

**EXTERNAL REVIEW OF ACTIVITIES OF
THE INTERNATIONAL CENTRE FOR WATER HAZARD AND RISK
MANAGEMENT (ICHARM)
CATEGORY 2 CENTRE UNDER THE AUSPICES OF UNESCO**

Tsukuba, Japan
November 2018

Prepared by:

Dr. Soroosh Sorooshian

EXECUTIVE SUMMARY

Over the past decades, UNESCO has established a number of category 2 centres (C2C) in the field of water science and management. These centres serve in their fields of specialization as international or regional centres and poles of expertise providing services and technical assistance to Member States, cooperation partners and the network of UNESCO field offices. In this context, water-related category 2 centres (WC2C) are expected to contribute directly to attaining the strategic objectives and programmatic priorities of UNESCO's International Hydrological Program (IHP).

The International Centre for Water Hazard and Risk Management (ICHARM) in Tsukuba, Japan, is one of UNESCO's WC2C. ICHARM started operations in 2006. An agreement between UNESCO and the Government of Japan was signed on 3 March 2006, and was renewed on 23 July 2013 for a duration of six years. The latest Agreement will expire on 22 July 2019.

UNESCO requires that Category 2 water-related Centres undergo periodic reviews. The main objectives of these reviews are to assess the Centres' performance with respect to their terms of reference and contributions to the UNESCO mandate. The principal outcome of the review is a recommendation as to whether the agreement between UNESCO and the host government should be renewed.

An evaluation of ICHARM was conducted in November 2018. Dr. Soroosh Sorooshian was the appointed reviewer. The purposes of the present review and evaluation were:

- to assess ICHARM's performance with respect to its objectives and functions, as specified in the Agreement between UNESCO and the host Government, and in regard to its contribution to UNESCO's strategic program objectives and respective sectoral and UNESCO-IHP strategies, priorities, and themes.
- to assess the extent to which the agreement concerning ICHARM is in conformity with the *Integrated Comprehensive Strategy for Category 2 Institutes and Centres under the auspices of UNESCO* (37 C/Resolution 93 and Document 37 C/18 Part I and its Annex), and if necessary, to provide guidance on how this can be achieved.

The review included a visit to ICHARM in Tsukuba, Japan, by Dr. Soroosh Sorooshian, conducted during 12 to 14 November 2018. During this period, Dr. Sorooshian met with ICHARM staff, interviewed ICHARM experts, inspected outputs generated by ICHARM in collaboration with Mr. Hans Thulstrup (FU/JAK).

Conclusion of evaluation.

The recommendation of Dr. Soroosh Sorooshian is that UNESCO's Agreement with ICHARM is renewed for a further duration of six years.

1. Introduction:

In March 2003 at the Ministerial Conference of the third World Water Forum in Kyoto, Mr. Koïchiro Matsuura, then Director-General of UNESCO, announced that an agreement had been reached with the Government of Japan to establish an international water-related center in Japan.

The agreement to establish such a centre resulted from growing concern on water-related disasters throughout the world and international expectations for Japan to contribute its

advanced science and technology to disaster reduction in particular in the light of Japan's prominent role in the global water community.

ICHARM was founded on March 6, 2006, and has thus been operational for 12 years. The Centre is hosted by Japan's Public Works Research Institute (PWRI), and located in the city of Tsukuba, about 50 kilometers northeast of Tokyo. ICHARM has benefited from the strong leadership of two distinguished and visionary Japanese scientist with impeccable international reputations. The founding director, Professor Kuniyoshi Takeuchi of Yamanashi University directed ICHARM from its formation in 2006 until his retirement and in 2014 Professor Toshio Koike of Tokyo University was appointed as ICHARM's second director.

In order to enhance the operation and effectiveness of individual UNESCO water related centers, as well as the effectiveness of their networks, UNESCO - in conformity with its principles and guidelines for Category 2 centers and institutes and related strategy - requires that Category 2 water-related centers undergo periodic reviews.

The main objectives of these reviews are to assess the centers' performance with respect to their terms of reference and contributions to UNESCO's mandate, to provide a recommendation as to 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 centers are in line with the strategic objectives of UNESCO. This review process is applied to all centers.

This document contains the report of the second review of ICHARM. The first review of the Centre was held after its first five years of operation in January 2011.

2. Objectives and functions of ICHARM:

The objectives of ICHARM are to conduct research, capacity-building and information networking activities in the field of water-related hazards and their risk management at the local, national, regional and global level in order to prevent and mitigate their impacts with a view to sustainable and integrated river basin management.

