

# Newsletter

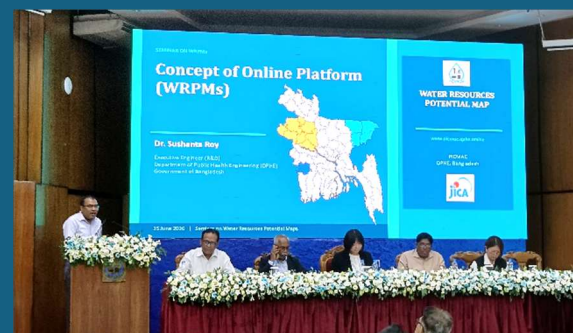
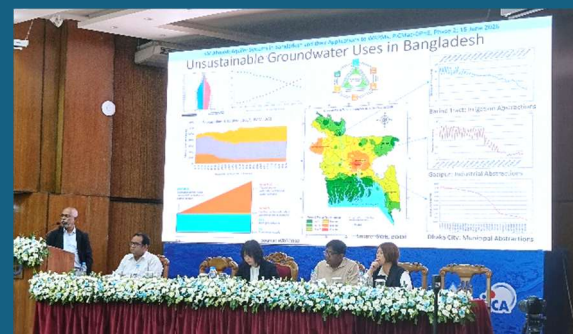
Edited By  
Mahbuba Munmun, Aya Kadokami,  
Yusuke Yamaguchi, Md. Monjur Kader

## PICMaC-DPHE (Phase-2)

*The project, which commenced in November 2023, will officially be completed in June 2026.*

*On 17 June 2026, the 5th Joint Coordinating Committee (JCC) Meeting was held, during which participants reviewed the achievements of the project and discussed recommendations for sustaining and further utilizing its outcomes in the future.*

*The project team would like to express its sincere appreciation to all those who contributed to and supported the project activities throughout the past two years and eight months. Your dedication and cooperation have been invaluable to the successful implementation of the project.*



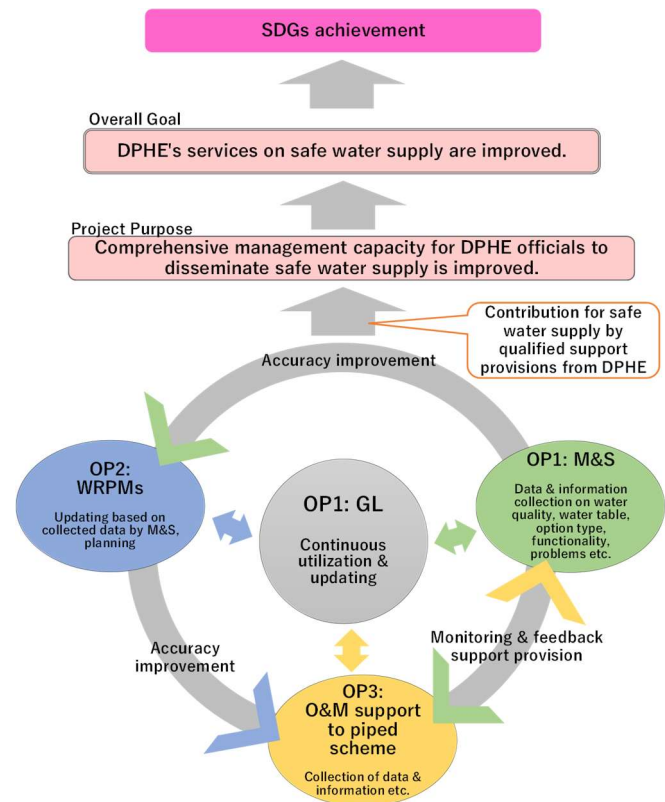
## Project Background and Objective

The Project for Improvement of Comprehensive Technical Management Capacity Phase 2 (PICMaC-DPHE phase 2) (Nov 2023- June 2026) aims to enhance the capacity of the Department of Public Health Engineering (DPHE) to provide safely managed drinking water across Bangladesh. Building upon the outputs developed in Phase 1 (2014-2021), namely the Comprehensive Technical Guideline for rural and Pourashava water supply (GL), Monitoring and Surveillance (M&S) mechanisms, and Water Resources Potential Maps (WRPMs), the project focused on their nationwide dissemination, institutionalization, and operationalization.

