



Investment Phase: Progress update

Cabo Verde

July 2026

Systematic Observations
Financing Facility

**Weather
and climate
data for
resilience**



General Information

Country	Cabo Verde	
Implementing Entity	UNEP	
Agreement effectiveness date	20 May 2024	
Duration	60	
Anticipated end date	20 May 2029	
Reporting period	From: 01 January 2026	To: 30 June 2026
Approved amount	Total: USD 3,879,118 UNEP: USD 3,408,318 WMO: USD 470,800	
Disbursed amount	Total: USD 2,883,572.04 UNEP: USD 2,726,654.4 WMO: USD 156,917.64	

Summary

Highlights of key achievements

Between 1 January and 30 June 2026, implementation of the SOFF Investment Phase in Cabo Verde focused on institutional coordination, stakeholder engagement, technical capacity development and GBON infrastructure development, including the operationalization of data exchange through WMO Information System 2.0 (WIS 2.0). Key achievements included the convening of the 2nd Project Steering Committee (PSC) meeting, a national stakeholder and civil society engagement workshop, a UNEP-led procurement capacity-development workshop, and 3 technical training courses delivered by the Portuguese Institute for Sea and Atmosphere (IPMA) and the Faculty of Geo-Information Science and Earth Observation of the University of Twente (ITC). On GBON infrastructure development, the INMG WIS2 Node was also configured and registered, enabling hourly international data exchange from 2 stations. Throughout the reporting period, UNEP, the National Institute of Meteorology and Geophysics (INMG), the Royal Netherlands Meteorological Institute (KNMI), IPMA and ITC maintained regular technical and administrative coordination across capacity development, procurement preparation and GBON infrastructure activities.

Under Outputs 1.1 - National consultations, including with civil society organizations and other relevant stakeholders, and 1.2 - NMHS institutional capacity required to operate the GBON network developed, the [2nd PSC meeting](#) was held on 25 June 2026 in Praia. The meeting brought together 14 participants, comprising 9 women and 5 men, representing 64% female participation. It provided a platform to review implementation progress, coordinate the sequencing of activities and consider priorities for the next period of implementation. A key milestone reported to the PSC was the confirmation that 2 meteorological stations, located in Sal and Praia, have been transmitting hourly observations through the WIS 2.0 global broker since June 2026, representing an important step towards meeting GBON data-exchange requirements.

Subsequently, on 26 June 2026, INMG organized the [Workshop on Stakeholder and Civil Society Organization Engagement in Weather and Climate Issues](#) in Praia. The workshop brought together 54 participants, comprising 26 women and 28 men, representing 48% female participation. Participants included representatives of government institutions, municipalities, civil society, academia, the private sector, the media and development partners. Opened by the United Nations Resident Coordinator in Cabo Verde, the workshop emphasized the role of meteorological and climate information as a public good supporting the protection of lives, food and water security, public health, tourism, investment planning and sustainable development.

Participants discussed priority needs for weather and climate services and the importance of ensuring that technical information reaches users in a timely, accessible and actionable form. The workshop also reinforced national stakeholder ownership of SOFF implementation and its contribution to the broader Early Warnings for All initiative.

Prior to the PSC meeting and stakeholder workshop, UNEP conducted a 2-day procurement capacity-development workshop with INMG on 23 and 24 June 2026. The workshop strengthened INMG's institutional capacity for procurement planning and management and introduced a new procurement management tool to support the planning, tracking and monitoring of procurement activities under the SOFF Investment Phase. Preparations among INMG, UNEP and KNMI also continued for a stakeholder and private-sector engagement workshop planned for October 2026 in São Vicente.

Under Output 1.3 – NMHS human capacity required to operate the GBON network developed, IPMA delivered the [3rd Meteorological Technician Station Operations and Maintenance Training Programme](#) from 19 to 28 May 2026. The programme comprised an online preparatory phase from 19 to 22 May, followed by a hybrid phase conducted on Sal Island from 25 to 28 May. It reached 31 INMG staff members, including 17 women and 14 men, representing 55% female participation. Of the participants, 22 joined remotely from across the islands and 9 attended in person on Sal Island. Supported by learning materials made available through a Moodle course, the programme strengthened the knowledge and practical skills of INMG meteorological observers in the operation and maintenance of observation systems. It covered instrumental observations, WMO and INMG procedures, quality control, instrument and data accuracy, climate-data analysis and remote-sensing applications, while reinforcing the importance of accurate data collection, processing, verification and archiving for operational forecasting and climate analysis. The hybrid approach enabled participation from across INMG's observation network and provided a model that may be replicated in future capacity-development activities.