In order to achieve these objectives, ICHARM has defined its functions as follows:

- (a) promote scientific research and undertake effective capacity building activities at the institutional and professional levels;
- (b) create and reinforce networks for the exchange of scientific, technical and policy information among institutions and individuals;
- (c) develop and coordinate cooperative research activities, taking advantage particularly of the installed scientific and professional capacity of the relevant IHP networks, the World Water Assessment Programme, the International Flood Initiative/Programme and the relevant programmes of non-governmental organizations, as well as involving international institutions and networks under those auspices;
- (d) conduct international training courses, especially for the practitioners and researchers of the world;
- (e) 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;
- (f) develop a strong programme of information and communication technology;
- (g) provide technical consulting services; and
- (h) produce technical publications and other media items related to the activities of the Centre.

3. Review of ICHARM activities:

This review is based on the Terms of Reference (TOR) drafted in 2018 and attached below in the present document. The review and evaluation were undertaken with the following purpose:

- to assess the extent to which the agreement ICHARM conforms with the Integrated Comprehensive Strategy for Category 2 institutes and centers under the auspices of UNESCO (37 C/Resolution 93 and Document 37 C/18 Part I and its Annex), and, if needed, to provide guidance on how this can be achieved; and
- to assess the Centre's performance with respect to its objectives and functions, as specified in the Agreement between UNESCO and the host government, and its contribution to UNESCO's strategic programme objectives and respective sectoral and UNESCO-IHP strategies, priorities, and themes.

Detailed Schedule of Evaluation Meetings

- **Day 1. Monday, 12 November 2018**

Time	Agenda	PIC
09:15-12:00	Meeting and interview with ICHARM Director and senior management	<ul style="list-style-type: none">● Prof. Toshio Koike/ Director● Prof. Shinji Egashira/ Training and Research Advisor● Mr. Hisaya Sawano / Deputy Director● Prof. Yoshiyuki Imamura / Director for Special Research● Mr. Hiroyuki Itou / Chief Researcher● Mr. Yoshio Tokunaga / Chief Researcher● Dr. Tetsuya Ikeda / Chief Researcher
13:00-14:00	Interview with ICHARM researchers	<ul style="list-style-type: none">● Dr. Abdul Wahid Mohamed Rasmy / Senior Researcher● Dr. Badri Bhakta Shrestha / Senior Researcher● Dr. Mamoru Miyamoto / Researcher● Dr. Tomoki Ushiyama / Research Specialist● Dr. Katsunori Tamakawa / Research Specialist
14:00-15:00	Interview with ICHARM Doctoral and Master's students	<ul style="list-style-type: none">● Mr. Kale Ravindra Vitthal/ Master student from India● Mr. Mohamed Thajudeen Mohamed Zuhail/ Master student from Sri Lanka● Mr. Islam Md. Khairul/ PhD student from Bangladesh● Mr. Ahmed Tanjir Saif/ PhD student from Bangladesh

- **Day 2. Tuesday, 13 November 2018**

Time	Agenda	PIC
10:30-11:00	Interview with the Ministry of	<ul style="list-style-type: none">● Mr. Hirokazu Tsukahara/ Director

	Land, Infrastructure, Transport and Tourism (MLIT)	<p>General, Water and Disaster Management Bureau, MLIT</p> <ul style="list-style-type: none"> ● Dr. Hirotada Matsuki/ Director, International Affairs Office, Water and Disaster Management Bureau, MLIT
13:00-14:00	Interview with the Ministry of Education, Culture, Sports, Science and Technology (MEXT) / Japanese National Commission for UNESCO	<ul style="list-style-type: none"> ● Mr. Yosuke Kobayashi/ Director for International Strategic Planning, MEXT/ Deputy Secretary-General, Japanese National Commission for UNESCO ● Ms. Eri Hata/ Assistant Director-General for International Affairs, MEXT ● Ms. Aya Saito/ Chief, International Affairs Division, MEXT
14:00-15:00	Interview with the Japanese Ministry of Foreign Affairs (MOFA)	<ul style="list-style-type: none"> ● Mr. Takatoshi Mori/ Director, Multilateral Cultural Cooperation Division, MOFA ● Ms. Yuki Wakasugi/ Assistant Director, Multilateral Cultural Cooperation Division, MOFA ● Ms. Mayumi Tsubakimoto/ Assistant Director, International Cooperation Bureau, MOFA
15:30-16:30	Interview with the National Graduate Institute for Policy Studies (GRIPS)	<ul style="list-style-type: none"> ● Dr. Mikitaka Masuyama, Executive Vice President, GRIPS

• **Day 3. Wednesday, 14 November 2018**

Time	Agenda	PIC
10:30-11:00	Courtesy visit to the Office of President of Public Works Research Institute (PWRI)	<ul style="list-style-type: none"> ● Mr. Kazuhiro Nishikawa, President, PWRI ● Dr. Yoshikazu Yamaguchi, Vice President, PWRI

4. Results of the visit:

This section presents the results of the evaluation and is structured around the main objectives and functions of ICHARM.