The project specifically aimed to:

- Promote the utilization of the GL in daily operations,
- Strengthen and institutionalize M&S activities,
- Enhance the utilization and updating capacity of WRPMs, and

Strengthen DPHE's technical support capacity for O&M of piped water supply systems in Pourashavas.



Pic: Project activity chart



Pic: Group photo with DPHE, JICA representative, JCC members and JICA expert members at 1st JCC meeting

The video training materials on the M&S mechanism and piped water supply O&M developed under this activity have been uploaded to the YouTube channel. Please scan the QR code on the right for access.



The Water Resources Potential Maps developed and updated under this project have been made publicly available through an online platform. Please scan the QR code on the right for access.



## Output 1-1: Dissemination and Utilization of the Comprehensive Technical



Pic: Guideline training to master trainers (TOT)

To institutionalize the GL within DPHE, the project adopted a cascade training approach based on the Training of Trainers (ToT) model. First, six Master Trainers were developed and trained to deliver GL training. They subsequently conducted training programs for DPHE officials at field offices nationwide. In addition, twenty Zonal Master Trainers were developed to establish a system capable of continuously conducting training activities at the local level. Through this approach, a core group of personnel capable of independently implementing GL training within DPHE was established, creating a sustainable mechanism for continuous human resource development even after the completion of the project.

Through this cascade training system, 670 out of the 716 targeted DPHE officials participated in the training, achieving a participation rate of 93.7%. The results of the comprehension tests and the post-training monitoring of GL utilization confirmed that all participants were able to apply the GL in their actual work. These findings indicate that all trainees achieved a sufficient level of understanding of the GL and were able to effectively apply it in their day-to-day professional activities.



Pic: Guideline training to EE delivered by master trainers at HRD



Pic: Guideline training to AE and SAE delivered by zonal master trainers at Khulna

daily operations, thereby strengthening organizational capacity and significantly improving the quality of water supply service delivery across the country.

The Comprehensive Technical Guideline (GL) is a standardized technical framework developed for the Department of Public Health Engineering (DPHE) to systematically implement the planning, design, construction, operation and maintenance support (O&M support) of water supply facilities in rural areas and Pourashavas, as well as monitoring and evaluation (M&E), Water Safety Plan (WSP) development support, and Monitoring and Surveillance (M&S) activities. The utilization of the GL is expected to strengthen DPHE's organizational management capacity and improve the quality of its operations, thereby contributing to the continuous and effective delivery of safe drinking water services throughout Bangladesh.

Furthermore, to promote the practical application of the GL, the project developed standardized formats and checklists related to procurement, construction supervision, inspection, and defect liability management. The continued use of these tools is expected to facilitate more efficient and practical implementation of water supply projects and routine operations in the future.

As a result of these efforts, the utilization rate of the GL in water supply activities increased significantly from 45.2% at the beginning of the project to 90.0% by the end of the project. This demonstrates that the GL has become established as a standard operational tool for DPHE officials in their routine work. Therefore, the project contributed not only to the dissemination of the GL but also to its institutionalization within DPHE's

## Output 1-2: Support for Monitoring and Surveillance (M&S)

The Monitoring and Surveillance (M&S) mechanism developed under PICMaC Phase 1 consists of four components: (i) Groundwater Source Monitoring, (ii) Water Quality Surveillance, (iii) Drinking Water Monitoring (Functionality Monitoring) in rural areas, and (iv) Drinking Water Monitoring in Pourashavas. GWSM was designed to monitor both groundwater levels and groundwater quality, thereby enabling DPHE to better understand groundwater conditions and trends. WQS focuses on identifying contamination risks throughout the water supply chain, from the source to the point of use, and supports risk-based management of drinking water quality. In addition, Functionality Monitoring aims to assess whether water supply options remain functional and continue to provide safe and sustainable water services after installation.



