



Tenth Steering Committee **6 February 2025**

SOFF Investment Funding Requests

INF 10.3

Systematic Observations
Financing Facility

**Weather
and climate
data for
resilience**



Purpose of this Document

This document provides an analysis of the SOFF Investment funding requests submitted for Bangladesh, Cuba, and Zambia. It outlines key information regarding the Global Basic Observing Network (GBON) targets and investment needs in these countries, the budget, the implementation arrangements, and summarizes the results of a risk assessment.

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SOFF Investment funding requests

1. Funding requests overview

Following an iterative review process from the SOFF Secretariat and WMO Technical Authority, three Investment funding requests are submitted for consideration of the 10th SOFF Steering Committee meeting: Bangladesh, Cuba, and Zambia, amounting to a total of USD 15.1 million.

The table below provides an overview of the three Investment funding requests. It includes information on the Implementing Entities, peer advisors, the budget requested, as well as links to the Project Documents (ProDocs) submitted by the Implementing Entities through the UN Multi-Partner Trust Fund (UN MPTF) Gateway¹.

Table 1. List of Investment funding requests recommended for Steering Committee decision (all amounts in USD).

Links	IE	Peer advisor	Duration (years)	Activities budget	IE fee	Peer advisor fee ²	Total budget requested
Bangladesh	IsDB	Norway - China	5	4,147,715.00	290,340.05	516,810.00	4,954,865.05
Cuba	UNDP	Spain	5	5,697,999.00	398,859.93	426,780.13	6,523,639.06
Zambia	WFP	UK	5	2,995,075.59	194,679.91	437,784.08	3,627,539.58
Total							15,106,043.69

Abbreviations: IE = Implementing Entity; IsDB = Islamic Development Bank; UNDP = United Nations Development Programme; WFP = World Food Programme

These three funding requests have been thoroughly reviewed against the SOFF programming criteria and have met the requirements for SOFF Investment funding. Investments in these three countries are expected to contribute significantly to closing critical GBON gaps, while also generating positive impacts in neighboring countries across the region.

1.1. Closing the most significant GBON gaps

SOFF investments are targeted to close the most significant GBON Gaps in Least Developed Countries (LDCs) and Small Island Developing States (SIDS). Closing these data gaps globally will maximize the critical input from observations to the Numerical Weather Prediction (NWP) models. As a baseline for SOFF, WMO conducted a GBON Global Gap Analysis in June 2023, which defines the number of GBON stations required to achieve mandatory compliance with GBON standard density requirements, the number of currently reporting stations, and the gaps in surface and upper-air stations. The WMO

¹ The UN MPTF Gateway is the online submission platform for Investment funding requests.

² Inclusive of the 7% WMO indirect support cost

GBON Global Gap Analysis serves as the basis for assessment of the GBON National Gap Analysis in the SOFF Readiness phase and preparation of SOFF investments.

It is important to note that the GBON gap presented in the WMO GBON Global Gap Analysis 2023 may differ from those outlined in the respective GBON National Gap Analyses. These differences are due to changes in national circumstances since the WMO GBON Global Gap Analysis was completed or through the application of SOFF flexibility principles,³ which is applied conservatively following a thorough review by the WMO Technical Authority. In such cases, it may be proposed to the Steering Committee that countries receive SOFF support for a higher number of stations than the GBON standard density target indicated in the WMO Global GBON Gap Analysis 2023. This is the case for all three countries presented in this document as detailed in the following sections.

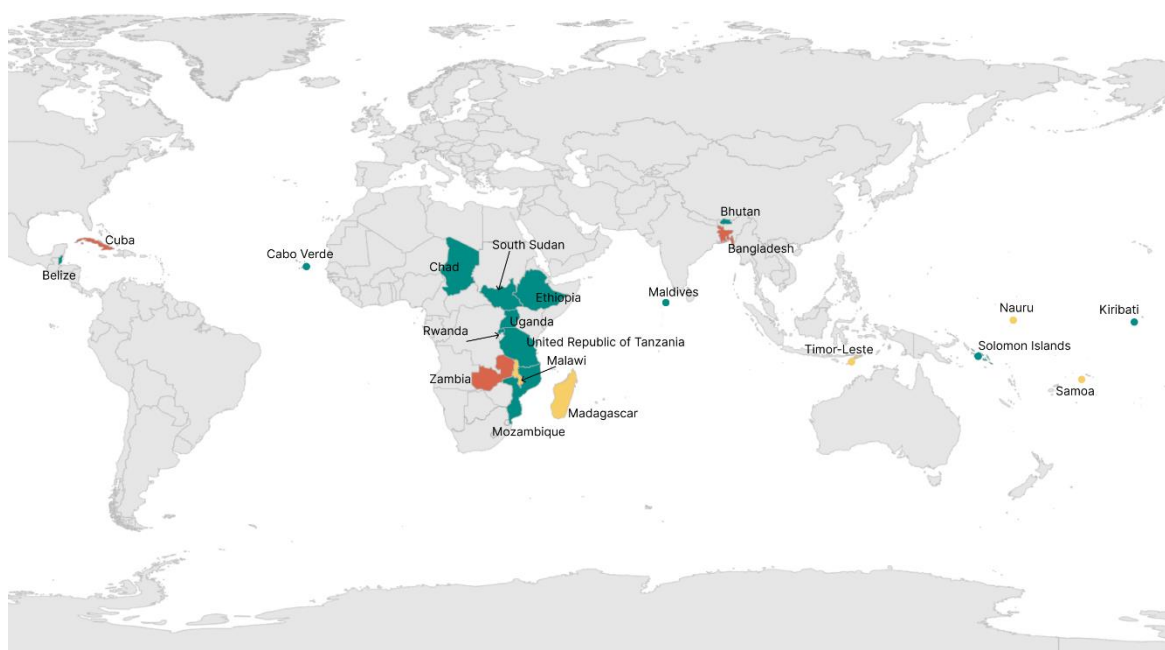


Figure 1. The map shows in green the 13 countries that have approved Investment funding requests and in yellow are the five countries with conditionally approved funding requests. Countries in red are those with funding requests that are under consideration at the 10th SOFF Steering Committee meeting.

Currently, there are no surface land stations reporting according to GBON standards in Bangladesh, Cuba, and Zambia; however, this gap will be addressed through SOFF's support for the installation of new and enhancement of existing 35 surface land stations.

