

Mainstreaming Disaster Risk Reduction in Collaboration with International Organizations

a) Contributions to the United Nations in water-related disaster risk reduction

(1) UN Special Thematic Session on Water and Disaster

The UN Special Thematic Session on Water and Disaster is a high-level international meeting on water and disasters held at the UN Headquarters in New York, convened every two years since 2013. It is organized through cooperation among the UN secretary-general, HELP, national governments, and international organizations. Its objectives include:

- Deepen international understanding of water-related disasters, such as floods, droughts, and storm surges;
- Promote cooperation and partnerships among countries; and
- Call on the international community to take action on water and disaster issues.

At the 3rd UN Special Thematic Session, held on July 20, 2017, a special session on science and technology was convened, co-chaired by ICHARM Executive Director KOIKE Toshio. The session discussed mechanisms for enhancing coordination among various international alliances on water and disasters, including IFI's initiative to establish Platforms on Water and Disasters, as well as research on sediment-related disasters, research foundations for advancing investment and finance, and approaches to addressing compound water-related disasters. Proposals for revitalizing international initiatives were also presented.

At the 4th Special Thematic Session, held on June 24, 2019, Executive Director Koike delivered a presentation during the science and technology session. He emphasized that, because science and technology can offer the knowledge needed to address complex challenges, the science and technology



Photo 1 The Special Session on Science and Technology
at 3rd UN Special Thematic Session



Photo 2 Presentation by Executive Director Koike
at 4th UN Special Thematic Session



Photo 3 Participants at 5th UN Special Thematic Session

community must serve as a facilitator by building trust-based relationships, clarifying the mechanisms underlying the problems, and presenting feasible solutions.

At the 5th Special Thematic Session, held online on June 25, 2021, ICHARM organized the science and technology panel. Executive Director Koike and Dean Gretchen Kalonji of Sichuan University served as co-moderators. The session opened with remarks by President TANAKA Akihiko of GRIPS, followed by a keynote lecture by Executive Vice President Xu Weilin of Sichuan University. Presentations and a panel discussion were then conducted by five representatives from UNESCO, WMO, UNDRR, CONAGUA, and SEADPRI-UKM. The panelists shared ideas on concrete actions to be taken in the future and how they should be implemented, emphasizing the importance of open science policies, systemic solutions, science-based integrated action, and strengthened cooperation across the science, policy, and implementation communities.

At the 6th Special Thematic Session, held from March 22 to 24, 2023, ICHARM took the lead in planning and organizing the “Science and Technology Panel: Showcases of Science and Technology Application, Connecting, Water, DRR, and Climate Change,” which was convened on March 21 ahead of the main meeting. The panel began with a keynote lecture by



Photo 4 The speakers of the 6th UN Special Thematic Session

Abou Amani, the director of UNESCO’s Division of Water Sciences and the secretary of IHP, who spoke on UNESCO’s cross-cutting approaches to water issues. This was followed by presentations from representatives of Honduras, Malawi, and Japan, as well as from U-Inspire, introducing concrete, science-based examples related to enhancing resilience to water-related disasters and promoting sustainable development.

Japan’s presentation was delivered by Kumamoto City Mayor ONISHI Kazufumi, who described efforts to conserve groundwater and reduce flood risk in the Shirakawa River in Kumamoto Prefecture. He emphasized the city’s commitment to addressing water issues through “open regionalism” and “collaboration with all stakeholders.” Special Envoy of the Prime Minister of Japan KAMIKAWA Yoko also commented on the value of knowledge integration using satellite data and the importance of local facilitators in building sustainable, resilient, and inclusive societies. Her remarks reaffirmed the significance of ICHARM’s activities in contributing to solutions for global water challenges.

(2)2023 UN Water Conference

The UN 2023 Water Conference was held from March 22 to 24, 2023, gathering approximately 10,000 participants either at the UN Headquarters in New York or online. This was the first UN conference dedicated specifically to water in 46 years,



Photo 5 Interactive Dialogue 3: Water for Climate, Resilience and Environment [Photo by MLIT]

since the Mar del Plata Conference held in Argentina in March 1977. The 2023 conference was convened as the mid-term review of the UN-designated International Decade for Action, “Water for Sustainable Development” (2018–2028), with the aim of accelerating efforts toward achieving SDG 6 and other international water-related goals.

