SOFF Readiness Funding Request Template

Version 1.0

17 January 2023

Systematic Observations Financing Facility

Weather and climate data for resilience

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	*Guyana*
Country Focal Point	*Garvin Rhandhir Cummings (Hydrometeorological Service of Guyana)*
Peer advisor	*Geosphere Austria*
Peer advisor Focal Point	*Giora Gershtein*
Prospective Implementing Entity	*TBD*
Prospective Implementing Entity Focal Point	*TBD*
Total budget USD	**170748**
Delivery timeframe	*8 months - April to November 2023*
Date of approval	30 March 2023
Signature SOFF Steering Committee co-chairs (after Steering Committee approval of the funding request)	

2. SOFF Programming criteria

Table 1: Programming criteria

<table>
<tr>
<td>Close the most significant data gaps</td>
<td>The GBON Gap Analysis for Guyana indicates that two (2) GBON Surface Land Stations (standard and high density) and One Upper-Air Station over land are still missing to achieve compliance and that could be addressed within the SOFF umbrella.
Table 1: GBON Gap Analysis for Guyana.
<table>
<tr><td colspan="6">WMO Member: Guyana</td></tr>
<tr><td colspan="6">Surface area: 347.003 square km</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td>Station type</td><td>Target</td><td>Reporting</td><td>Gap (total)</td><td>Gap (improve)</td><td>Gap (new)</td></tr>
<tr><td>GBON Surface Land stations (standard density)</td><td>2</td><td>0</td><td>2</td><td>2</td><td>0</td></tr>
<tr><td>GBON Surface Land stations (high density)</td><td>2</td><td>0</td><td>2</td><td>2</td><td>0</td></tr>
<tr><td>GBON Upper-Air stations over land</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
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In relation to GBON Surface Land Stations, there are currently two operational aeronautical stations at the country's two international airports (Cheddi Jagan International (24/7) and Eugene F. Correia International (18/7)) that provide hourly observations. These stations could be potentially utilised as the two required stations; however, it needs to be taken into consideration that they would not adequately represent the possible climate zones across Guyana as both are situated within 50 km of the coast (one at approximately 3 km inland and the second approximately 50 km inland) and each other and they also do not match the inter-station distance expected in both the standard and high density GBON surface land stations. Guyana is over 800 km (North-South) in length and over 400 km wide (East-West) with varying topography (plains, hills, mountains and savannahs) and therefore, with these various conditions and characteristics, additional stations may be required to provide a proper representation of conditions in the country.

Therefore, considering the nature of the country, a largest number of stations may be required. Upon agreement with the Implementing Entity, additional locations could identified and be fitted with automatic weather stations (AWS) to provide useful and valuable data on 24/7 basis. This data would be beneficial to both the SOFF aims and expectations while also reverting positively in the national activities.

With respect to GBON Upper Air Station, the country currently has no upper air stations and any improvement in this direction would</td>
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</table>

	therefore significantly strengthen local infrastructure/observational capacity. The inclusion of upper air stations could be done gradually, with a potential initial station situated along Guyana's eastern coastal corridor and a potential second station in southern Guyana. An enhancement in the number of surface and upper air stations should be accompanied with investment in capacity development, capital investments and instrument spares. It is to be noted that Guyana's harsh tropical environment can severely affect sensors on automatic weather stations and may therefore demand regular spares and maintenance to be performed and provided. In addition, the communications system require proper consideration since internet coverage may be an issue in some of the potential locations for station deployment.
Target easy fixes	There is currently one manned aeronautical station in Guyana that operates on a 24/7 basis (SYCJ), the second (SYEC) operates approximately 18 hours/day or as local aviation demands may require. Both stations could be designated GBON stations, with SYEC being fitted with an AWS to allow for 24/7 observations/data provision. Such an easy fix and activity would allow for almost immediate transmission of data from these two stations. Additional surface stations could be investigated under SOFF umbrella to achieve a high density network of the country as well as ensuring proper representation of the climatic variability. While potential additional locations exist with some level of infrastructure, there still would be the requirement to rehabilitate and improve them to become fully operational. Some of those potential locations for SOFF activities have either AWSs that would require rehabilitation/improvement or are airmarked for AWS in 2023/2024 using national resources, while some other locations would require the complete set-up and deployment of AWS. Note that enhancement of the observational network requires that additional spares, manteinance and capacity building investment is performed for long-term sustainability and operability. The additional stations should consider existing infrastructure and ensure that they are brought to 24/7 operations. In some specific cases this would be require very targeted and rather limited investment. In addition, wide geographical coverage could be explored through SOFF with mainteinance and logistical support towards planned infrastructure (2023/2024). It is to be noted that the climate of the

