ICHARM

Biennial Self-Assessment of Work Plan for FY 2024-2025

and

Work Plan for FY 2026-2027

June 16, 2026

Note: The Japanese fiscal year (FY) starts from April 1.

Mid-term Programme	Projects	Planned activities and expected results in FY 2024-2025	Self-assessment of achievements S: Excellent, more than planned A: Good, as planned B: Satisfactory, less than planned C: Poor, far less than planned	Achievements in FY 2024-2025	Planned activities and expected results in FY 2026-2027
(i) Innovative research					
1) Data collection, storage, sharing and statistical on water-related disasters					
ICHARM will conduct research on technologies to collect and store data and information regarding hazards, exposure and vulnerability and share them among stakeholders. We will also actively support nations and communities in data collection, storage, and sharing by developing and helping them implement technologies to collect damage data that can be operated by themselves. Technical assistance will also be provided for nations to compile highly reliable statistical data.	Support runoff inundation analysis using global observation data.	Check real-time rain gauge rainfall data that have been archived by Sri Lankan agencies in addition to the data provided by PAGASA in the Philippines. Improve the accuracy of the flood monitoring and forecasting systems by effectively correcting satellite rainfall data by increasing the number of rain gauge points for real-time rainfall data collection. Continue to operate the system that keeps the flood monitoring and forecasting systems in service even when they fail to receive rainfall data.	① Overall evaluation [S] ② Publication [S] ③ Scientific significance [S] ④ Social significance [S] ⑤ Dissemination [S]	Continued to archive rain gauge data provided by operational agencies in the Philippines, while developing a real time flood monitoring system that integrates real-time rain-gauge observations with real-time satellite-based rainfall data in Sri Lanka. Developed an ensemble-based flood forecasting system that accounts for uncertainty by introducing an ensemble rainfall forecasting approach, and improved the reliability of predictions. Established a real-time data delivery portal within DIAS to enable timely sharing of flood and rainfall information with relevant government agencies and stakeholders. The resulting system represents a state-of-the-art platform, and its outcomes have been disseminated through academic publications as well as presentations at scientific and policy conferences.	Continue operating the system in the Philippines, Sri Lanka, Kenya, and Ghana, demonstrating its effectiveness in flood risk reduction. Plan to integrate dam operation and optimization modules into the system to help reduce flood damage and enhance hydropower generation in Kenya and India. Use the knowledge and technologies gained through these projects to improve flood forecasting accuracy and optimize dam operations in Japan
	Improve the resolution of soil moisture observation using global observation data.	Combine WEB-RRI with the dynamic vegetation model that has been installed in the data assimilation system and test the combined system. Then, create more information to support agriculture, in addition to soil moisture content, by improving the resolution of "vegetation biomass."	① Overall evaluation [A] ② Publication [B] ③ Scientific significance [A] ④ Social significance [B] ⑤ Dissemination [A]	**Ghana:** Increased model resolutions using outputs from the WEB-RRI model and a data assimilation system coupled with a vegetation dynamic model, and confirmed its effectiveness to some extent. Furthermore, obtained district-scale agricultural information and developed a district-scale crop-yield estimation method using vegetation biomass as agricultural support information.	Develop a method to improve model resolutions from the water and energy budget process to soil moisture profiles and leaf biomass outputs by using optimized parameters assimilated by a low-resolution data assimilation system as initial inputs for the high-resolution WEB-RRI model.
	Develop OSS-SR (Online Synthesis System for Sustainability and Resilience).	Continue the implementation of OSS-SR in Davao Del Sur State according to the tripartite MoU that ICHARM concluded with Davao Del Sur State University and DOST XI. Continue to seek the possibility of introducing the OSS-SR project to other communities and countries while considering their needs and conditions.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [A]	Developed OSS-SR for the Davao River basin with functions for data integration, real-time flood-inundation prediction, climate change impact assessment, and e-learning. Developed DROSS at the request of local authorities to expand the target area to include Davao's neighboring city of Digos, where short-term heavy rainfall frequently causes flash floods, and the Davao de Oro region, where landslides and other sediment-related disasters are increasing.	Complete DROSS, which covers the entire Davao region, and complete Micro OSS, which generates ultra-high-resolution flood information, aiming for implementation and operation by local stakeholders. In doing so, expand the systems to address complex disasters based on local challenges, including not only floods but also landslides and other sediment-related disasters.