4.1 Alignment of ICHARM activities with the agreement signed with UNESCO

Good practices and remarks

Based on the information compiled in the 80-page Activities Report provided to the reviewer prior to site visit, as well as the interviews conducted with ICHARM management, staff and students – as well as with affiliated government agencies and partners during the site visit– the activities pursued by ICHARM are deemed to be fully in alignment with those set out in the agreement signed with UNESCO. Specifics and examples covering the range of activities corresponding to the eight (a-h) ICHARM objectives were presented and are well documented in the Activities Report and other publications.

The ICHARM newsletter has also been used as an effective means to disseminate news about its activities. The research, application, outreach and educational strategy of ICHARM has been based on the fusion between hydrologic modeling, data and observational networks, hydroclimate modeling, application of GIS and remote sensing tools, all framed in an integrated water resources systems engineering approach for policy-relevant and decision making at regional and local levels.

A central component of ICHARM research strategy and action plan, which were approved at the UNESCO-IHP Intergovernmental Council held at the UNESCO Headquarters in June 2016, has been the development and refinement of the International Flood Initiative (IFI). The IFI initiative and its hydrologic modeling components, Integrated Flood Analysis System (IFAS) and Rainfall-Runoff Inundation (RRI), have progressed considerably in recent years, closely associated with high-quality research and capacity-development activities at the country level in the region.

Following is a brief summary of some ICHARM research highlights:

Data collection, storage, sharing and statistics on water-related disasters:

Among the tangible outcomes under this activity one can cite ICHARM's role in assisting the Philippines in creating guidelines for effective data sharing of water-related disaster data, including damage to humans, houses, agricultural products and social infrastructure for developing a country-based framework under the IFI.

Risk assessment on water-related disasters: within the scope of this objective the need for more reliable rainfall data was identified and a method was developed to correct satellite rainfall using ground rainfall and to forecast heavy rainfall using the limited area ensemble approach. For runoff, the Integrated Flood Analysis System (IFAS) and Rainfall-Runoff-Inundation (RRI) model were improved with more advanced functions.

Monitoring and prediction of changes in water-related disaster risk: ICHARM has been involved in efforts to assess the future impact of climate change by participating in the “Program for Risk Information on Climate Change (SOUSEI) project (a project of the Ministry of Education, Culture, Sports, Science and Technology of Japan) and the Asian Development Bank (ADB) projects.

Evaluation and application of policy ideas for water-related disaster risk Reduction: Related to this topic, ICHARM’s role in assisting the Philippines, Sri Lanka, Myanmar and Pakistan in establishing country-based platforms to prepare policies on water-related disaster risk reduction is noteworthy.

Support in constructing the applicability of water-related disaster management: As a UNESCO Category 2 Centre, ICHARM has demonstrated a proactive role in carrying out its mission in the region. Among a number of examples we cite its role in providing technical assistance to both Pakistan and Sri Lanka in developing flood forecasting systems in collaboration with the government of each country and through UNESCO and other projects. What is most commendable is the hands-on approach ICHARM has taken by working with municipal personnel and communities in developing community-level flood risk contingency plans. Examples from Calumpit Municipality of Bulacan Province in the Pampanga River basin in the Philippines were highlighted.

Recommendations

ICHARM should continue its active role in developing state-of-the-art data collection and analysis, modeling related to its core objectives and assist the regions with water resources planning and addressing water hazards due to hydrologic extremes and risk management.

4.2 Alignment of ICHARM’s activities with UNESCO strategies, objectives and priorities

Good practices and remarks

ICHARM's activities make a clear contribution towards UNESCO strategic objectives and to the 39C/5 expected result number 10 "Responses to local, regional and global water security challenges strengthened" and 11 "Knowledge, innovation, policies and human and institutional capacities for water security strengthened through improved international cooperation" under Main Line of Action 6 "Strengthening freshwater security".

ICHARM's activities contribute across all six thematic areas of IHP-VIII. However, a particular contribution is made towards theme 1 (water-related disasters), 4 (water and human settlements of the future) and 6 (water education). ICHARM's core mandate relates to water and disasters, a mandate that is carried out in part through a comprehensive array of education, training and capacity-development programmes.

While ICHARM's mission is global in nature, a majority of its international activities have been focused on Asia and the Pacific. However, in pursuit of UNESCO's global priority Africa, ICHARM has since its inception welcomed students from Africa as well as other regions (please see the annexed complete list of past and current students), and is currently engaged in discussions about a possible new project to focus on West Africa.

Recommendations

With regard to UNESCO Global Priority Gender Equality, ICHARM management may wish to reinforce efforts to ensure better representation of women among its management and research staff.

ICHARM senior management acknowledged gender imbalance among management and research staff as a key issue to be addressed, and stressed that gender equality had been discussed during the most recent Governing Board meeting. ICHARM makes efforts to encourage women applicants in vacancy notices. However, these efforts are constrained by the limited pool of eligible women candidates with expertise in the technical fields required by ICHARM. ICHARM staff are sourced from government agencies, primarily PWRI and MLIT, which operate with similar gender imbalances. ICHARM management referred to a current strategic target of 30% female staff, however took note that this has yet to be formally implemented. ICHARM did, however, expect the gender imbalance among its management and research staff to change with time, as

more young female candidates come through the educational and governmental system.

