



SOFF Readiness Funding Request Template

Version 1.0

17 January 2023

Systematic Observations
Financing Facility

**Weather
and climate
data for
resilience**

A network diagram consisting of white curved lines and circular nodes, resembling a globe or a data network, is located in the bottom right corner of the page.

SOFF Readiness Funding Request

The SOFF Readiness Funding Request template includes the following sections:

1. **Basic information**
2. **SOFF Programming criteria**
3. **Readiness phase outputs, timeline and budget**
4. **Monitoring**
5. **Readiness Phase Risk Management Framework**

The **Assignment Terms of Reference** are included in **Annex 1**.

1. Basic information

SOFF Beneficiary Country	<i>CABO VERDE</i>
Country Focal Point	Ester Araújo de Brito Executive Administrator and the acting President of Institute National of Meteorology and Geofisycs Permanent Representative of Cabo Verde at WMO
Peer advisor	Royal Netherlands Meteorological Institute (KNMI)
Peer advisor Focal Point	Rubert Konijn KNMI Strategic business manager Climate Gé Verver /Janet Wijngaard Coordinator International Affairs
Prospective Implementing Entity	United Nations Environment Programme (UNEP)
Prospective Implementing Entity Focal Point	Jochem Zoetelief Head, Climate Services and Capacity Building Unit Early Warning and Assessment Division United Nations Environment Programme (UNEP)
Total budget USD	73000
Delivery timeframe	April-October 2023
Date of approval	
Signature SOFF Steering Committee co-chairs (after Steering Committee approval of the funding request)	

2. SOFF Programming criteria

Table 1: Programming criteria

<p>Close the most significant data gaps</p>	<p><i>Currently, the Cabo Verde observation network, with the transition to automatic stations, consists of the following:</i></p> <ul style="list-style-type: none"> <i>-Surface land based observation</i> <i>There are stations on all islands; in total 41 AWSs. But some are in bad shape and/or are lacking communication facilities. Only 20 are reporting regularly.</i> <i>-Upper air land-based observation</i> <i>One upper air observation system in Sal Islan, is stopped since 2017 due to lack of consumables and a hydrogen production unit.</i> <i>-Marine observation</i> <i>Even though marine observations are not part of SOFF scope of support, SOFF technical guidance on the GBON National Contribution Plan encourages countries and their peers to assess marine observation gaps for potential future support.</i> <i>Cabo Verde will include the analysis of marine observation gaps in the Readiness phase taking into account that the islands are surrounded by the large data-sparse Atlantic Ocean, which makes observations in Cabo Verde very valuable for NWP, representing a large geographical area. Currently the three AWSs in the three main ports of the country are all without signal.</i> <p><i>The WMO Global GBON Gap Analysis for Cabo Verde provides an estimate of four (4) surface and one (1) upper-air stations that are needed to meet the GBON requirements, and there is no reference on marine station.</i></p> <p><i>However, given the specific geographic distribution and the dimension of the islands, it should be considered to put in place at least one station per island, i.e. nine (9) surface stations, and at least three marine stations (S.V, Praia, Sal).</i></p> <p><i>The assessment and plan prepared during the Readiness phase will include the communication facilities, e.g. the real-time inter-island observational data transmission and connection to the regional data center.</i></p>
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	<p><i>The assessment and plan will also include the operation and maintenance of the measuring equipment in order to ensure the quality and reliability of the observed data.</i></p> <p><i>The increase in information derived from the extension of the AWS network, places higher demands on the data concentration center and the database in terms of infrastructure and database tools as well as on the need for training in the use of data quality control techniques.</i></p> <p><i>Currently these are a major challenges for the institute.</i></p> <p><i>The items mentioned above will be further specified and motivated using the GBON criteria in the Gap Analysis and National Contribution plan delivered during this the SOFF Readiness phase.</i></p>
<p>Target easy fixes</p>	<p><i>As described in the previous point, physically Cabo Verde does already have an observation network, but most of the stations are inoperative. Due to the COVID 19 pandemic all station are still without maintenance, and last year with the economic crises travel to other islands was quite difficult.</i></p> <p><i>However, it is possible to recover most of the equipment:</i></p> <ol style="list-style-type: none"> <i>1. Sounding system update, and financing for the permanent acquisition of radiosondes and balloons as well as recovery of the hydrogen generator;</i> <i>2. Recovery of some AWSs from the observing network through the acquisition and installation of spares.</i> <i>3. Although maritime observations in the port are strickly not in the SOFF scope, recovery of the maritime stations by acquisition and replacement of sensors (spares) will be part of the gap analysis and national plan.</i> <i>4. Improve data transmission technology from AWSs to the internal network.</i> <i>5. Extend the current network (connecting only four islands) to other islands, and increase the bandwidth of the inter-island communication network.</i> <p><i>The recovery of the stations are easy fixes that will be further specified in the GBON National Contribution Plan delivered in the proposed Readiness Phase</i></p>

