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# ICHARM

## Newsletter

INTERNATIONAL CENTRE FOR WATER HAZARD AND RISK MANAGEMENT  
under the auspices of UNESCO

### Message from the Director

ICHARM had a series of the most important events in the past one month since its foundation two and a half years ago. They were the graduation of the first year Master Course students, the second ICHARM International Symposium, the second ICHARM International Advisory Board Meeting, the 3<sup>rd</sup> IFI meeting, and the GFAS kick-off training course.

#### **Congratulations on the Graduation of the first year ICHARM Master Course Students**

We are so glad to have all the ten first year ICHARM Master's Course students successfully graduated on 17 September. They were awarded the GRIPS-PWRI/ ICHARM joint Certificates of the Master's degree in Disaster Management Policy at the GRIPS Auditorium. The course objective is to foster solution-oriented practitioners with sound understanding of basic theories in water-related disaster management. Their individual studies are valuable for their home countries as they are the extensive practical studies of their local problems. They are now back home and in the front line of disaster management. Miss Lili Ye said during their graduation trip to Ichinoseki, "Now we are proud of ICHARM, and in the future ICHARM will be proud of us." Indeed, we are looking forward to seeing their promising future.

#### **Success of the 2<sup>nd</sup> ICHARM International Advisory Board Meeting**

The 2nd Advisory Board Meeting was held at the International Conference Room of NILIM in Tsukuba on the 1<sup>st</sup> of October, preceded by the ICHARM International Symposium on Local Practices of Integrated Flood Risk Management at the National Olympics Memorial Youth Center in Yoyogi, Tokyo, on 30 September. We prepared very hard for the Board Meeting as this was the most important occasion for ICHARM to show the Board members the report of our achievements in the past biennium and the committed plan for the next biennium.

Both the report and the plan were well received by all the Board members and many constructive suggestions and encouragements were provided. There were strong voices supporting the achievements in capacity development, high

-tech flood forecasting systems, various local studies and consultation activities and especially in success of external fund raising. The voices echoed indicating wider collaboration needs with related organizations and programs, especially for the socio-economical consideration in local assistance programs.

Our view was well accepted that ICHARM is still in the first stage and needs to focus on the firm establishment of competitive research competence with prioritized activity areas.

#### **Donation of Geometric Art "Tsukuba" by French Artist Madam Judith Nem'c**

The highlight of the Board Meeting was a visit by Madam Judith Nem'c to the unveiling ceremony of her geometric artwork entitled "Tsukuba". Madam Judith Nem'c is Mrs. Andras Szollosi-Nagy. The artwork is a composite of five colors and shapes in permutation. Please pay a visit to the exhibition when you visit ICHARM where you feel a sudden fresh breeze from water.

#### **Local Ownership of Flood Forecasts started with the GFAS kick-off training course**

The last event of this busy month was the GFAS kick-off training course jointly held by IFNet and IID (Institute of International Development). It was our great pleasure to start distributing the IFAS ver.1 model in CD to the participants with training. ICHARM considers that the local ownership of flood forecasts is essential for the efficient exercises of early flood warning and preparedness, and believes that the local ownership of models and data are key components. ICHARM would like to strongly promote this direction together with all the organizations sharing the common views.

Kuniyoshi Takeuchi  
Director, ICHARM



## Special Topics

*ICHARM has recently held a series of international meetings: a symposium entitled “Local Practices of Integrated Flood Risk Management under Changing Natural and Social Conditions” on 30 September, a biennial ICHARM Advisory Meeting on 1 October, and an International Flood Initiative Advisory/Management Committee meeting (IFI AC/MC meeting) on 2 October. The following are brief reports on these meetings.*

### **ICHARM International Symposium “Local Practices of Integrated Flood Risk Management under Changing Natural and Social Conditions” (30 September)**

An international symposium entitled “Local Practices of Integrated Flood Risk Management under Changing Natural and Social Conditions” was held on 30 September for experts and researchers in water-related disasters at the National Olympics Memorial Youth Center in Yoyogi, Tokyo. The symposium started with opening addresses by Dr. Sakamoto, chief executive of the Public Works Research Institute (PWRI) and Dr. Andras Szollosi-Nagy, director of the UNESCO Division of Water.

ICHARM Director Kuniyoshi Takeuchi presented the overall view of ICHARM activities, followed by more detailed presentations by ICHARM researchers. Other invited international speakers also delivered presentations on current situations and issues on water-related disasters under local natural and social conditions. An audience of about 90 asked questions and made comments on the presentations, contributing to fruitful discussions with the speakers.



Dr. Sakamoto, chief executive of PWRI, greets speakers and participants



The participants listen to a presentation



A participant makes a comment after a presentation

For more details, visit the ICHARM website at: <http://www.icharm.pwri.go.jp>  
The presentation files are available in PDF format on the website.

## ICHARM 2<sup>nd</sup> Advisory Board Meeting (1 October)



The board members and other participants smile for photos.