4.3 Effectiveness of activities towards achieving stated objectives

Good practices and remarks

ICHARM's objectives are pursued through a suite of programmes delivered through several distinct components, including:

- Research and application. As outlined in the report prepared by ICHARM in advance of the evaluation as well as the presentation made to the evaluator by Prof. Koike, ICHARM has developed a range of tools and methodologies relating to forecasting, monitoring and risk assessment. As already eluded to, it has customized and deployed these tools across a range of projects in region as well as domestically. Partner countries include Myanmar, Pakistan, the Philippines and Sri Lanka. ICHARM researchers and technical staff engage directly with local counterparts to ensure that the products and services were operational.
- Education and capacity-development. ICHARM has proven its effectiveness through the delivery of a long-standing masters' degree programme and – more recently – a PhD programme. These programmes have been delivered in cooperation with GRIPS (the National Graduate Institute for Policy Studies), which serves as the degree-conferring institution, and have produced a total of 134 masters' degrees and 9 PhD degrees. Funding for students is secured primarily through JICA's training programme. ICHARM's MSc and PhD programmes have resulted in an impressive list of major publications, annexed with this report. Our interview of a selected number of students in these degree programs, shows a high degree of satisfaction and a sense of optimism about the future role they will play in their respective countries in addressing water and hazard related issues.
- Networking and information-sharing: ICHARM senior management and researchers engage proactively in forums/meetings/workshops at local, national, regional and global level – ensuring high visibility and dissemination of ICHARM products and services, internationally as well as domestically. The International Flood Initiative (IFI) provides a good example of ICHARM's international networking engagement. During the evaluator's interview with Mr. Mori of the Japanese Ministry of Foreign Affairs, particular note was made of how ICHARM products are now being considered for deployment in the context of a new

proposed JICA-funded project in West Africa – demonstrating the reach and relevance of ICHARM's platform and the potential for further broadening of the user base for ICHARM's modelling systems. As noted above, ICHARM publishes a regular newsletter, which is disseminated widely through email to more than 4,500 addresses.

Recommendations

During interviews conducted as part of the evaluation, ICHARM PhD and Master's students expressed keen interest in associating their degree work with publication of their research in international peer-reviewed journals. While the submission of two papers for publication is presently a requirement for PhD students, it is optional for students at Master's level – although ICHARM management has recently begun encouraging particularly promising Master's students to prepare papers for publication based on their research. ICHARM management remarked that PhD students are encouraged to focus on challenging research questions. It was further noted that due to the limited time available to PhD students at ICHARM, it is not a condition for the conferring of the degree that the two papers submitted are accepted for publication, so long as they are submitted prior to the completion of the programme.

ICHARM management took note that as most ICHARM students are staff of government agencies, many are not in the habit of writing papers. Funding is required for the submission of papers, a purpose for which ICHARM does not have a dedicated budget. However, in recognition of students' achievements for ICHARM as a whole, additional resources were mobilized to support the submission of papers for publication during the present fiscal year.

ICHARM management may consider closer integration of its application activities with the topics and thematic focus of its PhD and Master's programmes. During interviews with the evaluator, it was stressed that in line with ICHARM's "localism" strategy, students propose their research topics on the basis of problems to be addressed by their home countries, and then seek to solve them while at ICHARM. In addition to this, ICHARM now also asks students to identify elements of their research that can be used and applied in ICHARM's research projects. Likewise, internships with the potential to make a valid research contribution are also accepted. In a further display of increasing integration between ICHARM programmes, senior researchers and

research specialists also contribute to supervision of students. Students submit their MSc proposals to one of three research groups. These groups identify and link research topics with ICHARM research priorities and activities.

4.4 Quality of coordination and interaction with UNESCO Headquarters and other Category 1 and 2 centers:

Good practices and remarks

ICHARM liaises regularly with UNESCO IHP Secretariat as well as the UNESCO Office Jakarta, maintaining close relations and frequent interaction on joint projects, initiatives and cooperation. ICHARM is consistently present at key IHP events (IHP Intergovernmental Council, IHP Regional Steering Committee, strategic planning meetings, regional UNESCO National Commission consultations), as well as at leading water and disaster sector forums at the global level (Asia-Pacific Water Summit, World Water Forum), often pro-actively organizing sessions and events with participation by IHP Secretariat and networks.

Recommendations

To the extent possible, ICHARM management, UNESCO and the global network of Category 2 Centres may wish to reinforce engagement among researchers affiliated with Category 2 Centres working in associated fields. As a way to encourage enhanced exchange with other UNESCO Centres, ICHARM may wish to ensure that its newsletter – an impressive outlet for detailed information and news about the centre – reaches all water-related UNESCO Category 2 Centres.

