

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. The following summary includes the activities of Japanese National Committee for the International Hydrological Programme (IHP) of UNESCO undertaken during June 2008 to June 2010.

Professor Kuniyoshi Takeuchi was awarded by the Japan Society of Civil Engineers (JSCE) for his outstanding contributions to international activities for a long time including his services and leadership for UNESCO-IHP, ICHARM and IAHS. Dr. Andras Szollosi-Nagy, the former Director and Deputy ADG, Division of Water Science, UNESCO was also awarded at the same time.

1. ACTIVITIES UNDERTAKEN IN THE PERIOD JUNE 2008 – JUNE 2010

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 2010.

	Name	Position	E-mail
Chair *	TAKARA Kaoru	Prof., DPRI, Kyoto Univ.	takara.kaoru.7v@kyoto-u.ac.jp
*	NAKANISHI Hisae	Prof., Doshisha Univ.	hinakani@mail.doshisha.ac.jp
*	YAMAGATA Toshio	Prof., Univ. of Tokyo	yamagata@eps.s.u-tokyo.ac.jp
	UYEDA Hiroshi	Prof., HyARC, Nagoya Univ.	uyeda@rain.hyarc.nagoya-u.ac.jp
	OKI Taikan	Prof., IIS, Univ. of Tokyo	taikan@iis.u-tokyo.ac.jp
	KAWAMURA Akira	Prof., Tokyo Metropolitan Univ.	kawamura@c.metro-u.ac.jp
	KOIKE Toshio	Prof., Univ. of Tokyo	tkoike@hydra.t.u-tokyo.ac.jp
	SHIMIZU Yoshihisa	Prof., Kyoto Univ.	shimizu@biwa.eqc.kyoto-u.ac.jp
	TACHIKAWA Yasuto	Assoc. Prof., Kyoto Univ.	tachikawa@hywr.kuciv.kyoto-u.ac.jp
	TANAKA Shigenobu	Deputy Director, ICHARM	s_tanaka@pwri.go.jp
	TANAKA Tadashi	Prof. Emeritus, Univ. of Tsukuba	tadashi@geoenv.tsukuba.ac.jp
	TANIGUCHI Makoto	Prof., RIHN	makoto@chikyu.ac.jp
	NAKAYAMA Mikiyasu	Prof., Univ. of Tokyo	nakayama@k.u-tokyo.ac.jp
	HORI Tomoharu	Prof., WRRRC, DPRI, Kyoto Univ.	hori.tomoharu.3w@kyoto-u.ac.jp
	WATANABE Tsugihiro	Prof., RIHN	nabe@chikyu.ac.jp

Notes:

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

Secretariat of the Japanese National Committee for IHP, UNESCO:

c/o Mr. MINAMI Tetsuhito

Japanese National Commission for UNESCO,

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

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http://flood.dpri.kyoto-u.ac.jp/ihp_japan/index.htm

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]
- Interaction between hydrological cycle and physical/biochemical oceanography by cooperation between IHP and IOC [JAMSTEC, Univ. of Tokyo, Kyoto Univ.]

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

- Climate change research focusing on impacts on water-related disaster risk using “Earth Simulator”: MEXT Kakushin Project (2007-2011).
- Global Earth Observation System of Systems (GEOSS) and Asian Water Cycle Initiative (AWCI) 3rd GEOSS Asia-Pacific Symposium, Kyoto, Japan, 2-4 February 2009:
http://www2.restec.or.jp/geoss_090415/index.html
- GWSP-Asia: HydroChange2008 Conference, Kyoto, Japan, 1-3 October 2008:
http://www.gwsp.org/gwsp_asia.html
- Groundwater research such as GRAPHIC.
- GWES (Groundwater in Emergency Situations).
- Collaboration with Mongolian UNESCO Chair on Groundwater.
- Second Phase of PUB project in cooperation with IAHS [Kyoto Univ.].

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
- A new task force on frequency analysis for non-stationary hydrological time series in ICHARM initiated since 2009
- 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
- Case studies on human security and water-related disasters
- Best practices on water risk management
- Provide ICHARM coordination as focal point for possible networking activities
- Flood forecasting and management [MEXT Kakushin Program, ICHARM, PWRI, IFNet]

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)]

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.]

