydrological Institute (SHI) in St. Petersburg, Russia and the Civil Engineering Research Institute for Cold Region (CERI) on 5 August 2013 in St. Petersburg, Russia

- (23) ICHARM Research Specialist, Dr. Hideyuki Kamimera was awarded from the Ministry of Natural Resources and Environment (MONRE) of Vietnam on 16 August 2013
- (24) IFAS Training Workshop at the Flood Forecasting Division (FFD) of Pakistan Meteorological Department (PMD) on 22-26 August 2013 in Islamabad, Pakistan
- (25) IFAS Workshop hosted by JICA and the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre) in Jakarta, Indonesia on 9-12 September 2013
- (26) Field Survey on damage by a deep-seated landslide and following collapse of a natural dam occurred in Negeli Lima Village of Maluku Province, Indonesia on 10 September 2013
- (27) UNESCO Strategic and High-Level Meeting on Water Security and Cooperation on 11-13 September 2013 in Nairobi, Kenya
- (28) Field survey for flood and drought risk assessment on the “Program for Risk Information on Climate Change”, called SOUSEI program by MEXT in the Solo River Basin, Indonesia on 16-21 September 2013
- (29) The Budapest Water Summit “the Role of Water and Sanitation in the Global Sustainable Development Agenda” on 8-11 October 2013 in Budapest, Hungary
- (30) IFAS Training organized by the Asian Development Bank and the Japan Aerospace Exploration Agency (JAXA) on 8-11 October 2013 in Manila, the Philippines
- (31) The Second United Nations Office for Disaster Risk Reduction (UNISDR) Asia Partnership Meeting on 5-7 November 2013 in Bangkok, Thailand
- (32) The 29th meeting of ISO/TC 113 (Hydrometry) on 11-15 November 2013 at Comision Nacional del Agua (CONAGUA) in Mexico City, Mexico
- (33) The 14th Governing Council Meeting of Asia-Pacific Water Forum and the Consultation Workshop on Asian Water Information System on 25-27 November 2013 at ADB in Manila, the Philippines
- (34) The first joint team meeting of Sentinel Asia Step3, which promote the effective use of satellite observation data from space agencies, following step 1 (2006-2007) and step 2 (2008-2012), as a chair of the Flood Working Group) along 82 participants from 51 organizations of 15 countries in Asia-Pacific region on 27-29 November 2013 in Bangkok, Thailand
- (35) The 8th UNESCAP/WMO Typhoon Committee Integrated Workshop on 2-7 December 2013 in Macau, China
- (36) Field Survey and Discussion meeting with the Malaysia Meteorological Department (MMMD) and Drainage and Irrigation Department (DID) in Kuala Lumpur, Malaysia on 10-13 March 2014
- (37) 46th Session of the UNESCAP/WMO Typhoon Committee session on 10-13 February 2014 in Bangkok, Thailand
- (38) The 9th USGS-Japan Workshop on Hydrology and Water Resources on 18-20 February 2014 in Lakewood, USA
- (39) The intermediate meeting of Joint Coordinating Committee (JCC) on the “Research and Development for Reducing Geo-Hazard Damage in Malaysia Caused by landslide and Flood” which is one of the study programs of Science and Technology Research partnership for Sustainable Development (SATREPS) conducted by JST and JICA on 6 March 2014 in Kuala Lumpur, Malaysia
- (40) Special event of “Taking Stock of the International Year of Water Cooperation (IYWC) and Advancing the Global Water Agenda after Post-2015” on 11 March 2014 in Trusteeship Council Chamber, UN Headquarters, New York
- (41) Field Survey for research project on pre-recovery planning in the Pampanga River Basin of the Philippines on 13-15 March 2014
- (42) The international dialogue on “Safe Connected Communities against Floods through Remote Sensing & GIS Tools” and the steering committee for the UNESCO project “Strategic Strengthening of Flood Warning and Management Capacity of Pakistan” on 12-19 March 2014 in Lahore, Pakistan
- (43) The UN-Water “Water for Life” during World Water Day celebrations 2014 water and energy on 20-21 March 2014 in Tokyo, Japan
- (44) The First United Nations Office for Disaster Risk Reduction (UNISDR) Asia Partnership Meeting on 22-24 April 2014 in Bangkok, Thailand
- (45) The third meeting for the High-Level Experts and Leaders Panel on Water and Disasters (HELP) on 27-28 May 2014 in Rotterdam, the Netherlands