³ The flexibility principle is applied in specific situations to determine the number of stations to be supported by SOFF. Two key principles guide this process: (1) *Country-specific topography*: Consideration is given to countries with unique or challenging geographical features, such as mountainous terrain, diverse microclimates, or small islands with isolated and difficult-to-access areas. (2) *Regional observation coverage*: Flexibility is also applied in cases where regional observation coverage is significantly limited, particularly in under-observed or conflict-affected areas where achieving optimal coverage is not feasible in the short term.

Additionally, the number of upper-air stations reporting according to GBON standards in these countries will increase from four to nine.

These three Investment funding requests are expected to address 4% of the GBON gap for surface land stations and 5% of the GBON gap for upper air-stations in SIDS and LDCs. Together with the 18 countries with already approved and conditionally approved Investment funding requests from previous Steering Committee meetings⁴, this will result in SOFF addressing 33% of the GBON gap for surface stations and 32% of the GBON gap for upper air-stations in all SIDS and LDCs.

1.2. Phased approach

As outlined in the [Decision 8.4.2](#) document and endorsed by the SOFF Steering Committee, a phased approach to SOFF investments is proposed when technically feasible, in cases where closing the GBON gap in one investment is not feasible due to capacity constraints or difficult geopolitical circumstances. This is expected to allow a higher number of countries to benefit from Investment funding support during SOFF's First Implementation Period.

In line with this Steering Committee decision, a phased approach is proposed in Zambia's Investment funding request, where limited existing upper-air infrastructure and significant challenges related to staffing and maintenance in remote locations necessitate a gradual implementation to ensure sustainability. Further details are provided in the following section.

2. Country context

2.1. Bangladesh

Bangladesh is a predominantly low-lying country with two distinct physiographic regions: a vast deltaic plain highly susceptible to flooding and a smaller hilly area intersected by swift-flowing rivers. The country experiences a subtropical monsoon climate, characterized by significant seasonal variations in rainfall, warm temperatures, and high humidity.

The Bangladesh Meteorological Department (BMD) manages over 300 observation stations, including 58 manual synoptic observatories, 61 automatic weather stations (AWS), 125 agricultural AWS, and six upper-air stations. In 2023, BMD strengthened its infrastructure through the Bangladesh Weather and Climate Services Regional Project, supported by the World Bank. The upgrades included the installation of new AWS, calibration facilities, and a climate database management system.

⁴ 13 countries have approved Investment funding requests namely Belize, Bhutan, Cabo Verde, Chad, Ethiopia, Kiribati, Maldives, Mozambique, Rwanda, Solomon Islands, South Sudan, Uganda, and United Republic of Tanzania. In addition, five countries have conditionally approved funding requests namely Madagascar, Malawi, Nauru, Samoa, and Timor-Leste.

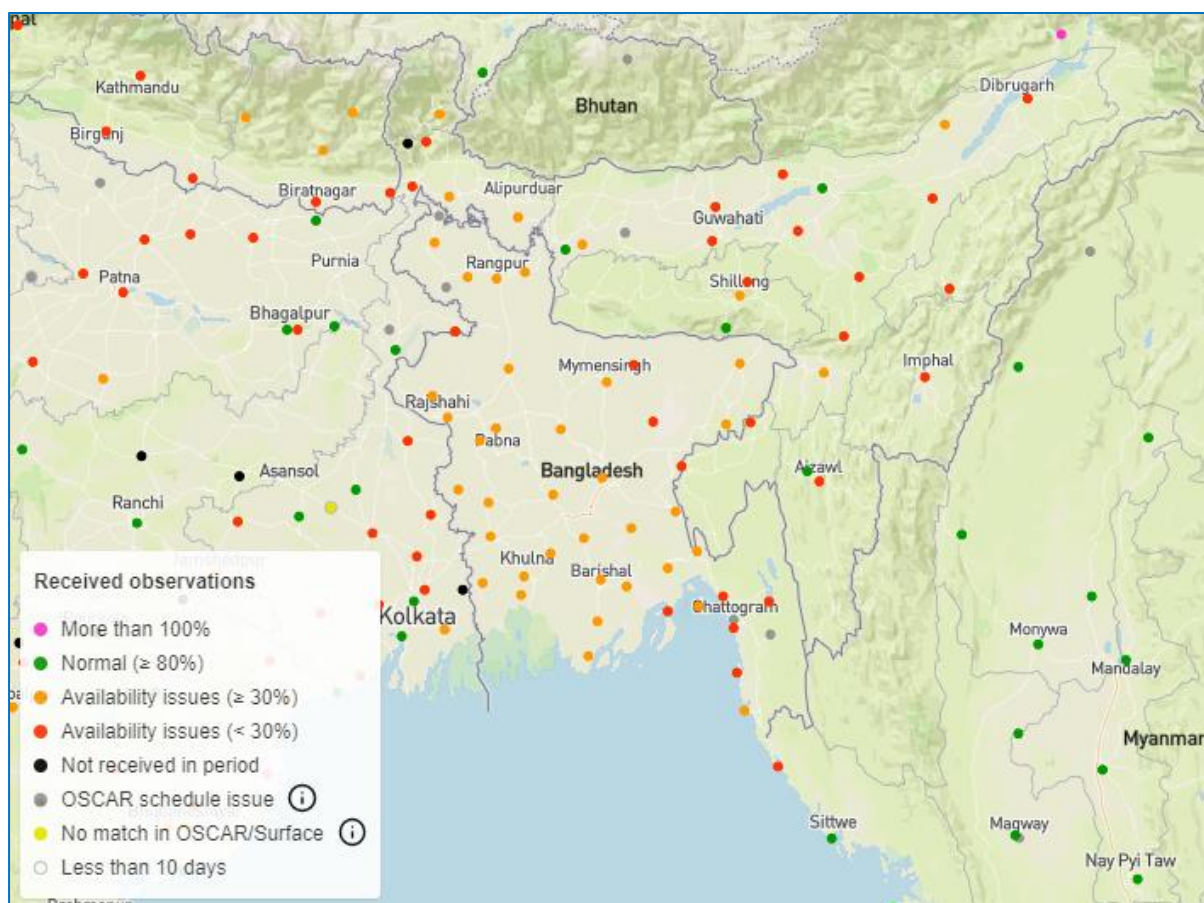


Figure 2. Availability of surface land station observations (global NWP) for surface pressure in Bangladesh and neighbouring countries for June 2023 as shown in the WDQMS webtool.