					Began developing Micro-OSS, which generates ultra-high-resolution local information for specific target areas. Discussed developing a system using local servers in collaboration with the central government, local authorities, and universities to support the implementation of these systems.	
2) Risk assessment on water-related disasters						
ICHARM will develop and verify a method to combine water-related disaster assessment models with other models. We will also develop an index that can holistically indicate the basin-wide impact of water hazards. Case studies on the risk assessment of water-related disasters will be conducted at multiple locations both in and outside Japan while taking local conditions into account. Necessary assistance will be provided for local communities to perform risk assessments based on their needs and circumstances using the findings of the case studies, thereby achieving disaster risk reduction.	Upgrade future climate prediction technology by using multiple models, downscaling GCMs, etc., and evaluate its regional applicability.	Conduct sensitivity analyses of rainfall estimated using a dynamic downscaling method to generate high-resolution climate data that can be used to assess the impact of global warming on small basins of 100 km^2 or less. Also establish the downscaling method required to achieve accurate rainfall estimation.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [A]	Conducted sensitivity analysis of model resolution related to rainfall reproduction in 14 small river basins as part of this dynamic downscaling study. Found that although resolution dependence was low for some typhoon-induced heavy rainfall cases, a 5-km resolution is overall insufficient for reproducing heavy rainfall in mountainous and hilly areas, and that at least a 3-km resolution is desirable. Performed runoff calculations using the computed rainfall data to investigate the impact on flood disasters.	Develop a method for estimating future rainfall conditions and discharge based on sensitivity analyses and runoff calculations that account for resolution-dependent effects.
	Develop, upgrade, and apply hazard assessment of sediment, driftwood, and flood inundation in Japan and abroad.	Integrate the sediment hydraulic model capable of processing basin, two-dimensional, and three-dimensional data with a hydrological model. Test the combined model for accuracy and validity by applying it to various river management settings in Japan and overseas. Propose the effective use of the findings for better river management practices.	① Overall evaluation [A] ② Publication [S] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [A]	Applied our proposed method to the compound disaster in Marumori Town, Japan, caused by Typhoon Hagibis in 2019. The simulation reproduced the multi-hazard processes in detail, from landslides and debris flows to flood and sediment inundation, including the spatial distribution of sediment-deposition depths and grain sizes. Combined the proposed method with simplified field observations as part of the Philippines SATREPS project, evaluated flood and sediment runoff characteristics and flood inundation risks while accounting for riverbed variation, and promoted its application to data-limited catchment management. Conducted flume experiments to verify and improve the method for analyzing flood flows containing a large amount of driftwood and sediment, while also expanding the RSR-model user base through GUI development and public release.	Quantify the impacts of backwater effects and sediment deposition associated with bridge clogging on upstream flood risks, based on experimental data, thereby reducing model uncertainties. Apply the improved method to past disaster events to verify its accuracy and validity. Continue collecting existing data and field observations in the study river basins to reduce model uncertainties in initial conditions. Examine methods for appropriately investigating and preparing initial conditions through these efforts to demonstrate the model's reproduction performance and scope of application. Integrate these research findings and propose a draft manual for developing highly accurate and reliable flood and sediment inundation hazard maps.

	Study adaptation measures using integrated risk assessment methods.	Develop an integrated model by coupling WEB-RRI and SIMRIW (a rice-plant growth prediction model) for Indonesia and Sri Lanka, in addition to the Philippines, and investigate water-related disasters and food production under climate change impacts using d4PDF and other tools.	① Overall evaluation [B] ② Publication [A] ③ Scientific significance [B] ④ Social significance [B] ⑤ Dissemination [B]	**Indonesia and Sri Lanka:** Could not apply the WEB-RRI-SIMRIW due to the unavailability of crop-related data required for SIMRIW. Instead, simulated the hydrological responses of the basins under various climate change scenarios using the WEB-RRI model and investigated the climate change impacts on water-related disasters. **Philippines:** Developed the WEB-RRI-SIMRIW model and calibrated and validated both hydrological responses and crop-related parameters using available paddy yield data. Then applied the calibrated model to investigate climate change impacts under RCP 8.5 and 2.6 scenarios of the MRI 3.2S and MRI-3.2H models. Also quantified flood and drought impacts on crop yields, as well as flood adaptation options (e.g., paddy dams) to reduce downstream flooding. Published three scientific publications about these outputs, conducted several policy meetings, and shared the outputs with the scientific community through the Advanced Study of Climate Change Project (SENTAN).	Continue to implement the WEB-RRI-SIMRIW model in the Philippines and strengthen the use of climate change scenario datasets (e.g., d4PDF). Conduct more robust long-term impact assessments and obtain reliable information for ensuring water and food security under climate change through the NEXES project at Tohoku University.
3) Monitoring and prediction of changes in water-related disaster risks					
ICHARM will develop, verify, and improve methods for monitoring and forecasting changes in hazards due to meteorological conditions with different temporal scales ranging from season to climate change and changes in exposure and vulnerability due to social development and economic changes. These methods will be applied to case studies at multiple locations	Improve the accuracy of forecasting rainfall and flood events several days ahead.	Improve the accuracy of rainfall and flood forecasting up to several days in advance by introducing the WRF-LETKF model to upgrade the data assimilation method and by improving the initial values of the atmospheric and terrestrial water circulation forecasting model. Also improve forecasting accuracy by assimilating cloud water content and other data obtained from satellite microwave observations into forecasting models. Then test the developed method for effectiveness by applying it to other cases.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [A]	Enhanced the model's ability to reproduce rainfall in linear precipitation zones by adjusting the configuration of the WRF-LETKF model and improving the method for assimilating cloud-water distribution data obtained from the CALDAS-WRF model using satellite microwave-radiometer data. Presented the results at the 2024 Spring Meeting of the Meteorological Society of Japan.	Evaluate the predictive accuracy of ensemble forecasting when the number of ensemble members is reduced to lower computational costs for future international deployment. Develop methods for improving the accuracy of rainfall forecasting using machine learning.