THEME 2: Strengthening Water Governance for Sustainability**FA 2.1 – Cultural, Societal, and scientific responses to the crises in water governance**

- Community-based integrated river basin management as a HELP follow-up [Univ. of Tokyo, Kyoto Univ.]

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

- Research on “virtual water”
- Collaboration with IHP-LAC for Rio de La Plata Basin Workshops
- Relative impact evaluation in water resources dynamics and social system with large development in river basins [Kyoto Univ.]

THEME 3: Ecohydrology for Sustainability**FA 3.1 – Ecological measures to protect and remediate catchments process**

- Participation in ecohydrology research development
- Effect of forest devastation on water resources and environmental issues [Univ. of Tsukuba, Kyoto Univ., Kyushu Univ., Univ. of Tokyo, Tokyo Univ. of Agriculture and Technology]
- Ecohydrology symposia and sessions at AOGS meetings

FA 3.4 – 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.]

THEME 4: Water and Life Support Systems

FA 4.3 – Achieving sustainable urban water management

- Hydrogeological and sociological survey on development processes of East-Asian cities co-existing with floods [Kyoto Univ.]
- Vulnerability assessment of urban groundwater resources in Asia and Oceania [Geological Survey of Japan]
- New CREST (Core Research for Evolutional Science and Technology) research projects supported by the JST (Japanese Science and Technology Agency) since 2009
- A special UNESCO session at the Rainwater Harvesting Conference was held in Tokyo, Japan, 9 September 2009.

FA 4.4 – 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 Training Courses and a Doctor degree course in Graduate School of Science in cooperation with a number of Japanese universities
- 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.
- Capacity building and education for observation experts for continuous monitoring of terrestrial environments in Asia [Univ. of Tsukuba]

Other regional and cross-cutting themes activities include:

- (1) Catalogue of Rivers:** The format of the Catalogue of Rivers for Southeast Asia and the Pacific, Vol. 6 was announced at the 15th Session of IHP Regional Steering Committee (RSC) for Southeast Asia and the Pacific (SEAP) in Manila, the Philippines, on 22-23 November 2007. No remarkable progress so far. The information of previous five volumes locates at:
http://flood.dpri.kyoto-u.ac.jp/ihp_rsc/riverCatalogue/index.html
- (2) Asian Pacific FRIEND:** Prof. Takara and Dr. Kobayashi attended the Asian Pacific FRIEND Workshop, Ho Chi Minh City on 5-6 March 2009.
- (3) Hydrology for Environment, Life and Policy (HELP):** No activities during this period.
- (4) Prediction in Ungauged Basins (PUB) by IAHS:** Prof. Takeuchi (ICHARM), Dr. Tachikawa (Kyoto Univ.) and others in PUB-Japan attended a PUB meeting held in Chéngdū, China on 7-9 November 2008.
- (5) International Flood Initiative (IFI), International Sediment Initiative (ISI) and International Programme on Landslides (IPL):** ICHARM is playing a role of the Secretariat of IFI. IFI was launched at a Session organized by UN agencies, ICSU, WFEO and the International Consortium on Landslides (ICL) at the World Conference on Disaster Reduction (WCDR) in Kobe, Japan in January 2005. Since then both IFI and IPL are promoted continuously and actively. IPL also have a linkage with the International Sedimentation Initiative (ISI). Prof. Takara attended ISI Workshop held in Beijing, China on 5-6 November 2008. His colleague attended a Workshop on Sediment Problems and Sediment Management in Asian River Basins co-convened by ICCE, ISI and WASER at IAHS General assembly in September 2009.

1.2 Activities at national level in the framework of the IHP

1.2.1 National/local scientific and technical meetings

- (1) The JFIT Annual Review and Evaluation Meeting on the Proposed Science Sector Activities of UNESCO Office Jakarta for the period 2009-2011 was held in the UNESCO Jakarta Office in May 2009. Two MEXT officers (Ms. Watanabe and Ms. Iwashita) attended. The status and progress of the UNESCO science programmes in the region were reported and evaluated. Jakarta Office explained the IHP-WINGA ASPAC (Water Interoperability Networks for Global Change

Adaptation in Asia and Pacific Region) project, which includes four components: RSC activities, IHP Training Course, Flood Prevention and Mitigation Measures in ASPAC region, and Sustainable Water to Improve Tomorrow's Cities Health – Integrated Programme for Asia (SWITCH – IPA). Flood Prevention and Mitigation Measures in ASPAC region includes AP-FRIEND, Flood Forecasting and Warning System and Disaster Reduction Hyperbase (DRH) managed by Prof. Kameda, National Research Institute for Earth Science and Disaster Prevention (NIED).