	country largely affects the stations and that manteinance is key as well as spares. Clearly, assistance and further investment in actions related to maintenance of the stations, spares acquirement and enhancement (increase number) of staff would highly benefit and improve the national capacities and ensure long-term operability of the observational network. Last, an initial upper air station, to fullfill the GBON upper air station criteria could be explored likely in the eastern coastal corridor. This would close a significant gap related to this type of observations.
Maximize delivery capacity	Geosphere Austria, formerly known as the Austrian Meteorological and Geodynamics service, has performed the Hydromet Diagnosis in Kazakhsta, North Macedonia and Albania and has deployed EWS in Myanmar. Hence, based on this practical experience, Geosphere Austria can act as SOFF peer advisors with adequate capacity to deliver SOFF support efficiently and effectively. The peer advisor receives no funding from other sources for the planned activities in the country neither has ongoing projects in the country. NB: at the time of submission of the financial request an Implementing Entity has not been appointed/decided.
Create leverage	Guyana is a member of both the Caribbean Meteorological Organization (inclusive of the Caribbean Institute for Meteorology and Hydrology – CIMH) and the Caribbean Community Climate Change Centre (CCCCC). The country has benefitted from project resources through both entities for the development of its existing automated network. As a result of these initiatives, the NMHS has good in-house capacity for AWS installation and maintenance – even though there is an urgent need to increase the number of technicians. National resources are available in 2023 from the expansion of the national observational infrastructure with the procurement of at least ten (10) micro-weather stations for hinterland/jungle locations. As in the past, challenges with maintaining these stations may arise. Support for their maintenance can be considered and if desirable, they can be constituted GBON stations. Additionally, the NMHS has existing working relationships with the local UNDP Office and the Regional UNEP Office given its responsibilities for the implementation of the Montreal Protocol. The

	UNDP and UNEP are the implementing partners for project under the Montreal Protocol. Also, the World Bank Group is an implementing partner for projects (flood risk) under the Ministry of Agriculture, the parent Ministry of the NMHS. The International Fund for Agriculture Development (IFAD) is also an implement partner with the Ministry of Agriculture - in fact, under a current project, the NMHS has been benefitting from resources to improve farm-level decision making. These existing relationships can be explored for possible strengthening to support activities envisaged under the SOFF. The corresponding dialogues with these entities will be explored.
Sub-regional gains	Guyana, Belize and Grenada (3 of 4 countries in LAC Region are members of the CMO/CIMH and CCCCC) and therefore support for these three can be channel through these institutions where appropriate. Additionally, a number of countries in the Region benefited from support under the CREWS-Caribbean Project which can be built upon. Several countries in the Caribbean (including Guyana) have weather radars whose data are merged to create a dynamic Caribbean radar mosaic, allowing for ease of data exchange/visualization. A similar mechanism can be developed to allow for the sharing of data (AWS and radiosonde) across the Region so that all countries can benefit from these investments to the fullest extent possible. The CIMH also runs regional hydrological, meteorological, and oceanographic forecasting models into which data emerging from future investments in Guyana can be fed to improve regional forecasting capabilities.
Ensure country balance	Guyana is classified as a SIDS.