Despite existing networks and prior investments in the country, the WMO GBON Global Gap Analysis 2023 indicates that none of the stations are GBON-compliant as illustrated in Figure 2. This figure highlights the availability of surface land station observations for Bangladesh for June 2023, showcasing the availability issues (data sharing only >30%) hindering GBON compliance. The whole South Asia⁵ region lacks observations meeting GBON standards, currently reporting only one surface station meeting GBON standards. The upper air compliance is higher with the network 51% compliant for the same region. SOFF investments in Bangladesh are expected to enhance GBON compliance in the regional and contribute to the quality of regional data and forecasts.

⁵ [South Asia Hydromet Forum for Climate Resilience and Regional Cooperation for Climate Action](#)

Table 2. Overview of the WMO GBON Global Gap Analysis 2023 for Bangladesh and targets from the National Contribution Plan developed during the Readiness phase.

Country	Station type	Baseline WMO GBON Global Gap Analysis 2023			Targets National Contribution Plan	
		Reporting	Gap New	Gap Improve	Gap New	Gap Improve
Bangladesh	Surface	0	0	4	0	5
	Upper-air	4	0	0	0	1

According to the WMO GBON Global Gap Analysis June 2023, Bangladesh requires four surface stations and one upper-air station over land to achieve GBON compliance. However, the GBON National Gap Analysis conducted during the Readiness phase identified the need to improve an additional existing surface station in order to meet the necessary horizontal resolution. For the upper air stations, while four existing stations were initially reported as compliant, the National Gap Analysis identified that these stations still require improvements to maintain GBON compliance. It was therefore identified to improve one upper-air station to meet the target requirements.

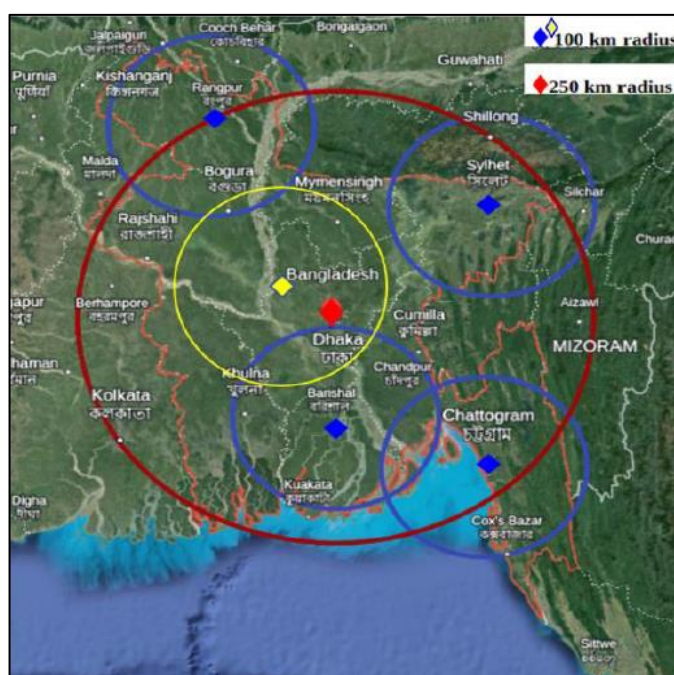


Figure 33. Map of Bangladesh with locations of four existing surface stations (blue circle) and the upper air station to be improved (red circle). The fifth surface station (yellow circle) is proposed to meet the 200 km horizontal resolution GBON requirement.

2.2. Cuba

Cuba, the largest Small Island Developing State (SIDS) in the Caribbean, is characterized by its long and narrow geographic shape, bordered to the north by the Gulf of Mexico and the Bahamas Channel, and to the south by the Caribbean Sea (Figure 4). The country lies within the hurricane belt of the Caribbean. Surface and upper air observations in this region are essential for regional forecasting during the hurricane season.

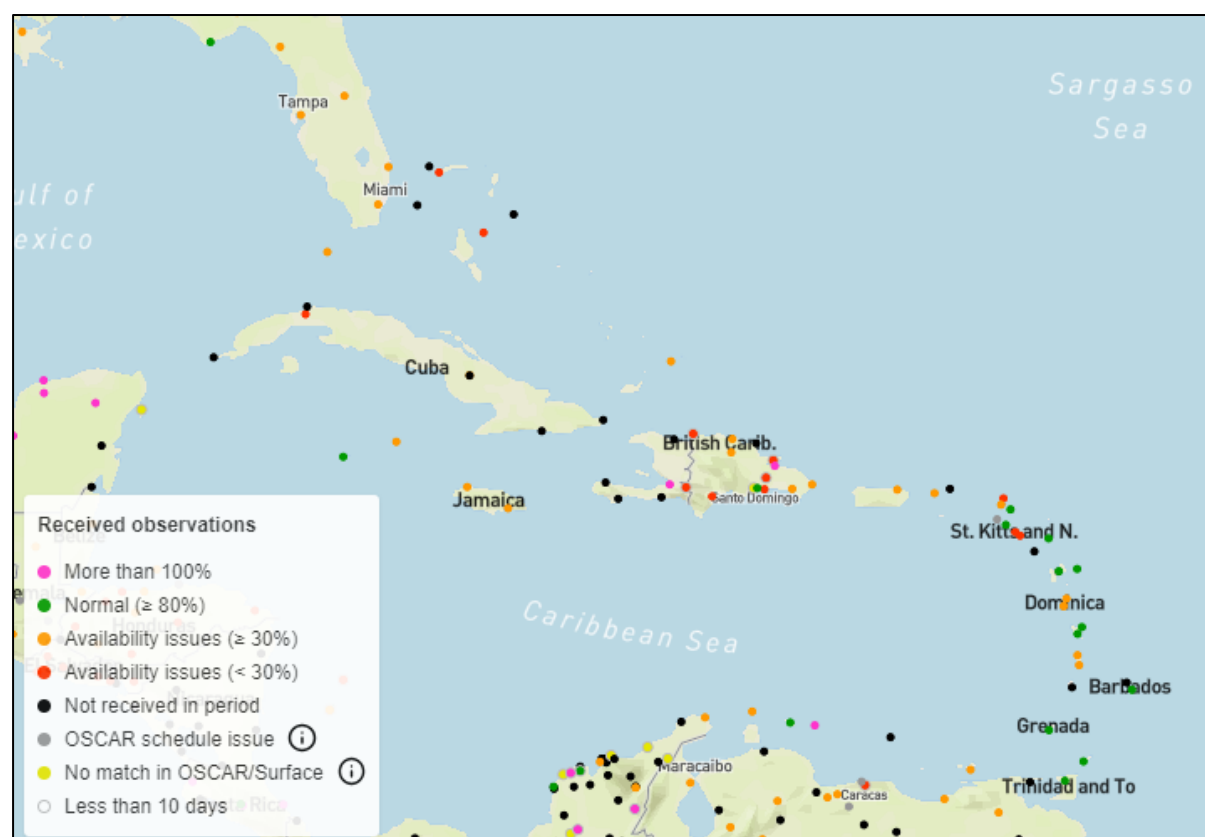


Figure 44. Availability of surface land station observations (global NWP) for surface pressure in Cuba and neighbouring countries for June 2023 as shown in the WDQMS webtool.