- (2) IHP Training Course task force meetings were held twice in Uji (Prof. Uyeda, Prof. Takara, Prof. Kojiri and Dr. Takemon) and in Kyoto (Prof. Uyeda, Prof. Takara) to discuss the organization of the 19th Course in Kyoto from 29 November to 11 December 2009, as well as the future plan of the course.
- (3) IHP Training Course task force meetings were held twice in Kyoto to discuss the organization of the 20th Course in Nagoya on 6-20 November 2010, as well as the 20th Anniversary events at Mielparque Kyoto on 14 November and at RIHN on 15-16 November. [Taniguchi, Watanabe, Uyeda, Takara, Hori]
- (4) The 27th IHP National Committee meeting was held at MEXT to discuss various issues relating to the 19th Session of IHP Intergovernmental Council (July 2010) and IHP-VIII (2014-2019) on 24 June 2010.

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 16th RSC was held in Ulan Bator, Mongolia in conjunction with the International Conference “Uncertainties in Water Resource Management: causes, technologies and consequences /WRM-Mon2008” on 29 September to 2 October 2008. The RSC adopted two resolutions for honoring achievements in the region, and inviting new countries: Singapore, Brunei Darussalam and Timor Leste. The RSC Secretariat Prof. Takara was re-elected for 2008-2010.
- (2) Prof. Takara and Dr. Kobayashi attended the Asian Pacific FRIEND Workshop, Ho Chi Minh City on 5-6 March 2009.
- (3) The 17th RSC was held in Wuhan, China in conjunction with the International Conference “Hydrology and Disaster Management” (H&DM 2009) on 2 to 6 November 2009. The RSC adopted a resolution "Archiving hydrological disaster management/reduction technologies". Dr. Heng Liu (China) was elected as the RSC Chairperson. [Takara, Tanaka]
- (4) IHP Eighth Phase (IHP-VIII) Task Force meeting at UNESCO Headquarters on 20-21 May 2010. [Oki]

1.2.3 Research/applied projects supported or sponsored

N/A

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),
- (2) The national government and its branches relating to hydrology and water resources administration,
- (3) Nagoya 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) and the International Consortium on Landslides (ICL).

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 33rd 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. It is important to cooperate with existing UNESCO water Centers such as IHE in the Netherlands, IRTCES in China, HTC in Malaysia and RCUWM in Iran, etc. The outline of ICHARM is as follows.

- 1) Objectives: The objective of the Centre is to function as the world centre of excellence to provide and assist implementation of best practicable strategies to localities, nations, regions and the globe to manage the risk of water related disasters including flood, drought, landslide, debris flow, storm surge, tsunami and water contamination. The Centre conducts research, capacity building and information networking activities in an integrated manner for preventing and mitigating the impacts of water related disasters and thus to achieve sustainable and integrated river basin management.
- 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, with the advice from the Advisory Board. 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 International Symposium on Flood Defense was held in Toronto, Canada, on 6-8 May 2008.
- (2) The UN/ISDR Comprehensive Tsunami Disaster Prevention Training Course was held at Tsukuba from 2 June to 11 July 2008.
- (3) MoUs were signed with UNESCO-IHE and RCUMW on 9 June 2008 in Paris.
- (4) The International Symposium, “Local Practices of Integrated Flood Risk Management under Changing Natural and Social Conditions” was held in Tokyo, Japan, on 30 September 2008.
- (5) The 2nd International Advisory Board meeting was held in Tsukuba on 1 October 2008.
- (6) The Third International Flood Initiative (IFI) Advisory and Steering Committees meeting in Tsukuba, Japan, on 2 October 2008.
- (7) A seminar on the Integrated Flood Analysis System (IFAS) was held at ICHARM on 3-8 October 2008.
- (8) The 5th Flood Hazard Mapping training course (a JICA training program) was held at ICHARM from 28 October to 28 November 2008.
- (9) The 3rd Follow-up Seminar of the Flood Hazard Mapping training course was held in Manila, Philippines, on 17-19 February 2009.
- (10) ICHARM served as the topic coordinator for the “Managing Disasters” session at the 5th World Water Forum on 16-22 March 2009 in Istanbul, Turkey.
- (11) A research collaboration agreement was signed with Yamanashi University on 27 March 2009.
- (12) An open house of ICHARM was held on 14 April 2009 at ICHARM.
- (13) A seminar entitled “Testing and Demonstrating a Technology to Cope with Debris Flows in Mountainous Regions” was held in Manila, Philippines, on 12 June 2009.
- (14) IFAS training workshops were held in Tsukuba, Japan, on 3-7 August 2009 and in Kathmandu, Nepal, on 27-28 August 2009.
- (15) A “Training Workshop on Risk Assessment and Flood Mitigation Strategies” was held in Kuala Lumpur, Malaysia, on 10-13 August 2009.

