

**Final Report**  
**Five Years Assessment of the**  
**International Centre for Water Hazard and Risk Management**  
**under the auspices of UNESCO**

**Jan 13-14, 2011**

**Tsukuba, Japan**

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**and**

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## Executive Summary

This report describes 5 year assessment of International Centre for Water Hazard and Risk Management (ICHARM) by Professor Soontak Lee and Dr Olivia Castillo. ICHARM is one of the UNESCO's category-II water centres which started its operation in 2006. The main purpose of this evaluation, which is managed by ICHARM in close consultation with the Government of Japan and UNESCO, is to provide a valuable element for deciding whether the agreement between UNESCO and the host government should be renewed, and to ensure that the focus and coverage of the activities of the Centre are in line with the strategic objectives of UNESCO in accordance with the new Integrated Comprehensive Strategy for Category II Institutes and Centres (document 35C/22) was approved by the 35th Session of the General Conference..

The evaluation team met at ICHARM, Tsukuba from 13th to the 14th of January 2011. The evaluation team's work was facilitated by Mr Shahbaz Khan and Mr Toshi Sonoda from UNESCO, Paris who participated as observers. The following methodology was used to assess progress of ICHARM in relationship with existing agreement with UNESCO.

- 1) Meetings and interviews with the Director and Key Staff of ICHARM
- 2) Examination of materials provided by ICHARM (Appendix-1 and 2)
- 3) Thematic analysis by the evaluation team (Appendix-3)
- 4) Analysis of budget and staffing data
- 5) Review of ICHARM web site and relevant material quoted by stakeholders and other organizations
- 6) Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis to summarise key observations
- 7) Recommendations to ICHARM, to Government of Japan and to UNESCO

A detailed thematic analysis was carried out by the evaluation team which is presented in Appendix-3 which shows excellent achievements of ICHARM within the framework of the International Hydrological Program especially IHP-VI and VII as well as the existing agreement of ICHARM. Key findings are given below:

- ICHARM has been working remarkably well within only five years from the establishment and available funding resources (around 400 million Japanese Yen per year – handout 2-3 provided by ICHARM) to deliver its roles and responsibilities under existing agreement with UNESCO. Its activities initiated in research, training and information networking should be noted as the most relevant and awaited ones in the global water-related risk reduction communities.
- The achievements in the initiation stage is without doubt the highest in all the category 2 centers existing especially in its Master Course program and advanced early warning system development.
- The efforts that Japanese Governments put into ICHARM through PWRI and that by ICHARM itself should be highly appreciated.

- However escalating demands for research and capacity building to deal with hydrohazards show the requirement to increase the funding base through core funds from the Government of Japan and extra-budgetary resources.
- ICHARM has been able to secure more than 10 percent of its budget from external funds. These extrabudgetary projects (listed in Appendix-3) are in full alignment with the strategic objectives of UNESCO IHP.
- The focused ICHARM team has been successful in delivering useful research, education and training products within a short time
- Growing international importance with recurring hydrohazards in many parts of the world demands greater role of UNESCO through ICHARM to deliver of integrated solutions in hydrohazards management focusing on conjunctive management of floods, droughts and associated ecosystems by building a greater scientific base in IWRM, economics and ecology

Based on the detailed assessment of ICHARM, the independent evaluators make the following recommendations to ICHARM, to the Government of Japan and to UNESCO.

*Recommendations to PWRI and ICHARM*

*Key recommendations include:*

- PWRI should be congratulated to host, support and promote ICHARM activities making outstanding international contributions through its support. It should be aware of that the world water community is deeply appreciating PWRI's role and its continuous support.
- Building on its success in flood risk management research, ICHARM may consider broadening its scope to include research on integrated management of floods and droughts, ecological consequences of hydrohazards and micro and macro econometric analysis of hydrohazards at the catchment, country and regional levels focusing on flow-on effects to the economy.
- Expand staff base by creating academic and remuneration incentives for hiring and maintaining high caliber international staff
- Promote greater linkages with other divisions of PWRI and other entities of MLIT to deal with the wider range of hydrohazards
- ICHARM needs to continue strengthen its niche in delivering high quality short term training programs (focusing on a wider range of managing hydrohazards such as floods, droughts, IWRM approach to managing hydrohazards, Tsunami and post disaster ecosystem risks) to multilevel stakeholders in collaboration with greater UNESCO family and other partners
- Institute greater peer review and external assessment processes in the Master and PhD degree programs and also formalize a program of high caliber adjunct faculty
- Secure additional financial resources to deliver a broaden agenda through targeted fund raising in association with UNESCO family

The following recommendations should also be important for further streamlining ICHARM operations:

- Build strategic partnerships with other national and international agencies and universities
- Increase number of students in the masters program to promote efficient use of intellectual knowledge base, staff time and structural facilities

- Consider offering Distance and Split Degree programs in cooperation with UNESCO IHE and other reputable universities and centres of excellence
- Employ a dedicated knowledge broker staff for stakeholder outreach and business development
- Promote geographic diversity in the selection of high quality Master and PhD students in cooperation with UNESCO water education program
- Focus on greater operational linkages with water management organizations and practitioners
- Establish greater number of reciprocal web links with the greater UNESCO family to deliver joint activities
- Promote scientific findings such as master student theses by making them available online

#### *Recommendations to the Government of Japan*

- Government of Japan should be congratulated to host, support and promote ICHARM activities making outstanding international contributions through its function. It should be aware of that the world community is deeply appreciating Japanese role in holding and supporting the global center of excellence of water-related disaster risk reduction responding to increasing disasters with population and economic growth and climate change threats. In order to assure and strengthen the function of ICHARM, Government of Japan is recommended to:
- Take appropriate steps including formulation of career progression structures and incentives to attract and keep cutting edge international staff skills in a very competitive international market
- Assign national staff recognizing the international competitive nature of the centre
- Consider enhanced financial support for ICHARM activities given the increasing demand for its expertise in delivering hydrohazard solutions to developing countries and poor communities in desperate need
- Ensure institutional flexibility for ICHARM to effectively operate as an international centre of excellence under the auspices of UNESCO

#### **Recommendations to UNESCO**

- UNESCO should pay a special attention to remarkable achievements of ICHARM in its initial stage as the category 2 centre promoting disaster risk reduction from regions and nations to localities through its research, training and information networking programs.
- *Considering the excellent achievements of ICHARM, continue operation of this centre as a key category II centre under the auspices of UNESCO*
- Provide necessary support to secure financial resources to deliver UNESCO agenda in developing countries facing ever increasing hydrohazards
- Where appropriate decentralise resources to ICHARM to deliver project based mid term strategy outcomes in ICHARM's areas of competence in consultation with the member states
- Ensure greater synergies between UNESCO mid term strategy such as the forthcoming International Hydrological Program (Phase VIII) and strategic plans of ICHARM in managing hydrohazards

- Consider providing seed grants for Master and PhD students from UNESCO member states preferably those from the Least Developed Countries to study at ICHARM
- Develop knowledge sharing platforms to provide ready access to ICHARM products to member states
- Promote networking, collaboration and project based partnerships between UNESCO category-II centres by operationalising new integrated strategy as approved by the 35<sup>th</sup> session of the General Conference (document 35 C/22).

## Programme Description

UNESCO has established a number of category II centres in the field of water management. These centres serve in their fields of specialization as international or regional centres and poles of expertise to provide services and technical assistance to Member States, cooperation partners and also internally to the network of UNESCO field offices. In this context, the category-II water centres are expected to contribute directly to attaining the strategic objectives and programmatic priorities of UNESCO's International Hydrological Program (IHP).

International Centre for Water Hazard and Risk Management (ICHARM) is one of the UNESCO's category-II water centres. ICHARM started operation in 2006. An agreement between UNESCO and the Government of Japan was signed on 3 March 2006. The objective of the Centre is to conduct research, capacity-building and information networking activities in the field of water-related hazard and risk management at the local, national, regional and global level in order to prevent and mitigate the impacts of such hazards and thus to achieve sustainable and integrated river basin management.