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[1]	Month 7	Month 8
National GBON Gap Analysis								
GBON National Contribution Plan								
Country Hydromet Diagnostic (on demand)								
Total budget USD[2]	**170748**							

Please note that two additional months are expected to complete the SOFF readiness phase in Guyana.

[1] It is expected that the assignment is completed within six months. If more time is required for exceptional circumstances, please add additional months to the table.

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

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

4. 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).

5. Readiness Phase Risk Management Framework

Please provide a brief description of the contextual, institutional, and programmatic risks that might hinder the effective delivery of the Readiness phase outputs.

Table 3: Risk Management Framework

Risk category	Description	Probability	Mitigation action
Contextual risks Risks related to conflicts, safety and political insecurity jeopardizing the delivery of the Readiness phase outputs	There are no existing/known risks in this category that would disrupt project delivery.	Low.	None to be implemented.
	Extreme Weather.	Medium	Plan major activities (face to face visits) outside of Guyana's two rainy seasons.
	Personal Safety and Health.	Low	Avoid high risk areas. Use protective gears. Immunization against tropical diseases/infections.
Institutional risks Risks related to the beneficiary country's institutions participation in the Readiness phase activities	The is very low risk of partner agencies being unwilling to participate in any aspect of this work. There is a good appreciation for the work and role of the NMHS by	Low.	Advance notice (7 to 10 days) to institutions on the need for their participation in any aspect of the intended activities will suffice.

	stakeholders. In recent years the relationship has been strengthen as a result of participation at the National Climate Outlook Fora (NCOFs).		
	Cultural and traditional festivities.	Medium	Avoid meetings/activities in September where the participation of indigenous communities might be required. Plan all activities to avoid national/religious festivities/observances.
Programmatic risks Risks related to country ownership of the Readiness phase outputs	Lack of Country Ownership.	Low	Meet with, and garner the support, of senior government officials.

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 Geosphere Austria to Guyana Weather Service 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.* It is expected to have two one-week visits to:
    - Perform the GBON gap analysis.
    - Perform the interview/exploratory activities to gather the information for the CHD. This will include interaction with the PR and staff members, potential visits to station locations and exchange with stakeholders.
    - Perform a review and agreement of the CHD final version.
    - Have face-to-face discussions and exchange with all the relevant national/international key players for the preparation of the National Contribution Plan.
- *Coordination arrangements with the prospective Implementing Entity*. This activity envisages:

  - 1 Initial Kick-off meeting with the implementing entity, peer advisor and beneficiary country.
  - 2 workshops, if possible face to face during the aforementioned visits.
  - 1 Agreement meeting (virtual) to finalise and formally agree on the National Contribution Plan.
- *In-person or virtual consultation meetings with relevant national and international stakeholders and partners*.
  - Within the on-site visits, a set of face-to-face discussions with national stakeholders will take place. This aims at exploring both sustainability and usability of data and products to facilitate considerations of the complete value chain in all the SOFF activities.
  - A virtual workshop is expected at the end of the 8-month period together with both Guyana Weather Servive, implementing entity and stakeholder, national and representatives of major international organisations (as possible)
- *Delivery partners that support the peer advisor in the delivery of the outputs, as applicable*. No additional support other than that of the SOFF Secretariat is envisaged.
- *Peer advisor delivery team and focal point*. The activities include the following team members:
  - Giora Gershtein – Focal Point
  - Delia Arnolds – SOFF support
  - On-demand technical expertise based on the initial assessment. The profile will focus on observational aspects including maintenance and data provision.
- *Timeline for the development of the outputs*. The outline follows that of the financial proposal:
  - Initial visit – second half April 2023
  - Finalisation of the GBON Gap Analysis – 30 June 2023
  - Finalisation of the CHD - 30 June 2023
  - Second visit – first half of September 2023
  - Finalisation of the National Contribution Plan – 30 November 2023

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
Peer advisor Robert Supper Andreas Schaffhauser Directorate General GeoSphere Austria
Prospective Implementing Entity