- (16) ICHARM Director participated in the 3rd World Climate Conference in Geneva, Switzerland on 31 August 2009.
- (17) The “Local Disaster Management Plan with Flood Hazard Map” training course (a JICA training program) was held at ICHARM on 9-27 November 2009.
- (18) An agreement on a joint regional technical assistance project was signed with ADB on 13 November 2009. As a part of this project, a local workshop was held in Indonesia on 2-4 March 2010 to implement IFAS in the Solo River basin.
- (19) ICHARM has conducted a one-year master’s program, “Water-related Disaster Management Course of Disaster Management Policy Program,” since 2007 in collaboration with JICA and GRIPS. Seven students in the class of 2008 graduated on 16 September 2009 with a master’s degree in disaster management. The class of 2009 started the program on 6 October 2009 with 13 students.
- (20) An MoU was signed with the International Research and Training Center on Erosion and Sedimentation (IRTCES) on 17 September 2009 at ICHARM.
- (21) The new doctoral program in disaster management started its admission process in December 2009 in collaboration with GRIPS.
- (22) The ICHARM Quick Reports on Floods 2009 was held at ICHARM on 10 December 2009.
- (23) An academic research agreement was signed on 25 January 2010 with the Disaster Prevention Research Institute (DPRI) of Kyoto University at DPRI.
- (24) An international workshop on sustainable tsunami countermeasures was held in Banda Aceh, Indonesia, on 9-11 March 2010.
- (25) The first announcement of the 5th International Conference on Flood Management scheduled to be held on 27-29 September 2011 was made on 7 May 2010.
- (26) The IRDR (Integrated Research on Disaster Risk) subcommittee has been established in the Science Council of Japan as a domestic committee of Japan and ICHARM Director Takeuchi has been elected as the subcommittee chair. The 2nd subcommittee meeting was held on 24 May 2010.
- (27) A preliminary MoU was signed with the HidroEx newly set up in Brazil on 25 May 2010 at ICHARM.

1.3 Educational and training courses

1.3.1 Contribution to IHP courses

Eighteen UNESCO IHP Nagoya Training Courses have been held since 1991 every year. Topics of the course were relevant to Water Resources for Sustainable Development, Hydrology and Water Resources under Vulnerable Environment, and Water Interactions (Systems at Risk and Social Challenges). About ten participants from East and Southeast Asian countries took lectures and practices every year in the training course. A few students of IHP special program for foreign students in Nagoya University (see (1) below) participated in the course every year. In late years, some of trainees are participating in the course at their own expenses. The training course is expected to continue due to strong requests of East and Southeast Asian countries. Activities of the UNESCO IHP Nagoya Training Course are uploaded on the website, <http://www.ihpnagoyaforum.org/>. Based on these experiences, the training course will be further renewed to fit to the themes of IHP Phase VII (2008-2013).

(1) Doctor of Science degree on atmospheric and hydrospheric science:

The Graduate School of Science and the Graduate School of Environmental Studies of Nagoya University accepts students from Asia and the Pacific region, with the financial support from the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT).