During an ITC mission conducted from 21 February to 8 March 2026, 2 additional 1-week training courses were delivered. The first, held from 23 to 27 February, was a 5-day Basic Python course for meteorological applications, attended by 8 INMG ICT, meteorological and forecasting staff. Designed for participants with limited or no previous Python programming experience, the course combined theory, hands-on scripting and Jupyter Notebook exercises. Practical applications included the analysis and visualization of station observations and gridded datasets, including Meteosat Second Generation imagery and outputs from the Weather Research and Forecasting

(WRF) model configured for Cabo Verde. Participants were registered on ITC's [GeoVersity e-learning platform](#), where course materials were made available to support continued learning after the on-site training.

The second course, delivered from 2 to 6 March 2026, provided 5 days of hands-on training to 2 designated INMG IT specialists on the implementation and operation of a WIS2 Node using WIS2Box, the WMO reference implementation for WIS 2.0-compliant data exchange. During the first 3 days, participants configured a WIS2 Node on a Linux-based computer and undertook practical exercises covering dataset registration, data uploading, system monitoring, notifications and the use of WIS2Box components. The final 2 days focused on preparing and uploading GBON-compliant observations from the Sal and Praia stations. A dedicated template was developed to convert comma-separated value files into the Binary Universal Form for the Representation of Meteorological Data (BUFR). The template can be adapted to support the addition of further stations in the future.

Following the training, ITC continued to provide remote technical support to INMG, in coordination with KNMI. The INMG WIS2 Node was successfully registered, and observations from the Sal headquarters and Praia airport stations became visible through the WIS 2.0 global broker. ITC and INMG investigated intermittent disruptions in data provision, updated the records of both stations in the Observing Systems Capability Analysis and Review tool (OSCAR/Surface), and monitored the availability of hourly observations through the [WIS2Box interface](#) and the [WMO Data Quality Monitoring System](#). WIS2Box scripts were subsequently revised in response to technical observations from KNMI concerning hourly data aggregation and from WMO concerning the BUFR template. Since June 2026, the 2 stations have been transmitting observations every hour, representing a substantial improvement over the manually uploaded 6-hourly observations reported previously. This constitutes important progress towards GBON compliance, while the planned physical upgrading and formal commissioning of the stations remain outstanding.

ITC also updated the Advanced Python course available through [GeoVersity](#) and reviewed the scope of future training on the ClimSoft Version 4 Climate Data Management System, data rescue, relational databases and Structured Query Language, as well as cloud-based data services and tools provided through [Copernicus](#) and the [European Centre for Medium-Range Weather Forecasts \(ECMWF\)](#). These activities remained preparatory during the reporting period and will inform the sequencing of subsequent capacity-development support.

INMG and IPMA continued to coordinate the implementation and sequencing of planned training activities, including through further discussions during the June

engagements in Cabo Verde. This coordination enabled the partners to review the training calendar against infrastructure progress and other interdependent project activities. Following this review, further delivery under the station operations and maintenance training programme and the planned upper-air station training programme were rescheduled to 2027.

With respect to staffing, the Project Manager recruited in November 2025 continued to support project planning, partner coordination and implementation follow-up. Recruitment processes for 3 additional technical positions, comprising one meteorological observer and 2 ICT technical staff, remained ongoing and had not been completed during the reporting period.