The key functions of ICHARM are listed below:

- to promote scientific research and to undertake effective capacity-building activities at the institutional and professional levels;
- to create and reinforce networks for the exchange of scientific, technical and policy information among institutions and individuals;
- to develop and coordinate cooperative research activities, taking advantage particularly of the installed scientific and professional capacity of the International Hydrological Programme (IHP) networks, World Water Assessment Programme (WWAP), the IFI/P, and the relevant programmes of non-governmental organizations, international institutions and networks;
- to conduct international training courses for practitioners and researchers on a global level;
- to organize knowledge and information transfer activities including international symposia or workshops, and to engage in appropriate awareness-raising activities targeted at various audiences including the general public;
- to develop a strong programme of information and communication technology;
- to provide technical consulting services;
- to produce technical publications and other media items related to the activities of the Centre.
-

A new Integrated Comprehensive Strategy for Category II Institutes and Centres (document 35C/22) was approved by the 35<sup>th</sup> Session of the General Conference. According to this strategy it is necessary to carry out a formal review and evaluation before the Director-General can renew the existing agreement. This new strategy applies to all new proposals for the establishment of category II institutes and centres, as well as any renewals of the existing agreements. The relevant articles of document 35C/22 are copied here for ready reference.

### **A.3 Periodic review and evaluation**

**A.3.1** The agreement for the establishment of an institute or centre as a category II institute shall be concluded for a definite time period, not exceeding six years. The agreement may be renewed by the Director-General in the light of the review in A.3.2 and the evaluation referred to in A.3.3.

**A.3.2** At least six months prior to the expiration of the agreement, the Director-General will carry out a review of the activities of the institutes and of the contribution to the Strategic Programme Objectives of the Organization and the Strategy for category II institutes and centres approved by the General Conference. He will include the results of this review in his report to the Executive Board on the execution of the Programme.

**A.3.3** To facilitate the review, the Internal Oversight Service will consider in its planned evaluations of the Strategic Programme Objectives (SPO), the contribution of the relevant category II institutes and centres to the SPO under review.

The evaluation referred to in A.3.3 needs to include an assessment of the activities of the centre and of its contribution to the Strategic Programme Objectives of the Organization and the Integrated Comprehensive Strategy for category II institutes and centres approved by the General Conference. The results of any evaluation conducted by UNESCO's Internal Oversight Service will be submitted to the Executive Board per standard reporting procedures.

Such review and evaluation is also required according to the IHP strategy for UNESCO's category I and category II water-related institutes and centres (177 EX/INF.9).

#### *Evaluation Purpose*

The main purpose of this evaluation, which is managed by ICHARM in close consultation with the Government of Japan and UNESCO, is to provide a valuable element for deciding whether the agreement between UNESCO and the host government should be renewed, and to ensure that the focus and coverage of the activities of the Centre are in line with the strategic objectives of UNESCO. This 5 year review had the following main objectives:



- Relevance of ICHARM activities to UNESCO's Medium-term Programme priorities (33 C/4 and 34 C/4) especially in the field of water management (IHP-VI and VII);
- Results achieved by ICHARM, and its contribution to UNESCO's efforts in integrated flood management;
- Quality of coordination and interaction between UNESCO Headquarters, other Water Centres, Field Offices and ICHARM's partner entities with regard to planning and implementation of programmes;
- Funding details, mechanisms for securing funds and their risks for sustained institutional capacity, and viability, and quality of organizational management and programme implementation systems adopted by ICHARM;
- Identify and propose the needed improvements for the effective functioning of ICHARM;
- Recommend actions necessary to be taken by the host country and UNESCO; and
- Based on the above points recommend whether the ICHARM's designation as a UNESCO Category II centre should continue or lapse.

In order to meet the purpose of the evaluation described above, the following evaluation parameters were considered by us in the process of designing a detailed analytical framework (Appendix-3) and writing an appropriate report consistent with the UNESCO reporting mechanisms to the Executive Board.

*(a) Relevance of its activities to UNESCO's programmes as mentioned in purpose section*

*(b) Results achieved*

Assess to what extent ICHARM has achieved its organizational objectives, which is to promote a conducive atmosphere for collaboration through technology and information exchange, education and science and to increase scientific and technological knowledge about flood management at various levels.

*(c) Quality of coordination and interaction with relevant entities*

- Assess the effectiveness of coordination and interaction with UNESCO regional offices and Headquarters (notably with the Water Sciences Division) and other Field Offices; and

- Assess the quality of partnerships with other relevant Category-II Water Centres.

*(d) Funding pattern and quality of organisational management*

- Analyze the funding patterns, mechanisms and their risks for sustained institutional capacity, and viability;
- Assess the process by which extra-budgetary resources are sought and obtained and to what extent the extra-budgetary funding is aligned to the strategic objectives of UNESCO; and
- Examine the quality of organizational management and the impact of the extent of functional autonomy provided.

## **Evaluation Methodology**

The evaluation team met at ICHARM, Tsukuba from 13<sup>th</sup> to the 14<sup>th</sup> of January 2011. The evaluation team's work was facilitated by Mr Shahbaz Khan and Mr Toshi Sonoda from UNESCO, Paris who participated as observers. The following methodology was used to assess progress of ICHARM in relationship with existing agreement with UNESCO.

- 1) Meetings and interviews with the Director and Key Staff of ICHARM
- 2) Examination of materials provided by ICHARM (Appendix-1 and 2)
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## Key Findings

A detailed thematic analysis is provided in Appendix-3 within the framework of the International Hydrological Program especially IHP-VI and VII as well as the existing agreement of ICHARM. Key findings on financial and administrative matters are given below:

- ICHARM has been working well within available funding resources (around 400 million Japanese Yen per year – handout 2-3 provided by ICHARM) to deliver its roles and responsibilities under existing agreement with UNESCO. However escalating demands for research and capacity building to deal with hydrohazards show the requirement to increase the funding base through core funds from the Government of Japan and extra-budgetary resources.
- ICHARM has been able to secure more than 10 percent of its budget from external funds. These extrabudgetary projects (listed in Appendix-3) are in full alignment with the strategic objectives of UNESCO IHP.

Summary of the key research, education and training and outreach achievements are given below:

### *Disaster Risk Reduction Research (IHP Theme 1)*

- *Tools for Flood Early Warning and Flood Hazard Mapping:* ICHARM has developed the IFAS (Integrated Flood Analysis System) toolkit for more effective and efficient implementation of flood forecasting and flood hazard analysis in developing countries with limited data. IFAS is useful to calculate river discharge with not only ground-based but also satellite-based rainfall data even in poorly-gauged river basins. This is major achievement since developing countries often lack accurate topographic data necessary for water-related disaster risk assessment therefore, satellite-based topographic data can help those countries overcome this disadvantage. There already advanced plans for the application these tools in a number of Asian Countries in partnership with the Asian Development Bank (ADB) and Japan Space Exploration Agency (JAXA). IFAS is also a key tool to be utilized by UNESCO and partners in building flood early warning and dissemination system in Pakistan.
- A new methodology for quantification for flood risks at the community and national levels is being developed.
- ICHARM is engaged in knowledge transfer at the community level e.g. West Rapti River in Nepal.
- *Tsunami Damage Mitigation* – Since its inception, ICHARM has been very active in developing sustainable measures for tsunami damage mitigation in developing countries, three main activities were carried out within the frame of this research, i.e. (1) investigation on the possible measures of comprehensive tsunami disaster prevention based on the potential tsunami hazard and the existing land use in the target area; (2) assessment and development of education materials on comprehensive tsunami disaster prevention and study on the potential

implementation of coastal vegetation as a tsunami barrier; and (3) development of guideline for planning and design of tsunami mitigative coastal vegetation belt. According to this research, the possible measures of comprehensive tsunami disaster prevention in target countries were proposed based on the characteristics of social conditions and topography. A textbook for comprehensive tsunami disaster prevention education and two guidelines for planning and design of tsunami mitigative coastal vegetation belt and for tsunami hazard mapping were developed.

