SOFF Investment Phase Funding Request

Kiribati

30 October 2023

Systematic Observations Financing Facility

Weather and climate data for resilience

SOFF Investment Phase Funding Request

The SOFF Investment Funding Request template includes the following sections:

1. **Basic Information**
2. **Programming Criteria**
3. **Readiness and Country Context**
4. **Investment Phase Outputs and Budget**
5. **Investment Phase Implementation Arrangements**
6. **Investment Phase Monitoring, Reporting, and Verification**
7. **Investment Phase Risk Management Framework**

The **GBON Gap Analysis**, the **GBON National Contribution Plan** and **Country Hydromet Diagnostic** are included in **Annex 1, 2, 3**.

The **Terms of References** of the advisory services provided by the **SOFF peer advisor** are provided in **Annex 4.**

1. Basic Information

SOFF Beneficiary Country and Focal Point	Kiribati – Kiribati Meteorological Service Mr. Ueneta Toorua, Director of Kiribati Meteorological Service, dmet@met.gov.ki			
Country classification	☒ LDC	☒ SIDS	☒ FCS	☒ ODA-recipient
SOFF Implementing Entity and Focal Point	United Nations Environment Programme (UNEP) Mr. Jochem Zoetelief, Head, Climate Services and Capacity Building Unit, Early Warning and Assessment Division Email: jochem.zoetelief@un.org			
SOFF Peer Advisor and Focal Point	Australian Government - Bureau of Meteorology Andrew Jones, General Manager International Development, Bureau of Meteorology, andrew.Jones@bom.gov.au			
Total Budget (USD)	Total: **10,845,152** Tranches (excluding peer advisory costs): - First tranche: **9,524,387 (90%)** - Second tranche: **1,058,265 (10%)**			
Delivery timeframe	60 months (5 years)			
Date of Steering Committee Approval				

Signatures

Mr Ueneta Toorua, Director, Kiribati Meteorological Service

26.10.2023

Mr Jochem Zoetelief, Head, Climate Services and Capacity Building Unit, Early Warning and Assessment Division, United Nations Environment Programme

Dr Andrew Jones, General Manager International Development, Bureau of Meteorology, Australia

2. SOFF Programming Criteria (2 pages)

Alignment with the SOFF Programming Criteria	
Close the most significant data gaps	Kiribati's national meteorological service (KMS) comprises skilled teams of observing, technical and forecasting personnel. These teams maintain: • 7 staffed weather stations; • 8 automatic weather stations (AWS); • one upper air station (with support from UK Met Office). However, KMS faces major challenges in skilled and sufficient personnel, logistics, sourcing of equipment and spares, maintenance and data communications, leading to quality and reliability issues. As a result, Kiribati currently has no GBON-compliant surface stations and most of its AWS are not providing data. UK Met Office funding and support from the NZ MetService have enabled KMS to maintain the upper air station in Tarawa; although during the SOFF review it was experiencing outages due to power unreliability. The station only provides one flight per day and is therefore not GBON compliant. As a country of many islands with a very large marine exclusive economic zone (EEZ), developing GBON targets for Kiribati requires some interpretation. In its global analysis, the WMO applied the GBON marine surface and upper air station density requirements to the EEZ to develop its land-based targets for Kiribati. This resulted in targets of 14 surface stations and 4 upper air stations. Maintaining isolated, unstaffed AWS has historically been less successful in terms of data quality and reliability in Kiribati and other SIDS of similar resources. Staffed stations have historically proven to be significantly more reliable, highest quality and most resilient. It is therefore proposed to: • upgrade the existing 5 AWS (in the Gilbert Island group) to meet GBON requirements, • upgrade 9 existing staffed stations (including with back-up satellite communication) and co-locate AWS (in Gilbert, Phoenix, Line Island Groups and Banaba Island),

- upgrade the existing UA station (in Tarawa) and install two more (in Line Islands and Phoenix Islands).

Kiribati will seek an exemption from WMO on the GBON requirement for a fourth upper air station, associated with the large EEZ in the southern Line Islands, on the grounds of impracticality in this extremely remote, uninhabited marine zone.

Achieving sustainable, reliable reporting to the WMO Information System (WIS) at hourly frequencies from all 14 proposed GBON surface stations and 3 proposed upper air stations will require a significant upgrade to KMS's ICT and data management systems. Through the entire value chain of data collection, transmission, processing, storage and distribution, KMS will retain total control and custodianship over their data.