(2) IHP Training Courses:

The Hydrospheric Atmospheric Research Center (HyARC) of Nagoya University offers IHP Training Courses for both foreign students of Graduate School of Science, Nagoya University and trainees chosen by UNESCO Regional Science Bureau for Asia and the Pacific in Jakarta. The training courses are financed by the Japanese Fund-in-Trust (JFIT) for IHP. The 18th IHP Training Course with the theme “Satellite Remote Sensing of Atmospheric Constituents” was held in Nagoya on 3-15 November 2008. The training course offered introductory lectures on the basics of meteorological satellite observations and the physical principles of retrieval algorithms, as well as a practical training to establish basic skill to analyze satellite data. Next year UNESCO Office, Jakarta in collaboration with Nagoya University and Kyoto University has successfully organized the 19th

IHP Training Course with the theme “Water Resources and Water-Related Disasters under Climate Change -Prediction, Impact Assessment and Adaptation-“. The course consists of a series of lectures, practical sessions and technical visits which will be held mainly at the Disaster Prevention Research Institute (DPRI), Kyoto University from 29 November to 12 December 2009.

1.3.2 Organization of specific courses

ICHARM has been providing a training course on flood hazard mapping (5 weeks every year) since 2004. In November 2007, 16 trainees participated from 8 countries in Asia Pacific region.

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). Seven students in the class of 2008 graduated on 16 September 2009 with a master’s degree in disaster management. The class of 2009 started the program on 6 October 2009 with 13 students. The new doctoral program in disaster management started its admission process in December 2009 in collaboration with GRIPS.

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) Prof. Takara visited UNESCO-IHE on 2 June 2009, giving a lecture "Water-Related Disasters in Asia and Pacific Regions" at Lunch Seminar.

(2) International Symposium “Water, Cultural Diversity and Global Environmental Change: Emerging Trends, Sustainable Futures?” was held at the Research Institute for Humanity and Nature (RIHN), Kyoto on 1-3 October 2009, co-organized by RIHN, UNESCO-IHP and UNU-IAS. Open Symposium for the general public was held at Kyoto International Conference Hall on 2 October 2009. The former UNESCO-IHE Rector Dr. Richard Meganck attended this international symposium as Keynote Speaker and Panelist. This symposium is also linked with UNESCO-MAB. [Watanabe, Takara, Nakayama]

(3) Former UNESCO-IHE Rector Richard Meganck visited Kyoto University President Hiroshi Matsumoto on 2 October 2009 to discuss future cooperation between UNESCO-IHE and Kyoto University. [Takara]

1.5 Publications

1. «For the Sustainable Groundwater Resources Management: Through the UNESCO Chair in Mongolia» -2007 University Student Exchange Programme-, Published by Prof. Tadashi Tanaka, Terrestrial Environmental Research Center (TERC), the University of Tsukuba, March 2008.
2. «For the Sustainable Groundwater Resources Management: Through the Japanese Activities on Countermeasures for the Remediation of Public Hazards» -2008 University Student Exchange Programme-, (Eds.) Maki Tsujimura and Tadashi Tanaka, Terrestrial Environmental Research Center (TERC), the University of Tsukuba, October 2008.
3. «UNESCO Chair Workshop on Sustainable Groundwater Management in Arid and Semi-arid Regions» Proceedings, Institute of Geo-ecology, MAS, Ulaanbaatar, Mongolia, 1 October 2008, (Eds.) Tadashi Tanaka, Ramasamy Jayakumar and Badamgarav Erdenechimeg, IHP VII Technical Document in Hydrology, No. 1, UNESCO Office Beijing, 64 pp., 2009.
4. «Satellite Remote Sensing of Atmospheric Constituents» -The Textbook for 18th IHP Training Course in 2008-, Hydrospheric Atmospheric Research Center, Nagoya University and United Nations Educational Scientific, November 2008.
5. «IWRM Guidelines at River Basin Level» Part 1: Principles, UNESCO-IHP, WWAP and NARBO, 24 pp., ISBN: 978-92-3-104100-6.

6. «IWRM Guidelines at River Basin Level» Part 2-1: The Guidelines for IWRM Coordination, UNESCO-IHP, WWAP and NARBO, 173 pp., ISBN: 978-92-3-104101-3.
7. «IWRM Guidelines at River Basin Level» Part 2-2: The Guidelines for Flood Management, UNESCO-IHP, WWAP and NARBO, 76 pp., ISBN: 978-92-3-104102-0.
8. «IWRM Guidelines at River Basin Level» Part 2-3: Invitation to IWRM for Irrigation Practitioners, UNESCO-IHP, WWAP and NARBO.

