



**Nanjing Research Institute of
Hydrology and Water Conservation
Automation**



Tonle Sap Authority

Project Handover Document
for
Pilot Projects of
Hydrological Data Observation
and
Transmission Technology for Tonle Sap Basin
in Cambodia

March 16 ,2025

Tam
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Project Name:

Pilot Projects of Hydrological Data Observation and Transmission Technology for Tonle Sap Basin in Cambodia.

Executive Agency:

Nanjing Research Institute of Hydrology and Water Conservation Automation (NIHWA), Ministry of Water Resources, China

Recipient Agency:

Tonle Sap Authority (TSA), Kingdom of Cambodia

1. Project Overview:

In alignment with the geographical and climatic characteristics of the Tonle Sap Lake basin, this project employs a combination of advanced technologies—including water level sensors, flow rate sensors, and video surveillance systems—to establish a comprehensive hydrological monitoring network. A total of 11 hydrological monitoring devices have been installed across the basin in Cambodia, comprising:

- a) Eleven Hydrological Monitoring Stations (installed between 2020–2022):
 - Four multi-parameter meteorological and rainfall stations (AWS)
 - Four radar-based water level and rainfall monitoring stations (HR)
 - Three vertical acoustic Doppler current profiler (V-ADCP) automated flow monitoring stations (HQR).
- b) One Master Station (deployed between 2020-2022).
 - Equipped with two computer servers for data processing and transmission in Tonle Sap Sever Room.
- c) A batch of weather sensors and video cameras (installed in 2025).

Complementing the infrastructure deployment, specialized technical training services have been provided to relevant personnel. This project aims to enhance the monitoring capabilities for hydrological data collection and transmission across the Tonle Sap Lake basin, strengthen early warning systems for floods and droughts, and improve technical and managerial competencies among operational teams.

2. List of 11 Hydrological Monitoring Stations:

No.	Station Name	River/Lake Location	Provinces	Function			Grid Coordinate	
				HR	AWS	HQR	Easting	Northing
1	Ta Oak Bridge	Stung Sen	Kampong Thom		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	518191	1429423
2.	Bak Trakoun Bridge	Stung Pusat	Pusat		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	364770	1366124
3.	Kampong Thkov	Stung Sraeng	Siem Reap			<input checked="" type="checkbox"/>	328401	1504324
4.	Chraing Chaot Bridge	Stung Sangkae	Battambang	<input checked="" type="checkbox"/>			294662	1421402
5.	Pov Veuv (Tonle Chmar Lake)	Tonle Sap Lake	Kampong Thom		<input checked="" type="checkbox"/>		423806	1413658
6.	Chhnoak Trou	Tonle Sap Lake	Kampong Chnnang	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		437265	1385487
7.	Tnaot Chum	Stung Chinit	Kampong Thom	<input checked="" type="checkbox"/>			507321	1384294
8.	Praek Taol	Tonle Sap Lake	Battambang	<input checked="" type="checkbox"/>			354830	1463244
Total				4	4	3		

Legend:

- AWS—Automatic Weather Stations with Multiple Parameters
- HR—Stage and Rainfall Stations with Radar Level Sensors
- HQR— Hydrological Stations (Discharge and Rainfall), Discharge Stations with V-ADCP

3. Scope of Handover

By 31 December 2022, all construction work has been accomplished by NIHWA in accordance with the project mandate. In March, 2025, NHIWA has donated a batch of sensors to TSA and has already finished installation and debug. The checklist for project handover is attached.

4. Responsibility Transfer Statement

The Recipient Agency is responsible for proper usage, protection and maintenance of sensors equipment and systems.

The Executive Agency is responsible for providing technical guidance, technicians training.

5. Future Cooperation

The past years have witnessed the vigorous cooperation between China and Cambodia. NIHWA has successfully carried the Asian Cooperation Fund Project, 11 hydrological monitoring stations around Tonle Sap Lake are in good running around the Tonle Sap Lake, which helps to better understand the complex relationship between the hydrological system of Tonle Sap Lake and the surrounding ecology, and contribute to the healthy development of agriculture, fishery and ecological environment in the region.

Both sides are willing to strengthen collaboration in the areas of hydrological monitoring, flood, drought disaster prevention, water quality monitoring, green development, joint research, comprehensive strategy plan of Tonle Sap Lake, integrated water resources management and development of the Tonle Sap basin capacity building and talent development via joint research, project applications development and so on.

Attachment:

Checklist of Handover Items.  Tam

NIHWA

TSA



H.E. Prof. Guan Tiesheng

Director General of NIHWA

Date: 16 / 3 /2025



H.E. Mao Hak

Vice Chairman of TSA

Date: 16 / March /2025

Annex

Checklist of Handover Items

Year 2022					
No	Category	Item	Type	Unit	Remarks
1	Data server	DELL R740	Piece	2	
2	Display	Dell E2722H	Set	1	keyboard and mouse included
3	Stabilized-voltage supply	HOSSONI GCA-10A	Set	1	
4	Database software	SQL2012	Set	1	
5	Operating system	Windows Server2012	Set	2	
6	A cabinet key, a product qualification certificate, a user manual, 1 stabilized voltage supply unit, 2 RTUs, 2 charge controllers, 10m RVVP2x1, 10m RVVP2X2, 1 USB data lines and 1 USB-RS232 lines.	Customized	Set	1	
7	Data receiving and processing software	NSY-SQ	Set	1	
8	Data into the database analysis software	NSY-SQ	Set	1	
9	Streaming media visual management platform	DS-8700E	Set	1	
10	RTU	YDH-1S	Set	11	Installed in Cabinet
11	GPRS/GSM Module	ME3630	Set	11	built-in RTU
12	Tipping-bucket rain gauge	JDZ05-1	Set	11	
13	V-ADCP	NSY FlowScout2000	Set	3	
14	Weather sensor	MULTI-4P	Set	4	
15	Radar level sensor	NSY	Set	7	
16	4G LTE Cellular Security Camera	DS-NACN54220I-DG	Set	7	
17	Staff gauge	Customized	Set	40	
18	ADCP floating carrier	Customized	Set	3	

19	ADCP dedicated cables	Customized	Set	3	
20	Battery	Panasonic 200AH	Piece	7	
21	Battery	Panasonic 100AH	Piece	4	
22	Charge controller	6A	Set	4	Installed in Cabinet
23	Charge controller	10A	Set	7	Installed in Cabinet
24	Cabinet (discharge station)	Customized	Piece	3	
25	Cabinet (stage and rainfall station)	Customized	Piece	4	
26	Cabinet (automatic weather station)	Customized	Piece	4	
27	Solar panel	160W/12V	Piece	7	
28	Solar panel	40W/12V	Piece	4	
29	Accessories for a discharge station	Customized	Set	3	
30	Accessories for a stage and rainfall station	Customized	Set	4	
31	Accessories for an automatic weather station	Customized	Set	4	
32	Beidou receiver	NSY	Set	13	
33	14 Mounting poles and 14 mounting rails (7*2)	Customized	Set	28	
34	Lightning rod	Customized	Set	11	
Year 2025					
1	RTU	YDH-1S	Set	2	
2	Weather sensor	MULTI-4P	Set	2	
3	Accessories for Weather sensor	Customized	Set	2	
4	4G LTE Cellular Security Camera	DS-2DE4223IW-D	Set	1	
Delivered by		Nanjing Research Institute of Water Conservancy and Hydrology Automation (NIHWA)			
Recipient Agency		Tonle Sap Authority (TSA)			