Type of station	Baseline (Results of the GBON National Gap Analysis)				GBON National Contribution Target	
	Target (# of stations)[1]	GBON-compliant stations (#)	Gap		To improve	New
			New	To improve		
Surface	14	0	0	14	14	0
Upper air	4	0	3	1	1	2

Table 1. GBON National Contribution Target

Target easy fixes	The first easy fix is to improve **five existing AWS** in the Gilbert Island group to report internationally and have a higher level of maintenance, calibration and quality control. The second easy fix to be **upgrading the existing upper-air station** to conduct two flights per day. Another "easy win" will be **uplifting communications and IT systems, as well as the overall level of maintenance** which in time will help to ensure that more of the current AWSs report internationally and more data is available to the international NWP community through the WMO Information System (WIS).
Create leverage	SOFF will contribute to a component of the Weather Ready Pacific Program, which is currently under development. The Weather Ready Pacific Program is a decadal program of investment to uplift the capability of Pacific

[1] For SIDS, for the WMO GBON Global Gap Analysis in January 2022, the EEZ area has been added to the total surface area which is the basis for the target number of stations. The standard density requirements for SIDS have been calculated with 500 km for surface stations and 1000 km for upper-air stations.

	Meteorological Services. It is Pacific-designed and Pacific-led and will coordinate all future investments in meteorological infrastructure and training. SOFF is an example of a project that will deliver to elements of the overall roadmap, and it will be the role of Weather Ready Pacific Program and the Pacific Meteorological Council to ensure that these efforts are not duplicated by other similar bespoke projects. As an accredited entity to the Green Climate Fund (GCF), the implementing entity UN Environment Programme (UNEP) could work in the future to raise GCF funding to further strengthen hydrometeorological and early warning capacity in Kiribati based on the needs identified through Country Hydromet Diagnostics.
Maximize delivery capacity	UNEP is already implementing projects related to weather and climate data collection in developing countries and Pacific SIDS. 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. The Programme Management Unit (PMU) of the latter is co-located with the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Pacific Climate Change Centre (PCCC) in Samoa. The PCCC is supporting capacity building within national meteorological services through delivery of the training module of the WMO Pacific Regional Climate Centre. Co-location with the PCCC is expected to enhance efficiency and coordination of human capacity development activities. UNEP is also an implementing partner under the Early Warnings for All Initiative (EW4All) and a member of a technical working group under Pillars 1 (Risk Knowledge) and 2 (Observations & Forecasting). Launched by the UN Secretary-General in November 2022 at the COP27, the EW4All Initiative calls for the whole world to be covered by early warning systems by the end of 2027. Kiribati is included into the first group of 30 countries that should receive coordinated and targeted support under the EW4All initiative, which will create further opportunities for accelerated implementation of early warning systems in the country. **The SOFF investment funding represents a major contribution as part of the EW4All overall support to Kiribati.**
Sub-regional gains	Economies of scale can be created through working in partnership with the other Pacific SOFF countries and under the guidance of existing Pacific regional architecture such as the Pacific Meteorological Council (PMC). A Pacific SIDS programmatic umbrella has been proposed by SOFF in response

	to a request from the Pacific countries to advance sub-regional implementation and maximize the benefits from standardized and coordinated GBON implementation in the region. Collaboration with the Regional WIGOS Centre in Fiji will be explored to assist with stations metadata and GBON compliance at station level. The proposed station layout, especially for upper air, will contribute to a broader well-distributed multi-country network across a critical region for Numerical Weather Prediction (NWP) encompassing other SOFF-funded stations in nearby countries including Tuvalu, Nauru, Fiji and Samoa. The Investment Phase will also accommodate future regional coordination initiatives such as regionally focused equipment calibration services, training, procurement of common equipment types, and maintenance services. These will be pursued through several forums in which KMS is active participant, including: • Regional SOFF coordination workshop in Spring 2024 • WMO RA V committee • Pacific Meteorological Council and its committees • Secretariat of the Pacific Regional Environmental Programme • Pacific Community. During the Investment Phase, KMS, UNEP and BOM will also pursue opportunities for regional synergies for maintenance services that can be implemented during the Compliance Phase.

3. Readiness and Country context (1 page)

SOFF Beneficiary Country Capacity Assessment
The Kiribati Meteorological Service (KMS) is the primary organisation of relevance to the operation and maintenance of GBON in Kiribati. It maintains almost all the weather stations in Kiribati, manages almost all the weather data, and has a legislated mandate to do this. KMS's annual core budget (as reported in 2019) of around AUD $ 618,458 (USD $409,020) has been increasing in recent years, although it is still low by world standards. Although it may cover staff salaries (with AUD $441,182 allocated in 2019), it does not allow KMS to completely cover equipment or consumables such as radiosondes, or to support significant staff training or operational funds. For this, Kiribati relies to some degree on international assistance. Nevertheless, there is a proven process for improving resourcing, which in recent years has resulted in the recruitment of a senior forecaster,

quality assurance officer, ICT specialist, and oceanographer. The Government is regarded as reliable in terms of budget allocations and due process.