### *Teaching and Training*

ICHARM has actively conducted a number of training courses in partnership with Japan International Cooperation Agency (JICA), UNESCO and other partners. Details of these training courses and partners were provided to the evaluation team. In addition to short courses ICHARM has been delivering a one-year Master's course from September 2007 in collaboration with the Japan International Cooperation Agency (JICA) and the National Graduate Institute for Policy Studies (GRIPS). The fourth batch of the course is being conducted during 2011. The overall goal of this course is to develop the trainee's capacity to practically manage problems and issues concerning water-related disasters in local levels (Localism concept) to contribute towards socio-economic and environmental improvements at regional and national levels in developing countries. Brief details of these courses are given below:

- The first course was organized from 30th September 2007 to 19th September 2008. Ten students, consisting of three each from China and Japan, two from Bangladesh, one each from Nepal and India, finally fulfilled the graduating requirements and were awarded the degree of "Master of Disaster Management".
- The second course was from 30th September 2008 to 19th September 2009. Out of nine who initially started the course, seven students (two each from China and Bangladesh, one each from Nepal, Indonesia and Ethiopia) finally met the graduating requirements and obtained the degree.
- The third course began on 28th September 2009 and had twelve students (three from Indonesia, two from Bangladesh, one each from China, Ethiopia, Myanmar, Japan, the Philippines, Sri Lanka, and Thailand).

While this effort has been very commendable, it is limited to the water professionals from the public sectors only which are nominated by individual governments and selected by JICA. UNESCO can help broaden the student base of this effort by providing seed funding to students from the least developed countries which can help bring students from university and NGO sectors etc.

ICHARM has now started a PhD program with emphasis on the developing countries.

### *Outreach and international Cooperation within the UN System*

ICHARM has been actively linking with its local, regional and global stakeholders through a number of partnerships and communication activities. Some highlights are provided below:

### **Contributions to the World Water Development Report 3 (WWDR3)**

ICHARM, in collaboration with UN/ISDR and WMO, greatly contributed in WWDR3 planning and compilation process especially on water-related disaster management issues, including active participation in preparatory meetings. As for the main volume of WWDR3, ICHARM's contribution was for Chapter 12 of Part 3 titled "Evolving Hazards- and emerging opportunities". ICHARM also took full responsibility of compiling one of side publications of WWDR3, which was titled "Global Trends in Water-Related Disasters: an insight for policymakers".

### **International Flood Initiative (IFI) Secretariat at ICHARM:**

ICHARM is providing secretariat services to IFI. The following are major activities of the IFI Secretariat in the period June 2008-May 2010.

- Hosting the IFI Website after its launch in June 2008 ([www.ifi-home.info](http://www.ifi-home.info))
- Organizing the 3<sup>rd</sup> IFI AC/MC meeting in Tsukuba-Japan, October 2008
- Mapping IFI-related activities of the partners as January 2008
- Issuance of IFI Newsletters
- Organizing workshop on "Charting Global Agenda for Meeting Today's Flood Management Challenges" on occasion of WWF5 (21 March 2009)
- Organizing workshop to follow-up actions recommended in the "Water and Disaster" Action Plan as special event during the 2<sup>nd</sup> Global Platform for Disaster Risk Reduction in Geneva (19 June 2009)
- Organizing IFI e-meetings (4 and 26 Jan. 2010, and 2 March 2010)
- Coordination with the IFI partners in preparatory process of the 5<sup>th</sup> International Conference on Flood Management (ICFM5)
- Involvement in the IFI Book series coordinated by UNESCO-IHP
- Preparation of the 5<sup>th</sup> IFI AC/MC meeting in Paris (7 July 2010)

### **Contributions to the Fifth World Water Forum (WWF5)**

At the early stage of WWF5 preparation, ICHARM, together with the Japan Water Forum (JWF), was appointed to coordinate the topic 1.3 titled "Managing Disasters" of the Forum. After the appointment ICHARM actively made numerous coordination activities during the preparation and on occasion of WWF5, which included planning of relevant sessions, identifying and discussing with key contributors, and delivering unified messages from the topic.

### **Joint training workshop on flash flood risk assessment and mitigation strategies**

ICHARM co-organized this WS with two other category 2 centers (HTC-Malaysia and RCUWM-Iran) in Kuala Lumpur from 10 to 13 August 2009

### **Flood hazard assessment in Johor, Malaysia**

ICHARM, HTC-Malaysia and Malaysian Department of Irrigation and Drainage (DID) agreed, taking opportunity of co-organization of FHM follow-up seminar in Malaysia, to collaborate on a project on flood hazard assessment in Johor Malaysia. This planned study is still under development because of administrative process within DID and HTC.

### **Knowledge transfer/dissemination in partnership with ADB**

On 17 June 2008, ICHARM was officially acknowledged by the Asia-Pacific Water Forum (APWF) as one of the regional Knowledge Hubs (KHs) with particular focus on "Disaster Risk

Reduction and Flood Management." Knowledge Hubs, developed under the framework of Asia Pacific Water Forum (APWF). Since its recognition as KH, ICHARM has become an implementing partner of ADB for regional technical assistance (RETA) for Supporting Investments in Water-Related Disaster Management in selected countries in Asia.

#### **Links with UNSGAB and IRDR**

ICHARM is actively involved in the UNSGAB high level expert panel on water and disasters and the Integrated Research on Disaster Risk (IRDR) programs jointly organized by ICSU, ISSC and UNISDR.

## **Key Lessons Learned through SWOT Analysis**

The SWOT analysis was carried out by the evaluation team in partnership with ICHARM management and staff. This analysis focused on technical, human, financial and institutional aspects of ICHARM operations and summary findings are given below.

#### *Strengths*

- Small focused team delivering useful products within a short time
- Development and ownership of good tools like IFAS
- Competent National and International Staff
- Strong commitment from the Government of Japan and the host organization i.e. Public Works Research Institute (PWRI)
- Growing international importance with recurring hydrohazards in many parts of the world

#### *Weaknesses*

- Local institutional requirements may hinder expansion of operations and appropriate development of human resources
- Lack of financial support and technical inputs from UNESCO leading to solo operation
- Inadequate communication of scientific and policy findings to national and international community – need for a dedicated knowledge broker role
- Lack of integration with local, regional and international water management organisations

#### *Opportunities*

- Delivery of integrated solutions in hydrohazards management focusing on conjunctive management of floods, droughts and associated ecosystems by building a greater scientific base in IWRM, economics and ecology
- Greater use of tools with global and local development banks, member states, insurance sector and other financial institutions (rural and commercial banks, pension trust funds and water bonds)

- Internationally accredited and externally peer reviewed Masters and Doctoral programs in collaboration with other UNESCO centres

*Threats*

- Too much focus on floods
- Likely loss of key staff due to competition from other universities and centres of excellence
- Education program may consume bulk of staff time if proper human resource management is not undertaken
- Inability to recruit and retain world class staff due to a lack of competitive incentives comparable to other national and international institutions in a relatively focused field of operations



## Recommendations

Based on the detailed assessment of ICHARM, the independent evaluators make the following recommendations to ICHARM, to the Government of Japan and to UNESCO.