Pic : M&S training to Mechanic and CCT at Gopalganj

PICMaC Phase 2 focused on operationalizing and institutionalizing these mechanisms within DPHE's routine operations by providing comprehensive technical support for planning, budgeting, training, implementation, and reporting. As a result, dedicated budget lines for M&S activities were established under the Government of Bangladesh budget for the first time, creating a foundation for long-term implementation. Between FY2022/23 and FY2024/25, M&S activities expanded progressively from 3 districts to 10 districts and subsequently to 19 districts. Furthermore, a cumulative total of 940 DPHE officials participated in M&S-related training programs, significantly strengthening institutional capacity for implementation and data management.

The project originally targeted expansion to 25 districts, representing 40% of the country's 64 districts, over the four-year implementation period ending in FY2025/26. However, due to budget revisions introduced by the interim government following the political unrest of July 2024, the budget required for six additional districts was not approved. Consequently, activities continued in 19 districts, covering approximately 30% of the country. Nevertheless, both central and field-level DPHE offices have acquired sufficient capacity to independently implement M&S activities, and DPHE has expressed its commitment to continue expanding the coverage by approximately 10% of districts annually after project completion.

With regard to Functionality Monitoring, it was recognized that assessing the condition of the vast number of rural water supply options solely through DPHE officials would be neither operationally feasible nor financially sustainable. Therefore, a pilot activity was conducted in three unions using digital data collection tools to assess the feasibility of nationwide implementation. The pilot demonstrated that collaboration with Local Government Institutions (LGIs) is both feasible and essential for large-scale implementation. It also highlighted the importance of developing a comprehensive national inventory of water supply facilities as a prerequisite for nationwide monitoring. Based on the pilot results, DPHE is positively considering the gradual expansion of Functionality Monitoring and the development of a concrete implementation plan for future nationwide rollout.



Pic : Pilot activity of functionality monitoring

Through these efforts, M&S has evolved from a project-supported initiative into a government-led operational program. The project successfully established a sustainable institutional foundation for evidence-based water resources management and the delivery of safe drinking water services throughout Bangladesh.

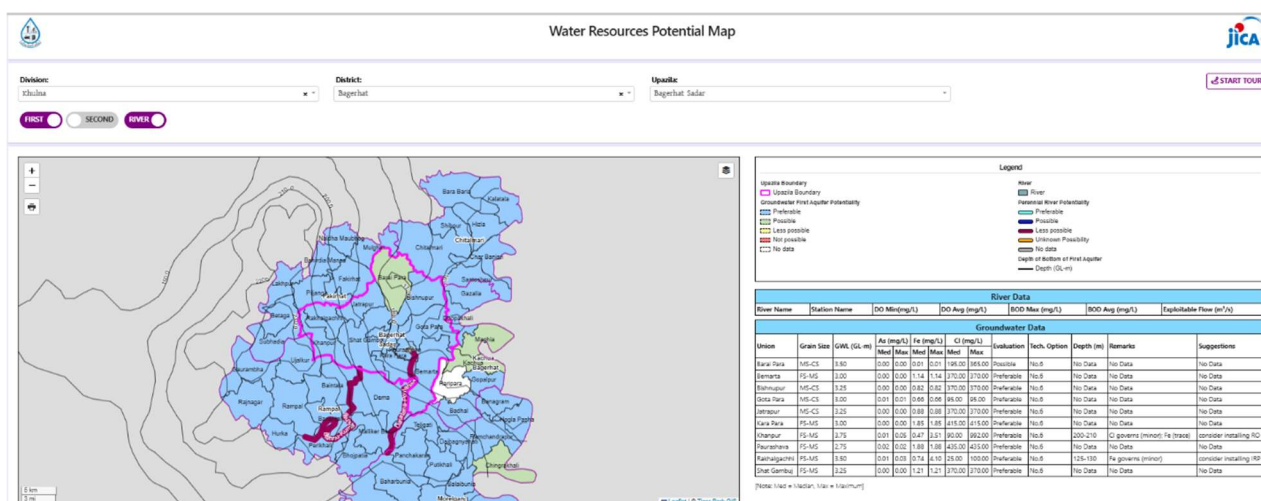
## Output 2: Water Resources Potential Maps (WRPMs)