The only other organisation presently operating weather stations in Kiribati is the Civil Aviation Authority of Kiribati. It maintains two automatic weather observing systems (AWOS), one at Cassidy Airport on Kiritmati Island and one at Bonriki Airport in the capital Tarawa. Neither were operational at the date of the site visit of the peer advisor for the SOFF program due to maintenance challenges. However, they are planned to be repaired and upgraded in the coming year with investment from an Australian Government Pacific aviation initiative. The aviation AWOS do not provide data to KMS systems. As these AWOS use a different technology to the KMS weather stations, and, as KMS does not have operational control nor ownership of these stations, it is difficult for KMS to ensure the reliability and quality of these data. Consequently, GBON requirements should be met with alternative infrastructure owned and operated by KMS.

A new Meteorological Act (2021) in Kiribati provides a mandate and outlines the functional responsibilities for Kiribati Meteorological Service (KMS). The Act clearly outlines the functions and accountability of KMS which include, among other functions, the following responsibilities relevant to GBON:

- the taking and recording of meteorological observations and other observations required for the purposes of meteorology;
- establishing and maintaining meteorology stations and other observation and research stations, and all other necessary technical installations and equipment;
- collecting, collating, archiving, and making available meteorological data and information required under this Act including archiving of such data and information;
- co-operating with the authorities administering the meteorological services of other countries. and with the World Meteorological Organisation, the International Civil Aviation Organisation, and any other relevant international organisations in relation to any of the functions and powers stated in this Part, and in particular, supporting the principle of free and unrestricted exchange of meteorological data between national meteorological services.

The Act provides clear, unambiguous authority and responsibility for KMS to establish and operate the GBON stations and share the data internationally.

The Kiribati Government Development Fund, known as the number 4 account, is a government bank account managed by the National Economic Planning Office used to receive and acquit donor funds. Funds are remitted to the account by donors and expenditure is then warranted to implementing ministries. The number 4 account provides a mechanism whereby KMS can receive and use funding from agencies such as UNEP and is a suitable mechanism for KMS to receive SOFF funding both during Investment and Compliance phases to support the proposed the GBON uplift activities. In general, national legislation therefore does not present any major constraints and in fact will facilitate implementation of GBON.

KMS maintains skilled and motivated teams of observing, technical and forecasting personnel. The staffing education profile of KMS reported as part of the Weather Ready Pacific proposal is shown in National Contribution Plan. The total number of staff positions is 33. Several teams are critical to the sustainability and quality of observations at the Kiribati Meteorology Service (KMS):

- The technical and engineering team, headed by the Senior Technical Officer (STO), includes 5 technicians.
- The observing team, headed by the Senior Meteorological Observer (SMO), currently has 13 personnel based at 7 field stations across the country.
- One IT specialist.

KMS has a better gender balance than many Pacific meteorological services at about 70% male, 30% female. It has high female representation in scientific professional roles such as climate, forecasting and oceanography. However, its gender balance overall is still skewed to males, particularly in technical and observing roles.

Out of 19 stations in total, country has six staffed weather stations that report internationally, between 2 and 8 times per day.[2] However, stations experience quality and reliable issues with data due to maintenance and calibration challenges and maintenance budget shortfalls.

UK Met Office funding and support from the New Zealand (NZ) Metservice have enabled KMS to maintain one upper air station in Tarawa, although it is currently experiencing outages due to power issues and only provides on flight per day and is therefore not GBON compliant. KMS also faces major challenges in logistics, sourcing of equipment and spares, maintenance and communications. Consequently, Kiribati currently has no GBON-compliant surface stations.

Therefore, it can be concluded that while there is institutional, administrative and technical capacity in place to execute SOFF project, there is substantial opportunity for SOFF to support the KMS team to address all the challenges mentioned above.

Investment Phase Alignment with the GBON National Contribution Plan

In addition to the development of Gender Gap Analysis and Gender Action Plan as suggested in the National Contribution Plan, the Investment Phase targets include organization of inception workshops at the national and subnational levels targeting different stakeholders; establishing a stakeholder engagement plan to be managed and monitored regularly by a designated person; conducting stakeholder engagement workshops on the implementation of the SOFF project deliverables. These activities aim at more building capacity for more systematic stakeholder engagement, including CSO and private sector.

[2] GBON National Gap Analysis, Table III

4. Investment Phase Outputs and Budget

As reaffirmed by the UN General Assembly in the 2019 Political declaration of the High-Level Meeting to Review Progress Made in Addressing the Priorities of Small Island Developing States through the Implementation of the SIDS Accelerated Modalities of Action (SAMOA) Pathway, SIDS remain a special case for sustainable development as they continue to face the combined challenges arising, in particular, from their geographical remoteness, the small scale of their economies, **high costs and the adverse effects of climate change and natural disasters**.[3]

The small size, remoteness and insularity of SIDS pose daunting challenges i.a. to transport logistics. For example, domestic inter-island shipping services in many countries of the Pacific region – especially to outer islands – are **infrequent, unreliable and expensive**. Similarly, air travel in the Pacific often involves **long-haul, multi-leg and expensive** flights in the absence of direct flight connectivity.[4] Therefore, the cost of travel, general logistics and transactions in the Pacific region are comparatively higher than in many other parts of the world.