The Cuban Meteorological Institute (INSMET) currently operates 68 manual synoptic stations and 69 AWS, of which only 21 are operational. As of January 2024, data via WIS2.0 are transmitted internationally from only 12 stations, however they are currently not being received into the WIGOS Data Quality Monitoring System (WDQMS), in other words, no station is GBON compliant. Additionally, there are no functional upper-air stations in the country. The WMO GBON Global Gap Analysis identified the need to improve two surface stations and one upper-air station in Cuba, as shown in the table below.

Table 3. Overview of the WMO GBON Global Gap Analysis 2023 for Cuba and targets from the National Contribution Plan developed during the Readiness phase.

Country	Station type	Baseline WMO GBON Global Gap Analysis 2023			Targets National Contribution Plan	
		Reporting	Gap New	Gap Improve	Gap New	Gap Improve
Cuba	Surface	0	0	2	1	8
	Upper-air	0	0	1	2	0

However, during the SOFF Readiness phase, a more detailed assessment by the peer advisor highlighted the need to revisit the initial global analysis. The unique geographical features of Cuba, including its large island extension and varying width, as well as numerous capes, sea entrances, and diverse topography, complicate the application of a standard station distribution based on the country's total surface area. Consequently, the GBON National Gap Analysis assessed that the original station distribution model, calculated per square meter of surface area, results in an underestimation of the need for stations to respect horizontal resolution for a country the shape of Cuba. The NCP therefore proposed the distribution of nine surface stations and two upper-air stations, as shown in Figure 5 below. This distribution was approved by the WMO Technical Authority considering the specific circumstances of the country.

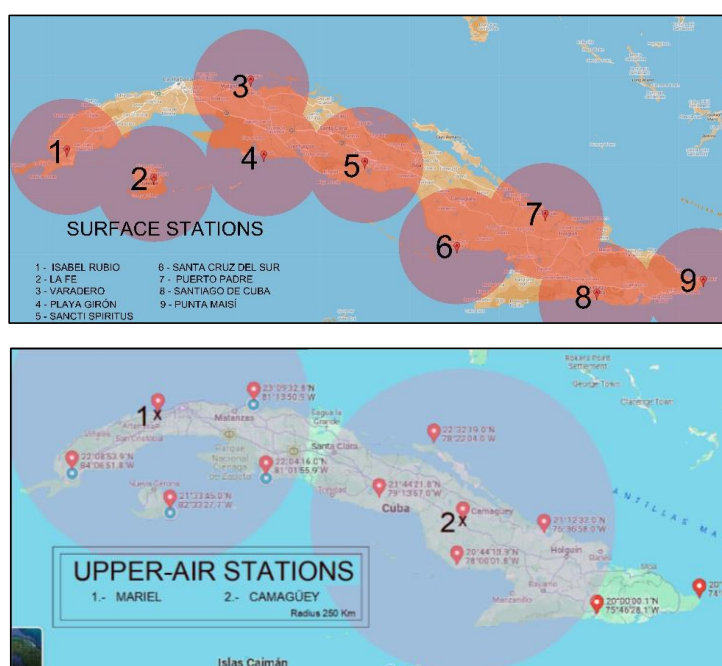


Figure 55. Map of Cuba with the proposed locations for the nine surface stations and the two new upper-air stations.

2.3. Zambia

Zambia, a landlocked country in Southern Africa, has a tropical climate influenced by its elevation and location. It experiences two seasons: a rainy season from November to April and a dry season from May to October. The country is particularly vulnerable to flooding and drought, which pose significant risks to the population. Enhancing awareness of these hazards is crucial for effective risk mitigation.

Since 2013, significant investments have been made in establishing a network of AWS across Zambia. The ADCON network, introduced between 2013 and 2015, initially established 74 AWS stations under a German-funded project but only 34 of these stations remain active. In 2020, a UNDP project added 20 AWS in vulnerable districts and provided spare parts for an additional 10 AWS at provincial capital sites. Additionally, the Zambia Meteorological Department (ZMD) is collaborating with the World Bank to install 120 AWS across all districts. Despite the investments in observational capacity in the region, according to the WDQMS in June 2023, no stations are GBON compliant or do not report data at all due to lack of human capacity (Figure 6). The WMO Global GBON Gap Analysis 2023 determined that Zambia has 0 surface stations meeting GBON standard density requirements and no upper air capacity.