### **1.3 Educational and training courses**

### 1.3.1 Contribution to IHP courses

The UNESCO IHP Japan Training Courses (TC) were initiated as UNESCO IHP Nagoya Training Course by Nagoya University in 1991 and have been held every year since then. Topics of the course were relevant to fit the IHP-VII themes: Water Resources for Sustainable Development, Hydrology and Water Resources under Vulnerable Environment, and Water Interactions (Systems at Risk and Social Challenges). The host or convener body is the Hydrospheric Atmospheric Research Center (HyARC), Nagoya University. After the 19th TC, the Disaster Prevention Research Institute (DPRI), Kyoto University joined as a convener body. After that, HyARC and DPRI took the convener role alternatively. This made the TC have wider scope including water resources and disaster prevention. About ten participants from East and Southeast Asian countries selected by UNESCO Jakarta Office took lectures and practices every year in the training course.

The 22nd was with a title of “Precipitation Measurement from Space and its Applications” under a collaboration of Japan Aerospace Exploration Agency and National Institute of Information and Communications Technology, the 23rd was with a title of “Ecohydrology for River Basin Management under Climate Change” organized by DPRI. The 24th will be with a title of “Forest Hydrology-Conservation of Forest, Soil, and Water Resource” organized by HyARC, Nagoya University.

An important development of TC is information dissemination on website. The broadcasting of the lectures to universities in Asia via Internet was successfully performed with help of Keio University and collaboration with EST (Engineering, Science, and Technology) programme. When the visiting participants and some graduate school students join the TC's, the number is limited as only 10-20. The lectures are now available via internet, and many participants at remote sites can join the TC's. The lectures are also opened to graduate school students in the host universities such as Nagoya University and Kyoto University. TC is a good opportunity for graduate school students, and conveners of TC encourage graduate students to join the TC's.

### 1.3.2 Organization of specific courses

ICHARM also has been conducting a one-year master's program, “Water-related Disaster Management Course of Disaster Management Policy Program,” since 2007 in collaboration with JICA and the National Graduate Research Institute for Policy Studies (GRIPS). 19 students in the class of 2011 graduated on 14 September 2012, and 12 students in the class of 2012 graduate on 17 September 2013 with a master's degree in disaster management. The class of 2013 started the program on 4 October 2013 with 12 students. The doctoral program in disaster management started in October 2010 in collaboration with GRIPS. One student in the class of 2010 graduated on 17 September 2013 with a doctoral degree. One student in the class of 2011, two students in the class of 2012 and three students in the class of 2013 participated from three countries.

ICHARM has been providing a short-term training course with JICA as Capacity Development for Flood Risk Management (from 2012) as well as Master's Course Program “Water-related Disaster Management Course of Disaster Management Policy Program”, and Doctor Course Program, “Disaster Management.”

This training program was launched in FY2012 and designed to provide opportunity for meteorologists, river administrators and disaster management officers in flood-vulnerable developing countries to learn the use of the Integrated Flood Analysis System (IFAS), developed and upgraded by ICHARM. The other important purposes are to learn about disaster management and evacuation plans and flood response cases in Japan, and to develop an action plan for local flood management of flood-vulnerable areas in the participants' countries. These training activities aim to enhance individual flood-coping capacities and eventually to contribute to flood damage mitigation in the countries.

### 1.3.3 Participation in IHP courses

N/A

## 1.4 Cooperation with the UNESCO-IHE Institute for Water Education and/or international/regional water centres under the auspices of UNESCO

- (1) UNESCO-IHE and ICHARM renewed the Memorandum of Understanding on 23 May 2014 and continue to promote the formal operation between two centres.
- (2) Prof. Tomoharu Hori (Kyoto Univ.) is active as a member of IHE Governing Board.