### *Recommendations to ICHARM*

#### *Key recommendations include:*

- Building on its success in flood risk management research, ICHARM may consider broadening its scope to include research on integrated management of floods and droughts, ecological consequences of hydrohazards and micro and macro econometric analysis of hydrohazards at the catchment, country and regional levels focusing on flow-on effects to the economy.
- Expand staff base by creating academic and remuneration incentives for hiring and maintaining high caliber international staff
- Promote greater linkages with other divisions of PWRI and other entities of MLIT to deal with the wider range of hydrohazards
- ICHARM needs to continue strengthen its niche in delivering high quality short term training programs (focusing on a wider range of managing hydrohazards such as floods, droughts, IWRM approach to managing hydrohazards, Tsunami and post disaster ecosystem risks) to multilevel stakeholders in collaboration with greater UNESCO family and other partners
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- Increase number of students in the masters program to promote efficient use of intellectual knowledge base, staff time and structural facilities
- Consider offering Distance and Split Degree programs in cooperation with UNESCO IHE and other reputable universities and centres of excellence
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- Establish greater number of reciprocal web links with the greater UNESCO family to deliver joint activities
- Promote scientific findings such as master student theses by making them available online

#### *Recommendations to the Government of Japan*

- Take appropriate steps including formulation of career progression structures and incentives to attract and keep cutting edge international staff skills in a very competitive international market
- Assign national staff recognizing the international competitive nature of the centre
- Consider enhanced financial support for ICHARM activities given the increasing demand for its expertise in delivering hydrohazard solutions to developing countries and poor communities in desperate need
- Ensure institutional flexibility for ICHARM to effectively operate as an international centre of excellence under the auspices of UNESCO

#### **Recommendations to UNESCO**

- *Considering the excellent achievements of ICHARM, continue operation of this centre as a key category II centre under the auspices of UNESCO*
- Provide necessary support to secure financial resources to deliver UNESCO agenda in developing countries facing ever increasing hydrohazards
- Where appropriate decentralise resources to ICHARM to deliver project based mid term strategy outcomes in ICHARM's areas of competence in consultation with the member states
- Ensure greater synergies between UNESCO mid term strategy such as the forthcoming International Hydrological Program (Phase VIII) and strategic plans of ICHARM in managing hydrohazards
- Consider providing seed grants for Master and PhD students from UNESCO member states preferably those from the Least Developed Countries to study at ICHARM
- Develop knowledge sharing platforms to provide ready access to ICHARM products to member states
- Promote networking, collaboration and project based partnerships between UNESCO category-II centres by operationalising new integrated strategy as approved by the 35<sup>th</sup> session of the General Conference (document 35 C/22).

## Appendix-1 List of Materials Evaluated

Material	Number of copy
Brochure of Public Works Research Institute (PWRI)	2
Brochure of ICHARM (the latest version)	2
Brochure of ICHARM (old version)	1
Brochure of IFAS	2
Brochure of Disaster Management Policy Program (Master's course)	2
Brochure of ICFM5	2
ICARM Web (partly)	2
Technical Note of PWRI	2
Master's thesis	2
Synopsis of Master's thesis	2
ICARM Newsletter	2
List of Agreements between ICHARM and organizations	2

Fisrt Progress Report for RETA 7276	1
Biennial Report (2006-2008)	2
ICHARM Action Plan (2008-2010)	2
Biennial Report (2008-2010)	2
ICHARM Action Plan (2010-2012)	2

## **Appendix -2 List of handouts and annexes provided by ICHARM to the Evaluation Team**

- |                    |  |
|--------------------|--|
| <u>Handout 1-1</u> | Agreement between the Government of Japan and the UNESCO   |
| <u>Handout 1-2</u> | Agreement between the PWRI and the UNESCO  |
| <u>Handout 1-3</u> | Goal for PWRI / Strategy to meet the goal for PWRI   |
|                    |  |
| <u>Handout 2-1</u> | List of ICHARM staff   |
| <u>Handout 2-2</u> | Trend of Number of ICHARM staff  |
| <u>Handout 2-3</u> | Trend of ICHARM budget   |
|                    |  |
| <u>Handout 3-1</u> | Member list of the 2 <sup>nd</sup> Advisory Board Meeting  |
| <u>Handout 3-2</u> | Minutes of the 2 <sup>nd</sup> Advisory Board Meeting  |
| <u>Handout 3-3</u> | Member list of the 3 <sup>rd</sup> Advisory Board Meeting  |
| <u>Handout 3-4</u> | Minutes of the 3 <sup>rd</sup> Advisory Board Meeting  |
|                    |  |
| <u>Handout 4-1</u> | Outline of ICHARM activities from 2006-2010  |
|                    | ➤ ANNEX 1: Table of Overview of the core Programme Themes of IHP-VII Focal Area                      |
|                    | ➤ ANNEX 2: List of Agreement between ICHARM and organizations  |
|                    | ➤ ANNEX 3-1: List of overseas business trip  |
|                    | ➤ ANNEX 3-2: List of overseas business trip (related to UNESCO)                                      |
|                    | ➤ ANNEX 4: List of Master's thesis   |
|                    | ➤ ANNEX 5: List of ICHARM R&D Seminar  |
|                    | ➤ ANNEX 6: List of international symposium   |
|                    | ➤ ANNEX 7: List of training course & seminar   |
|                    | ➤ ANNEX 8: List of dispatch for disaster survey  |
|                    | ➤ ANNEX 9: List of Publication   |
|                    | ➤ ANNEX 10: Trend of ICHARM Web Visitors   |
|                    | ➤ ANNEX 11: ICHARM Newsletter  |
|                    |  |
| <u>Handout 4-2</u> | Report by UNESCO's Water-related Centres on activities to the IHP in the period June 2008 – May 2010 |

## **Appendix-3 Thematic Analysis of ICHARM Achievements**

I. Functions of ICHARM	II. Activities	III. Phase or Date (FY○○ ~ ○○)	IV. Team in charge (*ITE: Intern ation al Techn ical Exchan ge Team *DRM: Disaste r Risk Managem ent Resear ch Team *HER: Hydrol ogic Engine ering Resear ch Team SA: Chief Resear cher of Special assign ment)	V. Evaluation Scope				VI. Reference	Comment
				(a) Releva nce of its activiti es to UNES CO's progra mmes  (ANNE X 1: IHP- VII Focal Area)	(b) Results achieved	(c) Quality of coordin ation and interact ion with relevan t entities	(d) Funding pattern and quality of organizational management		

(a) to promote scientific research and undertake effective capacity-building activities at institutional and professional levels	Case studies on the enhancement of the flood disaster management cycle	2006-2008	DRM	1.3	To implement this risk analysis, ICHARM carried out consultation with specialists and NGOs for both country- and local-scale case studies, and interviews with survivors of past food disasters, etc. And based on discovered facts from the real disaster-hit areas, factor analysis was carried out for Sri Lanka, Bangladesh, the Philippines and Honduras.	PWRI	ICHARM	Technical Note of PWRI No.4094, Technical Note of PWRI No.4068, Technical Note of PWRI No.4067, Technical Note of PWRI No.4066,
	Research on flood hazard mapping for developing countries	2006-2009	ITE	1.3	ICHARM aims to develop a flood hazard mapping method and promote the use of flood hazard maps (FHM) in developing countries. For that purpose, we investigated and analyzed the current situation of production and use of FHM in Asian developing countries by collecting information from participants of the Flood Hazard Mapping training course and explored more effective, efficient use of FHM.	PWRI	ICHARM	Technical Note of PWRI No.4164 ICHARM Biennial Report 2008-2010, pp16-17
	Research on sustainable tsunami countermeasures for developing countries	2006-2009	ITE and DRM	1.3	The possible measures of comprehensive tsunami disaster prevention in developing countries were proposed based on the characteristics of social conditions and topography. A textbook for comprehensive tsunami disaster prevention education as well as a Guideline for planning and design of tsunami mitigating coastal vegetation belt were developed.	PWRI	ICHARM	Technical Note of PWRI No.4177 Technical Note of PWRI No.4184 ICHARM Biennial Report 2006-2008, pp21-22



