



Investment Phase: Progress update

Kingdom of Bhutan

July 2025

Systematic Observations
Financing Facility

**Weather
and climate
data for
resilience**



General Information

Country	Kingdom of Bhutan	
Implementing Entity	United Nations Environment Programme (UNEP)	
Agreement effectiveness date	20 May 2024	
Duration	59.5 months	
Anticipated end date	01 May 2029	
Reporting period	From: 31 March 2025	To: 30 June 2025
Approved amount	UNEP: \$ 4,228,124 WMO: \$ 395,900	
Disbursed amount	UNEP: \$ 3,382,499 WMO: \$ 131,953	

Summary

Highlights of key achievements

The SOFF Investment Phase in Bhutan moved forward during the three-month reporting period from March to June 2025, with a focus on strengthening institutional capacity, building technical expertise, and initiating the procurement process. Progress included the initiation of procurement activities for key system and infrastructure upgrades, carried out in close coordination with the United Nations Environment Programme (UNEP) and the Finnish Meteorological Institute (FMI). As part of capacity development efforts, the National Centre for Hydrology and Meteorology (NCHM) conducted a SmartMet Forecast Product Workshop, held an internal technical training on Automated Weather Station (AWS) configuration, and organized a Consultation Workshop on Standardization and Innovation that brought together NCHM field staff, technicians, and headquarters teams. Regular monthly coordination meetings facilitated by UNEP with participation from NCHM and FMI have remained a key mechanism for maintaining structured progress and alignment across all partners.

As reported in the previous annual report, the [inception workshop, national consultation, and the first Project Steering Committee \(PSC\) meeting](#)—conducted as part of **Output 1.1: National consultations including with civil society organizations (CSOs) and other relevant stakeholders**—took place in January 2025. As a follow-up, a dedicated [Procurement Workshop](#) was held from 10 to 13 March 2025

for the Project Manager, Component Managers, and Procurement Staff of NCHM, facilitated by an expert from UNEP. The next round of stakeholder engagement activities is planned for 2026. Under Output 1.2, the Project Management Unit (PMU) has been established within NCHM and is currently functioning.

Significant progress was made under **Output 1.3: NMHS human capacity required to operate the GBON network**. To facilitate the implementation of the project, a Project Manager has been recruited to oversee key functions, including procurement coordination, capacity development, and stakeholder engagement. In support of these efforts, three component managers have been designated by NCHM to provide technical oversight in the areas of WIS and ICT, Calibration, Upper Air, and AWS. In response to operational requirements in Tsirang, NCHM has recruited a Junior Engineer, effective 1 July 2025. The engineer will be responsible for overseeing site-level operations related to the planned construction of the Upper Air Sounding system and the upgraded AWS, which is scheduled to commence between November and December 2025. To further strengthen technical capacity and ensure data quality, a Senior Hydro-Met Technician has also been deployed to the location. With this deployment, the site is now staffed by three personnel, including one existing technician, thereby supporting operational continuity and readiness. With regard to ICT support, NCHM continues to utilize the expertise of its in-house ICT Officer, based at headquarters, to meet project-related requirements.

In parallel with these staffing and operational arrangements, a SmartMet Forecast Product Workshop and demonstration session was held on 23 June 2025. The workshop introduced NCHM teams to tools such as the 3-day map forecast, medium-range forecast, rainfall and wind warning maps, observation charts, and district forecast images. It also covered the use of the forecast verification system and internal hub access for stakeholders. Interactive elements included live demonstrations and explanations on how outputs are refined using user feedback.

Moreover, two-day [Consultation Workshop on Standardization](#) and Innovation took place on 13–14 May 2025 at the Professional Development Centre in Tsirang, Bhutan. The workshop brought together 12 field technicians and 11 headquarters staff from NCHM. It resulted in the finalization of five core technical documents: i. updated meteorological observation manual, ii. updated hydrological observation manual, iii. instrumentation guidelines, iv. competency-based framework for technicians, and v. additional document addressing broader operational standards. These are expected to be included in the upcoming annual report.

Capacity development was further reinforced through an 8-day [in-house technical training on Automated Weather Station \(AWS\) configuration](#), held from 27 May to 4

June 2025. Facilitated by a technical expert from MicroStep-MIS (Slovakia), the training focused on AWS hardware, software, and operational maintenance procedures. Fourteen officials from various divisions and sections participated in the training, which provided both theoretical knowledge and hands-on practice. Completion certificates were awarded to all participants upon successful conclusion of the training.

Other initiatives under Output 1.3 included ongoing system enhancement activities involving the Weather Information System (WIS), Climate Data Management System (CDMS), Automated Weather Observing System (AWOS) server, and overall network infrastructure. Installation of the SmartMet server is expected to be finalized by the end of July 2025.