<p>Maximize delivery capacity</p>	<p><i>KNMI and UNEP (peer advisor and Implementeing Agency respectively) both have the capacity to contribute effectively and efficiently to the Readiness Phase deliverables.</i></p> <p>-</p> <p><i>The KNMI (Royal Netherlands Meteorological Institute), with years of joint work with the INMG and the results achieved, has proven to be a reliable institution with the capacity to deliver SOFF support efficiently and effectively in Cape Verde.</i></p> <p><i>A Formal Bilateral Cooperation between KNMI and INMG started in 2019, with implementation of a project plan, that support INMG by capacity building and training, improving climate data management, improving seasonal forecasts, prediction of droughts, hurricanes and dust storms, and by assessing the long-term sea level and sea temperature rise. This formal cooperation project will be formally closed in spring 2023.</i></p> <p>-</p> <p><i>The UNEP is considered one of Cabo Verde's strategic partners in the area of the environment, and we can highlight some:</i></p> <ul style="list-style-type: none"> - <i>National Ozone Program, funded by UNEP;</i> - <i>CV has already prepared and submitted 6 biodiversity reports with UNEP support;</i> - <i>Implementing an updated action plan on biodiversity, with the support of UNEP.</i> <p><i>UNEP is already implementing observations-related projects in developing countries. It is currently working on implementing a GCF-funded 5-year project "Enhancing Early Warning Systems to build greater resilience to hydro-meteorological hazards in Timor-Leste" and a GCF-funded 5-year programme "Enhancing Climate Information and Knowledge Services for resilience in 5 island countries of the Pacific Ocean" where strengthening observational capacity is one of the key components. UNEP is also co-leading Pillar 2 of Early Warnings for All Initiative (Observations & Forecasting).</i></p>
<p>Create leverage</p>	<p><i>The CREWS – West Africa project and the ClimSA project will both benefit from the re-establishment and upgrade to GBON standards of the observation network in Cabo Verde. It will contribute to more effective early warnings. The observations will</i></p>

	<p><i>also be submitted to the Regional Climate Centre strengthening the climate change assessments and underpinning of climate change adaptation actions.</i></p> <p><i>As an Accredited Entity to GCF, UNEP could work in the future to mobilise GCF financing to further strengthen hydrometeorological capacity in Cabo Verde based on the needs identified through Country Hydromet Diagnostics.</i></p>
<p>Sub-regional gains</p>	<p><i>The INMG is open to collaborate with countries in the region to optimize the installation, operation and maintenance of the observation network.</i></p> <p><i>The INMG has experience in collaborating with the African Portuguese Countries (Guine Bissau, S.Tomé e Príncipe) in the field of weather forecast and implementation of a common project (2007 -2010);</i></p> <p><i>Regionally, INMG is available to be part of the initiative implementing EWS for the region, sharing the observational data in near real time, which will be possible after the upgrade and installation of additional communication facilities as part of the SOFF initiative.</i></p> <p><i>If additional facilities for operation and maintenance of the measuring equipment are installed through SOFF, these might also be used by other countries in the region.</i></p>
<p>Ensure country balance</p>	<p><i>Cabo Verde is on the list of Small Island Development States (SIDS) designated by the UN, and an ODA-recipient country (OECD, Lower Middle income country). It is not a Fragile and Conflict affected State.</i></p> <p><i>Located some 620 km off the west coast of Africa between parallels 17°12' and 14°48', north latitude, and meridians 22°44' and 25°22', west longitude, Cabo Verde is an archipelago of ten islands with an area of 4033 km², and a vast exclusive economic zone (800 000 km², 200 times its land surface). Pre-pandemic statistical data shows a country whose population doubled since Independence in 1975, to count 544,000 inhabitants in 2018, with an estimated increase to 620,000 inhabitants in 2030, a scenario that presents opportunities and challenges.</i></p>