1.6 Participation in international scientific meetings

1.6.1 Meetings hosted by the country

- (1) HydroChange 2008 “Hydrological Changes and Managements from Headwater to the Ocean” was held in Kyoto, 1-3 October 2008 [Dr. Taniguchi (RIHN)].
- (2) IAH (International Association of Hydrogeologists) meeting in Toyama, Japan in October 2008 including GRAPHIC discussion [Dr. Taniguchi (RIHN)].
- (3) The 1st World Landslide Forum was held at UNU, Tokyo on 18-21 November 2008. ICHARM and other UNESCO-related organizations (ICHARM, Ritsumeikan Univ. and UNU) attended it as well as a pre-event on 17 November 2008. [H. Ooe (MOFA), J. Watanabe (MEXT), Takeuchi, Takara]
- (4) Japan is managing PUB (Prediction in Ungaged Basins) activities of IAHS. Asian PUB is developing quite well under Dr. Yasuto Tachikawa's initiative. Domestic PUB meetings were held in March 2009.
- (5) A Post-GAME project, MAHASRI led by Dr. Jun Matsumoto (Univ. of Tokyo) is now activated with many participants from Asian countries. They are collaborating with IHP FRIEND as well as with PUB.
- (6) Asian Water Cycle Symposium. See further at <http://monsoon.t.u-tokyo.ac.jp/AWCI/>.
- (7) GWSP-Asia (Global Water System Project) Working Group activities includes discussion on data collection and future research direction [<http://www.chikyu.ac.jp/USE/GWSP/GWSPasia.htm>; Dr. Makoto Taniguchi (RIHN)].
- (8) International Symposium “Water, Cultural Diversity and Global Environmental Change: Emerging Trends, Sustainable Futures?” was held at the Research Institute for Humanity and Nature (RIHN), Kyoto on 1-3 October 2009, co-organized by RIHN, UNESCO-IHP and UNU-IAS. [Watanabe, Takara, Nakayama]
- (9) UNESCO Chair Workshop on International Strategy for Sustainable Groundwater Management: Transboundary Aquifers and Integrated Watershed Management was held at the University of Tsukuba, Japan on 6 October 2009. The representatives of UNESCO Chair in Mongolia and Mr. Chusei Yamada, Special Assistant to the Ministry of Foreign Affairs (Former Special Rapporteur on Shared Natural Resources of the U International Law Commission) attended. [Tadashi Tanaka, Takeuchi, Takara]
- (10) The 9th IIASA-DPRI Forum on Integrated Disaster Risk Management in Kyoto, 12-16 October 2009. During this conference, there was DRH Consortium Symposium on 12 and 15 October 2009. Collaboration between DRH and IHP is discussed and approved. [Takara]
- (11) The IWRA (International Water Resources Association) International Symposium and Experts Meeting on Integrated River Basin Management in Monsoon Asia was held at the University of Tokyo on 14 and 15 December 2009, with a financial support by the River Fund. This meeting was jointly organized with the GEOSS-AWCI; other co-organizers were UNESCO-IHP, JSCE, IAHR and IAHS. [Takahasi, Takeuchi, Musiake, Koike, Takara, Nakayama, Oki]

1.6.2 Participation in meetings abroad

Japan has played important roles in the IHP Intergovernmental Council (IGC) as a member. In particular, Prof. Kuniyoshi Takeuchi had been the Chairperson of the Council and Bureau of IHP from 1998 to 2000 then served as Vice Chairperson (2000-2002). Prof. Takara has also been elected as Vice Chairperson for 2008-2010.

Japan participated in the establishment of the Regional Steering Committee (RSC) for Southeast Asia and the Pacific in 1993. The first RSC chairperson was Prof. Yutaka Takahasi (Univ. of Tokyo), who used to be the Vice Chairperson of the IGC (1990-1991) elected from the Group IV, Asia and the

pacific. Since the establishment of RSC, at least a couple of Japanese National IHP Committee members have attended and participated actively in all of the annual meetings of the RSC. Prof. Takeuchi had served as the RSC Secretary (1993-1999) and the Chairman of the Technical Sub-Committee (TSC) for Asian Pacific FRIEND (APF) Phase I (1997-2001) in the framework of the RSC, while Prof. Takara is playing a role of the RSC Secretary (1999-), and a member of TSC-APF Phases I (1997-2001) and II (2002-).