In addition, the costs under Output 2 not only include the procurement and shipping of the equipment, but also multiple supplementary costs, which in the context of Kiribati include:

- civil works and site preparation (including measures to mitigate the risk of climate-related hazards),
- security of the equipment including fencing and guarding the site,
- environmental impact assessment and environmental management plan to minimize environmental risks (especially for new sites),
- standard operating procedures for operating the equipment (including early action protocols for climate-related hazards),
- backup communications for co-located manual stations and AWS, etc.

[3] https://undocs.org/pdf?symbol=en/A/74/L.3
[4] https://unctad.org/meetings/en/SessionalDocuments/cimem7d8_en.pdf

The GBON National Contribution Plan provides detailed information on the Investment Phase Outputs (please see Annex 2).

Output 1. GBON institutional and human capacity developed	**Main activities**	**Budget (USD)**
1.1 **National consultations** including with CSOs, and other relevant stakeholders conducted	1.1.1 Inception workshops at the national and sub-national level targeting different stakeholders, including CSO and private sector. 1.1.2. Stakeholder engagement workshops on the implementation of the SOFF project deliverables. 1.1.3. Development of a Stakeholder Engagement Plan to ensure that future stakeholder engagement is more strategic and systematic	**545,490**
1.2 **NMHS institutional capacity** required to operate the GBON network developed	1.2.1. Development of Gender Gap Analysis and Gender Action Plan for mainstreaming Gender into SOFF initiatives. 1.2.2. Participation in the regional coordination initiatives and forums, including collaboration with other Pacific countries as part of the implementation of the SOFF regional SOFF programme	**387,790**
1.3 **NMHS human capacity** required to operate the GBON network developed	1.3.1. Recruitment of observers, ICT and project management staff 1.3.2. Basic Instruction Package for Meteorological Technicians (BIP-MT) trainings for observers 1.3.3. Training in cellular and satellite communications and router configuration for technical and engineering personnel 1.3.4. Training in weather station maintenance for all KMS technical staff 1.3.5. Participation in the regional trainings, e.g. trainings in the Regional WIGOS Centre in Fiji	**1,329,174**
Output 2. GBON infrastructure in place	**Main activities**	**Budget (USD)**
2.1 **New land-based** stations and related equipment, ICT systems, data management systems and standard operating practices in place	2.1.1. Procurement of equipment & material for installation of 9 co-located manual stations & AWS (including environmental	**1,579,000**

	management plan, shipping and civil works, telecommunication systems, backup satellite communication) 2.1.2. Travel of staff & contractor for installation of equipment 2.1.3. Development of Standard Operating Procedures for maintenance	
2.2 **Improved land-based** stations and related equipment, ICT systems, data management systems and standard operating practices in place	2.2.1. Procurement of parts to upgrade 5 existing stations AWS (including environmental management plan, supplementary materials to support the upgrade and transportation costs) 2.2.2. Travel of staff and contractor to upgrade existing equipment. 2.2.3. Development of Standard Operating Procedures for maintenance	**399,375**
2.3 **New upper-air** stations and related equipment, ICT systems, data management systems and standard operating practices in place	2.3.1. Securing land, EIA, environmental management plan, site preparation, telecommunications and other civil works for the 2 upper-air stations 2.3.2. Procurement of equipment & material for installation of 2 upper-air stations (including shipping) 2.3.3. Travel of staff to monitor and participate in construction of Upper Air Stations. 2.3.4. Development of Standard Operating Procedures for maintenance (for both new and upgraded UA stations)	**2,666,000**
2.4 **Improved upper-air** stations, related equipment, ICT systems, data management systems and standard operating practices in place	2.4.1. Procurement of parts to upgrade 1 existing UA station (including environmental management plan and supplementary materials to support the upgrade and transportation costs) 2.4.2. Travel of staff and contractor to upgrade existing equipment	**686,500**
2.5. **Upgrade the data management and storage system** to have functionalities to be a WIS 2.0 node	2.5.1. Expert audit of power supply, ICT equipment and data flows to develop detailed architecture for the Meteorological Data Management System for WIS 2.0 implementation 2.5.2. Procurement, installation and commissioning a Meteorological Data Management System (including WIS 2.0 capability), including ongoing trainings and maintenance support.	**715,000**