During discussions with the evaluator, a senior ICHARM researcher suggested that more opportunities be considered for researchers to participate in ICHARM's role and networking as a UNESCO centre – for example through cooperation and exchange with researchers at other water centres. UNESCO - in cooperation with ICHARM management - may wish to explore possibilities for facilitating such linkages. This recommendation extends beyond just ICHARM and maybe beneficial for all UNESCO Centres

4.5 Quality of partnerships with government agencies, public/private partners, and donors:

Good practices and remarks

During the evaluation, visits were made to key government agencies and ministry partners. Without exception, they were familiar in detail with ICHARM's work and conveyed a very positive impression of the Centre, its mission and function. This is a clear reflection of the proactive role played by Prof. Koike as Director of ICHARM and his senior staff, engaging and maintaining regular liaison with senior members of partner agencies in government. This observation extends beyond just Japanese agencies. Professor Koike's active role in various international activities and other countries has resulted in a very positive and well-deserved image for ICHARM.

Recommendations

ICHARM should continue its proactive role as a centre focusing on water hazard and risk management to further its scientific and operational assistance in the regions through partnership with governmental agencies.

4.6 Nature and quality of organizational arrangements, including management, governance, reporting and accountability mechanisms:

Good practices and remarks

In his presentation to the evaluator, Prof. Koike described in detail the ICHARM organizational chart (annexed with this report), as well as the function and role of the Centre's management and staff. One of four senior management positions (Chief Researcher for Training) was vacant at the time of the evaluation. Pending the recruitment of a replacement, the duties and responsibilities for this area are being handled in a temporary capacity by Chief Researcher for Risk Management.

A PWRI audit report was included in the evaluation report provided by ICHARM (annexed herewith), indicating compliance with prevailing rules and regulations.

Recommendations

ICHARM benefits greatly from a strong and well-organized management team. ICHARM is encouraged to consider filling future openings with qualified individuals with a view towards ensuring a more gender-balanced team.

4.7 Human and financial resources:

Good practices and remarks

ICHARM is hosted by PWRI, through which the Centre receives the bulk of its funding. In addition to the core funding from PWRI that ICHARM receives, a growing number of activities are funded by other sources – JICA/UNESCO (Pakistan), World Bank (Brazil), Asian Development Bank (Myanmar), In this sense, ICHARM has effective in obtaining additional resources beyond its core funding for special projects. While these resources do not at present demonstrate an increase as a proportion of the total budget, they do show increasing diversification over time.

The review was impressed with the quality of physical space and facilities occupied by ICHARM, which is clearly demarcated within its host institution.

ICHARM employs two types of researchers. One serves as semi-tenured PWRI staff, while the other has the status of time-bound (short-term) staff. There is no formal evaluation procedure associated with the latter group, while the first is subject to a standard bureaucratic evaluation procedure, which however is a not an academic review and evaluation does not give particular attention to the evaluation of scientific work.

Recommendations

ICHARM management may wish to explore the possibility of putting in place a research staff evaluation system that allows for systematic assessment of staff with clear reference to their research work, rather than to their relative position within the host institution's bureaucratic framework.

5. Conclusions

As a developer of state-of-the-art modelling and risk management tools, ICHARM plays a critical role in conceiving, introducing and implementing advanced technologies and procedures for operational purposes. ICHARM products are increasingly being applied

at multiple levels. The review was impressed with the number of journal publications by ICHARM researchers and students, totaling more than 650 in all – another indicator of dissemination of information to the scientific community. The quality of the material in the ICHARM newsletter which is constantly published and distributed is to be commended. In discussions with the Director, we were encouraged by the manner in which he promotes the publication of ICHARM’s scientific outcomes in scientific journals.

The evaluators were most impressed with the vision of ICHARM management team in carrying out the centre’s mission and the level of productivity in all categories. The leadership provided by the founding director Professor Takeuchi and currently by Professor Koike, undoubtedly has contributed to the success on ICHARM in carrying its mission in accordance with the Terms of Reference (TOR) stipulated in the agreement between UNESCO and the Government of Japan signed on July 23rd of 2013, and extending ICHARM as a Category 2 Centre under the auspices of UNESCO.

Below follows a summary of observations made in this report concerning the performance of ICHARM with respect to its terms of reference and contributions to the UNESCO mandate.