- (1) The 4th International Conference of Asia Pacific Association of Hydrology and Water Resources (APHW2008) was held in Beijing on 3-5 November 2008. A PUB Session was also convened.
- (2) The Fifth World Water Forum in Istanbul, Turkey, 16-22 March 2009. [ICHARM, Takara and others]
- (3) The 43rd IHP Bureau meeting at UNESCO Headquarters on 3-5 June 2009. [Takara]
- (4) The Second Session of the Global Platform for Disaster Risk Reduction, Centre Internationale de Conférences (CICG), Geneva, Switzerland, 16-19 June 2009. ICHARM organized a special event “Charting Global Agenda for water-related Disaster Risk Reduction” on 19 June. [Takeuchi, Takara]
- (5) IHP National Committee’s Meeting held at RCUWM in Tehran, Iran on 27-28 July 2009. Prof. Takara reported the activities of RSC in Southeast Asia, of Japanese IHP National Committee, and of ICHARM. The Meeting decided to initiate some action for launching International Drought Initiative (IDI).
- (6) Final Conference COST Action C22 Paris 2009 “Road Map Towards A Flood Resilient Urban Environment” at UNESCO Headquarters, 25-27 November 2009. Prof. Takara was invited to give a keynote speech "Flood Resilience in the Mega Cities in Asia" on 27 November.
- (7) The 44th IHP Bureau meeting at UNESCO-IHE, Delft, The Netherlands on 3-5 June 2009. [Takara]
- (8) FRIEND Database Harmonization Workshop at UNESCO Headquarters, 7-8 June 2010. Dr. Hidetaka Chikamori (Okayama Univ.) attended as the representative of AP-FRIEND.
- (9) The 10th IHP-IAHS George Kovac Colloquium “Hydrocomplexity: New Tools for Solving Wicked Water Problems” at UNESCO Headquarters, 2-3 July 2010. [Nakajo]
- (10) The 19th Session of the IHP Intergovernmental Council at UNESCO Headquarters, 5-9 July 2010. [Takara, Takeuchi and others]

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 2010

- (1) The 18th Session of the IHP Regional Steering Committee (RSC) for Southeast Asia and the Pacific will be held in Hanoi, Viet Nam on 8-12 November 2010.
- (2) The 5th International Conference of Asia Pacific Association of Hydrology and Water Resources (APHW2010). This meeting will be in conjunction with the 18th Session of RSC-SEAP in Vietnam.
- (3) The 20th IHP Training Course with the theme “Groundwater as a key for adaptation to changing climate and society” will be held on 7 to 20 November 2010. The 20th anniversary Special lectures and meetings will be organized during the 20th IHP Training Course.
- (4) The 3rd ICHARM Advisory Board will be held on 29 September 2010 in Tsukuba.
- (5) ICHARM will launch Ph.D. course in Disaster Management on 4 October 2010.
- (6) UNESCO Chair in Mongolia 2010-2011

(7) The 5th International Symposium on Flood Defense: Tsukuba, Japan on 27-29 September 2011.

2.2 Activities foreseen for 2011 - 2012

- (1) The 19th Session of the IHP Regional Steering Committee (RSC) for Southeast Asia and the Pacific will be held in Kyoto, Japan in October 2011.
- (2) Participation in RSC-SEAP activities including Asian Pacific FRIEND, the Catalogue of Rivers, IHP-DRH activities.
- (3) The 21st IHP Training Course in Kyoto: “Ecohydrology for sustainability” (to be confirmed).
- (4) Implementation of projects related to IHP-VII.
- (5) The 2nd Asia Pacific Water Summit, dates and place T.B.D.
- (6) Research on HELP basins.
- (7) Collaboration with UNESCO-MAB and UNESCO-IOC activities.
- (8) The Third Session of the Global Platform for Disaster Risk Reduction, Centre Internationale de Conférences (CICG), Geneva, Switzerland, 8-13 May 2011.

2.3 Activities envisaged in the long term

- (1) Participation in IHP-VII projects and RSC activities.
- (2) Information dissemination through a web page of the National Committee.