	2.5.3. Procurement, installation and commissioning a suitable upgraded Climate Data Management System. 2.5.4. Developing a webpage to provide weather data products to stakeholders and the public.	
Outcome: Sustained compliance with GBON	**Main activities**	**Budget (USD)**
3.1 **GBON land-based stations' commissioning period completed**, country-specific standard cost for operations and maintenance established, and data sharing verified by WMO Technical Authority	3.1.1. Procurement of spare parts and supplementary materials to maintain consistent operation of land-based stations after commissioning. 3.1.2. Staff travel for routine and emergency maintenance of the equipment.	**351,000**
3.2 **GBON upper air stations' commissioning period completed**, country-specific standard cost for operations and maintenance established, and data sharing verified by WMO Technical Authority	3.2.1. Procurement of spare parts and supplementary materials to maintain consistent operation of upper-air stations after commissioning. 3.2.2. Staff travel for routine and emergency maintenance of the equipment.	**1,231,000**
Total for all Outputs		**9,890,329**
Implementing Entity Fee[5]		**692,323**
SOFF peer advisory services	Please see p. 35	**262,500**
Total funding request		**10,845,152**

Budget breakdown by UNDG category	**USD**

[5] The implementation fee cannot exceed 7% of the total Investment Phase funding request.

(Excluding SOFF peer advisory services)[6]	
Staff and personnel costs	**619,200**
Supplies, Commodities and Materials	**2,135,875**
Equipment, Vehicles, Furniture and Depreciation	**5,152,000**
Contractual Services Expenses	**647,314**
Travel	**185,800**
Transfers and Grants	**1,150,140**
General Operating Costs	**692,323**

[6] The total budget (excluding the budget for the SOFF peer advisory services) is expected to be disaggregated by UNDG category. It includes direct and indirect costs of the Implementing Entity and beneficiary countries to establish a fully operational observation network, collecting and internationally exchanging data according to GBON requirements. Eligible expenditures are any type of expenditure required to implement the GBON National Contribution Plan, including the requirements of the beneficiary country to manage and administer the day-to-day activities of the Investment Phase. It also includes the budget required for the operation and maintenance of the observing network.

5. Investment Phase Implementation Arrangements

Execution model and implementation arrangements	UNEP will be the Implementing Entity for the Project and will be responsible for managing the implementation, financial management, evaluation, reporting and closure of the activities under the Project. UNEP will monitor and supervise the execution of the Project and ensure the proper management and application of SOFF Grant Proceeds. UNEP will ensure that the Grant Proceeds are utilised in accordance with the terms of the current Funding Request. UNEP will deploy a hybrid executing model comprising a National Executing Entity and, at the request of the SOFF Beneficiary Country focal point, limited Executing Entity functions by UNEP itself. Through its Global Support Services Agreement with UNOPs, UNEP is able to operate at the country level without necessarily having a national office. The Agreement covers the provision of HR and procurement services. UNEP will execute the Project in line with its programme manual and standard business procedures. As part of its executing functions, UNEP will contract Technical Partner organizations to undertake relevant activities as appropriate. The engagement of Technical Partners with a proven track record in supporting Kiribati will contribute to effectiveness, coordination, and sustainability of outcomes. The Kiribati Meteorological Service (KMS) will serve as the national Executing Entity (EE). KMS will be accountable to UNEP as IE for Project execution at the national level and for the effective and efficient use of resources. UNEP will enter into an appropriate agreement (Project Cooperation Agreement) with the Government of Kiribati for the execution of the Project by KMS. The Project Cooperation Agreement (PCA) will establish clear roles and responsibilities for the delivery of the proposed activities, and the schedule and conditions for instalments, the determination of the prevailing fiduciary standards and the terms and conditions for arbitrations and termination of contract. The PCA will include specific obligations for the national EE on Project execution, financial management, personnel administration and reporting, as well as arbitration and liability terms. Upon further consultations with KMS, UNEP in its executing role will engage relevant Technical Partner agencies to conduct activities such as trainings. These might include Secretariat for the Pacific Regional Environment Programme (SPREP), the WMO-SPREP Pacific Met Desk, the National Institute of Water and Atmospheric Research (NIWA) of New Zealand. These partners are highly qualified, internationally recognised,

	professional agencies with many years' experience of partnership in the Asia-Pacific region.
Private sector involvement	Currently there are no private sector operators providing meteorological observations or data services in Kiribati. The current business model of the KMS is **fully public,** and it is recommended that **it continues using this model.** However, there is opportunity for a substantial private sector role in supporting the NHMS by including ongoing maintenance, calibration and training support in the procurement contracts for weather station and ICT equipment. This would require developing a procurement plan as a part of the Investment Phase that allows for procurement of equipment to include private sector ongoing support for the life of the equipment including supply of spare parts during both Investment and Compliance phases.
Civil society participation	The overwhelming majority of the Kiribati population are indigenous. Many i-Kiribati are marginalised in terms of their vulnerability to climate change and short-term hazards. Remote residents are strongly disadvantaged by the difficulties and costs of communications. KMS has a people-centred culture and seeks to meet people's needs to an extent possible. Specific programs such as Climate and Oceans Support Program in the Pacific (COSPPac) include social inclusion components as part of their process. Education resources exist[7], and KMS engage where possible with relevant projects and initiatives. Regular school tours are given of the KMS sites, which serve to introduce students to key ideas about weather and climate and the importance of the KMS role. Education is also done through social media. To ensure that engagement of civil society in the future is more strategic and systematic, the Investment Phase will work to: • Organize inception workshops at the national and subnational levels targeting different stakeholders; • Establish a stakeholder engagement plan to be managed and monitored regularly by a designated person; • Conduct stakeholder engagement workshops on the implementation of the SOFF project deliverables.