As a small island development state (SIDS), Cabo Verde, a very small emitter of GHG emissions at a per capita rate of just under 1tCO₂eq, is disproportionately vulnerable to external economic shocks and extreme climatic events that can instantly erase years, if not decades of development gains.

Cabo Verde is particularly exposed to increasingly extreme weather events, desertification of land and persistent droughts, occasional but severe and highly damaging heavy rains (most recently in September 2020), and sea-level rise. As a consequence, the archipelgo faces severe adaptation challenges associated with, among others, water resource scarcity, food and energy security.

3. Readiness phase outputs, timeline and budget

The Terms of Reference for the development of the SOFF Readiness phase outputs (see Annex I) provide more detailed information. They also summarize the roles and responsibilities, as stated in the [SOFF Operational Manual](#), of the beneficiary country, the peer advisor, the prospective Implementing Entity and WMO Technical Authority for the delivery of the Readiness phase outputs.

The budget for the development of the SOFF Readiness phase outputs by the SOFF peer advisor shall be a lump-sum, fixed cost amount. It shall be calculated using a cost-recovery approach based on the peer advisors' standard cost recovery rates.

Table 2: outputs, timeline and budget

Outputs	Timeline						
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7
National GBON Gap Analysis							
GBON National Contribution Plan							
Country Hydromet Diagnostic (on demand)							

Total budget USD¹	73000
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4. Monitoring

The beneficiary country and peer advisor shall notify the SOFF Secretariat on any delays that may impede the timely delivery of the Readiness phase outputs. If the assignment takes more than six months, the SOFF peer advisor shall submit semi-annual progress reports to the SOFF Secretariat (form to be provided by the SOFF Secretariat) stating the delivery status of the outputs.

The Readiness phase completion will be monitored by the peer advisor and the SOFF Secretariat using the following country-level Results Framework for the Readiness phase.

Table 3: Result framework

Outputs	Indicator	Target
1. GBON National Gap Analysis	GBON gap established and reviewed (Y/N)	GBON gap analysed and reviewed by WMO Technical Authority
2. GBON National Contribution Plan	GBON national contribution plan developed (Y/N)	GBON national contribution plan developed and reviewed by WMO Technical Authority
	GBON National Contribution Plan includes gender considerations (Y/N)	GBON National Contribution Plan includes gender considerations
3. Country Hydromet Diagnostic (on demand)	Country Hydromet Diagnostic developed (Y/N)	Country Hydromet Diagnostic developed

5. Evaluation

An evaluation from both, the beneficiary country and the prospective Implementing Entity on the quality of support received by the peer advisor will be conducted at the end of the Readiness phase and the peer advisor’s assignment (form to be provided upon completion of the Readiness phase by the SOFF Secretariat).

¹ Eligible expenditures are limited to: Staff and consultants; Consultations, national technical workshops, and communications; Travel and transportation costs; Other incidental expenditures.

6. Readiness Phase Risk Management Framework

Table 3: Risk Management Framework

Risk category	Description	Probability	Mitigation action
<p>Contextual risks Risks related to conflicts, safety and political insecurity jeopardizing the delivery of the Readiness phase outputs</p>	<p>The travel advise for Cabo Verde by the Dutch government is negative (code Orange or Red) or travel is impossible for other reasons, making in-person meetings impossible. Deliverables might be delayed.</p>	<p>Low/medium</p>	<p>All meetings will be online, and more meetings will be organised.</p>
<p>Institutional risks Risks related to the beneficiary country's institutions participation in the Readiness phase activities</p>	<p>INMG does not (or can not) provide personel, information, or expertise needed to prepare deliverables</p>	<p>Low</p>	<p>This will be closely monitored and discussed in the regular meetings/visits. INMG will assign multiple persons to contribute to the deliverables, thus avoiding single points of failure.</p>
<p>Programmatic risks Risks related to country ownership of the Readiness phase outputs</p>	<p>The gap analysis and the national contribution plan is not endorsed by peer advisor, implementing agency</p>	<p>Low</p>	<p>The IE engages in an early stage and monitors and takes part in the assessment process of the readiness phase ensuring the</p>

	and beneficiary country		development of a shared vision. In case there are remaining unresolved issues, the WMO technical authority may be consulted.
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Annex 1. Assignment Terms of Reference for the development of the SOFF Readiness phase outputs