## 1.5 Publications

- (1) The textbook for the 22nd IHP Training Course in 2012, “Precipitation Measurement from Space and its Applications”, Nagoya University, Kyoto University and UNESCO.
- (2) The textbook for the 23rd IHP Training Course in 2013, “Ecohydrology for River Basin Management under Climate Change”, Nagoya University, Kyoto University and UNESCO.
- (3) IAHS Red Book on “Floods: From Risk to Opportunity”, Ali Chavoshian, Kuniyoshi Takeuchi, , Xialtao Cheng (Eds.), IAHS, 357, March, 2013, 470 p .
- (4) Proceedings of the International Symposium on Answers to Asian Aquatic Problems (AAA+2013), Tokyo Metropolitan University, Tokyo, November 2013.
- (5) The 23rd IHP Training course textbook, Ecohydrology under Climate Change, Water Resources Research Center, DPRI, Kyoto Univ., December 2013.
- (6) Morphometric Property and Flood Equation, Shigeko Haruyama and KayThwe Hlaing, Terrapub publisher, Tokyo, 2013,196 p
- (7) Coastal geomorphology and Vulnerability of disaster –towards disaster risk reduction-, Shigeko Haruyama (Eds), Terrapub publisher, Tokyo, 2013,180 p
- (8) Takara, K. (2013): Coping with extreme weather and water-related disasters, *Free Flow*, A UNESCO Publication for the International Year of Water Cooperation, Tudor Rose, UK, pp. 103-106.
- (9) Executive Summary of World Water Development Report 2014 in Japanese, MLIT (Ministry of Land, Infrastructure, Transport and Tourism) in support of UNESCO

## **1.6 Participation in international scientific meetings**

### **1.6.1 Meetings hosted by the country**

- (1) JAPAN WATER 2012, an IAHS-IHP Joint National Workshop for Water Issues, MEXT, Tokyo, 15 October 2012 [Takara, Taniguchi, Tsujimura, Oki, Tachikawa].
- (2) ISRS2013 (The 12<sup>th</sup> International Symposium on River Sedimentation, Kyoto Japan, Sept. 2-5, 2013)
- (3) IGU 2013 Kyoto Regional Conference, organized by IGU Commission Biogeography and Biodiversity, Kyoto International Conference Center, Kyoto, Japan, 4-9 August 2013.
- (4) World Water Day main celebrations, organized by UNU and UNIDO on behalf of UN-Water, supported by MLIT, MOE, MOFA and others, Tokyo, Japan, 20-21 March 2014
- (5) 1st Joint Seminar of Integrated Water Resources Management for Chao Phraya River Basin, organized by Thai government and JICA, Siam Niramit Theatre, Bangkok, Jan. 14th, 2012. [Oki]
- (6) Japan-China-Korea Green Technology Forum, Water Management March 2012, JST Tokyo Headquarters, Tokyo, Japan. [Oki]
- (7) Planet Under Pressure Water: integrated assessment, governance and management in changing conditions at global, regional and transboundary levels, London, 27 March, 2012. [Oki]
- (8) IPCC SREX Regional Outreach Meeting, Chinese Meteorological Agency, Beijing, China, April 26, 2012. [Oki]
- (9) DOE Workshop on Community Modeling and Long-Term Predictions of the Integrated Water Cycle Renaissance Washington DC Downtown Hotel, September 24 - 26, 2012. [Oki]
- (10) NSF “Climate Change” Symposium Cosmos Club, Washington, DC, USA, February 22, 2013. [Oki]
- (11) Science Council in Asia, Bangkok, Thailand, May 7, 2013. [Oki]
- (12) Asia Pacific Water Summit, Chiang Mai, Thailand, May 18, 2013. [Oki]
- (13) Integrated water resources management for the 21st century Science Forum, Budapest Water Summit, 9 October 2013, Budapest, Hungary. [Oki]
- (14) Integrated water resources management for the 21st century Science Forum, Budapest Water Summit, 9 October 2013, Budapest, Hungary. [Oki]
- (15) JST-NSERC Workshop on Sustainable Water Use, 21 October 2013 Fujisoft Akiba Plaza, Tokyo, Japan. [Oki]
- (16) In commemoration of the 2014 UN World Water Day: Asia Pacific Regional Symposium “Water - Energy Nexus in Asia”, 20 March 2014, UNU, Japan. [Oki]
- (17) In commemoration of the 2014 UN World Water Day: Asia Pacific Regional Symposium “Water - Energy Nexus in Asia”, 20 March 2014, UNU, Japan. [Oki]
- (18) The International Symposium on Answers to Asian Aquatic Problems (AAA+2013) was held in Tokyo Metropolitan University, Japan on 16 November 2013 with more than 100 participants gathered from 8 different nations throughout the world.
- (19) IAEA (International Atomic Energy Agency) Scientific Forum “Water Matters -Making a Difference with Nuclear Techniques-”, Vienna, Austria, 20<sup>th</sup> - 21<sup>st</sup> September 2011 [Tsujimura]
- (20) Joint Assembly of IAHS (International Association of Hydrological Sciences), IAPSO (International Association of the Physical Sciences of the Oceans) and IASPEI (International Association of Seismology and