[7] Eg 'Learning about climate change the Pacific way – A guide for Pacific teachers – Kiribati. Secretariat of the Pacific Community, 2013' https://kiribati-data.sprep.org/system/files/Kiribati.compressed.pdf

Fiduciary systems	The financial management and procurement within the Project will be guided by UN financial regulations, rules and practices, as well as UNEP's Project manual. The financial rules of UNEP, which follow International Public Sector Accounting Standards (IPSAS), are promulgated pursuant to the Financial Regulations and Rules of the UN. Within this context, funding allocation mechanisms are managed in accordance with UN rules and procedures, including eligibility criteria, proposal evaluation processes, quality assurance and control, project monitoring and supervision. UNEP is audited annually by the UN Board of Auditors. UN financial regulations and rules require the segregation of duties, and safeguards to ensure compliance with UN financial rules and regulations. Through its Global Support Services Agreement with UNOPs, UNEP is able to operate at the country level without necessarily having a national office. This Agreement covers the provision of HR and procurement services. Generally, UNEP's modality for project implementation results in funds being transferred in tranches to the Executing Entities (EEs) and Technical Partners (TPs) once they have satisfied the conditions that are defined under the legal instrument (Project Cooperation Agreement(s): PCAs) to be signed between UNEP and the EEs/TPs. The PCAs will include specific obligations on financial management, reporting and procurement, and will require periodic reporting from the EEs/TPs. The Kiribati Meteorological Service division under the Office of Te Beretitenti (President's Office) as the national EE follows the Kiribati Government Account system under the Ministry of Finance and Economic Development (MFED). Similarly, Technical Partners and the Peer Advisor supporting execution in Kiribati (including e.g. SPREP, NIWA and BOM), are subject to financial and procurement policies of their governments/Member States.
Social and environmental safeguards	Project activities are subject to national and international law, as well as UNEP's Environmental and Social Safeguard Principles and Standards in accordance with UNEP Environmental and Social Sustainability Framework (ESSF). The UNEP Environmental and Social Sustainability Framework (ESSF)[8] was approved in February 2020 and has an overall aim to strengthen the sustainability and accountability of UNEP programmes and projects. The framework identifies UNEP's commitment to sustainable development and environmental and social standards that are designed to promote human well-being and the protection of the environment. The framework identifies the following purposes:

[8] UNEP Environmental and Social Sustainability Framework (2020); Available at: https://wedocs.unep.org/bitstream/handle/20.500.11822/32022/ESSFEN.pdf?sequence=1&isAllowed=y

	• To enhance outcomes by systematically integrating environmental, social and economic dimensions in the UNEP-funded programmes and projects. • To strengthen alignment of UNEP's work with the SDGs and other UN entities and partners in addressing the environmental and social sustainability of development efforts. • To set standards of sustainability for UNEP's operations thereby confirming UNEP's accountability to its member States, and other funders. • To enable UNEP to work in a safer and smarter manner, thereby minimizing potential risks and harm to intended beneficiaries while enhancing UNEP's capabilities and credibility. The framework is structured around guiding principles, safeguard standards and related operational modalities. The guiding principles of the framework are derived from the 2030 Agenda for Sustainable Development and include the following: Leave No One Behind, Human Rights and Gender Equality and Women's Empowerment, Sustainability and Resilience and Accountability. The safeguard standards of the framework include the following: • Safeguard Standard 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management • Safeguard Standard 2: Climate Change and Disaster Risks • Safeguard Standard 3: Pollution Prevention and Resource Efficiency • Safeguard Standard 4: Community Health, Safety and Security • Safeguard Standard 5: Cultural Heritage • Safeguard Standard 6: Displacement and Involuntary Resettlement • Safeguard Standard 7: Indigenous Peoples • Safeguard Standard 8: Labour and Working Conditions In order to operationalize the framework, the framework includes a) screening, assessment, management and monitoring of environmental and social risks; and b) steps for ensuring meaningful stakeholder engagement and accountability. To screen projects, UNEP utilizes the Safeguard Risk Identification Form (SRIF). The form is used to identify any potential environmental and social risks and impacts associated with the