Water Resources Potential Maps (WRPMs) are

technical tools developed to support evidence-based water supply planning by integrating hydrogeological, hydrological, and water quality information and visualizing water resource potential on maps. In addition to presenting the potential of groundwater and surface water resources, the WRPMs provide guidance on appropriate water supply options under different regional conditions, thereby supporting informed decision-making in water supply planning. During PICMaC Phase 2, support was provided not only for updating the WRPMs developed in the previous phase but also for strengthening DPHE's capacity to utilize and continuously update the maps. To promote practical utilization of the WRPMs, a nationwide cascade training program based on the Training of Trainers (ToT) approach was implemented. Training focused on map interpretation, understanding hydrogeological and hydrological conditions, and the application of WRPMs in selecting appropriate water supply options. A total of 636 DPHE engineers participated in the training, and post-training assessments confirmed improved understanding among 77.7% of participants, exceeding the project target of 70%. These results demonstrated that DPHE field offices had significantly enhanced their capacity to utilize WRPMs in water supply planning and decision-making.



Pic: Discussion of aquifer analysis with Dhaka University and DPHE



Pic: Display example of WRPMs online platform

The project also supported updating the WRPMs through collaboration with the Bangladesh Water Development Board (BWDB), the University of Dhaka, and other technical institutions. Updated hydrogeological, groundwater level, water quality, and river water data were collected, analyzed, and incorporated into the revised maps. In addition, a future update plan was prepared and approved by the Technical Working Group (TWG), establishing a mechanism for continuous revision.

To address the limited availability of river flow and water quality information in Bangladesh, the project initiated river water monitoring activities. In collaboration with BWDB and other agencies, river data were incorporated into the updated WRPMs, and further expansion of monitoring activities was proposed to enhance water resources assessments. These efforts strengthened the consideration of surface water resources in water supply planning, especially in areas facing groundwater challenges.

A seminar on the WRPMs Online Platform was held at DPHE on 15 June 2026, attended by senior representatives from JICA Bangladesh and other relevant organizations. The WRPMs are expected to be widely utilized across Bangladesh in the future.

## Output 3: O&M Support for Pourashava Piped Water Supply

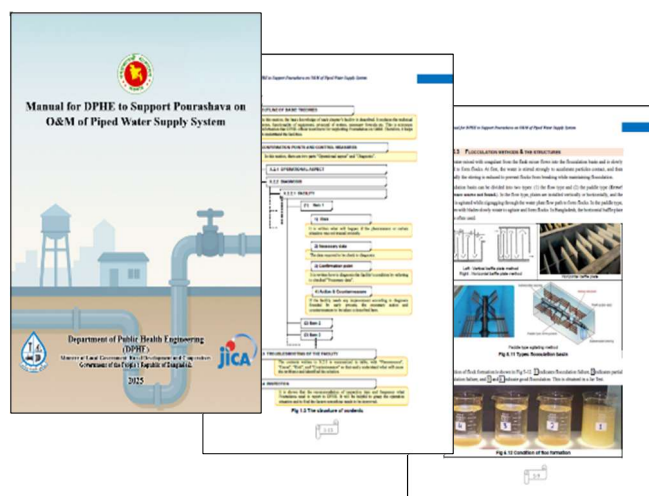
This activity was implemented to strengthen DPHE's capacity to provide Operation and Maintenance (O&M) support for piped water supply systems operated by Pourashavas. In Bangladesh, although the responsibility for O&M of piped water supply systems rests with the Pourashavas, many municipalities face technical and financial constraints that affect the sustainability of water supply services. Meanwhile, DPHE is responsible for the planning, design, construction, and technical support of water supply facilities. However, a systematic mechanism and technical reference materials for O&M support had not been established, and assistance was largely limited to responding to individual requests from Pourashavas.