1. Purpose and scope

The purpose of this Assignment is to provide SOFF peer advisory services by the Royal Netherlands Meteorological Institute (KNMI) to Cabo Verde to develop the outputs of the SOFF Readiness phase as described in section 3 of these Terms of Reference.

The provisions defined in the Terms of Reference are based on the SOFF Operational Manual, in particular Section 4.4 on Operational Partners and Section 4.5.1 on the Readiness phase.

2. Roles and responsibilities

Beneficiary country National Meteorological and Hydrological Service

- Is responsible for implementing the activities of the Readiness phase with the support from the peer advisor and the prospective Implementing Entity.
- Prepares the Assignment Terms of Reference following the standard Terms of Reference provided by the SOFF Secretariat, in collaboration with the peer advisor and in coordination with the prospective Implementing Entity.
- Submits the funding request for the SOFF Readiness phase support using the standardized template provided by the SOFF Secretariat.
- Is responsible for collaborating with the peer advisor to provide all the necessary information and participate in and facilitate the national activities the peer advisor needs to conduct in order to develop the Readiness phase outputs.
- Confirms receipt of the peer advisors' report with the Readiness phase outputs and provides comments on the outputs as needed.

Peer advisor

- Is accountable to the beneficiary country.
- In dialogue with the beneficiary country, provides independent technical advice, analysis and recommendations to support the beneficiary country in implementing the activities of the Readiness phase.
- Develops the Readiness phase outputs and is responsible for their quality and timely delivery. Communicates regularly with the beneficiary country and the Implementing Entity.
- Engages with the civil society, including on the identification of stakeholders of relevance for GBON implementation.

- Submits the final report with the Readiness phase outputs to the country for comments and to the prospective Implementing Entity for feedback.
- Submits the final report including the beneficiary country’s comments and the prospective Implementing Entity’s feedback to the SOFF Secretariat.
- Notifies the SOFF Secretariat and the prospective Implementing Entity of any delays that may impede the timely delivery of the outputs, and for assignments for which the delivery takes more than six months submits a semi-annual progress report.

Implementing Entity

- Participates in the Readiness phase activities and collaborates with the beneficiary country and the peer advisor to ensure a common understanding of the Readiness phase outputs and that they address the technical needs for the design and implementation of the Investment phase.
- Contributes to the definition of the Terms of Reference and provides feedback on the outputs delivered by the peer advisor.
- Based on its experience in the beneficiary country, supports the work of the peer advisor, e.g. by sharing its knowledge and facilitating access to the network of relevant stakeholders.

WMO Technical Authority

- Provides basic technical support to the beneficiary country, peer advisor, and prospective Implementing Entity on GBON regulations.
- Is responsible for the technical screening of the draft GBON National Gap Analysis and the draft GBON National Contribution Plan against the GBON regulations.
- Is responsible for establishing and administering the pass-through mechanism for contracting and funding of the technical assistance provided by the peer advisors.

SOFF Secretariat

- Facilitates communication, coordination and collaboration between the beneficiary country, the peer advisor, the prospective Implementing Entity and WMO Technical Authority.
- Reviews the Readiness funding request, including the Terms of Reference, for compliance and consistency with the information requirements in the template and provides feedback as needed. Transmits the funding request to the SOFF Steering Committee for its decision.
- Confirms receipt of the peer advisors’ report with the Readiness phase outputs.
- Organizes exchange of knowledge and experiences and captures lessons learned.

3. Readiness phase outputs

The peer advisor should perform the following tasks following the technical guidance and using the templates provided in the [operational guidance documents](#) for each one

of the outputs. A summary of the key steps and modules to be conducted for each output is presented below.