- Physics of the Earth's Interior), Gothenburg, Sweden, 22<sup>nd</sup> – 26<sup>th</sup> July, 2013. [Takara, Taniguchi, Tsujimura, etc.]
- (21) IGU 2013 Kyoto Regional Conference, organized by IGU Commission Hazard and Risk, Kyoto International Conference Center, Kyoto, Japan, 4-9 August 2013. [Haruyama, Takara].
  - (22) GLP committee meeting was held in Makuhari, Chiba Japan on 24 May 2012 at the occasion of JpGU (Japan Geoscience Union) meetings on 20-25 May 2012 [Haruyama].
  - (23) IHDP committee meeting was held in Makuhari, Chiba Japan on 24 May 2012 at the occasion of JpGU (Japan Geoscience Union) meetings on 20-25 May 2012 [Haruyama].
  - (24) GLP committee meeting was held in Makuhari, Chiba Japan on 23 May 2013 at the occasion of JpGU (Japan Geoscience Union) meetings on May 2013 [Haruyama].
  - (25) IHDP committee meeting was held in Makuhari, Chiba Japan on 23 May 2013 at the occasion of JpGU (Japan Geoscience Union) meetings on May 2013 [Haruyama].
  - (26) IHDP committee meeting was held in Yokohama, Kanagawa, Japan on 2 May 2014 at the occasion of JpGU (Japan Geoscience Union) meetings on 28 April-2 May 2014 [Haruyama].