Pic: Discussion of O&M support manual with DPHE reviewers

To address these challenges, the project conducted a comprehensive review of existing O&M manuals and carried out field surveys in 19 Pourashavas and City Corporations across the country to identify both technical and operational challenges. Based on the findings, an O&M Support Manual was developed to systematize the knowledge and methodologies required for DPHE to provide effective technical support to municipalities. The manual is the first DPHE document specifically designed for supporting Pourashavas and covers not only technical facility management, but also key elements required for sustainable utility management, including Non-Revenue Water (NRW) reduction, tariff collection, and financial management.

Furthermore, a Training of Trainers (ToT) program was conducted to promote dissemination of the manual and establish a sustainable capacity development mechanism. Through the program, 18 Master Trainers were developed from DPHE headquarters and field offices. In the post-training assessment, all participants achieved scores above the target benchmark of 80%, demonstrating a sufficient level of knowledge and understanding of O&M support. In addition, a nationwide training plan for the post-project period was prepared and approved. DPHE plans to continue training field office engineers through the network of Master Trainers developed under the project.



Pic: Developed O&M support manual



Pic: Site visit for practical training at Sylhet City Corporation WTP

Through these efforts, DPHE acquired the knowledge, human resources, and training framework necessary to support Pourashavas in O&M activities. The project established a foundation for transitioning from a reactive, request-based support approach to a more systematic and continuous support mechanism. As a result, the activity contributed significantly to strengthening the institutional framework for sustainable operation of piped water supply systems and the reliable delivery of safe drinking water services.

## Project Achievement

In this project, the indicators to measure the achievement level of each outcome were set as shown in the left column of the table below. The status of achievement at the completion of the project is likewise presented in the right column.

|                                            | Indicator                                                                                                           | Achievement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output 1-1<br>Guideline Dissemination      | 90% of engineers attend training of the Guideline and all attended trainees scored the mark more than 75% in a test | <ul style="list-style-type: none"> <li>Participation rate: 93.7%</li> <li>Pass rate of the comprehension test: 91.7% (14 participants did not meet the threshold)</li> <li>The level of understanding of the 14 participants was confirmed through GL monitoring activities.</li> </ul> <b>⇒ Achieved</b>                                                                                                                                                                                                      |
| Output 1-2<br>Monitoring & Surveillance    | The monitoring and surveillance activities are done by 40% of District offices of DPHE.                             | <ul style="list-style-type: none"> <li>FY2022/23 : Activities initiated in 3 districts</li> <li>FY2023/24 : Activities initiated in 10 districts</li> <li>FY2024/25 : Activities initiated in 19 districts (30%)</li> <li>FY2025/26 : Due to the impact of budget revisions under the interim government, additional budgets for six new districts were not allocated. As in the previous fiscal year, activities were implemented in 19 districts</li> </ul> <b>⇒ Not achieved due to the external factor</b> |
| Output 2<br>Water Resources Potential Maps | 70% of DPHE field offices improve understanding about water sources management.                                     | <ul style="list-style-type: none"> <li>Comprehension test pass rate: 77.7%</li> </ul> <b>⇒ Achieved</b>                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                            | Updating plan of the WRPMs is approved by TWG.                                                                      | <ul style="list-style-type: none"> <li>Approved at the 14th TWG meeting</li> </ul> <b>⇒ Achieved</b>                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                            | WRPMs is updated.                                                                                                   | <ul style="list-style-type: none"> <li>WRPMs at all union levels have been updated on the online platform</li> </ul> <b>⇒ Achieved</b>                                                                                                                                                                                                                                                                                                                                                                         |
| Output 3<br>O&M Pourashava Piped Scheme    | All master trainers scored more than 80% in a test on the general concept of O&M of pipe water supply systems.      | <ul style="list-style-type: none"> <li>18 master trainers were selected, trained through TOT.</li> <li>All master trainers scores marked more than 80% of full score.</li> </ul> <b>⇒ Achieved</b>                                                                                                                                                                                                                                                                                                             |