	proposed activities, and to identify opportunities to support other positive changes to the environment and society. UNEP's Gender Equality and Environment policy recognizes the role of gender equality as a 'driver of sustainable environmental development.'[9] As the lead organization to coordinate environmental matters within the United Nations System, UNEP has the responsibility to drive the achievement of the System's gender equality mandate in its environmental assessments and analyses, norms, guidelines and methods, for use by stakeholders looking for guidance on how to effectively manage the environment for their sustainable development and economic growth. To that end, UNEP has sought to formalize and bolster agency-wide gender mainstreaming efforts and has the expertise and personnel to support the analytical underpinning of project-level gender mainstreaming during implementation.
Dispute resolution mechanism	As part of UNEP's ESS Framework, stakeholders who may be adversely affected by the project can communicate their concerns about the environmental and social performance of the project to UNEP. The Grievance Redress Mechanism has been designed to the extent possible according to the effectiveness criteria for non-judicial grievance mechanisms outlined in the UN Guiding Principles on Business and Human Rights. UNEP's Stakeholder Response Mechanism (SRM) is established through the Independent Office for Stakeholder Safeguard-related Response (IOSSR).[10] The IOSSR serves two functions: • Compliance Review: processes for responding to claims by Stakeholders alleging that UNEP activities are not in compliance with the ESS Framework; • Grievance Redress: provides access to dispute resolution mechanisms used to address project-related disputes that relate to UNEP's activities. The IOSSR is responsible for the SRM, and thus carries out the following responsibilities: • Receives and screens complaints for eligibility;

[9] UN Environment (2015). "Gender Equality and the Environment: Policy and Strategy". https://wedocs.unep.org/bitstream/handle/20.500.11822/7655/Gender_equality_and_the_environment_Policy_and_strategy-2015Gender_equality_and_the_environment_policy_and_strategy.pdf.pdf?sequence=3&isAllowed=y

[10] UNEP's Environmental and Social Sustainability: Stakeholder Response Mechanism (2020), Available at: https://wedocs.unep.org/bitstream/handle/20.500.11822/32023/ESSFRM.pdf

	• Maintains a roster of accredited independent experts related to compliance review and dispute resolution; • Develops the appropriate TOR for facilitating the compliance review or dispute resolution; • Manages and oversees all experts engaged in compliance review and dispute resolution; • Maintains the IOSSR website that provides the public with access to all relevant documents related to compliance review and dispute resolution; • Issues reports to the UNEP Executive Director with findings and recommendations for compliance reviews, and outcomes for dispute resolution processes; • Monitors the implementation of decisions related to compliance review and grievance redress; • Reports on the IOSSR operations and provides advice based on lessons learned; • Conducts outreach to Stakeholders regarding the IOSSR; • Seeks to minimise risks of retaliation to complainants. Complaints can be filed to the Stakeholder Response Mechanism through the online project concern form, email or mail to the following address: Independent Office for Stakeholder Safeguard-related Response (IOSSR) & Director of Corporate Service Division United Nations Environment Programme Nairobi, Kenya Email: unenvironment-IOSSR@un.org Details are available in the UNEP's SRM Operating Procedures.
Additional relevant policies and procedures	As part of the Secretariat, UNEP follows UN policies, rules and regulations.

6. Investment Phase Monitoring and Reporting

The implementing entity, with the support of the peer advisor, is expected to monitor the implementation of the Investment Phase following an output-based approach. The Investment Phase outputs as well as respective indicators and targets are presented below.

Output 1. GBON institutional and human capacity developed	**Indicator**	**Target Y1**	**Target Y2**	**Target Y3**	**Target Y4**	**Target Y5**
1.1 **National consultations** including with CSOs, and other relevant stakeholders conducted						
1.1.1 Inception workshops at the national and sub-national level targeting different stakeholders, including CSO and private sector.	# workhops	**1**	**1**	**1**	**1**	**1**
	% female participants	**50**	**50**	**50**	**50**	**50**
1.1.2. Stakeholder engagement workshops on the implementation of the SOFF project deliverables.	# workhops		**1**	**1**	**1**	**1**
	% female participants		**50**	**50**	**50**	**50**
1.1.3. Development of a Stakeholder Engagement Plan to ensure that future stakeholder engagement is more strategic and systematic	years in which Stakeholder Engagement Plan will be drafted	**X**	**X**			
1.2 **NMHS institutional capacity** required to operate the GBON network developed						
1.2.1. Development of Gender Gap Analysis and Gender Action Plan for mainstreaming Gender into SOFF initiatives.	years in which Gender Gap Analysis and Gender Action Plan will be drafted			**X**	**X**	
1.2.2. Participation in the regional coordination initiatives and forums, including Regional SOFF coordination workshop in 2024 and other events	years in which participation is planned (tentatively)	**X**	**X**	**X**	**X**	**X**
1.3 **NMHS human capacity** required to operate the GBON network developed	# staff salaries paid	**11**	**11**	**11**	**11**	**11**
	years in which trainings will be conducted	**X**	**X**	**X**	**X**	**X**
Output 2. GBON infrastructure in place	**Indicator**	**Target Y1**	**Target Y2**	**Target Y3**	**Target Y4**	**Target Y5**