Under Output 2.1 – New land-based stations and related equipment, ICT systems, data management systems and standard operating practices in place, INMG proposed procuring and installing an additional new AWS in Mindelo under Output 2.1, instead of upgrading the existing Mindelo AWS as originally planned under Output 2.2. The proposed adjustment became necessary after the existing station sustained irreversible damage during Hurricane Erin in August 2025, rendering it inoperable. Based on its technical assessment, INMG concluded that rehabilitating the station would not be technically or economically feasible. At its meeting on 25 June 2026, the PSC agreed to the proposed amendment. INMG formally submitted the [amendment proposal](#) on 6 July 2026. At the request of INMG, the amendment was subsequently approved by UNEP, in consultation with the SOFF Secretariat. The amendment does not result in any change to the overall project budget. Consequently, Output 2.1 now covers the procurement and installation of 2 new AWS, while Output 2.2 covers the upgrading of the 2 existing AWS in Sal and Praia. The new Mindelo station is expected to restore surface meteorological observations in Mindelo, support the continuation of its historical observation record and facilitate its future integration into GBON.

In parallel, ITC reviewed the ICT infrastructure used to receive and store AWS data at INMG headquarters. The assessment identified the need to upgrade outdated systems and recommended 3 dedicated computers: one for operating the Campbell Scientific LoggerNet system, one for data archiving and online backup, and one to replace the computer currently hosting WIS2Box. ITC also recommended network-attached storage with sufficient redundancy for data recovery and an uninterruptible power supply. These recommendations are informing the technical specifications and procurement planning for the project's ICT infrastructure. Procurement preparations for the new AWSs, associated civil works and ICT equipment continued. Procurement of the new AWSs and related civil works is planned to commence in August 2026, with delivery targeted for April 2027, while procurement of the ICT equipment is planned to commence in September 2026, with delivery targeted for December 2027.

Under Output 2.2 – Improved land-based stations and related equipment, ICT systems, data management systems and standard operating practices in place,

the successful configuration of WIS2Box enabled the Sal headquarters and Praia airport stations to begin transmitting hourly observations through the WIS 2.0 global broker in June 2026, with regular transmission continuing thereafter. The stations' metadata in OSCAR/Surface were updated, and WMO data-quality monitoring indicated the regular receipt of hourly observations. While the physical upgrading of the stations remains planned, the improvements in data transmission and international exchange represent important progress towards meeting GBON requirements. As noted under Output 2.1, the procurement and installation of an additional new AWS in Mindelo are now planned in place of upgrading the existing station, which sustained irreversible damage during Hurricane Erin in August 2025 and was determined by INMG to be technically and economically unfeasible to rehabilitate.

Procurement of sensors and spare parts for upgrading the Sal and Praia stations is planned to commence in 2027. The procurement package is expected to include sensors for temperature, humidity, atmospheric pressure, wind and precipitation, as well as data loggers, shipping, local logistics and installation. Procurement of laboratory equipment, field calibration and testing equipment, and related civil works is also planned to commence in 2027.

Under Output 2.4 – Improved upper-air stations and related equipment, ICT systems, data management systems and standard operating practices in place,

preparations continued for the refurbishment of the upper-air station at Sal. Procurement of the required upper-air equipment and related civil works is planned to commence later in 2026, with implementation continuing into 2027. To align capacity development with the availability and installation of the upgraded equipment, the corresponding upper-air station training programme was also rescheduled to 2027.

Under Outputs 3.1 and 3.2 – Sustained compliance with GBON, the regular hourly transmission of observations from Sal and Praia established an important technical foundation for future commissioning and sustained international data exchange. However, no land-based or upper-air station completed formal commissioning during the reporting period. The physical upgrades, establishment of country-specific operations and maintenance arrangements, and formal verification of data sharing by the WMO Technical Authority will follow the procurement, installation, and commissioning of the planned equipment.

Challenges and Lessons Learned

Finalization of the Procurement Plan required additional time during the reporting period, and the timelines for the planned procurement activities were adjusted

accordingly. To strengthen procurement readiness, UNEP conducted a 2-day capacity-development workshop on 23 and 24 June 2026 for INMG staff. Following the workshop, the Procurement Plan was further structured and entered into the designated procurement platform. This experience highlighted the value of early procurement planning, clearly defined technical requirements and dedicated capacity support to facilitate the timely implementation and monitoring of procurement activities.

The sequencing of capacity-development activities also required adjustment, as the effective delivery of some training programmes depends on progress in related infrastructure and technical activities. Through continued coordination, INMG and IPMA reviewed the implementation calendar and rescheduled further station operations and maintenance training and the planned upper-air station training programme to 2027. This reinforced the importance of maintaining a jointly coordinated implementation calendar and aligning specialized technical training with the availability and installation of the relevant equipment.