## DPHE's Further Plan

Following the completion of the project, DPHE is committed to sustaining and expanding the achievements through a series of follow-up actions. One of the key priorities is continued capacity development. Training on the Comprehensive Technical Guideline (GL) and the O&M Support Manual will be incorporated into DPHE's regular annual training program, which is supported by the government training budget. In addition, DPHE is exploring the integration of GL training materials into the government's e-learning platform, enabling wider access to knowledge and continuous learning opportunities for officials across the country.

DPHE also plans to gradually expand Monitoring and Surveillance (M&S) activities nationwide. Although the expansion of district coverage was constrained by budget limitations under the Interim Government in FY2025/26, DPHE remains committed to increasing coverage by approximately 10% of districts each year. Through this phased approach, groundwater monitoring and water quality



surveillance activities are expected to reach nationwide coverage in the future. Furthermore, based on the five-year implementation plan developed under the project, DPHE is preparing to initiate surface water monitoring activities and is currently seeking the necessary budget allocations to support their implementation.

To ensure that project output remains relevant and up to date, DPHE will continue updating key technical tools developed under the project. The GL will be revised following the approval of the updated National Policy for Water Supply and Sanitation, ensuring consistency with the latest national policy framework. In addition, the Water Resources Potential Maps (WRPMs) will be updated every five years under the leadership of the Groundwater Circle. DPHE also plans to secure the budget required for collecting new hydrogeological, hydrological, and water quality data, ensuring that future revisions are based on the latest available information.

Through these continued efforts, DPHE aims to further strengthen evidence-based planning, monitoring, and service delivery, contributing to the long-term sustainability of safe drinking water services throughout Bangladesh.

## Looking Ahead: Sustaining and Expanding Project Achievements

While PICMaC2 successfully established important foundations for evidence-based water supply planning, monitoring, and management, further efforts will be required to achieve the project's Overall Goal and ensure long-term sustainability.

A key priority is strengthening institutional arrangements and organizational structures within DPHE. Clear assignment of responsibilities and reporting lines will be essential for the sustainable implementation of monitoring activities, water resources management, and municipal support services. Strengthening coordination mechanisms at both headquarters and field levels will help improve efficiency and consistency in service delivery.

Another important area is the digital transformation of data management systems. As monitoring activities continue to expand, the need for integrated and reliable data management is becoming increasingly important. The development of a centralized online platform for data collection, storage, analysis, and reporting would improve operational efficiency and support evidence-based decision-making across the sector.

Sustained financial commitment will also be critical. Continued expansion of monitoring and surveillance activities, implementation of training programs, and updating technical tools such as WRPMs will require stable budget allocations and efficient financial management mechanisms. Securing adequate resources will enable DPHE to further expand its services and maintain the achievements realized under the project.

The pilot implementation of Functionality Monitoring demonstrated that nationwide monitoring of rural water supply facilities is both feasible and valuable. Moving forward, the development of a national inventory of public water supply facilities, strengthened collaboration with Local Government Institutions (LGIs), and improved digital data management systems will be important steps toward nationwide implementation. A phased expansion strategy will help ensure that the system remains practical, affordable, and sustainable.

Finally, continued collaboration with universities, research institutions, BWDB, LGIs, and local communities will be essential. The partnerships established through WRPMs updating, water resources assessment, and pilot monitoring activities have demonstrated the value of cross-sector cooperation. By maintaining and further strengthening these partnerships, DPHE will be better positioned to improve data quality, enhance technical analysis, and support the provision of safely managed drinking water services throughout Bangladesh.

Building on the achievements of PICMaC2, these efforts will contribute to strengthening DPHE's institutional capacity and advancing the delivery of safe, sustainable, and evidence-based water supply services for communities across Bangladesh.

