



Investment Phase: Progress update

Rwanda

July 2024

Systematic Observations
Financing Facility

**Weather
and climate
data for
resilience**



General Information

Country	Rwanda	
Implementing Entity	United Nations Development Programme	
Agreement effectiveness date	1 January 2024	
Duration	48	
Anticipated end date	1 January 2028	
Reporting period	From: 1 January 2025	To: 30 June 2025
Approved amount	3,107,377.37 USD	
Disbursed amount	2,330,533.03 USD	

Summary

I. OVERVIEW OF THE SOFF PROJECT

The United Nations Development Programme (UNDP), in partnership with the World Meteorological Organization (WMO) and the Rwanda Meteorology Agency (METEO Rwanda), have secured a four-year (Jan 2024 to Jan 2028) funding agreement of USD 3.5 million from the Systematic Observations Financing Facility (SOFF). This initiative aims to strengthen Rwanda's meteorological services, enhance the country's resilience to weather and climate-related risks, and contribute to global efforts in climate data exchange.

The SOFF project focuses on closing the critical gap in basic weather and climate observations, while supporting Rwanda's active participation in the Global Basic Observing Network (GBON), a key initiative of the WMO that facilitates the international exchange of high-quality meteorological data.

To achieve these goals, the project is structured around three outputs:

Output 1: GBON institutional and human capacity developed

This output includes national consultations with civil society organizations (CSOs) and relevant stakeholders, development of institutional frameworks, and strengthening of the human resource capacity within the Rwanda Meteorology agency (METEO RWANDA) to effectively manage and operate the GBON network.

Output 2: GBON infrastructure in place

This involves the establishment of new land-based meteorological stations and the upgrade of existing ones, incorporating modern equipment, ICT systems, robust data management tools, and standardized operating procedures to ensure data quality and system sustainability.

The Rwanda Meteorology Agency will lead the implementation of the project, with UNDP serving as the Implementing Entity. The Finnish Meteorological Institute (FMI) serves as the peer advisor and WMO provide technical guidance and oversight to ensure compliance with global standards and best practices.

Output 3: Sustained compliance with GBON

This output, the project will ensure Rwanda maintains compliance with GBON requirements over the long term, safeguarding the quality, continuity, and reliability of meteorological data. Key interventions include:

- Completion of commissioning periods for land-based and upper-air GBON stations.
- Establishment of country-specific standard costs for operations and maintenance.
- Verification of data sharing protocols by the WMO Technical Authority.

During the reporting period, significant strides have been made in advancing the implementation of the Rwanda SOFF (Systematic Observations Financing Facility) project:

II. ACHIEVED RESULTS PER OUTPUTS

Below are the main achievements for January to June 2025 period:

Output 1: GBON Institutional and Human Capacity developed**1.1. National consultations, including with CSOs and other relevant stakeholders conducted**

Under this output, ownership of the project was strengthened through a multi-sector project committee meeting convened to review implementation progress, address challenges, and share lessons learned. The meeting also examined the expected impact of the SOFF project at both national and global levels. In addition, stakeholders clearly defined their respective roles to ensure smooth project implementation and effective dissemination of project results.

1.3 NMHS human capacity required to operate the GBON network developed

To ensure sustainability and effective operation, the capacity of METEO RWANDA staff was strengthened through both theoretical and practical training. A total of 13

personnel (6 technicians and IT staff, and 7 data managers) received hands-on training on land-based weather station setup, software configuration, maintenance, and data quality assurance.

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

During the reporting period, the project delivered key infrastructure upgrades that significantly strengthened Rwanda's meteorological observation capacity. Three land-based automatic weather stations: Rubengera, Nyagatare, and Kazo were modernized with advanced sensors for temperature, humidity, wind speed and direction, atmospheric pressure, and precipitation. Each station was equipped with high-capacity data loggers, automated transmission systems, and specialized software to enable reliable data collection and real-time international exchange through the World Meteorological Organization Information System (WIS).

Before the intervention, only the Kigali International Airport station met Global Basic Observing Network (GBON) requirements. With SOFF support, Rwanda now operates three additional GBON-compliant stations, transmitting hourly data to both the global WIS2 environment and METEO RWANDA's Headquarters server. Station performance can be monitored here: <http://wis2.meteorwanda.gov.rw/fixed-land-station-map/urn:wmo:md:rw-rma:kedehn>.

2.3 New upper air stations and related equipment, ICT systems, data management systems and standard operating practices in place

During the reporting period, the project advanced the preparatory phase for establishing Rwanda's new upper-air observation capacity. In collaboration with relevant stakeholders, expert field visits were conducted with the selected contractor to develop site designs and a detailed Bill of Quantities.

In parallel, the supplier has shipped all upper-air station equipment, with delivery to the installation site expected by the end of August 2025. These steps lay the groundwork for the next phase physical site preparation and installation ensuring the project remains on track to deploy modern upper-air observation and data management system.

III. CHALLENGES AND LESSONS LEARNT

During the January-June 2025 reporting period, the project made steady progress toward strengthening Rwanda's GBON-compliant observation network and preparing for the installation of a new upper-air station. While notable achievements were recorded, the implementation process also presented some challenges, which provided valuable insights for improving future activities.