	both in and outside Japan, and the outcomes will be used to provide support for all stakeholders to select appropriate methods according to their needs and conditions to mitigate future risks of water-related disasters by themselves. The methods will be modified with various local adjustments and compared with each other for further improvement to eventually become globally applicable.	Develop a water circulation model that can represent low to high water, including the effects of seasonal and regional factors such as snow cover and melt.	Conduct verification of the developed dam inflow forecasting approach by applying it to flooding cases in the Tone River with different rainfall patterns, such as ones caused by a typical typhoon or frontal rainfall, in addition to the Sai River cases in 2018, 2019, and 2021. Also develop WEB-RRI-S, a version of WEB-RRI with a module for snow cover and melt.	① Overall evaluation [A] ② Publication [B] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [B]	Finalized a plan to develop two water cycle models: one for evaluating vegetation dynamics in the Memuro and Obihiro regions of the Tokachi River basin in Hokkaido, Japan, and the other for evaluating snowfall, snow cover, and snowmelt runoff in the Tokachi Dam and Bisei Dam basins. Following the plan, collected the data necessary for model development and created a database for model calibration and verification. Reviewed and analyzed the collected data, and confirmed the irrigation effects of water supplied from Bisei Dam on agricultural crops in the Memuro area. Also continued to develop another advanced water cycle model, WEB-RRI-S, by adding snowfall, snow-cover, and snowmelt-runoff components to the WEB-RRI model. Began preparing various basin parameters and datasets required for this model development. Delivered a presentation titled “Development of a Real Time Analysis Platform for Snowfall, Snow accumulation, and Snowmelt: Delivering High Accuracy, High Temporal, and High Spatial Resolution Information from Japan to the World” under the NEDO incentive driven program for solution development utilizing satellite data in the Energy Management Infrastructure category in FY2024. Received the Jury’s Special Prize, and the team’s efforts were widely disseminated to the public.	Develop a water cycle model that can evaluate vegetation dynamics for the Memuro and Obihiro areas in the Tokachi River basin, and improve the estimation accuracy of the basin’s water cycle. Also investigate agricultural support information. Furthermore, improve the WEB-RRI-S prototype and validate WEB-DHM-S.
		Evaluate changes in exposure and vulnerability due to social changes.	Prepare to compile policy recommendations based on water disaster risk assessments in the framework of the SATREPS Philippines Project. Continue performing water disaster risk assessments and revising policy recommendations while communicating with collaborative organizations and local governments. Conduct disaster awareness surveys for residents and provide training for administrative staff in the target areas of the Pampanga River basin and the Laguna Lake basin. Also organize training programs in Japan to develop human resources.	① Overall evaluation [S] ② Publication [S] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [A]	Conducted rainfall and flood simulations incorporating climate change impacts and surveys on residents’ flood awareness, and developed policy recommendations based on the findings. Held discussions on the recommendations with national agencies, as well as with officials and residents from San Fernando City in Pampanga Province and the Municipality of Bay in Laguna, where the target river basins are located. Finalized the recommendations based on these discussions. Organized symposia in the Philippines and Japan to disseminate the recommendations, and distributed the final synthesis report of the policy recommendations policy briefs to	Apply the lessons and insights gained from the achievements to risk assessment and capacity-development training for projects planned in countries such as Ghana and Kenya.

					national and local institutions. Conducted training on river flow monitoring as part of the project's capacity development activities in Laguna and Pampanga provinces in May and June 2024, respectively. Organized training programs in Japan in July 2025 and Feb 2026 for Philippine counterparts to learn about Japan's flood management practices and regional economic development policies. Submitted part of the project's research findings to a peer-reviewed academic journal, and the paper was accepted for publication in a special issue compiling project achievements.	
4) Proposal, evaluation and application of policies for water-related disaster risk reduction						
When developing policies to address climate change impacts, it is essential to consider stakeholders' understanding of disaster management measures, lifestyles, socio-economic activities, and possible changes in disaster risks. To achieve these, ICHARM will develop models to assess each policy's practicality and effectiveness, as well as socio-economic assessment methods applicable to different nations. We will also provide training for strengthening human resources to lead local consensus-building and political decision-making.	Develop technologies to support the effective implementation of "River Basin Disaster Resilience and Sustainability by All".	Continue to develop a system to evaluate water disaster risk and resilience. Study a framework in which third parties check evaluations conducted by companies for quality and technical validity. Conduct questionnaire surveys and other means to businesses and analyze the results to clarify their awareness levels regarding water disasters and climate change and decision-making mechanisms.	① Overall evaluation [A] ② Publication [B] ③ Scientific significance [B] ④ Social significance [A] ⑤ Dissemination [B]	Developed a prototype of the Water Disaster Risk and Resilience Assessment Support Platform System as a system that helps private companies assess flood risks on their own. Established a group to study the operation of this system and discuss its dissemination and third-party evaluation. Conducted surveys and hearings with private companies to collect and analyze information on their awareness of climate change risks, the types of information they consider necessary for implementing countermeasures, and the usability of the system.	Develop the Water Disaster Response Management Simulation System, which can analyze and examine business-related issues, such as subsidy measures for companies or financial approaches for pre-disaster investment, as part of basin-scale flood management. Complete the Water Disaster Risk and Resilience Assessment Support Platform System through repeated hearings and test uses with companies and industry organizations. Continue to hold study meetings to explore ways to promote its use and adoption after the SIP program ends. Integrate the two systems mentioned above to enhance their usability for businesses.
5) Support in constructing the applicability of water-related disaster management						
ICHARM will support local governments and citizens at several locations in Japan and overseas in the implementation of means for effectively sharing information from early warning systems and other sources among administrators and residents to facilitate	Support the development of an early warning system by providing real-time water-level forecasts and information on flooding and other hazards.	Construct models for multiple rivers nationwide according to the manual for constructing small and medium-sized river flood forecasting models. Explore ways to utilize the forecasting results in the Integrated System of Disaster Reduction for Municipalities (IDR4M). Also prepare for the revision of the	① Overall evaluation [A] ② Publication [B] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [A]	Developed eight additional flood forecasting models for small and medium-sized rivers, bringing the total number of river models to 208, including those from previous years. Verified the models' accuracy using actual flood events and evaluated 298 events, including those assessed in previous years. Confirmed the required lead time in approximately 90% of the events under operational conditions assuming an allowable	Further examine measures to address the identified issues and reflect them in the Manual for Developing Flood Forecasting Models for Small and Medium-Sized Rivers to improve forecasting accuracy. Continue to conduct analysis and verification through demonstration of the existing models, and improve both the system and the manual to make them