- ICHARM has benefited from the strong leadership of two distinguished and visionary Japanese scientist with impeccable international reputation. The founding director, Professor Kuniyoshi Takeuchi of Yamanashi University directed ICHARM from its formation in 2006 until his retirement and in 2014 Professor Toshio Koike of Tokyo University was appointed as ICHARM’s second director.
- As a developer of state-of-the-art modelling and risk management tools, ICHARM plays a critical role in conceiving, introducing and implementing advanced technologies and procedures for operational purposes. ICHARM products are increasingly being applied at multiple levels.
- ICHARM has successfully led the development and refinement of the International Flood Initiative (IFI). The IFI initiative and its hydrologic modeling components, Integrated Flood Analysis System (IFAS) and Rainfall-Runoff Inundation (RRI) have progressed considerably in recent years. ICHARM has effectively aligned the IFI research outcomes and training with the capacity-development activities both within Japan and in the region.

- ICHARM's research and development activities in the area data collection, storage, sharing and statistics on water-related disasters in the region are to be commended. Among the very tangible outcomes under this activity one can cite ICHARM's role in assisting the Philippines in creating guidelines for effective data sharing of water-related disaster data, including damage to humans, houses, agricultural products and social infrastructure for developing a country-based framework under the IFI.
- Developing the blueprint for the application of water-related disaster management in the region is another notable contribution of ICHARM. We cite its role in providing technical assistance to both Pakistan and Sri Lanka in developing flood forecasting systems in collaboration with the government of each country and through UNESCO and other projects supported by international funding organizations and NGOs. What is most commendable is the hands-on approach ICHARM has taken by working with municipal personnel and communities in developing community-level flood risk contingency plans.
- In the area of education and capacity-development, ICHARM has proven its effectiveness through the delivery of a long-standing masters' degree programme and – more recently – a PhD programme. These programmes have been delivered in cooperation with GRIPS (the National Graduate Institute for Policy Studies in Japan), which serves as the degree-conferring institution.
- ICHARM has demonstrated its commitment to the objectives and goals stated in the Terms of Reference as a Category 2 Centre. It has been consistently present at key IHP events (IHP Intergovernmental Council, IHP Regional Steering Committee, strategic planning meetings, regional UNESCO National Commission consultations), as well as at leading water and disaster sector forums at the global level (Asia-Pacific Water Summit, World Water Forum), often pro-actively organizing sessions and events with participation by IHP Secretariat and networks.
- ICHARM is highly regarded by all the Japanese governmental ministries and agencies we had an opportunity to visit and interview. The strong financial, infrastructure and in-kind supports provided by these agencies is a strong

evidence of the value placed on ICHARM and it is clear that its future continuity as a category 2 centre will remain as a highly priority for Japanese government.

Annex 1 - List of trained persons

Annex 2 - List of major publications

Annex 3 - Organizational chart

Annex 4 - Audit report

Annex 5 – List of hosted events (as of Mar 2016)

Terms of Reference

Evaluation of the International Centre for Water Hazard and Risk Management (ICHARM) in Tsukuba, Japan, as a Category 2 Centre under the auspices of UNESCO

1. BACKGROUND INFORMATION

1.1. Historical background

In the recent past UNESCO has established a number of category 2 centres (C2C) 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 water-related category 2 centres (WC2C) are expected to contribute directly to attaining the strategic objectives and programmatic priorities of UNESCO's International Hydrological Program (IHP).

The International Centre for Water Hazard and Risk Management (ICHARM) in Tsukuba, Japan, is one of UNESCO's WC2C. ICHARM started operation in 2006. An agreement between UNESCO and the Government of Japan was signed on 3 March 2006, and was

renewed on 23 July 2013 for a duration of six years. The latest Agreement will expire on 22 July 2019.

For more information on the Centre, please consult the ICHARM's website: <http://www.icharm.pwri.go.jp/>.

1.2. Status of the Centre

ICHARM is an institution operating as an integral part of the Public Works Research Institute (PWRI). The PWRI enjoys, in accordance with the laws and regulations of Japan, the legal personality and capacity necessary for the exercise of its functions.

1.3. Purpose of the Centre

The objectives of the Centre are to conduct research, capacity-building and information networking activities in the field of water-related hazards and their risk management at the local, national, regional and global level in order to prevent and mitigate their impacts with a view to sustainable and integrated river basin management.

In order to achieve the above objectives, the functions of the Centre are to:

- (a) promote scientific research and undertake effective capacity building activities at the institutional and professional levels;
- (b) create and reinforce networks for the exchange of scientific, technical and policy information among institutions and individuals;
- (c) develop and coordinate cooperative research activities, taking advantage particularly of the installed scientific and professional capacity of the relevant IHP networks, the World Water Assessment Programme, the International Flood Initiative/Programme and the relevant programmes of non-governmental organizations, as well as involving international institutions and networks under those auspices;
- (d) conduct international training courses, especially for the practitioners and researchers of the world;
- (e) 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;

- (f) develop a strong programme of information and communication technology;
- (g) provide technical consulting services; and
- (h) produce technical publications and other media items related to the activities of the Centre.