<p>Development of a flood-runoff analysis system "Integrated Flood Analysis System (IFAS)"</p>	<p>2006-2010</p>	<p>HER</p>	<p>1.3</p> <p>ICHARM conducted a joint research with the Infrastructure Development Institute (IDI), Japan, and nine major civil-engineering consulting companies to develop a flood runoff analysis system (IFAS) utilizing satellite data and global GIS data from 2005 to 2007. IFAS can create a flood runoff analyzing/forecasting system very efficiently utilizing global/local GIS data (elevation, soil, land use, land cover, geology) and calculate river discharge not only by using ground-based data but also inputting satellite based data. Minor improvements have been being conducted since 2008. IFAS has been being used for capacity building and implementations of flood-runoff analysis system in poorly-gauged rivers.</p>	<p>PWRI</p>	<p>ICHARM</p>	<p>Technical Note of PWRI No.4148</p> <p>ICHARM Biennial Report 2006-2008, pp 15-20</p> <p>ICHARM Biennial Report 2008-2010, pp 10-13</p>	
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Study on climate change projection for the 21st century (KAKUSHIN Program)	2007-2011	HER	1.1, 1.2, 1.3	As part of the third phase (FY2006 - 2010) of Japan's Science and Technology Basic Plan, the MEXT has launched a five-year (FY2007 - 2011) initiative called the Innovative Program of Climate Change Projection for the 21st Century (KAKUSHIN Program). The name of the ICHARM's research on climate change is the "assessment of the impact of climate change on flood disaster risk and its reduction measures over the globe and specific vulnerable areas." This research is based upon MRI-20km (GCM), its bias-correction method, global/basin-wide hydrologic model (BTOP model), inundation & damage evaluation model and local case studies.		Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan	ICHARM	ICHARM Biennial Report 2006-2008, pp 22-23 ICHARM Biennial Report 2008-2010, pp 6-10	
Development of basin-wide material (nitrogen and phosphorus) transport components in the process-based distributed-parameter hydrologic model	2006-2010	HER	4.1	This study aimed at improving the WEP (Water and Energy Processes) hydrologic model, a basin-wide physically-based distributed-parameter hydrologic model by incorporating the simulation components of N (Dissolved Nitrogen (DN) and Particulate Nitrogen (PN)) and P (DP and PP), targeting integrated water & material river basin management on a river basin scale, and supporting decision making.		PWRI	ICHARM	ICHARM Biennial Report 2006-2008, pp 24 ICHARM Biennial Report 2008-2010, pp 15	

Study on utilization of satellite-based topographical data for flood risk assessment	2008-2010	ITE and HER	1.3 Three satellite-based topography data (ALOS PRISM, ASTER and SRTM) were compared with laser profiler topography data to check their accuracy and inundation simulations were conducted by using those satellite-based topography data. As a result of the comparison with the laser profiler data, ALOS PRISM and SRTM showed similar error characteristics in the test area and ASTER was inferior to them. However, ALOS PRISM showed a gauge shape which SRTM did not in that area. The results of inundation simulation showed that none of them could simulate the actual inundation process but SRTM showed better results than ALOS PRISM and ASTER. A smoothing methodology for ALOS-PRISM will be proposed for inundation analysis.	PWRI	ICHARM	ICHARM Biennial Report 2008-2010, pp13-14
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Develop ment of Flood Disaster Prepared ness Indices (FDPI)	2009-2010	DRM	1.3	ICHARM is trying to contribute in developing a set of indicators, which can assess the disaster preparedness level of each local community in understandable and comparable manner. As of September 2010, ICHARM has prepared a set of questionnaire including around 80 points to be answered by local disaster managers, which were basically prepared according to disaster management cycle (DMC). At the same time, for the purpose of taking questionnaire, ICHARM opened a web site at <a href="http://www.fdpi.jp/fdpi/">http://www.fdpi.jp/fdpi/</a> where questionnaire can be taken electronically.	PWRI	ICHAR M	ICHARM Biennial Report 2008-2010, pp19 <a href="http://www.fdpi.jp/fdpi/">http://www.fdpi.jp/fdpi/</a>
Preparati on of policy-effective Large Flood Report	2009-2010	DRM	1.3	In order to understand the best flood management policy practices and lessons learned, this project focuses on the experiences of the past large scale floods mainly in the last two decades.	PWRI	ICHAR M	ICHARM Biennial Report 2008-2010, pp23

<p>Reliability improvement of river-discharge observation data using new sensor technology</p> <p>Development of a precise &amp; practical flood flow measurement system</p>	<p>2006-2008</p> <p>2009-2011</p>	<p>HER</p>	<p>1.3</p>	<p>ADCP (Acoustic Doppler Current Profiler) platform has been developed and tested in severe hydraulic conditions. The tethered ADCP platform is expected to expand the possibility of ADCP measurements in wide variety of flooding condition with high flow and suspended objects/sediments of steep rivers in the Asian Monsoon region. In addition, another automatic and continuous river-flow measurement system through observing actual water surface velocities with non-contact current meters (radio current meters) has been elaborated. Missing data from radio current meter can be interpolated based on observation data of water surface slope. With combining information between the noncontact current meter and ADCP measurements the water-discharge measurement system can maintain automatic continuous high flow measurement with higher accuracy.</p>		<p>PWRI</p> <p>ICHARM</p>	<p>ICHARM Biennial Report 2006-2008, pp 25-26</p> <p>ICHARM Biennial Report 2008-2010, pp 15-16</p>	
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	Asian Water Development Outlook (AWDO) 2010	2009.10.~2010.12	SA		ICHARM participated to write the second Asian Water Development Outlook (AWDO) entitled "Water Security of Asia" to write Key Dimension 5 (KD 5): "Building resilient communities that can adapt to changes", focusing on disaster risk management, disaster preparedness and adaptation, among other four AWDO key dimensions for the 2010 volume. ICHARM extensively worked on preparing Flood, Drought and Coastal flood/Storm surge indicators and then combined them into a Water-Related Disaster Risk Index for the 37 out of 48 ADB member nations where uniform data were available.	Asia Development Bank (ADB)	ADB/PWRI	ICHARM	AWDO2007	
	AWDO 2010 Case studies (Ketsana and Aral sea)	2009 - 2010	SA		Flood and drought severity studies		ADB/PWRI	ICHARM	AWDO2007	
(b) to create and reinforce networks for the exchange of scientific, technical and policy information among institutions and individuals	Memorandum of Understanding (MoU) with many institutes				ICHARM has signed many Memorandum of Understanding (MoU)s and agreements with 20 institutes in the field of water disaster risk management.				ANNEX 2: List of Agreement between ICHARM and organizations	
	Participant in international conferences				ICHARM staffs have been participated in and contributed to 249 international conferences.				ANNEX 3-1: List of overseas business trip	

	(UNESCO related activities)				ICHARM staffs have been participated in and contributed to 24 conferences related to UNESCO activities.			ANNEX 3-2: List of overseas business trip (related to UNESCO activities)	
(c) to develop and coordinate cooperative research activities, taking advantage particularly of the installed scientific and professional capacity of the relevant International	The International Flood Initiative (IFI)	2006-	DRM	1.3	ICHARM has served as the IFI Secretariat, providing various services such as maintaining IFI website ( <a href="http://www.ifi-home.info/">http://www.ifi-home.info/</a> ), arranging Advisory Committee and Management Committee meetings and assisting information networking among IFI partners and related organizations, etc.	Collaboration with such international organizations as UNESCO (IHP), WMO, UN/ISDR, UNU, IAHS and IAHR	PWRI	ICHARM	ICHARM Biennial Report 2006-2008, pp 34 ICHARM Biennial Report 2008-2010, pp32-34 <a href="http://www.ifi-home.info/">http://www.ifi-home.info/</a>