On March 23, Interactive Dialogue 3, “Water for Climate, Resilience and Environment,” co-chaired by Egypt and Japan, was convened. ICHARM presented the view it had consistently emphasized in international forums: the importance of positioning science and technology as a game changer for building a resilient post-COVID 19 society by promoting consilience, fostering facilitators, and leveraging an end-to-end approach. The session adopted this perspective as one of its Key Messages. In this way, ICHARM contributed to further mainstreaming water-related disaster risk reduction in the international community.

b) Contributions to UNESCO and international engagement in the water sector through UNESCO

As one of only two UNESCO Category 2 Centres in Japan, ICHARM operates under an agreement between the Japanese government and UNESCO, carrying out a wide range of activities aimed at reducing water-related disaster damage worldwide. These activities are built on three pillars: research, training, and information networking. Accordingly, ICHARM engages with UNESCO in multiple ways, including contributing to UNESCO’s long-term programmes and implementing international projects funded through UNESCO resources.

(1) Contribution to UNESCO IHP-IX

The UNESCO IHP is the only intergovernmental programme within the UN system dedicated to water-related science, management, education, and capacity development. It was launched in 1975 with the aim of providing a scientific foundation for the optimal management of freshwater resources through international cooperation. In 2019, it was formally designated as an intergovernmental programme and renamed from the International Hydrological Programme to the Intergovernmental Hydrological Programme. Japan has continuously participated in and contributed to IHP activities as a member of the 36-country intergovernmental council.

IHP carries out initiatives aimed at advancing international cooperation to improve knowledge on water, promote technological innovation, strengthen the science–policy interface for achieving water security, and enhance education and capacity development for better water resources management and governance.

IHP develops a strategic plan every eight years, and it is currently implementing its 9th plan (UNESCO IHP-IX: 2022–2029). Under the overarching theme “Science for a Water Secure World in a Changing Environment,” the 9th plan identifies five key water priority areas, listed below. These priorities are intended to support Member States in achieving the 2030 Agenda and the SDGs, particularly the water-related goals, as well as other global frameworks related to water, such as the Paris Agreement and the Sendai Framework

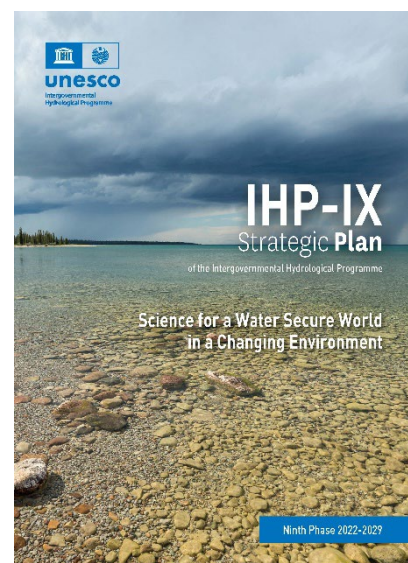


Figure 1 IHP-IX Strategic Plan

for Disaster Risk Reduction.

1. Scientific research and innovation
2. Water education in the Fourth Industrial Revolution, including sustainability
3. Bridging the data-knowledge gap
4. Integrated water management under conditions of global change
5. Water governance based on science for mitigation, adaptation, and resilience

UNESCO IHP-IX has three cross-cutting working themes, and ICHARM Executive Director KOIKE Toshio serves as the chair of one of them: “Hydrological systems, rivers, climate risk, and the water–food–energy nexus.”

(2) Participation in UNESCO-hosted international conferences and symposia

① IFI side event

An IFI side event was held at the UNESCO Headquarters on June 13, 2016, organized by UNESCO, one of the partner organizations of IFI, for which ICHARM serves as the secretariat. The event marked the launch of the new IFI Strategy 2016–2022, which had been developed under ICHARM’s leadership together with IFI partner organizations, and provided an opportunity to discuss its implementation. IFI activities were also reflected in Theme 1 of the 8th IHP Strategic Plan (2014–2021). The side event brought together approximately 70 participants from more than a dozen countries. Following Executive Director Koike’s presentation of the new strategy, representatives from UNESCO, WMO, IAHS, and others discussed how the strategy could be put into practice in line with the SDGs and related global agendas.

② UNESCO International Water Conference

UNESCO convened its first International Water Conference at the UNESCO Headquarters in Paris, France, on May 13 and 14, 2019, to enhance understanding of the fact that water is connected to all of the SDGs. The conference brought together ministers from around 40 countries and more than 1,000 experts from 126 countries. It consisted of a high-level panel and several thematic sessions. ICHARM co-organized the Water and Disasters Panel on May 13 with HELP.