ICHARM, established under the auspices of UNESCO, is required to have a biennial advisory board meeting, in which ICHARM reports activities during the previous two years and presents an action plan for the next two years. The board members ask questions and give advice to help ICHARM take necessary action effectively with a clear vision.

international organizations, such as the UNESCO Headquarters, World Meteorological Organization (WMO), and United Nations International Strategy for Disaster Reduction (UN/ISDR).

This year's advisory board meeting was held at ICHARM. The board highly praised the global contributions that ICHARM made for the past two years and also gave useful comments and advice on various issues, such as the importance of cooperation with other international organizations in research and training and the necessity of training designed specifically for policy makers in addition to engineers.

The board also suggested the importance of research on hydrologic cycle from a viewpoint of climate change as a future research topic.

ICHARM is planning to publish the "ICHARM Action Plan 2008-2010" after reviewing the plan based on comments and advice from the board members.



The board meeting in session

## International Flood Initiative (IFI) Meeting (2 October)

The third meeting of the Advisory Committee (AC) and Management Committee (MC) of the **International Flood Initiative (IFI)** was held at ICHARM. The main agenda of this joint meeting was to propose an IFI Action Plan.

Following the review of the IFI mapping activities exercise, the discussion on the IFI Action Plan went to emphasize the role of the initiative in synthesizing what we already know on flood issues and translating available research and studies to an understandable format for flood policy makers. In order to formulate sensible IFI outcomes, three types of IFI products were proposed:

- **IFI briefs:** About 2 pages (at most 4 pages); a brochure-type multilingual publication to communicate flood issues and available solutions to governments and policy makers. They can be in a printed format or web-based.
- **IFI reference series:** A kind of guidebooks and manuals to fulfill gaps and elaborate in detail on flood issues and solutions for practical use with respect to ongoing activities at WMO and various other available texts.
- **IFI web tutorials:** web-based education and training with respect to the available e-courses at UNU and UNESCO-IHE.

In order to promote the exposure of IFI activities, it was agreed that the IFI Secretariat at ICHARM should publish IFI newsletters and periodical reports. They can be distributed using the UNESCO-IHP network as well as WMO-CHY and other relevant networks. The next meeting of the IFI AC/MC will be held at Geneva-WMO Headquarters on the occasion of the 2<sup>nd</sup> Global Platform for Disaster Risk Reduction (16-18 June 2009).



ICHARM has developed a flood forecasting system (IFAS) using satellite-based rainfall information as a streamflow version of GFAS and jointly organized a kick-off training course for GFAS validation with WMO and IFNet on 3-8 October. The following are a brief introduction of IFAS and a report on this training course.

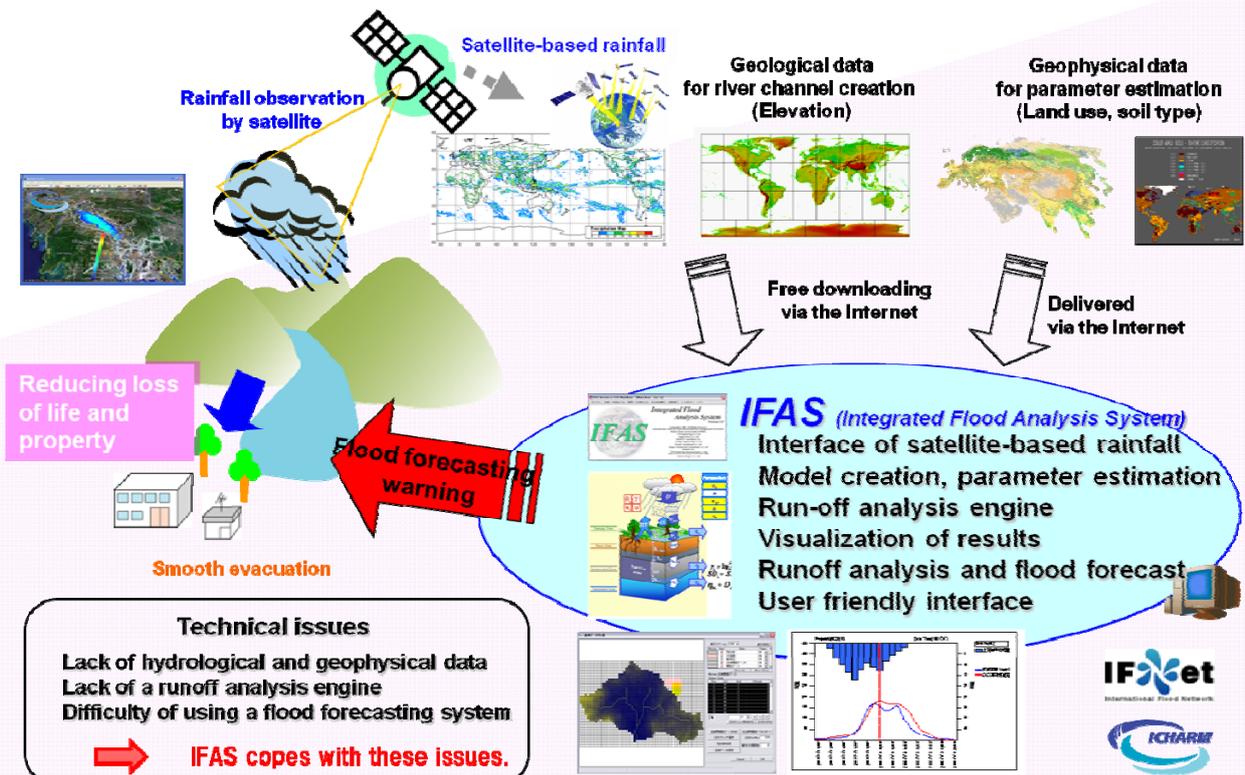
### Development of Integrated Flood Analysis System (IFAS)