coordinated disaster responses among different sectors. We will also develop, verify, and help them implement methods for preparing operation continuity plans based on local needs and conditions and improving interoperability during disaster response by liking administrative functions effectively at all levels.		manual, based on the issues identified through model construction.		water-level error of ±50 cm, as well as lead-time conditions considering flood travel time. Shared the results with the administrators of the IDR4M. Conducted factor analysis for cases in which the target lead time could not be secured. Identified and sorted out points for improvement based on the analysis results. Also advanced further examinations toward future model utilization and operational manual revision.	more user-friendly and easier for practitioners to understand.
	Develop optimal operation methods for existing dams and other structures to enhance flood control and provide support for their implementation.	Test the developed optimal dam operation for effectiveness by applying it to rivers with multiple dams. The dam operation has been developed for a single hydroelectric dam in the upper Oi River based on ensemble inflow forecasts and optimized to improve its water use capacity and gain a flood control capacity. Conduct additional investigations for the Sai and Tone Rivers to identify the optimal operations for single-dam and multiple-dam cases and put them into practical use.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [A]	Evaluated the accuracy of ensemble inflow prediction for dams across multiple flood events in the upper Sai River basin in Japan and the Krishna River basin in India. Produced a paper based on the Sai River evaluation results, which was published in an international journal. Investigated a method to secure flood control capacity by pre-releasing reservoir water based on predicted ensemble inflow to the dam in the Tana River basin in Kenya. Demonstrated quantitatively that pre-releasing can both reduce peak dam discharge and increase hydropower generation during flooding, and presented the results at an international conference.	Continue to investigate optimal dam operations that increase hydropower generation and enhance flood control functions based on ensemble inflow prediction in the Oi, and Sai River basins in Japan. Conduct similar studies in overseas basins with limited rainfall and discharge observations, and synthesize the results obtained across these different basins.
	Develop a method for disseminating flood forecast information with uncertainty.	Start developing a method to support various stakeholders in making timely decisions when preparing for or responding to floods by providing flood information with likelihood levels.	① Overall evaluation [A] ② Publication [B] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [B]	Explored how to evaluate the uncertainty of ensemble flood forecast information to support decision-making, and developed an approach to assess the variability of forecast information using variance. Applied this approach to ensemble predictions of future climate, and confirmed that it can evaluate the width of the probability density function for each climate scenario and assess prediction reliability quantitatively. Proposed a method to reduce the variability of the probability density function of rainfall under future climate conditions by creating a prior distribution through Bayesian estimation and correcting it accordingly. Produced a paper based on these activities and results and submitted it to an international journal, which was accepted for publication.	Develop a method for evaluating the uncertainty of ensemble forecasts using predicted rainfall from sources such as ECMWF and NCEP. Create information that supports decision-making by assessing the variance of the probability distribution function of forecast information up to 14 days ahead according to lead time. Develop a correction method that improves prediction reliability by creating a prior distribution from long-term data using Bayesian estimation.