1.4. Rationale for the review and underlying principles

In order to enhance the operation and effectiveness of individual UNESCO C2C, as well as the effectiveness of their network, the General Conference at its 37th session amended the Integrated Comprehensive Strategy for Category 2 Institutes and Centres under the auspices of UNESCO (37 C/Resolution 93), as contained in document 37 C/18 Part I and its annex¹, and requested the Director-General to apply the strategy to all proposals for the establishment of C2C and to all renewals of existing agreements. This integrated comprehensive strategy supersedes all relevant prior resolutions by the General Conference on the subject.

The General Conference has mandated that each existing agreement for C2C be reviewed in consultation with the Member State with a view to bringing it into conformity with the new strategy for C2C and respective sectoral strategies. To that effect, it is necessary to carry out a formal review at least six months prior to the expiration of the agreement before a decision is taken to renew the existing agreement concerning the designation of a C2C. The principles of the evaluation as set out in the document 37 C/18 part I are particularly relevant in the context of the review.

1.5. Budget

The C2C under review or a sponsoring Member State shall be invited to cover all costs related to the review, including the mission costs of the expert(s), or to assist with the mobilisation of extrabudgetary resources to cover the cost of the review, in both cases to be provided through an additional appropriation to the UNESCO Office in Jakarta.

¹ <http://unesdoc.unesco.org/images/0022/002217/221715E.pdf>

2. PURPOSE AND USE OF THE REVIEW

The main purpose of the review is to inform the decision-making process on the renewal of the category 2 status of the Centre. The findings of the review will be included in the Director-General's report to the Executive Board on the execution of the Programme with her recommendations as to whether the designation as C2C under the auspices of UNESCO should be maintained, terminated or not renewed.

In addition, the review is also intended to inform the Member States of UNESCO, the UNESCO Secretariat and other stakeholders on the Centre's overall performance, its contribution to the Strategic Programme Objectives of UNESCO and on the implementation of the Integrated Comprehensive Strategy for Category 2 Institutes and Centres (37 C/Resolution 93 and document 37 C/18 Part I and its annex), and on potential improvements that may be suggested for the future.

The results of the review will be shared with the Natural Sciences Sector, the Government of Japan and ICHARM. The final report of the review will also be made available on the Natural Sciences sector's website.

3. REVIEW SCOPE

The evaluation, which must include a mission of 2 to 3 days consisting of a field visit to the Centre, will adopt both a retrospective and forward-looking perspective. It should result in evidence-based and action-oriented recommendations and will be guided by the following overarching questions, to be further refined by the evaluators during the inception phase. In order to meet the objectives of the review, as described above, the following parameters shall be considered by the expert(s) responsible for conducting the review:

- (a) The alignment of the activities effectively pursued by the Centre with those set out in the Agreement signed with UNESCO;
- b) The relevance of the Centre's programmes and activities to achieving prevailing UNESCO's strategic programme objectives and sectoral or intersectoral programme priorities and themes. In particular:
 - The Centre's contributions to UNESCO strategic objectives and to expected results 10 "Responses to local, regional and global water security challenges

- strengthened” and 11 “Knowledge, innovation, policies and human and institutional capacities for water security strengthened through improved international cooperation” under Main Line of Action 6 “Strengthening freshwater security”, as well as to UNESCO’s global priorities Gender Equality and Africa
- The Centre’s ongoing and planned contributions to the implementation of relevant thematic and focal areas of the eighth phase of IHP (IHP-VIII for 2014-2021) in the region and internationally;
- (c) The effectiveness of the Centre’s programmes and activities to achieving its stated objectives;
 - (d) The quality of the coordination and interaction with UNESCO, both at Headquarters and in the field (including UNESCO field offices and UNESCO National Commissions), and other thematically-related category 1 and 2 institutes/centres with regard to planning and implementation of programmes;
 - (e) The quality of partnerships with government agencies, public/private partners and donors;
 - (f) The nature and quality of organizational arrangements, including management, governance and accountability mechanisms;
 - (g) The human and financial resource base and the quality of mechanisms and capacities, as well as context-specific opportunities and risks for ensuring sustainable institutional capacity and viability;
 - (h) The process of mobilizing extrabudgetary resources and to what extent such extrabudgetary funding is aligned to the strategic programme objectives of UNESCO.
 - (i) The longer-term effects / the impact resulting from the Centres’ activities in Japan and in the region.
 - (j) With a view towards the future, and considering the external environment within which the Institute operates, the strengths, weaknesses, opportunities and threats (SWOT) facing ICHARM.
 - (k) The capacity and strategies of the Centre to communicate, share and disseminate knowledge in Japan and in the region.

4. REVIEW TEAM

The qualifications of the independent reviewer(s) should be:

Required:

- At least 10 years of professional experience in research and/or capacity-building in the field of water management
- Academic degree (PhD preferred) in the above-mentioned field (water management)
- At least five years' experience in policy and programme evaluation with strong knowledge and skills in applying various evaluation methodologies and methods of data collection;
- Excellent communication and report-writing skills in English;
- Knowledge of the role and mandate of UNESCO and its programmes
- No involvement in current or past activities of the Centre under the Centre's present agreement.