#### 1.6.2 Participation in meetings abroad

- (1) The 20th Session of the IHP Intergovernmental Council at UNESCO Headquarters, 4-7 June 2012. [Takara, Tachikawa and others]
- (2) ASLO summer meeting: Lake Biwa, 8-13 July 2012
- (3) The International Workshop of the UNESCO Chair in Mongolia was held at Ulaanbaatar in July/August 2012.
- (4) The 90<sup>th</sup> Anniversary meeting of IAHS and PUB final symposium was organized at TU Delft, the Netherlands, on 23-25 October 2012 [Takeuchi, Sayama (ICHARM), Takara, Tani (Kyoto Univ.)].
- (5) First meeting of the IHP Phase-VIII implementation working group in Koblenz, Dec. 10th - 12th, 2012 [Tachikawa]
- (6) The 6<sup>th</sup> International Conference on Water Resources and Environment Research (ICWRER), Koblenz, Germany, 3-7 June 2013.
- (7) IAHS/IASPEI/IAPSO joint Assembly – Knowledge for the Future: Gothenburg, Sweden on 22-20 July, 2013
- (8) 2<sup>nd</sup> Asia Pacific Water Summit (Focus Area Session: IWRM Process Water Secured World organized by UNESCO)[NARBO supported and attended]
- (9) The 81<sup>st</sup> ICOLD Annual meeting at Seattle, USA, on 12-16 August 2013 [Sumi (Kyoto Univ.)]
- (10) ISO TC207/SC5/WG8 meeting, Shangri-La Hotel, Bangkok, Thailand, 24 June 2012. [Oki]
- (11) ISO TC207/SC5/WG8 “Water Footprint” 7th working group meeting, Padova, Italy, 10 Dec. 2012. [Oki]
- (12) The 6th installment of the International Perspectives on Water Resources & the Environment conference, Swissotel, Izmir, Turkey, January 8th, 2013. [Oki]
- (13) Soil Systems and Critical Zone Processes – Integrating Life Support Functions across Disciplines Monte Verita (Ascona- Switzerland) 14-18, April 2013. [Oki]
- (14) Integrated hydrological-water resources modeling in the Anthropocene PhD Defense Symposium for Yoshi Wada, Utrecht, November 8th, 2013. [Oki]
- (15) World Environmental & Water Resources Congress 2012, Albuquerque, New Mexico, USA on 20-24 May, 2012.
- (16) IGU 2012 organized by IGU Commission Hazard and Risk, Bonn University, Bonn, German, 26-30 August 2012. [Haruyama].
- (17) The International Seminar on Infrastructure Development in Cluster Island in Eastern Part of Indonesia, Baubau, Indonesia on 19 January, 2013.
- (18) The 6<sup>th</sup> International Conference of Asia Pacific Association of Hydrology and Water Resources “Climate Change and Water Security – APHW2013”, Seoul, Korea, 19-21 August 2013 [Takara].
- (19) The 3rd International MAHASRI/HyARC Workshop on Asian Monsoon and Water Cycle, Danang, Vietnam on 28-30 August 2013.
- (20) IAHS Statistical Hydrology Workshop (STAHY 2013), Kos Island, Greece on 17-19 October 2013.
- (21) The 2<sup>nd</sup> International Symposium on Vietnam Water Cooperation Initiative for Liable Cities (VACI 2013), Hanoi, Vietnam on 16 December 2013.
- (22) The 35th Hydrology and Water Resources Symposium, Perth, Australia on 24-27 February 2014.
- (23) General Assembly of EGU (European Geosciences Union), Vienna, Austria, 27 April - 2 May 2014. [Sayama, Tsujimura]
- (24) The 3<sup>rd</sup> Istanbul Water Forum was held in Istanbul, Turkey, 27-29 May 2014 [Takara].

- (25) IGU 2014 organized by IGU Commission Hazard and Risk, Jagiellonian University, Krakow, Poland, 18-23 August 2014. [Haruyama].
- (26) 11<sup>th</sup> Annual Meeting of Asia Oceania Geosciences Society (AOGS2014) will be held in Sapporo, Japan, 28 July – 2 August 2014.
- (27) 12<sup>th</sup> Annual Meeting of Asia Oceania Geosciences Society (AOGS2015) will be held in Singapore, 3-7 August 2015.

## **1.7 Other activities at regional level**

- 1.7.1 Institutional relations/cooperation  
N/A
- 1.7.2 Completed and ongoing scientific projects  
N/A

## **2. FUTURE ACTIVITIES**

### **2.1 Activities planned until December 2014**

- (1) The 24<sup>th</sup> IHP Training Course with the theme “Forest Hydrology–Conservation of Forest, Soil, and Water Resource” will be held in Nagoya, 2-13 December 2014.
- (2) The 22<sup>nd</sup> Session of the IHP Regional Steering Committee (RSC) for Southeast Asia and the Pacific will be held at Yogyakarta, Indonesia on 10-14 November 2014.
- (3) FRIEND-Water2014: 7th Global FRIEND-Water Conference, Montpellier, France, 7-10 October 2014.

### **2.2 Activities foreseen for 2015 - 2016**

- (1) Groundwater-surface water interaction research in arid/semi-arid regions (Mongolia, Tunisia, China) in collaboration with Alliance for Research on North Africa and Japan-China Center on Hydrological Cycle Research, University of Tsukuba.
- (2) ICWRER2016, International Conference on Water Resources and Environment Research 2016 will be held in Kyoto, Japan, 13-17 June 2016.

### **2.3 Activities envisaged in the long term**

- (1) Participation in IHP-VIII projects and RSC activities.
- (2) Information dissemination through a web page of the National Committee.  
<http://hywr.kuciv.kyoto-u.ac.jp/ihp/japan/index.html>
- (3) Activities relating to “Sustainability Science” that is a key promotion by the Japanese Commission for UNESCO