#### Flood Forecasting System Using Satellite-based Rainfall Information as a tool of GFAS-streamflow version

For more effective and efficient flood forecasting in developing countries, ICHARM has developed a concise flood-runoff analysis system as a streamflow version of GFAS, which is provided by the International Flood Network (IFNet). This system is called the “Integrated Flood Analysis System (IFAS).” IFAS is equipped with a number of innovative functions. The system can use not only ground-based but also satellite-based rainfall information. It can create river channel networks based on GIS data. It can also estimate parameters for a default runoff-analysis engine and display output results. Furthermore, to promote the effective use of IFAS, ICHARM has a plan to hold training seminars for potential users and conduct joint research with governmental agencies and other organizations. ICHARM hopes that IFAS will be used worldwide as a tool which contributes to the development of flood forecasting and warning systems in developing countries and other ungauged areas. The following are some of the main features of IFAS.

## IFAS Development of Integrated Flood Analysis System (IFAS)

Flood Forecasting System Using Satellite-based Rainfall Information as a tool of GFAS-streamflow version



Conceptual image of IFAS

#### 1) Utilization of satellite-based rainfall as input data

IFAS allows users to use satellite-based rainfall information instead of ground rainfall information. In recent years, real-time or semi real-time satellite-based rainfall information, which cover almost the entire globe, have been provided by NASA, NOAA, JAXA, and other agencies. These satellite-based rainfall information are easily accessible through the Internet, even with a personal computer.

2) Multi run-off analysis engines based on distributed hydrological models

IFAS has adopted run-off analysis engines based on physics-based distributed hydrological models. Most parameters for a distributed hydrological model are related to physical basin conditions, such as land use and soil types, and they are also globally available for public use. In addition, guideline parameters have also been prepared based on past simulation results. Therefore, IFAS is now ready to be easily put into practical use in any poorly gauged basin. Moreover, IFAS is equipped with multi run-off analysis engines, which enable users to try different simulations of their own choice.

3) Model creation function

IFAS has unique functions to create a run-off model and estimate parameters using GIS data including elevation, land use, soil type, etc. With these functions, run-off analysis can be applied to basins with insufficient hydrological and geophysical information.

4) Visualization of flood forecasting results

IFAS has interfaces to display output results not only in figures and tables but also on a digital map. In this way, users can easily identify flood risks at different locations, looking at visualized simulation results.

5) Free distribution

ICHARM distributes IFAS executable files to users for free.

**Training course for the validation of the Global Flood Alert System (GFAS)**

ICHARM and IFNet jointly organized a kick-off training course for GFAS validation at Tsukuba City, Ibaraki Prefecture, Japan, on 3-8 October in collaboration with the World Meteorological Organization (WMO). This training course was designed for trainees to become able to undertake hydrological forecasting and warning in relatively ungauged catchments by (1) validating GFAS using ground observation data (rainfall data) and (2) practicing using IFAS. ICHARM introduced IFAS in this training course and provided a lecture about how to operate IFAS and also how to install a flood forecasting system using IFAS.

For this kick-off training course, the trainees were invited from seven nations (Argentina, Bangladesh, Cuba, Ethiopia, Guatemala, Nepal, and Zambia). They studied about products of satellite-based rainfall information, the GFAS-rainfall and GFAS-streamflow versions (i.e. IFAS), and flood forecasting systems and hydrological observation currently in practice in Japan. Each trainee also had an opportunity to use IFAS and created a runoff model for a basin of his/her own country. Afterwards, they discussed GFAS validation results and IFAS application plans in their own countries.

ICHARM will continue to carry out this type of training courses to promote further installation of flood forecasting systems worldwide.



The course participants with ICHARM staff



Team Leader Fukami of ICHARM lectures on IFAS.



The participants discuss with ICHARM staff.