Desirable:

- Understanding and application of the UN Mandates in Human Rights and Gender Equality.

Verification of these qualifications will be based on the provided curriculum vitae. Moreover, references, web links or electronic copies of one recently completed evaluation report conducted by the consultant(s) should be provided as part of the technical proposals, preferably relevant to the thematic areas of the review.

The evaluation should follow [UNEG \(United Nations Evaluation group\)](#) norms and standards for evaluations, as well as be based UNEG ethical guidelines.

5. REVIEW METHODOLOGY

The review methods to be employed are to be clarified in the review framework to be proposed by the external evaluator, showing how each of the review dimensions mentioned in the review scope section will be addressed with regards to data sources and data collection methods. Among others, the following methods should be considered:

- Document review (desk study)

- Interviews with stakeholders (face to face, phone/skype)
- Direct observations through field visit(s), and
- Questionnaires / surveys with stakeholders, such as UNESCO staff and/or Partners.

The Division of Water Science and International Hydrological Programme Secretariat (SC/HYD), the UNESCO Office, Jakarta, and ICHARM will provide the expert(s) with relevant documentation to be reviewed in the desk study. Interviews are to be conducted with relevant UNESCO staff (SC/HYD, UNESCO Office in Jakarta), ICHARM staff and other key stakeholders (e.g., academics and professionals who have been involved in training conducted by ICHARM).

ICHARM will make all relevant documents and information available to the evaluators, including:

- A copy of the existing agreement between the Member State and UNESCO establishing the centre;
- (Annual) progress and activity reports;
- Financial reports;
- List of staff;
- List of key publications;
- List of donors and project partners;
- Minutes of the Governing Board meetings;
- Available audit and evaluation reports;
- List of beneficiaries, people trained and countries assisted.

A number of between 10 and 15 working days are estimated to be required for the realisation of this evaluation project.

6. PLANNING AND IMPLEMENTATION ARRANGEMENTS

6.1 Management arrangements

SC/HYD and UNESCO Office, Jakarta will assist in the preparation and organisation of the review exercise and will facilitate the field visits of the evaluators. The evaluator(s)

will be responsible for being self sufficient as regards logistics (office space, administrative and secretarial support, telecommunications, printing of documentation, etc.). However, suitable working space, when necessary, will be provided during the visit to Tsukuba. While the evaluator(s) is/are primarily responsible for the dissemination of all methodological tools (surveys, questionnaires), SC/HYD and UNESCO Office, Jakarta will facilitate this process to the extent possible (providing contact information, email addresses, etc.). Relevant stakeholders are being requested to provide planning documents, mission reports or other documents relevant to the evaluation.

6.2 Time schedule and deliverables:

The review will result in three deliverables, as follows:

1. The evaluator(s) should submit an *inception report* consisting of:
 - i. Background, objectives and refined key review questions;
 - ii. Methodology (customized framework of how the exercise intends to cover the entire scope of the evaluation; and
 - iii. Work plan.

2. *Draft review report*: The process for preparing the draft review report shall allow adequate time for a discussion of the findings and the recommendations that have been proposed with SC/HYD and pertinent stakeholders, including the Government of Japan and ICHARM.

3. *Final review report*: The final report (maximum 30 pages excluding annexes) should be structured as follows:
 - Executive summary (maximum four pages);
 - Purpose of the review;
 - Scope of the review;
 - Methodology;
 - Findings;
 - Recommendations (including a formal recommendation on (dis)continuation of the Category 2 status);

- Annexes (including interview list, key documents consulted, Terms of Reference).

The language of all reports will have to be English.

The final review report will be shared with the Centre and made available on the SC website.

Table 1: Tentative Schedule for the review

WHEN	WHAT	WHO
June 2018	Draft TOR	SC/HYD, SC/EO
By 15 July 2018 September 2018	Finalization of TOR	IOS, UNESCO Office, Jakarta
	Advertising for candidates	ICHARM
	Selection of external evaluator	ICHARM , UNESCO Office, Jakarta and SC/HYD
	Establishing a contract with evaluator	UNESCO Office, Jakarta
	Briefing of external evaluator	SC/HYD, UNESCO Office, Jakarta
	Completion of review framework (design)	Evaluators
October 2018	Field visit(s), workshop for presentation of emerging findings and validation of preliminary recommendations	Evaluators, and eventually SC/HYD, UNESCO Office, Jakarta

November 2018	Submission of draft report to UNESCO	Evaluators
	Review and comment on draft	SC/HYD, UNESCO Office, Jakarta and ICHARM
	Finalization of the review report	Evaluators, SC/HYD, UNESCO Office, Jakarta
February 2019	Submit final documents to GBS	SC/HYD, SC/EO
April 2019	Presentation of final report plus documents to Executive Board	Director-General