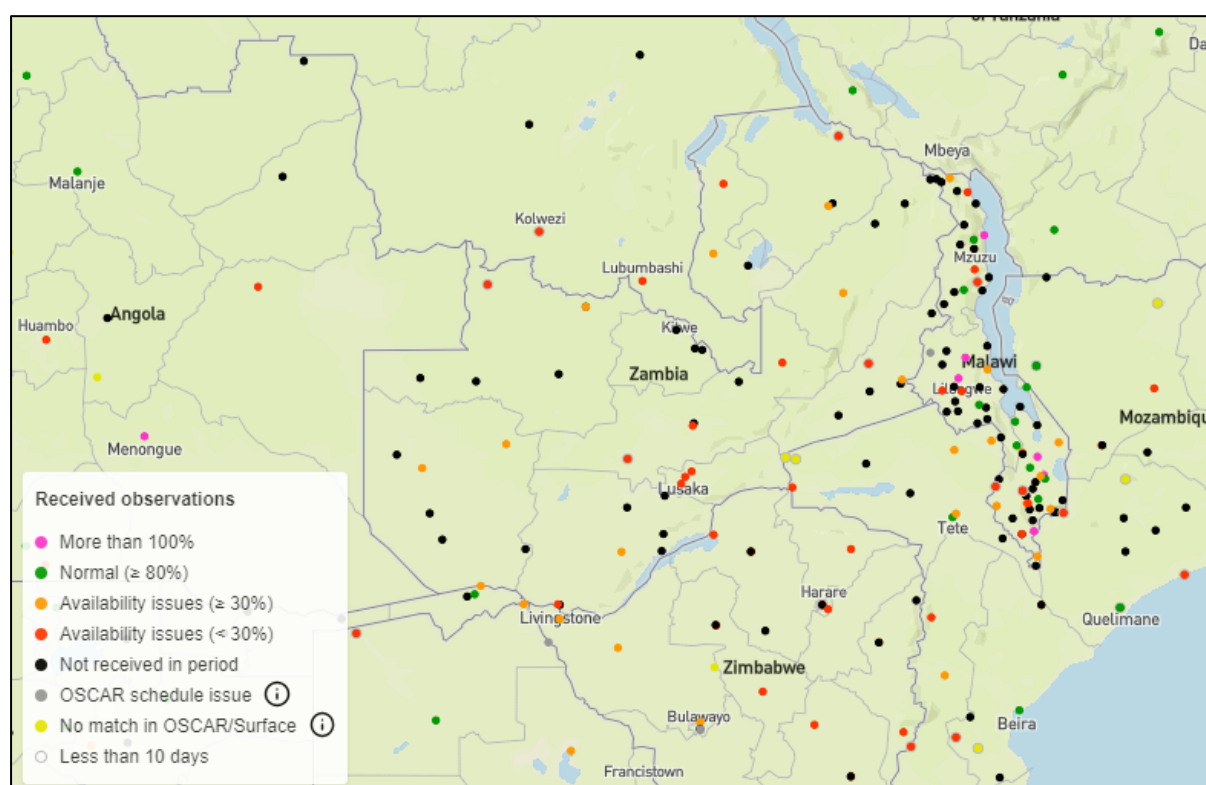


Figure 66. Availability of surface land station observations (global NWP) for surface pressure in Zambia and neighbouring countries for June 2023 as shown in the WDQMS webtool.

To meet GBON's frequency requirement of hourly observations, it is recommended that only Automatic Weather Stations (AWS) be designated as GBON stations. Furthermore, the GBON National Gap Analysis identified the need to improve 21 surface stations that were established through the above-mentioned investments. This represents an increase of two stations over the 19 recommended in the WMO GBON Global Gap Analysis 2023, as outlined in the table below. These two additional surface stations ensure comprehensive spatial coverage across Zambia at a 200 km resolution, addressing network gaps and ensuring uniform site distribution. These recommendations are considered as easy fixes considering the high number of AWS installations currently underway, minimizing costs by leveraging existing infrastructure and requiring only incremental support for station maintenance. This was approved by the WMO Technical Authority.

Table 4. Overview of the WMO GBON Global Gap Analysis 2023 for Zambia and targets from the National Contribution Plan developed during the Readiness phase.

Country	Station type	Baseline WMO GBON Global Gap Analysis 2023			Targets National Contribution Plan	
		Reporting	Gap New	Gap Improve	Gap New	Gap Improve
Zambia	Surface	0	0	19	0	21
	Upper-air	0	0	4	4	0

The [National Contribution Plan](#) also proposes the need for four upper-air stations to achieve GBON compliance, as shown in the figure below. However, Zambia currently has no active upper-air stations as those listed in WDQMS and included in the WMO GBON Global Gap Analysis 2023 are either non-operational or lack the necessary infrastructure and equipment. While the upper-air station in the capital Lusaka has some remaining physical infrastructure such as a balloon shed, its hydrogen generation and storage equipment are beyond repair and needs complete replacement for safe and sustainable operation. To address this significant gap in upper-air capacity and ensure sustainability of SOFF investment, a phased approach is recommended and applied in the funding request for the establishment of four upper-air stations. The first phase reflected in the current Investment funding request will establish the rehabilitated surface network and will finance the rehabilitation and full operationalization of one upper-air station in Lusaka. If successful, the second phase, will support establishment of additional three upper-air stations at the identified locations, marked by yellow dots in the figure below. Further details can be found in the Investment funding request document.

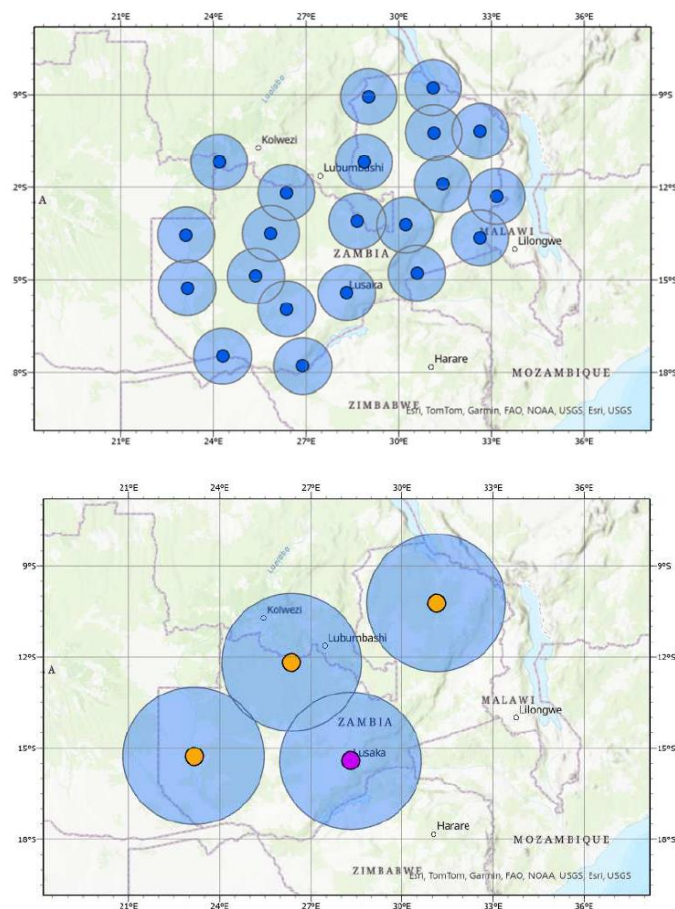


Figure 77. Map of Zambia with the proposed locations for the 21 improved surface stations (top) and four new upper-air stations (bottom).

3. Implementation arrangements

The implementation arrangements for SOFF investments are established by the designated Implementing Entity (IE) in collaboration with the supported country. This process follows the guidelines outlined in the SOFF Operational Manual and adheres to IE's respective legal agreements with the UN MPTF Office.