## International Meetings and Seminars

### Seminar and training workshop on use of satellite-based data in flood risk management -Jakarta & Bundung, Indonesia (21-24 July)

The seminar and training workshop in the title were held in Jakarta and Bandung, Indonesia, on 21-24 July. They were organized by the Indonesian Ministry of Public Works (DPU) and other related agencies as a capacity-building activity under the GEOSS-AWCI (Asian Water Cycle Initiative). Team Leader Kazuhiko Fukami of ICHARM Hydrologic Research Engineering Team attended these meetings. Other resource persons were from the University of Tokyo and the United Nations University. The seminar was held on Day 1 at DPU in Jakarta. The team leader made a presentation on the historical development of flood management in Japan and outlined ICHARM activities for government administrators and public engineers. In the three-day workshop at the Institute of Water Resources in Bundung, he introduced how to operate IFAS (see p.4) to Indonesian participants. IFAS was jointly developed by ICHARM and the private sector to technically assist developing countries in prompt, efficient implementation of a flood forecasting and warning system. IFAS is capable of using satellite-based rainfall information and conducting GIS analysis, which enables instant flood runoff analysis even for poorly-gaged river basins. The system is expected to contribute to the reduction of flood disasters in developing countries. The IFAS executable file is available free of charge.

### 13<sup>th</sup> IWRA Congress -Montpellier, France (1-5 September)

The special session entitled "Scientific and Technological Innovation in Water Management in Japan and Promotion of International Collaboration" was held on 2 September during the **IWRA Congress in Montpellier**. The session was organized by Japan Commission for IWRA and coordinated by Deputy Director Akira Terakawa of ICHARM.

The session started with the key note speech entitled "Water Issues in Monsoon Asia including Japan" by Prof. Katsumi Mushiake of Fukushima University, followed by six presentations on several topics, which included: 1) recent river administration issues in Japan, focusing on how to implement adaptation measures to cope with possible climate change impacts; 2) activities for conserving and restoring nature-rich river environment; 3) current status and trend of the application of information technology to the dissemination of river-related information to the public, and; 4) promotion of international collaboration in river management.

### Planning meeting for topic 1.3 of the 5<sup>th</sup> World Water Forum (WWF5) -Stockholm (20 August)

A planning meeting for disaster management (called "topic 1.3") of the fifth World Water Forum (WWF5) was jointly organized by ICHARM and the Japan Water Forum (JWF) on 20 August at the occasion of the Stockholm International Water Week. The two organizations are the coordinators of this important topic for WWF5. Approximately 30 participants from different organizations, including Deputy Director Akira Terakawa and Chief Researcher Katsuhito Miyake of ICHARM, joined lengthy discussions on the four sessions to be organized under topic 1.3. Lead session conveners were also agreed. The agreed sessions are: (1) Trialogue session, (2) Technologies for water-related disaster management, (3) Risk management under changing climate, and (4) Water management during and after disasters/conflicts. For more information, visit the WWF5 website at: <http://www.worldwaterforum5.org/>.



### International Seminar on Long-Term Flood Forecast Technology for Disaster Management -Dhaka, Bangladesh (3-4 September)

The International Seminar, organized by the Bangladesh Department of Water Resources with support from the U.S. Agency for International Development and other related organizations, was held on 3-4 September in Dhaka, Bangladesh. The seminar discussed a wide range of topics from advanced flood forecasting technologies using satellite-based rainfall data to community-based dissemination trials. Team Leader Kazuhiko Fukami of ICHARM Hydrologic Research Engineering Team participated in the seminar. He chaired an international country-report session, where speakers from several other Asian countries introduced their flood forecasting/warning systems. He also made a presentation on Japan's current systems for river information and flood forecasting/warning, including the introduction of IFAS (see p.4), which ICHARM has recently developed jointly with the private sector.

**ICHARM researcher lectures at UNESCO-IHE  
-The Netherlands (8-12 September and 15-19 September)**

Research Specialist Rabindra Osti of ICHARM International Technical Exchange Team visited the UNESCO Institute for Water Education (UNESCO-IHE) in the Netherlands on 8-19 September to give lectures on flood-related issues.

ICHARM and UNESCO-IHE have been exchanging expertise in the form of guest lecturers for their training courses since 2006. The two parties formally signed a cooperation agreement in June 2008 to strengthen the bilateral collaboration in research and training of professionals.

This time, UNESCO-IHE invited the ICHARM research specialist to speak in two different interdepartmental courses, respectively entitled "Framework for Modeling in Water and Climate (8-12 September)" and "Climate Change in Integrated Water Management (15-19 September)." He lectured on flood management policy in general for the first course and flood hazard mapping in Japan for the second course.

Although the titles were different, both courses actually dealt with climate change impacts and adaptation measures in the water sector. The first one was lecture-oriented while the second was practice-oriented. For the practice, the participants were divided into small groups to work on problems concerning water input and demand under different climate scenarios. Simulations were carried out for a virtual environment called the "Republic of Climate Land." The participants were advised to focus on climate change impacts and adaptation measures in the water sector in the upstream-downstream situation of the imaginary country. There were about 20 participants, and most of them were trainees currently involved in a Master's course at UNESCO-IHE.