Develop technologies (e.g., VR) to effectively provide risk information.	Conduct evacuation behavior experiments using a virtual flood experience system, which has been improved to create a metaverse where users can experience flood situations virtually, and analyze evacuation behavior from various standpoints, such as behavioral psychology and behavioral economics. Also Continue virtual content creation using the metaverse platform in collaboration with local communities. In participating in this effort, residents will learn about the characteristics of their communities, including nature, history, and urban activities, which will lead them to a deeper understanding of their living environment and a higher awareness of desired evacuation behavior in case of flooding.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [S]	Examined a method for efficiently constructing a local version of VFES using a base map as three-dimensional spatial information for Kurashiki City in Okayama Prefecture, Japan, one of the regions where PLATEAU has not yet been released as of March 2025. The team successfully improved townscape realism by creating generalized building models through slight modifications to similar buildings, enabling low-cost expansion of three-dimensional areas. Conducted disaster prevention learning sessions in collaboration with local governments across Japan to verify the applicability of VFES in educational settings, such as inquiry-based learning classes at junior high schools in Joso City, Ibaraki Prefecture, and in Matsumoto City, Nagano Prefecture, as well as at Otani High School in Obihiro City, Hokkaido. Carried out evacuation behavior experiments with students to verify the effectiveness of these learning sessions.	Continue to conduct educational and experiential activities using VFES in Ibaraki, Nagano, Hokkaido, and other areas, accumulating insights for social implementation and making improvements aimed at standardizing the system for broader use. Draft the "Virtual Flood Experience Education Program Package" by compiling VFES content with an instructor manual, incorporating feedback from teachers who have already conducted inquiry-based learning classes using VFES, as well as from prefectural and municipal boards of education and relevant departments of MEXT, and continue to refine the content and prepare dissemination methods. Examine users' behavior from a psychological perspective through demonstration experiments and disaster response learning using VFES, and clarify the key qualities of disaster-prevention knowledge and information necessary to make evacuation behavior personally relevant.
Strengthen communities' early recovery by learning lessons from past disaster response efforts.	Collect critical situations from disaster response reports published in fiscal 2021 or later using the critical-situation collection technology developed last year using a deep learning model. Then analyze all collected situations, including the ones gathered before 2020, to identify response actions likely to be taken when the flood disaster risk increases and critical situations during the recovery and reconstruction processes. Typical situations will be selected from the identified cases and used to plan practical actions, including ones for faster restoration. The outcomes will also be used to revise the Collection of Critical Situations during Flood Emergency Response (local government edition).	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [B]	Developed a case extraction support system that identifies descriptions similar to collected cases and lists them as candidate cases, enabling semi-automation of the case extraction process. Developed a database search system that allows browsing past disaster-response near-miss cases by category, and also developed a system using a large language model that automatically extracts relevant cases when a new report is uploaded in PDF format.	Renovate the developed the "Critical Situation during Flood Emergency response" database search system so that local government officials and related stakeholders can make greater use of it in their own countermeasure planning. In addition, we will develop training methods for learning flood response using these databases, including tabletop exercises.

(ii) Effective capacity building 1) Foster solution-oriented practitioners and Training-of-Trainers (TOT) instructors who can effectively lead the planning and practice of disaster management with solid theoretical and engineering foundation at all levels from local to international settings.					
ICHARM will continue and enhance the doctoral and master's courses by strengthening the collaboration with GRIPS and JICA. Particularly, we will more closely connect the doctoral education with our research activities, for example, by providing opportunities to learn more practical knowledge while utilizing ICHARM's human resources. We will also make full use of more functional learning materials and remote learning methods.	Doctorial Course "Disaster Management"	Accept about 3 students per year.	① Overall evaluation [S] ② Publication [A] ③ Scientific significance [S] ④ Social significance [A] ⑤ Dissemination [A]	Accepted three students in October 2024: two from Nepal and one from Sri Lanka Accepted three students in October 2025: one each from Bangladesh, Nepal, and Vietnam. Launched new subjects: "Water and Peace," "Water and Poverty," and "Water and Sanitation."	Continue accepting approximately three students per year. Discuss PWRI's response to the relaxation of restrictions on activities outside the scope of JICA scholarship recipients' visa status
	Master's Course "Water-related Disaster Management Course of Disaster Management Policy Program"	Accept about 14 students.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [A]	Revised the curriculum, including a generational shift in instructors and a restructuring of subjects. Accepted seven students in October 2024: one each from Bangladesh, Mexico, the Philippines, Sri Lanka, and East Timor-Leste, and two from Peru. Accepted 14 students in October 2025: one each from Bangladesh, Bhutan, Kenya, Timor-Leste, and Vietnam; two each from Indonesia, Madagascar, and Sri Lanka; and three from Malawi. To maximize training efficiency in the short one-year master's program, online pre-enrollment (pre-departure) guidance sessions for incoming students were launched in 2025. With the cooperation of JICA Tsukuba and other overseas offices, former and current students from respective countries participated in the sessions.	Continue accepting approximately 14 students per year. Strengthen cooperation with JICA offices and alumni in each country (e.g., pre-entry guidance, participation of local JICA offices in PCM results presentations).
	Start preparing for new capacity development programs to develop and implement water-related disaster management policies.	Launch a short-term interdisciplinary training program on basin-wide flood management.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [S]	Conducted short-term training in 2025, including site visits to areas with advanced river basin management in Japan, in cooperation with the World Bank, inviting experts from five Southeast African countries. *This training plan, which aimed to cultivate interdisciplinary human resources capable of addressing water issues across different fields, was initially discussed with the Ministry of Foreign Affairs but did not materialize due to its design attempting to integrate country-specific and issue-specific training frameworks. Conducted facilitator training in Japan in cooperation with UNESCO, inviting experts from Kenya in diverse fields such as meteorology, water use, disaster management, and energy. The facilitators who completed this	Hold a short-term flood prediction training program for 11 ASEAN countries in 2026 in collaboration with WMO. Continue exploring the possibility of proposing this training program as part of recurrent education at a follow-up seminar planned to be held in person in June 2026. Also continue discussions with the Ministry of Foreign Affairs and JICA to make this initiative a reality, given the importance of cross-cutting human resource development advocated at UN water conferences and other forums.