At the panel, Executive Director Koike delivered a presentation on “The Role of Science and Technology in the Interlinkages among Water, Disasters, and

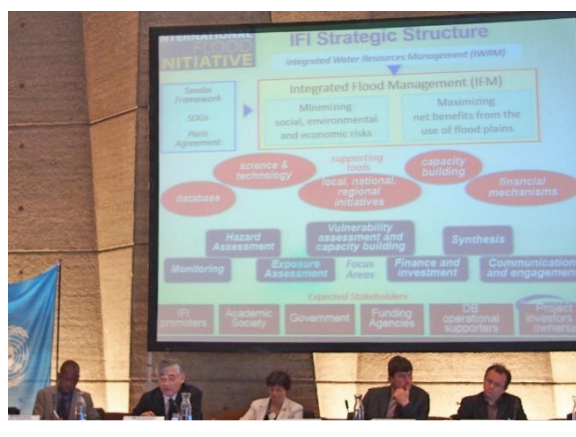


Photo 6 Executive Director Koike (2nd from left) explaining the new IFI strategy 2016-2022



Photo 7 Director Koike made a presentation at the panel discussion

Climate Change.” He introduced the end-to-end approach as a framework for achieving sustainable socio-economic development in the face of water-related disasters and climate variability, highlighted the importance of facilitators who help implement science and technology in society, and presented the online information-integration system that supports these efforts. During the panel discussion, participants reaffirmed the importance of linking water, disaster risk reduction, and climate change, as well as the need to incorporate water and disaster issues into the UN Climate Action Summit.

Following the conference, a UNESCO Water Family meeting was held on May 14, with representatives from more than 20 UNESCO Category 2 Centres and UNESCO Chairs in attendance. From ICHARM, Senior Researcher IKEDA Tetsuya participated and presented updates on the center’s recent activities.

③ International conference on “Climate Risk, Vulnerability and Resilience Building”

Under the auspices of UNESCO, the international conference “Climate Risk, Vulnerability and Resilience Building” was held at the UNESCO Headquarters in Paris, France, from April 19 to 21, 2023. On April 19, Executive Director Koike participated in the panel session “Science-Policy Discussion Panel: Bridging the gap between science and the different scales of decision making for climate risk management,” where he delivered a speech on knowledge-integration systems and related topics.



Photo 8 Participants discussing in the ICHARM-hosted side event

Two ICHARM researchers also gave presentations in other sessions.

Taking advantage of the gathering of climate-change experts from around the world, ICHARM organized a side event titled “Cross-Cutting Research on Hydrological Systems, Rivers, Climate Risk and the Water-Food-Energy Nexus.” Moderated by Abou Amani, the director of UNESCO’s Division of Water Sciences, participants engaged in active discussion and agreed to undertake joint research focusing on Africa, leveraging collaboration among five Category 2 Centres to promote cross-sectoral and integrated multilateral cooperation through water.

④ International Symposium of UNESCO Natural Sciences Sector Category 2 Centres

The International Symposium of UNESCO Natural Sciences Sector Category 2 Centres was held from May 15 to 17, 2024, in Kuala Lumpur, Malaysia, for the first time in six years. The event was jointly organized by the UNESCO Headquarters and ISTIC, a UNESCO Category 2 Centre (C2C) in Malaysia. Approximately 70 participants attended, including representatives from ICHARM and 30 other C2Cs around the world, as well as the UNESCO Headquarters and local institutions. On the second day, during Session 3, “Water and Disaster Risk Reduction,” ICHARM presented its research on



Photo 9 Participants gathering at the symposium venue

floods and droughts, its doctoral and master's programs, networking activities such as IFI and the Typhoon Committee, and UNESCO-supported projects in Africa.

⑤ IHP's 50th anniversary events and a side event hosted by Japan

The year 2025 marked two major milestones for UNESCO: the 60th anniversary of the International Hydrological Decade and the 50th anniversary of the establishment of the International Hydrological Programme, later renamed the Intergovernmental Hydrological Programme. To commemorate these occasions, a series of anniversary events was held at the UNESCO headquarters from June 10 to 13, 2025, with Executive Director Koike and others in attendance.

Executive Director Koike delivered a presentation titled "Together with Africa," in which he reported on ICHARM's ongoing research and information-networking activities in the region. The event was well attended by UNESCO officials, including Lidia Brito, the assistant director-general for natural sciences, and KANO Yudai, the ambassador and permanent delegate of Japan to UNESCO, as well as researchers and other stakeholders, and concluded on a high note.

On June 12, Japan hosted a side event under the overarching theme "Frontiers in Hydrology and Their Contributions to Water Security in a Changing World." Speakers included Executive Director Koike; OKI Taikan, the chair of the Science Subcommittee of the Japanese National Commission for UNESCO and a professor at the University of Tokyo; SAYAMA Takahiro, a professor at the Disaster Prevention Research Institute of Kyoto University; and other experts from Japan and abroad. They presented and exchanged views on the recommendations from the IHP 50th Anniversary Symposium held under the same theme in Japan in March, as well as Japan's past and future efforts and contributions to IHP.