3.1 GBON National Gap Analysis

The GBON National Gap Analysis defines the gap between the mandatory requirements of the GBON regulations and the existing country surface and upper-air networks. In other words, it serves as the basis for identifying the number of observing stations that need to be installed or rehabilitated to comply with the mandatory requirements of the GBON regulations.

To develop the GBON National Gap Analysis, the following steps should be followed

- **Step 1** – Country information from the GBON Global Gap Analysis
- **Step 2** – Analysis of existing GBON stations and their status against GBON requirements
- **Step 3** – GBON Gap Analysis results
- **Step 4** – Country endorsement for integration of the GBON National Gap Analysis into the GBON National Contribution Plan

3.2 GBON National Contribution Plan

The GBON National Contribution Plan identifies the infrastructure, human and institutional capacity needed to achieve a progressive target toward GBON compliance, including the sustained operation and maintenance of the national GBON observing network.

To develop the GBON National Contribution Plan, the following modules should be completed

- **Module 1. National target toward GBON compliance:** Establishment of a progressive national target toward GBON compliance
- **Module 2. GBON business model and institutional development:** public-private business model as appropriate; partnerships, institutional and financial arrangements needed to operate and maintain the observing network
- **Module 3. GBON infrastructure development:** Appropriate investments needed to increase or improve the observing network and its Information and Communication Technology (ICT) infrastructure
- **Module 4. GBON human capacity development:** Human technical and managerial capacities required to operate and maintain the observing network

- **Module 5. Risk Management:** Operational risks of the observing network and required mitigation measures
- **Module 6. Transition to SOFF Investment phase:** Support the beneficiary country and the Implementing Entity in preparing the Investment phase funding request (template provided by the SOFF Secretariat).

3.3 Country Hydromet Diagnostics

The Country Hydromet Diagnostic (CHD) complements the GBON National Gap Analysis and the GBON National Contribution Plan. It is a standardized, integrated and operational tool and approach for diagnosing National Meteorological Services across the meteorological value chain, their operating environment, and their contribution to high-quality weather, climate, hydrological and environmental information services and warnings. Its assessment serves as a basis for investments beyond SOFF, across the whole value chain, by the SOFF Implementing Entity and other development partners.

The peer advisor should **assess the 10 CHD elements** with its respective indicators following the matrix provided in the CHD guidance document.

- Governance and institutional setting
- Effective partnerships to improve service delivery
- Observational infrastructure
- Data and product management and sharing policies
- Numerical model and forecasting tool application
- Warning and advisory services
- Contribution to climate services
- Contribution to hydrological services
- Product dissemination and outreach
- Use and national value of products and services

To develop the Country Hydromet Diagnostic, the following **steps** should be completed.

- Stage 1 – Information gathering. As input, the WMO Monitoring Evaluation Risk and Performance unit will provide available country data structured along the CHD elements and their indicators (performed remotely)
- Stage 2 – Validation and analysis (performed in-country if feasible)
- Stage 3 – Closure

4. Delivery process

The peer advisor in collaboration with the beneficiary country and in coordination with the prospective Implementing Entity should establish the specific activities and consultations needed to complete the outputs. The development of the outputs should include the following:

- Collaboration arrangements between the beneficiary country and the peer advisor, including at least one country visit, unless the country context does not allow it:

There will be two visits of two KNMI experts and a consultant to Cabo Verde: the first meeting will take place soon after the start of the Readiness Phase. The main goal will be to prepare the GBON Gap Analysis (step 1 and 2), and to plan and prepare for the National Contribution plan and the Country Hydromet Diagnostics (CHD).

In month 2 the gap analysis will be sent to the WMO technical authority for screening. In months 2 to 5 regular virtual meetings (KNMI, UNEP, Consultant) will take place to discuss and prepare for the National GBON contribution plan. During these months the stakeholders in Cabo Verde that will be consulted for the CHD will be selected and contacted.

The second visit will take place in month 5 or 6 with the goal to deliver the National Contribution Plan and to gather information from the stakeholders in Cabo Verde to prepare the CHD.

The CHD will be delivered at the end of month 7.