3.1. Execution models

The Investment funding requests define the execution model and clearly outline the roles and responsibilities of the country, the Implementing Entity and any additional executing partner(s). Recognizing the diverse profile and needs of SOFF supported countries, the choice of execution model is flexible and dependent on country demand and context.

The table below provides a brief overview of the proposed execution models. The more detailed description provided by the Implementing Entities can be found in the narrative section of the respective funding requests.

Table 5. Overview of the execution models.

Country	
Bangladesh	The Islamic Development Bank (IsDB) will oversee planning, implementation, financial management, reporting, and closure of the project. The IsDB Regional Hub in Dhaka will create a project execution strategy and establish a steering committee to guide the project. A project management unit will be set up at the head office of the Bangladesh Meteorological Department (BMD), supported by technical task teams across the country. BMD will be the national executing entity, responsible for overseeing project implementation and ensuring efficient use of resources. It will also manage activities such as workshops, capacity building, and procurement processes. The Norwegian Meteorological Institute (MET Norway), serving as the peer advisor, will provide technical advisory services to BMD and support the implementation of the National Contribution Plan, while the China Meteorological Administration (CMA) will serve as a partner peer advisor and contribute expertise in calibration, data quality control, and technical support for data products.
Cuba	The project will be implemented by the United Nations Development Programme (UNDP) under the support to national implementation modality and follow the procedures outlined in the Country Program Document 2020-2024 and UNDP's policies. UNDP will oversee the project's implementation, ensuring compliance with agreed standards, and will handle procurement processes for goods, consulting services, training, equipment installation, and monitoring. UNDP will manage financial resources through the MPTF, ensuring proper tracking and reporting. The Cuban Institute of Meteorology (INSMET) will serve as the implementing partner, responsible for project execution. Monitoring mechanisms will be established in consultation with INSMET to ensure project success, with regular updates to the annual work plan to address challenges and mitigation measures. The Spanish Meteorological Agency (AEMET) will provide technical advisory services to support INSMET in implementing the National Contribution Plan. AEMET will also assist IT bidding procedures; provide capacity-building training; and advise on data management systems, lifecycle maintenance, calibration, and data transmission for AWS and radiosounding. AEMET will also contribute to the final reporting of the project.
Zambia	The World Food Programme (WFP) will oversee the implementation, financial management, reporting, and closure of the project, ensuring the proper use of grant proceeds. A steering committee, comprising WFP and the Zambia Meteorological Department (ZMD), will

Country	
	coordinate project activities, with technical advisory support provided by the UK Met Office as the Peer Advisor. ZMD, as the national executing entity, will be responsible for project execution in Zambia, ensuring the effective and efficient use of resources. A project cooperation agreement between ZMD and WFP will define roles, responsibilities, and procurement procedures. While WFP will manage procurement using its expertise and country office resources, ZMD, in collaboration with WFP and the Peer Advisor, will specify technical requirements and ensure compliance with procurement standards. The project will leverage strong coordination between ZMD's headquarters and its four regional maintenance hubs, with decentralized support from WFP field offices. ZMD will oversee data transmission to WIS 2.0, supported by the Peer Advisor and relevant service providers, ensuring alignment with project objectives.

3.2. Public-private partnerships

Countries are encouraged to explore public-private partnerships, where applicable, to facilitate the cost-effective and efficient implementation of the GBON National Contribution Plan and achieve sustainable compliance with GBON requirements. The role of the private sector during the Investment Phase for the three countries is outlined below:

Table 6. Overview of public-private partnerships.

Country	
Bangladesh	In Bangladesh, meteorological observations and data services are exclusively provided by the Bangladesh Meteorological Department (BMD), which operates under a fully public business model. BMD offers historical and climatological data for research and commercial purposes at predefined rates upon request. To strengthen collaboration with stakeholders, particularly the private sector and ensure systematic engagement, it is recommended that a stakeholder engagement plan be developed during the Investment phase. BMD plans to establish maintenance contracts with system providers to address challenges in maintaining its systems due to workforce limitations and ensure uninterrupted services.
Cuba	Efforts will focus on strengthening the partnership between INSMET and the private sector by identifying areas of mutual benefit for stakeholders, including tourism operators, agricultural enterprises, and the energy sector. This will provide INSMET with opportunities to

Country	
	expand its portfolio of services, enhance collaborations other sectors requiring meteorological data, and engage new economic actors. Incorporating private sector operators, particularly micro, small, and medium-sized enterprises (MSMEs) and voluntary observers, such as small-scale farmers, will present both opportunities and challenges. INSMET can offer these stakeholders updated meteorological and climatological information, advisory services, and guidance on acquiring meteorological equipment. In return, MSMEs and self-employed workers can contribute to software development, spare parts supply, and data sharing with INSMET.
Zambia	Service agreements with private suppliers will be established to facilitate the supply, installation, and maintenance of essential equipment. These agreements will encompass upgrading AWS stations to WIS 2.0 connectivity, supplying spare parts, conducting advanced sensor calibrations, and providing training for ZMD staff. Similarly, the agreement for the upper-air station will include the installation and maintenance of two radiosonde ground systems, a hydrogen generator, and backup power, with connectivity ensured through a mobile modem.

3.3. Regional Implementation

SOFF promotes regional and sub-regional approaches to GBON implementation and encourages countries to explore opportunities to create economies of scale and optimize the design of the observing networks. This approach aims to promote coordinated implementation, leverage investments and climate finance opportunities beyond SOFF, and facilitate knowledge sharing and consultation on technical issues relevant to specific regions. Additionally, regional benefits during the Investment phase will be pursued in collaboration with regional organizations. The table below outlines how the regional approach is incorporated into the funding requests.

Table 7. Overview of regional implementation.

Country	
Bangladesh	BMD participates in several regional organizations focused on capacity building in hydrometeorology, notably the Regional Integrated Multi-Hazard Early Warning System (RIMES) and the BIMSTEC Centre for Weather and Climate (BCWC). It collaborates with regional centres and meteorological organizations, such as the Regional Specialized Meteorological Centre (RSMC), India Meteorological Department (IMD), MET Norway, China Meteorological Administration (CMA), Japan Meteorological Agency (JMA), and Korea Meteorological Administration (KMA), for early warnings, weather prediction, and climate research.