Challenges:**1. Delays in site preparation for upper-air station installation**

While designs and Bills of Materials were finalized, the physical site preparation has not yet commenced, which may compress timelines for installation and commissioning once equipment arrives.

Lessons Learned:**1. Early and inclusive stakeholder engagement builds ownership**

The multi-sector project committee meetings demonstrated that involving a wide range of actors early in the process fosters stronger buy-in, clarifies roles, and facilitates smoother project execution.

2. Hands-on technical training enhances operational sustainability

Combining theoretical instruction with practical, on-site training for METEO RWANDA staff has proven effective in equipping personnel with the skills needed to operate, maintain, and troubleshoot upgraded GBON-compliant stations.

Communication products:

Video: https://youtu.be/S13yoYrp_qs

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 consultation workshops	1			1		1					On-track	Two consultation workshops are planned over the course of this project. The first was successfully held in the first year as planned, while the second is scheduled for the final year. Therefore, no workshop was planned during this reporting period. However, a one-day Project Steering Committee meeting was convened by the implementing entity and beneficiary. This meeting brought together key stakeholders to review implementation progress, discuss challenges, share lessons learned, and examine the anticipated impact of the SOFF project at both national and global levels.		
	% female participants in the workshops	50			50		60					On-track	Not planned for this reporting period		
	# of high-level dialogues organised	1			1							On-track	During the reporting period, no high-level dialogue was scheduled. As outlined in the project plan, the first dialogue was supposed to take place in the first year, while the second is scheduled for the project's final year. As reported previously, the SOFF project in Rwanda was launched during the World Environment Day in 2024. The first high-level dialogue will be conducted in the last quarter of this year. The reasoning behind putting this high-level meeting in the last		

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
													quarter of this year 2025 is to ensure that during the meeting, the new acquired equipment (Upper air station) will be showcased.	
1.2 NMHS institutional capacity required to operate the GBON network developed	# of updated processes				1							Select an item	To be implemented and reported by WMO/Peer Advisor	
	# of people trained	3										Select an item	To be implemented and reported by WMO/Peer Advisor	
	# gender assessment conducted	1										Select an item	To be implemented and reported by WMO/Peer Advisor	
	# gender workshop organized			1								Select an item	To be implemented and reported by WMO/Peer Advisor	
1.3 NMHS human capacity required to operate the GBON network developed	# of developed observation process				1							Select an item	To be implemented and reported by WMO/Peer Advisor	
	# of documents (SOPs or roadmaps) updated or developed				1							Select an item	To be implemented and reported by WMO/Peer Advisor	
	# of Meteo Rwanda staff members participated in the training on operation and maintenance of upper-air space		4	4								Not yet started	Not planned for this reporting period	
	% of female Meteo Rwanda staff participants in the training		50	50								Not yet started	Not planned for this reporting period	
	# of IT technician trained			4								Not yet started	Not planned for this reporting period	
	# of forecasters trained			12								Not yet started	Not planned for this reporting period	
	# data analysts trained			9								Not yet started	Not planned for this reporting period	

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
	# of staff trained on maintenance and calibration of land surface stations		4					13				Achieved	The capacity building on installation and maintenance of new installed sensors and data loggers, as well as the data quality assurance was conducted.	
	% of female participants in the training		50					30				On-track	30% were trained on operation and maintenance of upgraded land-based stations	
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	N/A										Select an item	Not planned in the project	
2.2 Improved land-based 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		3					3				Achieved	Three land-based stations were upgraded with new sensors and data loggers. With support from WMO, the stations were integrated into WIS2 and are now sharing data internationally.	The stations have been registered in WIS2, but their metadata has not yet been updated. An update for all metadata is planned by the end of September. The WIS2 node for Rwanda is currently hosted by the WMO WIS Division through the European Weather Cloud. Meteo Rwanda plans to

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
														establish a local node during the installation of the upper-air station, scheduled for early November 2025.
	# standard operating practices updated											Not yet started		
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					1				On-track	Site for installation was identified, specifications developed and procurement process has started. The contract for supply and installation of upper air has been signed. The factory acceptance test of the upper air and its accessories was completed. The shipment of equipment started. The process for hiring local contractor to undertake required civil works is ongoing.	The hiring process for a local contractor to carry out the required civil works at the site takes longer than expected, which may pose a risk of delaying the planned installation schedule. However, the process is now in its final stage, with the selection of a competent bidder ongoing.
	# standard operating practices updated				1							Select an item	To be implemented and reported by WMO/Peer Advisor	
2.4 Improved upper air stations and related equipment, ICT systems, data management systems	# of stations improved as per the GBON National Contribution Plan	N/A										Select an item	Not planned in the project	

Output	Indicator	Target					Actual					Status	Milestones achieved	Challenges and risks
		Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5			
and standard operating practices in place														
3. Sustained compliance with GBON														
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	N/A										Select an item	Not planned in the project	
	# land-based stations maintained, calibrated and transmitting data to GTS			3	3							Not yet started	Not planned for this reporting period	
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	N/A										Not yet started		