While the WIS2Box installation enabled the Sal and Praia stations to transmit hourly observations through the WIS 2.0 global broker, intermittent disruptions in data provision were identified during follow-up monitoring. ITC worked with INMG, KNMI and WMO to refine the hourly data-aggregation scripts and BUFR conversion template. Continued monitoring will be required to confirm that the stations consistently meet the required data-availability threshold of at least 85%. The experience also highlighted the need to develop and consistently apply standard operating procedures for monitoring data transmission, identifying interruptions and restoring data provision within the shortest possible time.

The delivery of the IPMA training in a hybrid format also provided a useful operational lesson for capacity development across Cabo Verde's geographically dispersed islands. By combining online preparation, remote participation and classroom-based instruction, the programme enabled 22 participants to join remotely while 9 attended in person on Sal Island. The approach demonstrated the value of combining in-person technical instruction with e-learning platforms and remote participation to broaden access, support continuity and reduce logistical constraints.

Next Steps

With the designated procurement management tool now operational, INMG will continue preparing the planned procurement processes in coordination with UNEP and KNMI, including the finalization of technical requirements and identification of potential suppliers. Procurement of 2 new AWS and the associated civil works is planned to commence in August 2026, with delivery targeted for April 2027.

Procurement of the required ICT equipment is planned to commence in September 2026, with delivery targeted for December 2027. Preparations for procuring equipment and undertaking related civil works for the refurbishment of the upper-air station at Sal are also expected to continue later in 2026 and into 2027.

In 2027, INMG plans to initiate procurement of sensors and spare parts for upgrading 2 existing AWS, including the required shipping, local logistics and installation. Procurement of laboratory equipment, field calibration and testing equipment, and related civil works is also planned for 2027.

On institutional development and stakeholder engagement, INMG, UNEP and KNMI will continue preparations for the stakeholder and private-sector engagement workshop planned for October 2026 in São Vicente. Recruitment processes for the remaining 3 technical positions, comprising 1 meteorological observer and 2 ICT technical staff, will also continue. INMG and IPMA will maintain coordination on the capacity-development calendar, with further station operations and maintenance training and the upper-air station training programme rescheduled to 2027 to align their delivery with the availability and installation of the relevant equipment.

ITC will continue discussions with INMG and KNMI on the development of future course materials covering climate data management system concepts, geospatial and relational databases, ClimSoft Version 4, data rescue and climate-data analysis. ITC will also continue supporting INMG in monitoring hourly data transmission from the existing AWS through WIS2Box and in confirming whether the required data-availability threshold is consistently met. Subject to the planned deployment of additional stations in Mindelo or Brava, ITC will, at INMG's request, provide further technical assistance to update the data-processing and transmission scripts and support the stations' integration into the WIS 2.0 data-exchange system.

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	Number of workshops and related activities (1.1.1)	1	2	1	0	0	2		2			Achieved	Face-to-face inception workshop , stakeholder engagement session were conducted on 25-26 March 2025 2nd PSC meeting was held on 25 June 2026 Workshop on Stakeholder and Civil Society Organization Engagement in Weather and Climate Issues was held on 26 June 2026		
	Percentage of female participation in workshops <i>(please also indicate the actual number in brackets)</i> (1.1.2)	50	50	50	0	0	36% (19)		64% (9), 48% (26)			Achieved	The inception workshop and stakeholder engagement held on 25-26 March included the participation of 19 women and 34 men. 2 nd PSC Meeting: 14 participants, 9 women and 5 men, 64% female participation Workshop on Stakeholder and Civil Society Organization Engagement in Weather and Climate Issues: 54 participants, 26 women and 28 men, 48% female participation.		
1.2 NMHS institutional capacity required to operate the GBON network developed	Number of workshops (1.2.2)	0	1	1	0	0	1					On-track	Civil society stakeholder workshop held on 26 March.		