				training later organized hands-on training sessions, inviting experts from 12 organizations in Kenya.	
2) Train facilitators to acquire interdisciplinary scientific knowledge related to water-related disaster risk reduction and the capability to lead discussions and consensus building among various stakeholders.					
It is important to increase the understanding and collaboration of all stakeholders in a river basin to build resilience and sustainability against increasingly intense water-related disaster risks. ICHARM will provide support to foster facilitators who can integrate and translate interdisciplinary scientific knowledge for all stakeholders to cooperate in building social consensus by employing a cross-sectoral approach in the public sector and encouraging the private sector for active participation.	Provide e-learning and training opportunities, including facilitator training, through IFI and other networks.	Upgrade the content of the materials used in the past e-learning training conducted in the Philippines and Indonesia and, with the improved materials, conduct facilitator training in each participating country using the IFI platform framework and OSS-SR. Conduct facilitator training in Sri Lanka in August 2024. Start discussions about holding facilitator training in Vietnam and Thailand while considering their needs and situations.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [A]	Organized facilitator training for diverse stakeholders in Davao City, Philippines, in February 2025 and March 2026, including lectures and hands-on sessions on climate change impacts, hydrological modeling, and science communication. The training focused on methods for detecting floods and sediment disasters using satellite imagery, as well as case studies of disasters in the Davao region, which were directly related to the development of DROSS and resulted in high participant interest and motivation. These case studies were later presented in Thailand, which led the country to establish a "Platform for Water Resilience and Disasters" and plan a capacity development program.	Philippines: Develop and improve flood and sediment disaster prediction technologies with the aim of implementing and operating DROSS. In particular, we will work closely with local governments in exploring approaches to generate and utilize area-specific prediction information. Thailand: Develop and implement a capacity-building program to strengthen local capabilities to generate prediction information on water-related disasters and assess their impacts on agriculture and other sectors. Kenya: Promote the establishment of a "Platform for Water Resilience and Disasters," building on previous efforts, and expand the scope to river basins beyond the Tana River. Support the country in developing regional cooperation mechanisms with neighboring countries.
3) Maintain and enhance the capacity of local experts and institutions engaging in addressing water-related disaster management using the knowledge and skills accumulated in research and practice. ICHARM will provide support to build a global network of good practitioners involved in water-related hazard and risk management.					
ICHARM will support the graduates from our educational and training programs in becoming leaders in water hazard and risk management in their localities by offering them opportunities to research and practice water-related disaster management. We will continue holding follow-up seminars to enhance the global network of ICHARM alumni and create a knowledge hub to contribute to water-related risk reduction worldwide.	Enhance the network by holding follow-up seminars for ICHARM master's program graduates and others.	Conduct an online follow-up seminar once a year and hold webinars on different themes of meteorology, hydrology, sediment disasters, and disaster risk reduction.	① Overall evaluation [S] ② Publication [S] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [A]	Conducted the 17th Follow-up Seminar online on February 22, 2025, attended by 96 participants, including 51 alumni from 23 countries. The seminar fostered a shared understanding of the alumni's potential to be key players in addressing global water challenges. Conducted the 18th Follow-up Seminar online on May 13, 2026, although it was originally scheduled for FY 2025, in connection with holding an in-person seminar as part of the ICHARM 20th Anniversary events in June 2026. Conducted seven themed webinars on specific topics such as meteorology, hydrology, landslides, and disaster risk reduction, further strengthening the alumni network.	Hold an online follow-up seminar once a year. Hold themed webinars on meteorology, hydrology, landslides, and disaster risk reduction for another year, and discuss future arrangements for this initiative. Continue discussions on the future direction of ICHARM's educational activities, collect success stories from graduates, objectively evaluate the strengths and weaknesses of ICHARM's activities based on graduates' feedback, and compile recommendations for future directions.
(iii) Efficient information networking					

1) Accumulate, analyze and disseminate major water-related disaster records and experiences by maintaining and upgrading a worldwide practitioners' network.					
ICHARM, as the global knowledge center for water hazards, will be working closely with the UNESCO IHP, the World Meteorological Organization (WMO), the Typhoon Committee (TC), the International Flood Initiative (IFI), and other domestic and international agencies, exchanging data, information, lessons, and ideas regarding water-related disasters. By hosting and organizing international academic meetings, ICHARM will continue offering a place to collect and disseminate the most advanced knowledge to researchers around the world.	Fulfill the duties as the IFI secretariat.	Continue fulfilling the duties of the IFI secretariat: hosting regular meetings with participating organizations, sharing and aggregating information on flood disasters, and reviewing strategies and concepts. Also actively disseminate information about IFI's activities and promote collaboration with other organizations to reduce water-related disaster damage by participating in major international conferences and projects and strengthening professional networks.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [A]	Exchanged information and views with IFI partners, such as UNESCO and WMO. Reviewed the IFI Strategy 2016-2022. Disseminated updates on IFI activities, particularly on the "Platform on Water Resilience and Disasters" projects in various countries at international conferences, such as the 10th World Water Forum (May 2024), the Asia Water Cycle Initiative (AWCI) sessions (Sep 2024, Oct 2025), and the 7th UN Special Thematic Session on Water and Disasters (July 2025).	Continue fulfilling the duties of the IFI secretariat: hosting regular meetings with participating organizations, sharing and consolidating information on flood disasters, and reviewing strategies and concepts. Actively disseminate information on IFI activities and promote collaboration with other organizations to reduce water-related disaster damage by participating in major international conferences and projects and strengthening professional networks.
	Support local efforts led by IFI.	Provide support for the Philippines, Sri Lanka, Indonesia, Thailand, and other countries in launching a Platform on Water Resilience and Disasters and performing platform-related activities. Also promote IFI activities in other countries in Asia, Africa, and South America.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [A]	Assisted the IFI-project implementing countries in setting up a Platform on Water Resilience and Disasters and undertaking related activities in cooperation with their responsible agencies. **Philippines**: Conducted online consultation and training for new facilitators in Aug 2024 and local hands-on training in Feb 2026. Organized a workshop to develop a localized Micro-OSS, assess sediment disaster risks, and collaborate with indigenous communities. Established an action plan for implementing the OSS-SR application. **Sri Lanka**: Received a request from the Mahaweli Authority after the Cyclone Ditwah disaster in Nov 2025, and developed the Mahaweli River early warning system for runoff and inundation observation and prediction. **Indonesia**: Organized the 2nd High-Level Meeting of the IFI Platform in Apr 2024, and held separate dialogues with four partner ministries in Feb 2026. **Thailand**: Held the 2nd Plenary Meeting of the IFI Platform in Mar 2025 and approved an implementation plan with five focus areas. Discussed the application of prediction with uncertainties based on the Cyclone Senyal floods during the 3rd Plenary Meeting in Mar 2026. **Vietnam**: Invited a representative from the Department of Water Resources Management, MONRE, to deliver a thematic report. **Others**: Launched the IFI Africa project in cooperation with the Ministry of Education,	Expand activities related to the Platform on Water Resilience and Disasters in the Philippines, Sri Lanka, Indonesia, Thailand, and other countries. Support African countries in launching IFI activities, in addition to Asia countries.