- Coordination arrangements with the prospective Implementing Entity:

The Implementing Agency, UNEP, will be invited to all meeting, unless the agenda contains pure technical matters. Especially for the preparation of the CHD and the consultations of the stakeholders UNEP will be involved.

- In-person or virtual consultation meetings with relevant national and international stakeholders and partners:

This will be done in-person during the 2nd visit to Cabo Verde as well as through virtual meetings. The consultant in Cabo Verde in coordination with the INMG will organise this (selecting, inviting, and preparing the stakeholders, short reporting of these meetings).

- Delivery partners that support the peer advisor in the delivery of the outputs, as applicable:

KNMI works together regularly with Dutch private companies or consultants providing additional expertise on weather and climate services in developing countries, such as Cabo Verde. This will also be the case in this readiness phase contributing mainly to deliver the CHD.

- Peer advisor delivery team and focal point:

The team of experts from the KNMI will consist of Rubert Konijn (FP), Janet Wijngaard, Gé Verver, supported by an external, experienced consultant.

- Timeline for the development of the outputs:

If the project starts in time (e.g. April) the Gap analyses should be finalised before Summer and during the first visit. The national Contribution plan should then be ready by the end August 2023 or half September at the latest. It will be delivered right after the second visit to Cabo Verde. We plan to have a draft version of the CHD ready by the end of September, if it is feasible to collect the input from the stakeholders for this during the second visit to Cabo Verde. A final version of the CHD will be delivered in month 7.

5. Reporting and completion

Reporting. For assignments for which the delivery of advisory services takes more than six months, the SOFF peer advisor shall submit a semi-annual progress report to the SOFF Secretariat (form to be provided by the SOFF Secretariat).

Completion

- **Step 1.** The peer advisor submits the draft GBON National Gap Analysis and the GBON National Contribution Plan reports to WMO Technical Authority and, as applicable, the draft Country Hydromet Diagnostics to the Monitoring Evaluation Risk and Performance unit of the WMO Secretariat. The draft reports have to follow the templates provided in the SOFF operational guidance documents.
- **Step 2.** WMO Technical Authority screens the draft GBON National Gap Analysis and the draft GBON National Contribution Plan to ensure consistency with the GBON regulations. The WMO Monitoring Evaluation Risk and Performance unit screens the draft Country Hydromet Diagnostics and provides feedback for revisions as needed.
- **Step 3.** The peer advisor submits the report with the Readiness phase outputs for beneficiary country and prospective Implementing Entity feedback.
- **Step 4.** The peer advisor finalizes the report for confirmation of receipt by the beneficiary country and, as needed, beneficiary country comments. Following beneficiary country receipt of the report, the peer advisor submits the report, including beneficiary country's comments and the prospective Implementing Entity's feedback, to the SOFF Secretariat.
- **Step 5.** The SOFF Secretariat confirms the satisfactory receipt of the report and informs the country and the prospective Implementing Entity accordingly. The SOFF Secretariat authorizes WMO to proceed with the release of the final payment, and informs the SOFF Steering Committee of the completion of the SOFF readiness phase.

6. Signatures

By signing this document, the beneficiary country, peer advisor and the prospective Implementing Entity agree with the provisions stated in this Terms of Reference.

Beneficiary country:

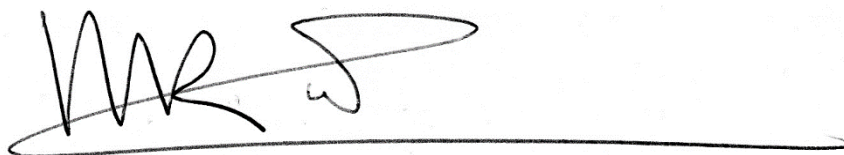
Ester Araújo de Brito
Executive Administrator and the acting President of Institute National of Meteorology and Geofisycs
Permanent Representative of Cabo Verde at WMO




23.02.2023

Peer advisor:

Maarten Van Aalst
Director General of the Royal Netherlands Meteorological Institute (KNMI)
Permanent Representative of The Netherlands at WMO



Prospective Implementing Entity:

Jochem Zoetelief  23.02.2023
Head, Climate Services and Capacity Building Unit
Early Warning and Assessment Division
United Nations Environment Programme (UNEP)
Implementin Entity Focal Point