Country	
	Recommendations include partnering with CMA for meteorology training and calibration, engaging with RIMES for capacity building in various hydromet disciplines, and collaborating with the Regional WIGOS Centre for station metadata and data quality improvement. Additionally, BMD should explore opportunities with WMO training centres for knowledge exchange and technical assistance. There are also opportunities for regional collaboration in equipment calibration, maintenance, and sub-regional network design. BMD could benefit from specialized facilities for equipment calibration, training packages, and continued engagement with RIMES for further capacity development. Additionally, BMD should explore establishing a backup CDMS system (CLIMSOFT) in collaboration with MET Norway for further technical support.
Cuba	Cuba's strategic location in the Caribbean positions it as a key player in regional meteorology, particularly in forecasting hurricanes, cold fronts, and droughts. Through INSMET, the country provides critical forecasts and early warnings that benefit both Cuba and neighbouring countries. SOFF's investment will further strengthen GBON affiliation in the Caribbean by integrating Cuba's real-time data into regional systems to enhance hurricane forecasting and disaster response. INSMET actively collaborates with regional meteorological services, such as those in the Dominican Republic and Haiti, as well as with WIGOS Regional Centres to improve data management and quality assurance. Additionally, Cuba's meteorological calibration laboratory contributes to data accuracy, enhancing weather forecasting capabilities across the Caribbean and Latin America. The laboratory also serves as a regional training center, building local capacity for effective meteorological data management. These efforts promote regional cooperation and strengthen the Caribbean's resilience to climate challenges.
Zambia	In terms of capacity development, there is potential for regional collaboration with the WMO Regional Training Centre, hosted by the South African Weather Service (SAWS). As the Regional WIGOS Centre for SADC countries, including Zambia, SAWS offers opportunities for joint capacity-building initiatives to enhance GBON data performance. Collaboration with the Meteorological Association of Southern Africa (MASA) and SADC CSC strengthens training initiatives, equipment maintenance, and calibration. Through existing partnerships, such as the Joint Programme on Strengthened Early Warning and Anticipatory Action, WFP is also advancing regional training initiatives, including a training on impact-based forecasting. WFP, in partnership with the FAO and IFRC, co-hosts the Regional Early Warning and Anticipatory Action Working Group, focusing on enhancing climate services for anticipatory action within

Country	
	the Southern African Development Community (SADC). To support this effort, WFP has launched a sub-working group on climate services that is closely linked to the SADC Climate Services Centre (SADC CSC).

4. Leveraging investments

SOFF investments aim to leverage investments and co-financing beyond its own resources to ensure more comprehensive programmatic support supporting the entire hydro-meteorological value chain. SOFF Implementing Entities have an important role in integrating or aligning SOFF funding with larger projects and programmes within the beneficiary country, while also identifying opportunities to mobilize additional investments across other areas of the hydro-meteorological value chain. These efforts will draw on the Implementing Entities' own resources as well as from multilateral climate and environmental funds. This section outlines how the three SOFF funding requests leverage resources from multilateral climate funds and other sources.

4.1. Operationalizing the collaboration framework for enhancing observation

SOFF investments are designed to leverage synergies with key multilateral climate funds, including the Adaptation Fund (AF), Climate Investment Funds (CIF), Green Climate Fund (GCF), Global Environment Facility (GEF), and the Climate Risk and Early Warning Systems (CREWS), to enhance the effectiveness and sustainability of investments in systematic observations. The SOFF Secretariat, together with the Secretariats of these five funds, signed a [Framework for Collaboration for enhancing systematic observation and improving the use of essential weather and climate data for effective climate action](#). This framework seeks to further enhance complementarity by leveraging the work of SOFF to support better climate information services and early warning systems.

Implementing Entities for Bangladesh, Cuba, and Zambia have identified potential areas for further synergies and the operationalization of the Collaboration Framework through SOFF investments. These are summarized in the table below:

Table 8. Overview of the operationalization of the SOFF Collaboration Framework with the multilateral climate funds through the funding requests.

Country	Climate fund	Project title	Status	Financing amount ⁶	Total
Bangladesh	AF	Adaptation Initiative for Climate Vulnerable Offshore Small Islands and Riverine Charland in Bangladesh	Ongoing	\$9,995,369	\$80,915,869
	CIF				
	CREWS				
	GCF	Climate Resilient Infrastructure Mainstreaming (CRIM)	Ongoing	\$40,000,000	
		Enhancing adaptive capacities of coastal communities, especially women, to cope with climate change induced salinity	Ongoing	\$24,980,000	
	GEF	Community-based Climate Resilient Fisheries and Aquaculture Development in Bangladesh	Ongoing	\$5,940,500	
Cuba	AF				\$23,952,294
	CIF				
	CREWS	Improve hydrometeorological information and early warning for disaster risk reduction and energy sectors	Ongoing	\$250,000	
	GCF	Coastal Resilience to Climate Change in Cuba through Ecosystem Based Adaptation-"MI COSTA"	Ongoing	\$23,927,294	
	GEF				
Zambia	AF				\$83,980,000
	CIF	Strengthening Climate Resilience in the Kafue Sub-Basin	Completed	\$38,000,000	
	CREWS				
	GCF	Strengthening Climate Resilience of Agricultural Livelihoods in Agro-Ecological Regions, I and II in Zambia	Ending in 2025	\$32,000,000	

⁶ Financing amount from the climate funds are obtained from <https://climateprojectexplorer.org>.

Country	Climate fund	Project title	Status	Financing amount ⁶	Total
	GEF	Adaptation to the effects of drought and climate change in Agro-ecological Zone 1 and 2 in Zambia	Completed	\$3,795,000	
		Building the Resilience of Local Communities in Zambia through the Introduction of Ecosystem-based Adaptation (EbA)	Ongoing	\$6,185,000	
		Strengthening Climate Information and Early Warning Systems in Eastern and Southern Africa for Climate Resilient Development and Adaptation to Climate Change - Zambia	Completed	\$4,000,000	

4.2. Leveraging co-financing, blended finance and other investments

In addition to the Collaboration Framework with the five climate funds, SOFF activities will also leverage other investments in the countries including bilateral cooperation activities, the work of technical agencies, and regional programmes. Implementing Entities are expected to further identify and integrate opportunities for SOFF Investment activities to complement or leverage previous, on-going or planned initiatives in other aspects of the hydro-meteorological value chain.

Table 9. Overview of complementary investments beyond the five multilateral climate funds.