Course participants including instructors stand in front of the Dordrecht Municipality Building, Dordrecht, the Netherlands

**5th Meeting of the Expert Working Group (EWG) on Measuring Vulnerability  
-Vietnam (14-16 September)**



A conference banner posted across the entrance welcomed participants.

ICHARM was invited to participate in the Fifth Meeting of the Expert Working Group on Measuring Vulnerability organized by the United Nations University Institute for Environment and Human Security (UNU-EHS, Bonn). The meeting was held at Can Tho University in Vietnam on 14-16 September. Twenty experts from the field of vulnerability and climate change discussed issues on capturing and assessing vulnerability and coping and adaptation in coastal and delta regions. Research specialist Ali Chavoshian attended the meeting and made a presentation on "Pressure and Release Case Studies in Asian Monsoon Regions." The meeting was led by Dr. Birkmann of UNU-EHS. It was partially financed by the WISDOM project under UNU-EHS. The outcome of the discussions will be presented in the next EWG meeting on vulnerability, scheduled to be held in 2009 in Bonn.



Vulnerable houses in the Mekong River Delta

**AIDCO Consultation Meeting  
-Bangkok, Thailand (17-19 September)**

The AIDCO Consultation Meeting organized by the United Nations International Strategy for Disaster Reduction (UN/ISDR) was held in Bangkok, Thailand, on 17-19 September. Research Specialist Dinar Istiyanto of ICHARM International Technical Exchange Team attended the meeting, made a presentation to communicate the achievements of ICHARM's Comprehensive Tsunami Disaster Prevention Training Course, and actively participated in working group discussions. This Consultation Meeting is related to the Building Resilience to Tsunamis in the Indian Ocean programme, an ISDR-coordinated multi-partner initiative funded by the Europe Aid Cooperation Office (AIDCO) of the European Union. ICHARM is one of the implementing partners and carried out the Comprehensive Tsunami Disaster Prevention Training Course in June 2008.

The overall objective of this two and half-day consultation is to bring players from the project countries together and stimulate dialogues amongst them as well as with the European Commission and UN/ISDR. The meeting provided an opportunity to revisit the objectives of the project, discuss issues and concerns, and share lessons, achievements, accomplishments, and plans.

During the meeting, ICHARM's tsunami training course was highlighted by national program officers of India, Indonesia, the Maldives and Sri Lanka in their presentations. More specifically, a Maldivian officer mentioned the training's contribution to the enhanced focus of disaster risk reduction by their National Disaster Management Center, while an Indian officer stated that the training's extensive curriculum assisted the country's participant in developing an action plan back home. For the course details, visit the website of the "[UN/ISDR Comprehensive Tsunami Disaster Prevention Training Course](#)".



The participants discuss issues and concerns.



The participants of the AIDCO Meeting

**Integrated Workshop of the ESCAP/WMO Typhoon Committee  
-Beijing, China (22-25 September)**



The workshop in session

The Integrated Workshop of the ESCAP/WMO Typhoon Committee (TC) was held on 22-25 September in Beijing. Representatives from 14 TC member countries participated. The workshop was convened to develop and implement coordinated activities among the members and related sectors, such as meteorology, hydrology, and disaster prevention and preparedness, to reduce typhoon-related disasters in the TC regions. Chief Researcher

Katsuhito Miyake of ICHARM attended the workshop, and served as chair of the Working Group on Hydrology (WGH). Now that much severer typhoon-related disasters are anticipated as a result of climate change, the TC is focusing on activities that can contribute more to climate change-related issues for the betterment of people in the TC regions. Miyake has been coordinating TC/WGH-related international cooperation activities as well as sector-wise cross cutting activities.



The Working Group on Hydrology

**International Symposium on Science and Practice of Basin-scale Water Policy for Population  
Upsurging Asia  
-Tokyo, Japan (25-26 September)**

The Japan Science and Technology Agency (JST) organized an international symposium in the title on 25-26 September at the National Museum of Emerging Science and Innovation in Tokyo with the support of the Japan International Cooperation Agency (JICA) and the University of Yamanashi Global COE program. There were approximately 120 participants including invited speakers from Canada, China, India, Indonesia, Iran, and Thailand. This symposium aimed to deliver the findings of a JST's five-year science program led by Prof. Kengo Sunada of Yamanashi University. Team Leader Junichi Yoshitani of ICHARM Disaster Prevention Research Team, a sub-leader of the project, made a joint presentation on flood control policies for the Changjiang River Basin with Prof. Wang Yicheng, who is a former PWRI specialist and currently the director of the Remote Sensing Center of the China Institute of Water Resources and Hydropower Research.