<p>al Hydrologic al Programme (hereinafter referred to as "IHP") networks, World Water Assessment Programme , International Flood Initiative/Programme and the relevant programmes of non-Governmental organizations and involving international institutions and networks under those auspices</p>	<p>Contribution to World Water Development Report 3 and its Side-publications under the guidance The World Water Assessment Programme (WWAP) secretariat and UN Water</p>	<p>2007-</p>	<p>DRM</p>	<p>1.3</p>	<p>ICHARM provided more than 35 sub-topics for WWDR3 main text and boxes. ICHARM has also provided a disaster risk indicator. Some of ICHARM's inputs were incorporated in the WWDR 3 main document. In the meantime, ICHARM member participated in meetings concerning WWDR3 preparation in Paris in October 2007 and in Perugia in April 2008 to streamline the report. It was published during the 5th World Water Forum in Istanbul, Turkey, in March 2009. ICHARM took charge of one of the WWAP side publications titled "Global trends in Water-related Disasters: an insight for policymakers", which came out in mid-2009. The publication analyzed in detail global and regional water-related disasters' trend to help policymakers make future plans.</p>	<p>UN/ISDR, WMO, UNU, UNESCO, UNIDO, IFAD, WB, UNU, UNDP, UNEP, and other UN Water organizations and agencies including WWAP</p>	<p>PWRI ICHARM</p>	<p>ICHARM Biennial Report 2006-2008, pp33-34 ICHARM Biennial Report 2008-2010, pp37 The United Nations World Water Development Report 3 (WWDR3)</p>	
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	Asia-Pacific Knowledge Hubs	2007-	DRM		During the Asia-Pacific Water Summit held in December 2007, it was declared that regional knowledge hubs (KHs) will be established in order to contribute to meet various needs in the water sector. Following this declaration and after the selection process from candidate KHs, it was finally decided that 12 KHs will be established under the framework of the Asia-Pacific Water Forum. ICHARM was entitled as KH for "Disaster Risk Reduction and Flood Management".			ICHARM Biennial Report 2006-2008, pp35	
	Exchanging expertise between UNESCO-IHE	2006-	DRM/ITE		UNESCO-IHE and ICHARM have been exchanging expertise in the form of guest lecturers for their courses since the year 2006. As visiting guest lecturer to the IHE, Dr. Shigenobu Tanaka, Dr. Rabindra Osti and Dr. Takahiro Sayama was dispatched to IHE. In exchange, from IHE Dr. Frank van der Meulen has been visiting ICHARM annually to deliver lectures related to Flood Hazard Mapping.			ICHARM Biennial Report 2008-2010, pp40	
(d) to conduct international training courses especially for the practitioners and researchers of the world	River and Dam Engineering Course III	1973-2010	ITE	5.2	The short training course has been conducted by MLIT from 1973 and about 430 trainees participated totally. ICHARM has been providing technical assistant. PWRI accepted 10 participants in 2006. 10 in 2007, 10 in 2008, 11 in 2009 and 6 in 2010.	PWRI, JICA	ICHARM	ICHARM Biennial Report 2006-2008, pp27-28	

Flood Hazard Mapping Training Course	2004-2008	ITE	5.2	ICHARM has carried out the short course for east and southeast Asian countries, such as Cambodia, China, Indonesia, Lao PDR, Malaysia, Thailand, the Philippines and Vietnam. Total 78 participants successfully acquired knowledge and techniques necessary for flood hazard mapping.	One lecturer of UNES CO-IHE invited from 2006	PWRI, JICA	ICHARM	Technical Note of PWRI No.4162
M. Sc. Program "Water-related Disaster Management Course of Disaster Management Policy Program"	2007-	ITE	5.2	This is a one-year M. Sc. program and designed so that Master's degrees in flood disaster mitigation will be granted at the completion of the course. 10 students in 2007-2008, 7 in 2008-2009, 12 in 2009-2010 respectively conferred Master's degree "Disaster management. Now 12 students are studying in ICHARM.	One lecturer of UNES CO-IHE invited in each year.	PWRI, JICA	ICHARM, JICA, GRIPS	Technical Note of PWRI No.4127 Technical Note of PWRI No.4166 Technical Note of PWRI No.4190  <b>ANNEX 4: List of Master's thesis</b>
Comprehensive Tsunami Disaster Prevention Training Course	2008	ITE	5.2	The objective of the course was to improve the efficiency of tsunami disaster management by national and regional officials in the Indian ocean countries. 11 participants from Indonesia, India, Maldives and Sri Lanka participated lectures and exercises related to tsunami and enhanced their knowledge and understanding on comprehensive tsunami disaster prevention.	UN/ISDR	PWRI, JICA, UN/ISDR	ICHARM	Technical Note of PWRI No.4114

	Local Emergency Operation Plan with Flood Hazard Map Training Course	2009-	ITE	5.2	The Program aims for the participants to develop the direction and schedule to make local disaster management plan combined with flood hazard map and flood forecasting/warning system. A total of ten trainees participated in 2009. In January 2011, 12 trainees will enroll the course.	One lecturer of UNES CO-IHE invited	PWRI, JICA	ICHARM	ICHARM Biennial Report 2008-2010, pp25-26, Reference material
	Ph.D. Program "Disaster Management Program"	2010-	ITE	5.3	At present, one student has enrolled in this program, but two more students from overseas are expected to join him later in this semester.		PWRI	ICHARM, GRIPS	ICHARM newsletter No.18
(e) to organize knowledge and information transfer activities including international symposia or workshops, and to engage in appropriate awareness-raising activities targeted at various audiences including the general	ICHARM R&D Seminar	2006-	All	5.4	ICHARM R&D Seminar is a series of in-house seminars irregularly held to help ICHARM's activities and enlightening research staffs.		PWRI	ICHARM	ANNEX 5: List of ICHARM R&D Seminar

public

ICCHARM Inauguration Anniversary Symposium -Towards Global Water Induced Disaster Reduction - Cooperating through ICHARM-	2006.5.10	All	5.4	The symposium was held in UNU in Tokyo and about 80 participants attended. In the discussion, we exchanged opinions from broad horizon on the issues concerning what should ICHARM undertake and what should be expected for reducing recurrent water disasters worldwide.	PWRI	ICCHARM	<a href="http://www.icharm.pwri.go.jp/news/news_e/2006510.html">http://www.icharm.pwri.go.jp/news/news_e/2006510.html</a> ICCHARM newsletter No.2 <b>ANNEX 6: List of International symposia</b>
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1st Follow-up seminar for FHM training course	2007.2 .7-9	ITE	5.2	To follow up the activities of ex-trainees of FHMs training course, ICHARM hold a seminar. In 2007, at Kuala Lumpur co-organized with Malaysian Department of Irrigation and Drainage (DID).	Regional Humid Tropics Hydrology and Water Resources Centre for South-East Asia and the Pacific (HTC Kuala Lumpur)	PWRI, JICA, DID, HTC Kuala Lumpur	ICHARM	Technical Note of PWRI No.4164 <b>ANNEX 7: List of training course and seminar</b>
ICHARM Quick Report on Floods 2007	2007.1 1.6	All	5.4	ICHARM organized a collection of quick reports on the most serious floods occurred in 2007, inviting top local experts responsible for national flood research and management in China and U.K. After all the presentations, a panel discussion followed towards the establishment of international collaboration mechanisms for adaptation to climate change.		PWRI	ICHARM	ICHARM newsletter No.7
The first Asia-Pacific Water Summit (APWS1)	2007.1 2.1-4	DRM	1.3	APWS1 was held in Beppu city in Dec. 2007 where ICHARM served as a lead organization of "Water-related Disaster Management" priority theme. ICHARM highly contributed to leading discussions among high-level guests as well as compilation of policy-related messages as		PWRI	ICHARM	ICHARM Biennial Report 2008-2010 P50 ICHARM Newsletter Vol.7

				outcome of the Summit.				
2nd Follow-up seminar for FHM training course	2008.1 .30 -2.1	ITE	5.2	To follow up the activities of ex-trainees of FHMs training course, ICHARM hold a seminar. In 2008, at Guangzhou, China. with the Office of State Control Relief Headquarter of China (OSFDH).		PWRI, JICA, OSFDH	ICHARM	Technical Note of PWRI No.4164
ICHARM's Open Day	2008.4 .17	All	5.4	ICHARM international researchers spoke to the audience, especially to 50 students in Tsukuba high school, and exchange dialogue on broad subjects on disasters, water, environment, climate, etc. The event followed by a poster exhibition and a quiz.		PWRI	ICHARM, Master's students	<a href="http://www.icharm.pwri.go.jp/news/news_e/080502top1_e.html">http://www.icharm.pwri.go.jp/news/news_e/080502top1_e.html</a>

<p>ICHARM International Symposium</p> <p>-Local Practices of Integrated Flood Risk Management under Changing Natural and Social Conditions-</p>	<p>2008.9.30</p>	<p>All</p>	<p>5.4</p>	<p>The symposium was held in Tokyo and about 90 participants attended. Director Takeuchi explained ICHARM activities and several invited speakers made presentations on their water-related issues.</p>		<p>PWRI</p>	<p>ICHARM</p>	<p>ICHARM Newsletter Vol.10</p>	
<p>3rd Follow-up seminar for FHM training course</p>	<p>2009.2.17-19</p>	<p>ITE</p>	<p>5.2</p>	<p>To follow up the activities of ex-trainees of FHMs training course, ICHARM hold a seminar. In 2009, at Manila with the PAGASA.</p>		<p>PWRI, JICA, PAGASA</p>	<p>ICHARM</p>	<p>Technical Note of PWRI No.4164</p>	