Under Outcome 2 – GBON infrastructure in place, procurement processes continued throughout the reporting period. Activities included the finalization of technical specifications and development of procurement packages for system upgrades, including the WIS, CDMS, AWOS server, institutional network enhancements, a backup generator for the data server, and upper-air observation infrastructure. Strategic planning for the upper-air observation station in Tsirang is also advancing, with consultancy work approaching completion. These procurement processes are being undertaken in coordination with the UNEP procurement team, with invitations to bid, evaluation, and contract awards anticipated by the end of 2025.

Visual Stories and Key Media Coverage



13-14 May 2025: two-day [Consultation Workshop on Standardization](#) and Innovation took place at the Professional Development Centre in Tsirang, Bhutan



27 May – 4 June 2025: 8-day [in-house technical training on Automated Weather Station \(AWS\) configuration](#), facilitated by a technical expert from MicroStep-MIS (Slovakia)

Progress of implementation

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks	
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5				
1. GBON institutional and human capacity developed															
1.1 National consultations , including with CSOs and other relevant stakeholders conducted	# of workshops held	1	1	1	1	2	2					Achieved	The inception workshop and first Project Steering Committee (PSC) meeting took place on 28 January 2025 in Thimphu, Bhutan. A national stakeholder consultation followed on 29 January, engaging 30 representatives from key sectors. As a follow up of the inception workshop, a Procurement Workshop for the NCHM Project Manager, Component Managers, and Procurement Staff was conducted from 10–13 March 2025, led by an expert from UNEP.		
	% female participation in the stakeholder workshops	50	50	50	50	50	42.3					On-track	PSC meeting: 46% were women. Stakeholder Meeting: 41% were women. Procurement Workshop: 40% were women.		
	# of targeted gender workshops		1	1								Not yet started			
1.2 NMHS institutional capacity required to operate the GBON network developed	# of activities for strengthening institutional capacity		1	1			1					On-track	A Project Manager under NCHM was appointed to oversee implementation, including procurement coordination, capacity-		

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
													building, and stakeholder engagement.	
1.3 NMHS human capacity required to operate the GBON network developed	# trainings	2	2	2	2	2	1	2				On-track	<p>Two NCHM professionals underwent hands-on training on the SmartMet system at the Finnish Meteorological Institute (Peer Advisor).</p> <p>A SmartMet Forecast Product Workshop and demonstration session was held on 23 June 2025.</p> <p>two-day <u>Consultation Workshop on Standardization</u> and Innovation took place on 13–14 May 2025 at the Professional Development Centre in Tsirang, Bhutan.</p> <p>8-day <u>in-house technical training on Automated Weather Station (AWS) configuration</u>, held from 27 May to 4 June 2025.</p>	
	# of recruited staff	4	4	4	4	4	1	2				On-track	A Project Manager has been recruited to oversee key functions, including procurement coordination, capacity development, and stakeholder engagement. Complementing this arrangement, three component managers have been designated by NCHM to provide technical oversight in the	

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
													<p>areas of WIS and ICT, Calibration, Upper Air, and AWS. These personnel have been assigned from within the institution to support project execution in their respective domains.</p> <p>In response to operational requirements at the Tsirang site, NCHM has recruited a Junior Engineer, effective 1 July 2025, to oversee site-level activities related to the planned construction of the Upper Air Sounding system and the upgraded Automatic Weather Station.</p> <p>NCHM will undertake internal consultations regarding the recruitment of the remaining staff members under this indicator and will provide updates on progress accordingly</p>	
2.1 New land-based stations and related equipment, ICT systems, data management systems and standard operating practices in place	# of new stations installed as per the GBON National Contribution Plan											Not yet started		
2.2 Improved land-based stations and related equipment, ICT systems, data	# of stations improved as per the GBON National Contribution Plan		1									On-track	Finalized technical specifications and developed procurement	

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
management systems and standard operating practices in place													packages for WIS, CDMS, AWOS server, network upgrades, backup generator, and upper-air station. Strategic planning for the Tsirang upper-air station is ongoing, with consultancy work close to completion.	
2.3 New upper air stations and related equipment, ICT systems, data management systems and standard operating practices in place	# of new stations installed as per the GBON National Contribution Plan			1								On-track		
2.4 Improved upper air stations and related equipment, ICT systems, data management systems and standard operating practices in place	# of stations improved as per the GBON National Contribution Plan											Not yet started		
3.1 GBON land-based stations' commissioning period completed , country-specific standard cost for operations and maintenance established, and data sharing verified by WMO Technical Authority	# of stations commissioned as per the GBON National Contribution Plan					6						Not yet started		
3.2 GBON upper air stations' commissioning period completed , country-specific standard cost for operations and maintenance established, and data sharing verified by WMO Technical Authority	# of stations commissioned as per the GBON National Contribution Plan					1						Not yet started		

Attachment

[Bhutan SOFF Investment Phase Annual Report 2024](#)