## Visitors to ICHARM

### ICHARM and UNESCO-IHE promote research and educational collaboration

**Dr. Nigel Wright**, professor of UNESCO-IHE, visited ICHARM on 5 September to promote mutual research and educational collaboration based on the signed Memorandum of Understanding on 9 June. A lecture by Prof. Wright on inundation modeling and flood risk management was followed by discussion on the promotion of mutual collaboration. The following is a list of some discussed topics:

- Collaboration in the International Flood Initiative (IFI)
- Joint research on flood disaster preparedness and continuing collaboration on PhD-level research on the Flood Vulnerability Index (FVI).
- Possibility of joint research on Glacial Lake Outburst Floods (GLOF) and information sharing
- Sharing research results and information on flood inundation modeling
- Collaboration in online training courses
- Continuation of the exchange lecturers program



Dr. Wright gives a lecture

### ICHARM and RCUWM-Tehran discuss mutual collaboration



Director Takeuchi and Dr. Yazadndoost

**Dr. Farhad Yazadndoost**, director of the Regional Centre on Urban Water Management (RCUWM) under the auspices of UNESCO, visited ICHARM on 12 September. It was the first directors' meeting since the Memorandum of Understanding was signed between the two category II centres in Paris on the occasion of the 18<sup>th</sup> UNESCO-IHP Inter-Governmental Council on 9-13 June.

The meeting resulted in an agreement between ICHARM and RCUWM-Tehran to work closely on a few research and educational topics for starters, such as urban flood management and climate change issues. The possibility of holding joint workshops and research collaboration was also discussed.

### ICHARM agrees on collaboration for WWDR-III Side Publication

On 1 October, Director of **UN/ISDR Salvano Briceno** and Chief Executive of PWRI Tadahiko Sakamoto signed an agreement to collaborate for developing the Side Publication of the Third World Water Development Report (WWDR-III) on Water Risks and Disasters. UN/ISDR and ICHARM have been closely working together to implement the Hyogo Framework for Action.

Research Specialist Adikari Yoganath is the lead author to WWDR-III from ICHARM. This Side Publication will be a collaborative work with main actors in water-related disaster risk reduction at the global level, including UNESCO, WMO, UNU, ICHARM and UN/ISDR, with assistance from WWAP. It will supplement WWDR-III with policy-related issues of water-related disasters and will be completed by the end of August 2009.



Mr. Salvano and Dr. Sakamoto sign the agreement.

### Dutch officials visit ICHARM to discuss flood risk management policy



The Dutch officials discuss flood risk management policy with ICHARM staff.

Dutch officials from the Ministry of Transport, Public Works and Water Management (VenW) and the **Royal Netherlands Embassy** in Japan visited ICHARM on 6 October to discuss and share information on flood risk management policy. The Dutch delegates consisted of Senior Policy Advisor Hans Balfort, Senior Policy Advisor Jos van Alphen, and Policy Advisor Michelle Hendriks. They were accompanied by Mr. Michiel de Lijster and Mr. Rob Stroekst from the embassy.

After a brief introduction of ICHARM by Director Kuniyoshi Takeuchi, Mr. Alphan presented the outline of the Netherlands and the European Directive on the Assessment and Management of Flood Risk. Team Leader Junichi Yoshitani of ICHARM Disaster Prevention Research Team also delivered a presentation on Japanese flood management experiences, and afterwards, moderated the discussion on a new flood risk management plan in the Netherlands, in which the Dutch delegates presented their issues and problems to ICHARM researchers, hoping to find hints for solutions to them.

ICHARM has a close tie with Dutch organizations on water-related disaster risk management and climate change issues.



The visitors and ICHARM staff smile for a photo after the discussion.