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
													INMG undertook a visit to KNMI from 24 to 27 November 2025 private-sector engagement workshop planned for October 2026 in São Vicente UNEP conducted a 2-day procurement capacity-development workshop with INMG on 23 and 24 June 2026	
	Percentage of female participants in workshops <i>(please also indicate the actual number in brackets)</i> (1.2.3)	0	50	50	0	0	36% (19)					On-track	The civil society stakeholder workshop on 26 March 2025 included the participation of 19 women and 34 men.	
1.3 NMHS human capacity required to operate the GBON network developed	Number of trainings (1.3.1)	2	2	2	2	2	1	6	1			Achieved	3rd Meteorological Technician Station Operations and Maintenance Training Programme from 19 to 28 May 2026 by IPMA 5-day Basic Python course for meteorological applications from 23 to 27 February 2026 by ITC 5 days of hands-on training to 2 designated INMG IT specialists on the implementation and operation of a WIS2 Node using WIS2Box, the WMO reference implementation for WIS 2.0-compliant data	Note: 4 training activities previously reported under Year 1 has been moved to Year 2, as they were conducted after 20 May 2025, which is considered Year 2 of the project (20 May 2025 to 19 May 2026).

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
													exchange from 2 to 6 March 2026 by ITC Training programme and study visit on station operations and maintenance in January 2025 by IPMA 2nd edition of the Meteorological Technician Station Operations and Maintenance training programme from 22 to 26 September 2025 by IPMA Training of-Trainers (ToT) competence programme for INMG staff from 20 to 28 May 2025 by IPMA Senior management and project management training from 2 to 12 June 2025 by IPMA The second ToT competence training was also completed in November 2025 by IPMA	
	Number of staff employed through the project (1.3.2)	3	3	3	3	3		1				Delayed	A project manager was recruited in November 2025 Recruitment processes for 3 additional technical positions, comprising one meteorological observer and 2 ICT technical staff, remained ongoing	Note: The Project Manager's recruitment, previously reported under Year 1, has been moved to Year 2 (20 May 2025–19 May 2026), as the position was filled during this period Procurement and service acquisition processes remained complex, particularly due to national

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
														requirements for public procurement approvals. These procedures extended the timelines for finalizing contracts and contributed to delays in establishing the Project Management Unit, which in turn affected the timely implementation.
2. GBON infrastructure in place														
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 (2.1.1)	0	1	0	0	0						Delayed	UNEP, in consultation with the SOFF Secretariat, approved INMG's proposal to procure an additional new AWS for Mindelo after hurricane damage rendered the existing station unfeasible to rehabilitate, with no change to the overall project budget. Procurement of the new AWSs and civil works is planned to commence in August 2026, with delivery targeted for April 2027. Following ITC's assessment, ICT procurement is planned to commence in September 2026, with delivery targeted for December 2027.	Logistical constraints, as inter island travel was disrupted by aircraft availability and flight cancellations, delaying the technical missions. Finalization of the Procurement Plan required additional time during the reporting period, and the timelines for the planned procurement activities were adjusted accordingly. To strengthen procurement readiness, UNEP conducted a 2-day capacity-development workshop on 23 and 24 June 2026 for INMG staff. Following the workshop, the Procurement Plan was further structured and entered into the designated procurement platform.
2.2 Improved land-based stations and related equipment, ICT systems, data management systems and	# of stations improved as per the GBON National Contribution Plan (2.2.1)	0	3	0	0	0			2			On-track	2 stations, located in Sal and Praia, have been transmitting hourly observations through the	

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
standard operating practices in place													WIS 2.0 global broker since June 2026 UNEP, in consultation with the SOFF Secretariat, approved INMG's proposal to procure an additional new AWS for Mindelo instead of upgrading the hurricane-damaged station. Procurement of sensors and spare parts for the existing AWSs is planned to commence in 2027 Procurement of laboratory equipment, field calibration and testing equipment, and related civil works is also planned to commence in 2027	
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	0	0	0	0	0						Select an item		
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 (2.4.1)	0	0	1	0	0						On-track	Procurement of the required upper-air equipment and related civil works is planned to commence later in 2026, with implementation continuing into 2027	
3. Sustained compliance with GBON														

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
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 (3.1.1)	0	0	0	0	4						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 (3.2.1)	0	0	0	0	1						Not yet started		

Attachment: [Cabo Verde SOFF Investment Phase Annual Report 2025](#)