				Culture, Sports, Science and Technology, while putting dialogues with IFI-LAC (Latin America and the Caribbean) on hold due to staff transfers. Prepared for ASEAN training supported by WMO.	
	Play a leading role in Typhoon Committee (TC).	Continue contributing to TC by fulfilling the duties as the chair of the Working Group on Hydrology (WGH), maintaining cooperative relationships with WGH and other working group members and related organizations, leading the implementation of Annual Operation Plan (AOP), and supporting other related activities. Also, in collaboration with MLIT, assist Japan and other member countries in hosting WGH meetings. Furthermore, participate in integrated workshops and annual sessions as the WGH chair, lead discussions on regional typhoon-related disasters in cooperation with member countries, and contribute to planning and implementing necessary actions.	① Overall evaluation [S] ② Publication [A] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [S]	Fulfilled duties as the WGH chair and served as the AOP leader. Contributed to enhancing Japan's international presence by Coordinating domestically between the Water and Disaster Management Bureau of MLIT and the Japan Meteorological Agency. Promoted cooperation among TC member countries to revitalize the hydrological field and led efforts to mitigate typhoon damage. Took the initiative in introducing a system in which Japan and other member countries jointly host the annual meeting, successfully strengthening the autonomy and proactive engagement of each member country. These efforts presumably contributed to the appointment of an ICHARM member as a Regional Hydrological Advisor to WMO Regional Association II (WMO RAII).	Strengthen domestic and international cooperation and contribute to mitigating typhoon-related damage through the capacity of the WGH chair. Lead efforts to strengthen regional cooperation and contribute to enhancing water disaster resilience in various countries.
2) Integrate interdisciplinary scientific knowledge into a consilience of water-related risk management as a common asset of practitioners.					
ICHARM will establish a system to collect accurate data and information by strengthening collaboration with organizations collecting and archiving scientific data, information, and knowledge about water-related disasters and nations co-hosting ICHARM's training and research projects. Collected data and information will be sorted out and accumulated as meta-data and integrated into a "consilience of water-related disaster risk management" as a shared asset of practitioners.	Collect water-related disaster information and support its accumulation and implementation.	Collect information from organizations involved in water-related disaster management in various countries through the IFI Platforms on Water Resilience and Disasters and other international and regional networks. The information will be accumulated using DIAS and other tools and used to support local efforts to reduce water-related disaster damage.	① Overall evaluation [S] ② Publication [A] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [S]	Continued the operation of various systems in different countries and provided information to relevant institutions until the end of FY2024 in collaboration with DIAS and under the framework of IFI. Presented these achievements as part of DIAS activities in a poster session at the GEO Global Forum 2025 in Rome. The systems include: the Flood Forecasting and Early Warning System (FFEWS) for the Kelani and Mahaweli River basins in Sri Lanka; the Flood Early Warning System (FEWS) for the Davao River basin in the Philippines; the FEWS developed under the UNESCO project for the Niger and Volta River basins in West Africa; the FEWS for the Pampanga River basin in the Philippines developed under the SATREPS project; and the Drought Early Warning System (DEWS) for Ceará State in Brazil developed through the World Bank project. Developed and demonstrated two new systems within the framework of the UNESCO project in FY2025: an FFEWS for the Tana River in Kenya; and an Integrated Early Warning System (IEWS)	Continue to demonstrate the flood and drought early warning systems developed through the joint non-funded research collaboration with DIAS through FY2025, while advancing system development and supporting on-site implementation in newly targeted river basins.