Photo 10,11,12 Participants in the side event hosted by Japan

c) Collaboration with other organizations

(1) World Meteorological Organization

ICHARM and WMO have collaborated in a wide range of activities, including the participation of the director of WMO's Hydrology, Water and Cryosphere Division as a member of the ICHARM Governing Board, ICHARM's involvement in WMO-organized events, and the appointment of ICHARM staff as a WMO regional hydrological adviser. In addition, WMO has also taken part in IFI, for which ICHARM serves as the secretariat.

① ICHARM Researcher appointed as a WMO regional hydrological adviser

The 79th session of the Executive Council of WMO, held in Geneva from June 16 to 20, 2025, decided that Senior Researcher MIYAMOTO Mamoru would be appointed as the regional hydrological adviser for Regional Association II (RA II).

WMO divides the world into six regions, each with its own Regional Association responsible for identifying regional priorities and formulating corresponding activities. RA II, which covers Asia and the Middle East, is composed of 35 member countries and territories.

Regional hydrological advisers play an important role by proposing technical and scientific approaches to regional hydrological priorities, strengthening hydrological services in member countries and territories, and promoting hydrology-related programs tailored to regional needs.

As the regional hydrological adviser for RA II, Miyamoto is expected to contribute to a wide range of regional efforts: strengthening collaboration and networking among members, implementing global strategies, advancing hydrological services under climate change, improving early warning systems, and promoting water-related disaster resilience. In particular, he is expected to play a key role as a bridge between technical and institutional practices at the operational level through collaboration with initiatives such as the IFI-led Platforms on Water and Disasters and with the Typhoon Committee.

② Participation in the WMO RA II Coordination Panel on Hydrology and Water Resources

The first in-person meeting of the RA II Coordination Panel on Hydrology and Water Resources (RA II CP-Hydrology) was held in Vientiane, Laos, from October 31 to November 1, 2022, and Senior Researcher Miyamoto participated. Building on the preparatory meeting held online in September, the purpose of the meeting was to formally launch the RA II CP-Hydrology following WMO's organizational restructuring.

At the meeting, hydrology and water resources experts from across WMO's Asia region discussed the work plan and milestones for hydrology-related activities and reached consensus on the implementation plan. They also confirmed that Miyamoto would lead two thematic areas: "Enhancement of Flood Resilience through Platforms on Water Resilience and Disasters" and "Expansion of Integrated Flood Management (IFM) HelpDesk to include Integrated Water Resource Management (IWRM)."

The third meeting of RA II CP-Hydrology was held in Goyang, Republic of Korea, from July 1 to 2, 2024.



Photo 13 Dr. Miyamoto speaking at WMO RA II meeting

From Japan, participants included representatives from the MLIT Water Management and Land Conservation Bureau, as well as two researchers from ICHARM: Senior Researcher Miyamoto and Researcher TAKEGAWA Shinya.

On the first day, progress updates were shared by each expert team. In the session, “CPH Project 1 – Promote cooperation in hydrology and water resources among RA II Members and ensure coordination among the hydrology substructures in RA II,” Miyamoto presented the achievements to date of two initiatives under his leadership: “Enhancement of Flood Resilience through Platforms on Water Resilience and Disasters” and “Expansion of the Integrated Flood Management (IFM) HelpDesk to include Integrated Water Resources Management (IWRM).” Discussions were held with the WMO Secretariat and other participants on the next steps for consolidating these efforts.

(2) Collaboration with UNDRR

ICHARM has maintained a strong partnership with UNDRR through a wide range of activities. The UNDRR representative in Japan has served as a member of the ICHARM Governing Board, and their senior officials have visited ICHARM. ICHARM has also participated in UNDRR-organized events. In addition, UNDRR has been an important member of IFI, for which ICHARM serves as the secretariat.

① Visit by UNDRR officials

On September 22, 2025, a delegation of six UNDRR officials, led by Director Paola Albrito, visited PWRI for a facility tour and an exchange of views. Her visit to Japan was realized as part of the Strategic Invitation Program for Practitioners, promoted by Japan’s Ministry of Foreign Affairs. The program invites individuals who currently hold leadership positions or who are expected to play pivotal roles in government, business, academia, and other sectors abroad, with the aim of fostering networks with Japanese counterparts and cultivating future pro-Japan and Japan-knowledgeable leaders.

During the facility tour, the delegation visited the Hydraulic Experiment Laboratory, where Director ITAGAKI Osamu of the River Restoration Research Group provided an overview of the facility and explained the dam model experiments. This was followed by a briefing by Director for Special Research FURUMOTO Kazushi on ICHARM’s activities, after which the two sides exchanged views on ICHARM’s strategies and the importance of capacity development.



Photo 14 Director Albrito (second from left) with an official of Japan's foreign ministry and ICHARM staff