5th World Water Forum (WWF5)	2008-2009.3.16-22	DRM	1.3	<p>ICHARM, together with the Japan Water Forum (JWF), served as coordinator on topic 3.1 "Managing Disasters" at the forum. This was the highlight of the continued activities with which ICHARM and JWF were tasked as the topic coordinators by the WWF5 organizers since 2008. 6 sessions were held under this topic, including four specifically focused sessions. All sessions were fully attended and lively discussions were held.</p>	PWRI	ICHARM	<p>ICHARM Biennial Report 2008-2010, pp31-32 ICHARM Newsletter Vol.12</p>
ICHARM's Open Day	2009.4.14	All	5.4	<p>ICHARM organized a special public event as part of the PWRI Science week and invited high school and junior high school students. The program included a video presentation, quizzes about water, self and country introductions by researchers and graduate students, followed by poster presentations about natural disasters in their respective countries.</p>	PWRI	ICHARM, Master's students	<p>ICHARM Newsletter Vol.12</p>



Knowledge Sharing Workshop on Water Science and Technology for Sustainable Well Being	2009.8.25	HER		<p>ICHARM and NDRI in Nepal jointly organized the workshop. The research which ICHARM and NDRI conducted for the West Rapti River Basin was presented in the workshop. The researchers of universities and research institutes in Nepal and river engineers also joined the workshop and discussed about the management of rivers in Nepal.</p>		PWRI, Nepal Development Research Institute	ICHARM, Nepal Development Research Institute (NDRI)	
ICHARM Quick Report on Floods 2009	2009.12.10	All	5.4	<p>ICHARM invited top experts from several countries who are responsible for flood research and management to speak about disaster damage that their countries suffered and lessons and issues they learned from the experience as well as to have discussions with other experts.</p>		PWRI	ICHARM	<a href="http://www.icharm.pwri.go.jp/news/news_e/091210quick_report_02_e.html">http://www.icharm.pwri.go.jp/news/news_e/091210quick_report_02_e.html</a> ICHARM Newsletter Vol.15
<p>ICHARM International Symposium</p> <p>-Floods - A global problem that needs local solutions-</p>	2010.9.28	All	5.4	<p>The symposium was held in UNU in Tokyo and about 80 participants attended. Regional problem was reported and panel discussion was held.</p>	United Nations University (UNU)	PWRI, UNU	ICHARM	ICHARM Newsletter Vol.18

ADB TA7276-REG, Indonesia component, IFAS training	2010.1 2.16-17	HER		15 trainees (all trainees are from Indonesia)		PWRI, ADB	ICHARM, ADB	
International Workshop on Application and Validation on GFAS (Global Flood Alert System)	2008.1 0.3-10.8 2009.8 .3-7	HER		7 trainees (Ethiopia, Zambia, Cuba, Vietnam, Bangladesh, Argentina, Nepal and Guatemala) held at ICHARM in 2008 6 trainees (India, Indonesia, Nepal, Lao PDR, Vietnam and Bangladesh) held at ICHARM in 2009		PWRI, WMO, IF-Net, APN	ICHARM, WMO, IF-Net	
IFAS training workshop	2009.8 .26-27	HER		8 trainees (all trainees are Nepalese), held at NDRI, Nepal		PWRI, Nepal Development Research Institute	ICHARM, Nepal Development Research Institute (NDRI)	
1st training workshop with BBWS solo	2010.3 .2-4	HER		25 trainees (all trainees are from Indonesia) held at Solo, Indonesia		PWRI, ADB	ICHARM, ADB	

	1st IFAS Seminar in Myanmar Nay Pyi Taw (for Sentinel Asia, APRSAF)	2010.6.21-25	HER		15 trainees (all trainees are from Myanmar) held at Nay Pyi Taw, Myanmar		JAXA	ICHARM, JAXA	
	4th Follow-up for ex-trainee and IFAS seminar	2010.1.1.6-7	ITE, HER	5.2	40 participants in total including 7 foreign participants in south-east Asia learned how to use IFAS and studied on the early warning system in Japan, held at Hanoi, Vietnam	Co-organizing with UNES CO-Jakarta	PWRI, UNES CO-Jakarta	ICHARM, UNES CO-Jakarta	
(f) to develop a strong programme of information and communication technology	WMO/ESCAP Typhoon Committee (TC)	2005-			The WMO/ESCAP Typhoon Committee (TC), an international collaboration framework participated by 14 countries and members, has been actively promoting coordinated activities covering Meteorology, Hydrology and Disaster Risk Reduction (DRR). ICHARM Chief Researcher Miyake is contributing developing disaster indices activities on 2010 and Chief Researcher Kamoto will be served as Chair of TC Working Group on Hydrology on January 2011.				

Asia Pacific Regional Space Agency Forum (APRSAF) / Sentinel Asia	2006-		<p>“Sentinel Asia” project has been promoted by APRSAF in order to implement an Asian-Pacific Regional Disaster Management System for urgently sharing disaster information on wildfire, flood, etc. in the region utilizing satellite-based remote sensing data and so forth. Chief Researcher Fukami is leading the Flood WGs for the Sentinel Asia Project and proposed a working plan for the 2nd step of the Sentinel Asia.</p>				
IFNet (International Flood Network)	2006-		<p>IFNet is a network aiming to promote activities that will contribute to reduce the negative impacts of floods all over the world. The secretary is Infrastructure Development Institute (IDI), Japan. IFNet is promoting an initiative: GFAS (Global Flood Alert System). ICHARM has provided technical assistance to validate GFAS-rainfall data using worldwide in-situ ground-based rainfall data. In August 2010, ICHARM temporarily launched a homepage of GFAS-streamflow including the two components for the Indus River in Pakistan, in response to the request of the UNESCO headquarters and its representative of Pakistan.</p>				

High-level Expert Panel on Water and Disaster (HLEP)	2007-		The High-Level Expert Panel on Water and Disaster (HPWD) was established in 2007. ICHARM Director Takeuchi was appointed as one of the HLEP members. Chief Researcher Miyake of ICHARM served as Chair of TC Working Group on Hydrology from 2005 to 2008 and made considerable contribution to TC activities.				
GEOSS/ Asian Water Cycle Initiative (AWCI)	2007-		Based on the regionally common and sharable ideas on the water-related issues in Asia and their natural and socio-economical backgrounds, a well coordinated regional challenge, "Asian Water Cycle Initiative (AWCI) contributing to GEOSS", has been organized in cooperation among the 18 countries in Asia. ICHARM Team Leader Fukami is leading the Flood Working Group of AWCI since 2007. Several meetings such as GEOSS-AP Symposia, GEOSS-AWCI International Coordination Group Meetings, etc. have been organized jointly with Univ. of Tokyo, JAXA, UNU, APN, etc.				

	ICSU IRDR program and IUGG GeoRisk Commissi on	2008-		ICCHARM is actively involved in a research program "Integrated Research on Disaster Risk (IRDR)" led by the International Council on Sciences (ICSU), the International Social Science Council (ISSC) and UNISDR. The plan was initiated by ICSU and started in October 2008. The ICHARM Director Takeuchi is serving as a Vice Chair of Science Committee and played a leading role to form the Japan National Committee for IRDR (IRDR-Japan) within the Science Council of Japan with 25 members.			
(g) to provide technical consulting services	Emergency response (Solomon Islands Offshore Earthquake Tsunami)	2007.4 .18 -28	2.1	Team leader Tanaka was dispatched to the Solomon Islands to survey the tsunami damage. With the help of JICA, he surveyed Western Province and Choiseul Province, which were severely damaged by the tsunamis. In this disaster, lessons from the Indian Ocean Tsunami had been well known among the islanders, and most people evacuated before the tsunamis.	JICA	ICCHARM	ICCHARM Biennial Report 2006-2008, pp41