Country	Project title	Financing source	Status	Financing amount
Bangladesh	Bangladesh Weather and Climate Services Regional Project	World Bank	Ongoing	\$127,800,000
	Project for Improvement of Meteorological Radar System in Dhaka and Rangpur	JICA	Ongoing	1,955,700,000 (BDT)
	Strengthening the Capacity of Weather and Climate Services project	JICA	Ongoing	267,300,000 (BDT)
	Support of the GEO-KOMPSAT-2A Receiving and Analysis System in Bangladesh	Korea Meteorological Administration (KMA)	Completed	\$2,000,000
Cuba	-	-	-	-
Zambia	Transforming Landscapes for Resilience and Development in Zambia	World Bank	Ongoing	\$100,000,000
	Zambia Integrated Forest Landscape Project	World Bank	Completed	\$32,800,000

5. Risks

The funding requests also outline the application of the [SOFF risk management framework](#), with a focus on the implemented risk mitigation measures. The table below summarizes the identified risks in the funding requests and their associated risk levels:

Table 10. Risk levels as identified in the funding requests.

Risk	Bangladesh	Cuba	Zambia
Non-compliance with fiduciary and procurement standards in some SOFF activities	Medium	Medium	Medium
SOFF-funded investments cause minor environmental or social impacts, particularly in the installation of equipment where minor works may be required	Low	Low	Medium
NMHS staff depart after being trained	High	High	High
Slow implementation and delays in procurement, installation and capacity building activities	High	High	High
After the conclusion of the Investment phase, GBON data are not collected or shared or are shared of insufficient quality	Low	Low	High
Destruction or theft of SOFF-financed equipment and infrastructure	Low	Low	Very high
Countries cannot make optimal use of data, including accessing or using improved forecasts products from the Global Producing Centers throughout the hydromet value chain	Low	High	Medium

SOFF Investment phase activities include extensive capacity building for both human resources and institutions, such as trainings, staff salaries and regional workshops, alongside infrastructure investments. These activities address various risks, including

issues related to data sharing, data quality, and data flow, as well as staff retention. Workshops with stakeholders, including civil society organizations, help raise awareness and support for the importance of national meteorological services, while also serving as protective measures for stations and equipment, particularly in remote areas where risks of destruction or theft exist.

To tackle risks related to fiduciary and procurement standards compliance, the Implementing Entities will evaluate the financial management capacity of national Executing Entities and provide ongoing support for capacity development. Close monitoring of project finances, annual audits, and establishment of internal controls will ensure compliance with anti-fraud and anti-corruption frameworks, along with training on procurement and fiduciary policies. Clear responsibilities will be outlined through agreements among parties.

Environmental and social risks will be addressed through the policies and procedures of the Implementing Entity. Adherence to environmental policies and implementation of site-specific mitigation plans informed by Environment and Social Impact Assessments will ensure responsible project execution.

Effective collaboration between the Implementing Entity, peer advisor, and beneficiary countries, along with recruitment of experienced procurement staff and frontloading of complex procurements within the initial 18 months of implementation, will address risks associated with slow implementation and investment activity delays.

To address the risk of countries not optimally utilizing data, SOFF is partnering with Global Producing Centres, such as the European Centre for Medium-Range Weather Forecasts (ECMWF), to provide free access to improved forecast data and graphical products.

6. Prioritization of Investment funding requests

Through [Decision 8.4.2](#), the SOFF Steering Committee endorsed an approach to address Investment funding requests within the context of limited financial resources. This includes prioritization of Investment funding requests applying the SOFF programming criteria as adopted by [Decision 1.4](#), putting particular emphasis on closing the most significant data gaps and creating leverage.

This prioritization approach has been applied to this batch of Investment funding requests presented at the 10th SOFF Steering Committee meeting. In light of the information gathered during the Readiness phase and considerations presented in the funding requests, the SOFF Secretariat recommends that the SOFF Steering Committee conditionally approve the three funding requests in the following order:

- **Zambia:** Zambia is surrounded by non-GBON compliant countries for surface and upper-air stations, for surface mostly requiring increased frequency of reporting and for upper air requiring additional stations. The only GBON compliant country in Southern Africa is South Africa, for surface, but not upper-air stations.

Zambia's current network of surface observation stations does not meet GBON compliance standards and the country lacks GBON-compliant upper-air stations. The funding request, if approved, provides a strategic opportunity to bridge these gaps to ensure long-term sustainability by upgrading existing surface stations, leveraging the large investments in infrastructure from previous programmes in the country. The country is also adopting a phased approach for the establishment of upper-air stations to ensure sustainability, first establishing one and if successful will apply for additional SOFF funding to establish the additional three. Support from SOFF will play a critical role in helping Zambia achieve GBON compliance while promoting regional collaboration through enhanced capacity development.

The investment in Zambia is prioritized for its potential to leverage over USD 80 million in previous investments, with the SOFF investment focusing on human capacity and sustainability of operations and maintenance rather than infrastructure.

- **Cuba:** The Caribbean region is heavily impacted by extreme weather and observations in the Caribbean hurricane belt play an important role in regional and global forecasts. Cuba, surrounded by EEZ with the closest islands being Haiti, Dominican Republic and Jamaica, is an essential contributor to observations for the region. Despite its location in the Caribbean hurricane belt and strategic importance in regional meteorology, Cuba has received relatively limited investments in climate information and early warning systems. Cuba plays a crucial role in forecasting hurricanes, cold fronts, and droughts, which have significant impacts across the region. According to the Country Hydromet Diagnostics, Cuba has moderate to high maturity scores, with a well mandated and managed National Meteorological and Hydrological Services and sufficient capacity to address operational gaps. However, the Institute of Meteorology (INSMET) lacks financial resources, faces challenges related O&M due to the embargo as well as an aging workforce. With support from SOFF, Cuba has the opportunity to strengthen its meteorological capacity, foster regional collaboration, and enhance the Caribbean's overall resilience to climate-related challenges.
- **Bangladesh:** Support from SOFF is requested as current none of the existing surface stations are GBON-compliant due to challenges such as irregular observations resulting from manpower shortages and the concentration of stations in the same area. However, it is important to note that Bangladesh has received significant investments from various sources aimed at improving its national meteorological and hydrological services through upgrades in both equipment and human capacity. There is a great potential to leverage previous investments in infrastructure and calibration facilities, with SOFF focused on

human capacity and sustainable operations and maintenance. With some of these initiatives still ongoing, the aim of SOFF investment will be to leverage these investments to create a large impact, through both financial support and technical assistance, to achieve GBON compliance with a relatively small investment.