					for flood and drought monitoring and forecasting for the Volta River in Ghana. Also conducted workshops to train facilitators. Supported the implementation of a flood monitoring system for the Pampanga River basin, including the installation of a server at UPLB under the SATREPS framework.	
		Develop a database that can be used by past and current students of ICHARM's graduate programs.	Study the detailed process to implement the ICHARM Alumni Meta Knowledge Database, tentatively named iAME, a tool to organize and accumulate the data used by doctoral and master's students in their research activities as metadata to be used for various purposes.	① Overall evaluation [B] ② Publication [B] ③ Scientific significance [B] ④ Social significance [B] ⑤ Dissemination [B]	Continued developing the alumni database by collecting information through participant registration records from alumni webinars, including presentation materials on their latest research and activities. Required additional effort to complete coordination with DIAS, originally planned to serve as the foundation of the database platform.	Discuss the type of information infrastructure to develop to meet the growing need for a knowledge database platform as the alumni network strengthens. Continue holding alumni webinars for at least another year, and then reassess the needs for a database.
3) Mainstream water-related disaster risk reduction by facilitating active collaboration and communication among experts and organizations through sharing cases and findings in water-related hazard and risk management.						
	ICHARM will continue contributing to worldwide efforts to implement and mainstream disaster risk reduction in step with the Sendai Framework and the Sustainable Development Goals (SDGs), both adopted in 2015. By enhancing research, capacity building, and networking, we will continue stressing the importance of water-related disaster risk reduction and promoting the creation of a resilient, sustainable society by involving all stakeholders at local, national, and international levels.	Provide technical support, analysis, and findings regarding water-related disaster management.	Provide timely and reliable technical support, analysis, and findings on the management of water-related disasters around the world through the publication of simulation results and scientific papers and contributions to the revision of technical guidelines.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [A] ⑤ Dissemination [S]	Conducted a technical review of the flood prediction section for the World Bank report "Dam Safety Management in Japan (2025)." Contributed to the ADB report "Asian Water Development Outlook 2025" by calculating new indicators of climate change impacts on floods and droughts, and prepared user-friendly GIS data sets of 50 economies. Disseminated research outputs through 23 peer-reviewed papers, 42 non-peer-reviewed papers and oral presentations, and 15 poster presentations.	Provide timely and reliable technical support, analysis, and findings on the management of water-related disasters worldwide by publishing simulation results and scientific papers and contributing to the revision of technical guidelines.
		Organize, participate in, or contribute to major regional and international events.	Disseminate our activities and achievements and build and maintain professional networks with experts and organizations by hosting technical sessions and delivering presentations at major events organized by UN agencies and other international and regional organizations, as well as by participating in and contributing to international and regional projects. Support Indonesia in hosting the 10th World Water Forum (WWF10) in May 2024 as the coordinator for Sub-theme 3: Disaster Risk Reduction and Management.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [A]	Coordinated 22 sessions under Sub-theme 3 "Disaster risk reduction and management" and presented research outputs at four technical sessions at the 10th World Water Forum in Bali on May 18-25, 2024. Organized AWCI sessions at the 16th AOGEO in Sep 2024 and the 17th AOGEO in Oct 2025, which were incorporated into the final statements. Delivered presentations "Evolution of hydrology at a turning point," "International cooperation in disaster risk reduction through research, development, and human resource development," and "Together with Africa" at commemorative events organized by Japan in 2025, which were held in Tokyo on Mar 26 and at the UNESCO headquarters in Paris on June	Disseminate ICHARM's activities and achievements and strengthen professional networks with experts and organizations by hosting technical sessions and delivering presentations at major events organized by UN agencies and other international and regional organizations, as well as by participating in and contributing to international and regional projects.

			12, to celebrate the IHP 50th anniversary and the IDH 60th anniversary. Executive Director Koike attended the science and technology panel “From Glaciers to Ocean” and presented the results of the hydroclimate analysis at the 7th UN Special Thematic Sessions on Water and Disasters, “Water and Disasters for Cooperation and Partnerships,” in New York on July 8, 2025.	
Public relations	**Website**: Update the website with the latest information and improve it through feedback from readers. **Newsletter**: Publish it four times a year in April, July, October, and January. Make improvements to keep the content appealing to readers: featuring contributions from graduates and collaborating experts, and reflecting readers’ feedback from surveys. **Outreach**: Conduct open day events and outreach programs to raise the awareness of local youth about our activities.	① Overall evaluation [A] ② Publication [A] ③ Scientific significance [A] ④ Social significance [S] ⑤ Dissemination [A]	**Website**: Posted 24 topics and 22 news items in FY2024-2025 to enhance public outreach. **Newsletter**: Published eight issues (Nos. 72-79) in FY2024-2025 and maintained content quality by collecting contributions from experts and graduates. The latest issue has about 5,700 subscribers, an increase of about 250 over the past two years. **Outreach**: Organized ICHARM open day events, including lectures and poster presentations, on Apr 24, 2024, and Sep 8, 2025, welcoming 78 and 88 middle and high school students, respectively. Introduced hands-on demonstrations to youths on the Virtual Flood Experience System at Science Agora 2025 on Oct 25, 2025. Hosted a hands-on workshop “Experience a flood in Minecraft” at the “Research institute open house on civil engineering day” on Nov 15, 2025, receiving excellent feedback from participants.	**Website**: Update the website with the latest information and improve it based on reader feedback. **Newsletter**: Publish the newsletter quarterly (Apr, July, Oct, Jan) and enhance its appeal by featuring contributions from graduates and collaborating experts and by reflecting reader feedback from surveys. **Outreach**: Conduct open day events and outreach programs to raise local youths’ awareness about our activities.