Emergency response (Cyclone Sidr, Bangladesh)	2007		2.1	ICHARM dispatched experts in two different occasions for investigation. Team leader Tanaka was dispatched to survey damage due to storm surges caused by the cyclone and the needs for recovery as a member of JICA investigation team. Team leader Miyake was dispatched to some of the heavily-hit towns and villages such as Sharankola, Pirojpour and Mathbaria.	JICA	ICHARM	ICHARM Biennial Report 2006-2008, pp41-42 <b>ANNEX 8: List of dispatch for disaster survey</b>
Feasibility study on integrated community-based flood disaster management of Banke District, Nepal	2006-2009	DRM/HER	1.3	The study included the fact finding of the local reality of flood-related disaster risks, the analyses leading to a proposal of the method of possible remedy and its feasibility study through the community based approach. The scientific know-how is shared among communities to enhance their local knowledge and to promote the sustainable flood mitigation and long term flood risk management plan at the community as community owned initiative. Besides community based activities, the study comprised literature survey, local stakeholders meetings, evaluation meetings by local and national steering committees, field investigations, hydrological analyses and socio-economic analyses. The outcome of the first phase study has been compiled in the form of ICHARM local study series.	PWRI and Ministry of Education, Culture, Sports, Science and Technology (MEXT)	ICHARM, NDRI (Nepal Development Research Institute)	Technical Note of PWRI No.4122

Demonstration of debris-flow brakes in the Philippines	2008-2009	DRM	1.3	Construction of a debris-flow dehydration brake along the Kennon Road in the Philippines to demonstrate the effectiveness of the structure to prevent debris-flow damage. ICHARM provided technical assistance to construct the structure, which completed in December 2009. ICHARM also held a project report seminar on March 27 in Manila.	Asia Development Bank (ADB)	ADB	ICHARM	ICHARM Biennial Report 2006-2008, pp13-14 ICHARM Biennial Report 2008-2010, pp22-23
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<p>ADB RETA727 6: Supporting Investment for Water-related Disaster Management (Asian Development Bank Regional Technical Assistant 7276)</p>	<p>2009-</p>	<p>DRM</p>	<p>1.3</p>	<p>The role of ICHARM is to offer technical assistance that helps Bangladesh, India, Indonesia, and the Lower Mekong Countries (Vietnam, Cambodia and Laos) and to make effective disaster management investment in the future. Some of the key country-specific activities included in this RETA project has been as follows:  1) Model application of a satellite-based flood forecasting and warning system- so-called Integrated Flood Analysis System (IFAS) - to the Solo River basin in Indonesia  2) Demonstration of community-based flood management approaches (Indonesia and Bangladesh)  3) Review and proposals for improvement on the early flood warning system in Bangladesh  4) Development of flood vulnerability indices for the Lower Mekong Basin  5) Capacity building (training) of local experts at ICHARM on local disaster management plans for Bangladesh and Indonesia  6) Organization of regional workshops to share knowledge and the latest information on selected topics, such as adaptation to climate change</p>	<p>Asian Development Bank (ADB)</p>	<p>ADB</p>	<p>ICHARM</p>	<p>ICHARM Biennial Report 2008-2010, pp34-35 First Progress Report</p>
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	UNESCO science flood and related geo-hazards mission in Islamabad	2010.8.23-26	SA		A multidisciplinary team of six senior science experts - five experts from UNESCO and one from ICHARM (Chief Researcher for Special Assignment Kamoto) - met at length in Islamabad with leading scientific figures and heads of institutions.	UNESCO science mission	UNESCO	ICHARM	ICHARM Newsletter Vol.18	
(h) to produce technical publications and other media items related to the activities of the Center	Publication of Technical Notes of PWRI peer-reviewed papers	2006-2010	All					ICHARM	ANNEX 9: Publication List	
	Dissemination of information through ICHARM web-page	2006-2010	ITE		ICHARM opened its web site at March 2006 and revised them April 2009. After that, the number of visitors almost doubled up.		PWRI	ICHARM	ICHARM website ANNEX 10: Trend of ICHARM Web Visitors	
	Dissemination of information through ICHARM newsletters	2006-2010	ITE		Newsletters on ICHARM various activities have been published every three month for its launch. The latest volume is 18th. The number of subscribers is 1400.		PWRI	ICHARM	ANNEX 11: ICHARM Newsletter	

## Appendix -4 List of Media Outreach

Date		Title		Source	News paper	TV
2006	3/7	Launch of ICHARM	ICHARM	Yomiuri Simbun, Mainichi Simbun, Nikkei Simbun, Sankei Simbun, Ibaraki Simbun, Joyo Simbun	○	
	5/11	The result of collaboration research on flood prediction with U.S.Univ. conferred best award by ASCE (American Society of Civil Engineering)	Team Leader Yoshitani	Hokkaido Simbun	○	
	9/13	ICHARM Inauguration Symposium will be held on 14th September	ICHARM	Nikkan Kensetsu Sangyo Simbun, Nikkan Kensetsu Kogyo Simbun	○	
	10/17	ICHARM Inauguration Symposium will be held on 14th September	ICHARM	Kensetsu Tuushin Simbun	○	
	11/18	Town Watching in Ise City	Field survey of Flood Hazard Mapping training course	Chunichi Simbun	○	
2007	1/18	ICHARM researcher developed flood prediction method applicating "Itou's formula"	Team Leader Yoshitani	Niikei Sangyo Simbun	○	

	2/8	1st follow-up seminar of FHM course in Malaysia	Follow-up seminar of FHM training course	The Star Newspaper (Malaysia), NEW STRAITS TIMES (Malaysia)	○	
	2/9	Contribution to making FHMs in Asia by PWRI	Follow-up seminar of FHM training course	The Daily NNA	○	
	8/14	Driftwood seen as resource for business	Team Leader Miyake	Yomiuri Simbun	○	
	11/16	Town Watching in Ise City	Field survey of Flood Hazard Mapping training course	Chunichi Simbun	○	
	12/6	Asian Pacific Water Summit in Beppu ends	Asian Pacific Water Summit	Yomiuri Simbun	○	
2008	1/27	Water crisis - Japan's experience helps developing countries	Disaster Risk Management Research Team	Yomiuri Simbun	○	
	5/9	Explanation about Cyclon Nargis	Deputy director Tanaka	NHK broadcasting		○
	6/18	Field survey in Sanriku area in Comprehensive Tsunami Training Course	Field survey of Comprehensive Tsunami Training Course	Iwate Nippo	○	
	6/20	Field survey in Sanriku area in Comprehensive Tsunami Training Course	Field survey of Comprehensive Tsunami Training Course	NHK broadcasting		○
	7/2	Field survey in Kii peninsula in Comprehensive Tsunami Training Course	Field survey of Comprehensive Tsunami Training Course	NHK broadcasting, Ise Simbun, Mainichi Simbun, Chunichi Simbun,	○	○

				Nankainichinichi Simbun		
	7/2	Disaster management seen as part of economic development	Disaster Risk Management Research Team	Nikkan Kogyo Simbun	○	
	7/2, 7/9, 7/16	Helping developing countries fight against disasters (running story)	ICHARM	Nikkan Kogyo Simbun	○	
	7/8	Floods rise fourfold globally in the last 25 years	Disaster Risk Management Research Team	Yomiuri Simbun	○	
	7/9	Early flood warning becomes more accurate	IFAS	Nikkan Kogyo Simbun	○	
	7/30	Explanation about water accident in Toga River	Team Leader Fukami	Fuji Television		○
	8/6	Fight against disasters	ICHARM	Joyo Simbun	○	
	12/7	Misunderstanding: problem to raise disaster awareness	Director Takeuchi	Kensetsu Tsuushin Simbun	○	
2009	2/17	2nd follow-up seminar of FHM course in Manilla	Follow-up seminar of FHM training course	(in Philippines)		○
	9/6	JICA trainees learn community disaster management from Hada residents	Field survey of Mater's course	Tanko Nichinichi Simbun	○	

2010	12/3	UNESCO considers introducing satellite-based flood forecasting/warning system to Pakistan	IFAS	Mainichi Simbun	○	
	12/14	Irina Bokova, UNESCO director-general, calls on partners for a stronger tie with UNESCO	ICHARM	Yomiuri Simbun	○	