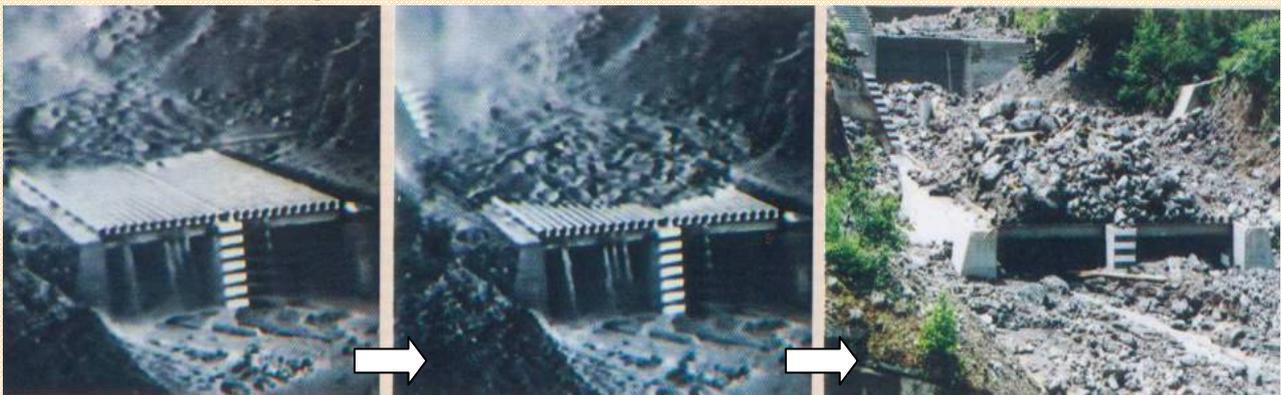
## Research and Training

### Debris-flow dewatering brakes: a promising tool for disaster management in developing countries

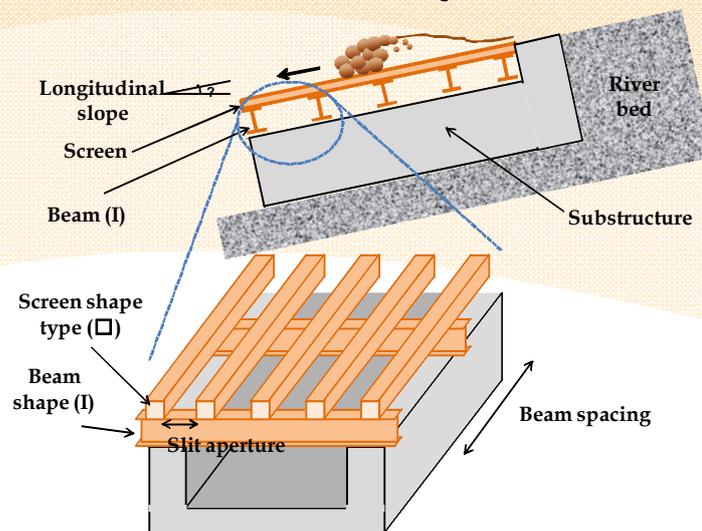
ICHARM/PWRI has taken an initiative to transfer “debris-flow dewatering brakes” to the Philippines with financial support from the Asian Development Bank (ADB). Masayuki Watanabe, coordinator for disaster mitigation research of ICHARM, is leading this pilot project at a site along Kennon Road, which connects Manila with Baguio City in Benguet Province. This Japanese technology and its know-how are cost-effective and can be constructed with locally available materials. Therefore, it can be considered as one of the best debris-flow countermeasures for remote communities. ICHARM promotes the transfer of this technology for the benefit of communities in rugged disaster-prone terrains and road management authorities throughout the world.

“Debris-flow dewatering brakes” are one of the sediment control structures and designed to help remove water from debris flows, reduce flow energy, and thus contribute to damage mitigation in downstream areas. Prof. Noriaki Hashimoto of the Nagoya Institute of Technology contrived the concept in 1956. The idea was experimentally verified by PWRI, which was under the management of the then Ministry of Construction at that time. The structure was named “*teimen mizunuki*,” or “screen dam,” literally meaning “dewatering through a screen”. Debris-flow brakes were tested in three pilot projects in Japan to collect data and technical know-how regarding their construction and maintenance. Then, a full-scale project was implemented at Mt. Tokachidake in Hokkaido, Japan.

Debris-flow brakes are considered to efficiently prevent sediment-related disasters in mountain terrains and residential areas anywhere in the world, especially in developing countries, because they can be cost efficient, simply designed, easily repaired and maintained if size and location are well planned before construction. The ongoing pilot project in the Philippines is a collaboration among ICHARM, ADB and the Philippines’ Flood Control and Sabo Engineering Center of the Department of Public Works and Highways to further demonstrate the practical efficiency of debris-flow brakes in developing countries.



Debris-flow dewatering dam at work (Matsumoto sabo office, MLIT)



Structure of a debris-flow dewatering brake

For more information: <http://www.adb.org/Water/PDA/PHI/pda-phi-200802.asp>

## Master's Program "Water-related Risk Management Course of Disaster Management Policy Program" completed its successful first year

ICHARM has been conducting a one-year Master's program entitled the "Water-related Risk Management Course of Disaster Management Policy Program" since September 2007 in collaboration with the Japan International Cooperation Agency (JICA) and the National Graduate Institute for Policy Studies (GRIPS).

Utilizing the synergy of a large number of experts in water and water-related disaster management, we at ICHARM aim to respond to an urgent need for experts and professionals, particularly to that of developing countries, through this program, which is the first of its kind in the world. The unique feature of this program is to train professionals who can blend state-of-the-art technology with societal needs and expectations so that in the future they can demonstrate to policy makers the importance of disaster management in national planning.

In the first year, out of eleven who initially started this program from 30 September 2007, ten students (three each from China and Japan, two from Bangladesh, one each from Nepal and India) finally fulfilled the graduating requirements and were granted a Master's degree in disaster management. After the graduation ceremony at GRIPS on 17 September, the first graduates proudly went back to their home countries with their enhanced expertise.

The students were diligently engaged in lectures and exercises despite some difficulty living in an unfamiliar environment for a long period of time. In particular, when working on their Master's theses, they spent many hours in a study room at ICHARM completing the theses while getting helpful advice from

ICHARM researchers. The program provided a great opportunity for students to increase their professional knowledge by working on their theses. Additionally, it greatly helped ICHARM itself to build closer relationships with students and create and spread a global network through them. The network of this kind will surely contribute to future ICHARM activities to a great extent.



The first class of graduates from the Master's program gathers for photos at the front gate of the GRIPS (17 Sep.)



Mr. Mitra is awarded the Outstanding Award by Director Takeuchi for his distinguished achievement.



Group Photo at the Opening Ceremony



Greeting Address by Mr. Robin from Bangladesh as a representative

Following the first graduation, the program has already started its second year on the occasion of this year's International Day for Natural Disaster Reduction, which fell on 8 October. The opening ceremony was held at ICHARM on 3 October. Nine students came all the way from Bangladesh, China, Ethiopia, Indonesia, Nepal and Thailand to participate in the program.

This program is also a contribution to the United Nations (UN) Decade for Education and Sustainable Development (DESD) 2005-2014. For more detail, please visit: <http://www.icharm.pwri.go.jp/html/training/index.html>



It was a great opportunity for me to be a participant of the one-year Master's Program on Flood-related Disaster Mitigation. I am also feeling proud of being one of the first graduates of this course. The course curriculum was successfully completed, as GRIPS, PWRI, ICHARM and JICA managed it well. I enjoyed the environment of the institute campus and my time in Japan, especially in Tsukuba. My acquired knowledge helped me to formulate an action plan for a project which I hope to implement after going back my country. Bangladesh is a disaster prone country like Japan. So, as a participant from Bangladesh, I hope my acquired knowledge from Japan will be very helpful for my country.

*Muhammad MASOOD (Bangladesh)*

### After completing the Master's Program...

This one-year course has given me many ideas about the solutions of flood-related disaster mitigation based on Japan's experiences. Deeply I have realized the weakness in China in comparison with our situations. As a member involved in the field of flood-related disaster mitigation, I feel more responsibilities we have to shoulder. My action plan is about flood hazard mapping in Mengwa Detention Basin. In China there are 157,800 people living inside 97 detention areas with a total area of 180.4km<sup>2</sup>. Hopefully this project will lay a solid foundation for the management of detention areas in China. ICHARM provides a very good platform to share their successful experiences in flood-related disaster mitigation with developed countries, which is a forevermore beneficial move to enhance human capability to mitigate flood-related disasters. Let's treasure the chance to update our knowledge about flood-related disaster mitigation and shoulder the great task with our passion.

*YE, Li-Li (China)*



## ICHARM contributes to a JICA training course “Comprehensive Management of River and Dam”

The “Comprehensive Management of River and Dam” training course organized by the Japan International Cooperation Agency (JICA) started in 1973 as a response to a request in which developing countries asked developed countries to transfer advanced technologies in flood control and water resources development. The course used to be called the “River Engineering” training course, and it has provided a training opportunity for a total of about 420 people from 51 countries in various regions including Asia, Africa, and Central and South America. This fiscal year, JICA revised the entire training course and restarted it as a new training course designed to be more problem-solving oriented.



The participants take part in a Town Watching exercise in Kurihashi.

ICHARM contributes to this training course by planning and managing the course as well as conducting lectures, exercises and field trips. This year, ICHARM provided lectures and exercises such as “Principle of disasters”, “Hydrological observation”, “Hydrological statistics”, “Run-off analysis”, “IFAS”, “Hazard mapping”, and other related issues for 10 participants from China, Indonesia, Iran, Mauritania, Myanmar, Syria, and Vietnam.



Each group presents the findings from a field trip in front of the class.

From now on, the course participants will work on interim reports on their independent study subjects. Then, after going back to their home countries, they will complete and submit final reports with support from their supervisors in the organizations they work for.

## Flood Hazard Mapping Training Course starts on 28 October



A group photo at the opening ceremony

This year’s Flood Hazard Mapping Training Course is conducted at ICHARM from 28 October to 28 November. This is one of the training courses organized by the Japan International Cooperation Agency (JICA) and carried out by ICHARM for practitioners in Asian countries who work in the field of water-related disaster mitigation. The purpose of this training course is to provide an opportunity for them to learn how to make and use hazard maps through lectures by specialists in water issues and field trips to several areas across Japan. Five years have passed since this course first started in



Team Leader Mr. Tanaka gives a Lecture

2004. This year, 10 participants came from seven countries, including Cambodia, China, Lao, Malaysia, the Philippines, Thailand and Vietnam. More information on this training course will be reported in the next newsletter.

## About us

**The mission of ICHARM is to function as the 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.**

**ICHARM Newsletter is quarterly and non-commercial publication to develop information networking on water-related disaster. It is distributed via e-mail. They can also be downloaded from our website.**

Subscribe/unsubscribe to our mailing list, please contact us.

1-6 Minamihara, Tsukuba, Ibaraki 305-8516, Japan

Tel: +81 29 879 6809 Fax: +81 29 879 6709

Email: [icharm@pwri.go.jp](mailto:icharm@pwri.go.jp)

URL: <http://www.icharm.pwri.go.jp>

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