2.1 **New land-based** stations and related equipment, ICT systems, data management systems and standard operating practices in place	# stations as per the GBON National Contribution Plan			4	5	
2.2 **Improved land-based** stations and related equipment, ICT systems, data management systems and standard operating practices in place	# stations as per the GBON National Contribution Plan		5			
2.3 **New upper-air** stations and related equipment, ICT systems, data management systems and standard operating practices in place	# stations as per the GBON National Contribution Plan		1	1		
2.4 **Improved upper-air** stations, related equipment, ICT systems, data management systems and standard operating practices in place	# stations as per the GBON National Contribution Plan		1			
Outcome: Sustained compliance with GBON	**Indicator**	**Target Y1**	**Target Y2**	**Target Y3**	**Target Y4**	**Target Y5**
3.1 **GBON land-based stations'** commissioning period[11] completed, country-specific standard cost for operations and maintenance established, and data sharing verified by WMO Technical Authority	# stations as per the GBON National Contribution Plan		5	9	14	14
3.2 **GBON upper air stations'** commissioning period completed, country-specific standard cost for operations and maintenance established, and data sharing verified by WMO Technical Authority	# stations as per the GBON National Contribution Plan		2	3	3	3

[11] The commissioning period is the last year of the Investment Phase. The beneficiary country, supported by the Implementing Entity, must demonstrate the sustained operation of all the SOFF-supported stations according to the GBON compliance.

The implementing entity is expected to report on progress as described below.

- **Quarterly updates** to the SOFF Secretariat: A simple standardized form providing a progress update against the Investment Phase Outputs' indicators (and Outcome, where applicable[12]) and flagging major issues that are delaying implementation, if any.
- **Annual narrative and financial reports** according to the UNMPTF reporting requirements indicated in the legal agreements. The annual narrative report reports on progress on the delivery of the Investment Phase Outputs, measured by the Investment Phase Indicators. It includes also a review of the Investment Phase risks and an update on environmental and social safeguards, including gender.
- **Final narrative and financial reports** according to the UNMPTF reporting requirements indicated in the legal agreements. The final narrative report confirms the completion of all the activities and report on the number of stations that have completed the commissioning period (outcome). The WMO technical authority verifies GBON compliance of the indicated stations and provides a verification report to the SOFF Secretariat. Upon WMO verification, the Investment Phase can be considered completed. The Final Report should describe the Investment Phase results achieved and lessons learned; and it should also specify the long-term institutional arrangements to secure sustained GBON compliance with SOFF Compliance Phase support.

[12] The quarterly reports should also include, when applicable, progress achieved in terms of new or rehabilitated stations that have become operational and are already sharing the data into the WIS 2.0 system as confirmed through the WIGOS Data Quality Monitoring System (WDQMS) web tool.

7. Investment Phase Risk Management Framework

The Investment Phase Risk Management Framework should be based on the SOFF Risk Management Framework, incorporating relevant programmatic risks and including additional country-specific risks. Please follow the methodology established by the Multi-Partner Trust Fund Office (MPTFO) presented below.

		Impact				
		Insignificant (1)	**Minor (2)**	**Moderate (3)**	**Major (4)**	**Extreme (5)**
Likelihood	**Very Likely (5)**	Medium (5)	High (10)	High (15)	Very High (20)	Very High (25)
	Likely (4)	Medium (4)	Medium (8)	High (12)	High (16)	Very High (20)
	Possible (3)	Low (3)	Medium (6)	High (9)	High (12)	High (15)
	Unlikely (2)	Low (2)	Low (4)	Medium (6)	Medium (8)	High (10)
	Rare (1)	Low (1)	Low (2)	Medium (3)	Medium (4)	High (5)

Please complete the following table.

Risk	Risk level	Likelihood	Impact	Risk Mitigation Measures
Non-compliance with fiduciary and procurement standards in some SOFF activities	Medium	Rare	Major	UNEP will undertake an assessment of the financial management capacity of the national Executing Entity (EE) to identify risk elements and to prepare appropriate mitigation measures including ongoing capacity development support by UNEP. UNEP will also closely monitor the financial management of the Project using the established Monitoring and Evaluation procedure and financial reporting

				mechanism, including an annual audit; and establish internal controls for the Project and project fund management. The Project Cooperation Agreements (PCAs) between UNEP and the national EE and Technical Partners will include warranties and caveats by the EE to inter alia ensure compliance with the Anti-Fraud and Anti-Corruption Framework of the United Nations Secretariat.
SOFF-funded investments cause environmental or social impacts	Medium	Unlikely	Moderate	The potential impacts are likely to be very limited in terms of magnitude and easily avoided by proactive planning. Many of the project activities are related to capacity building and training, which are inherently low-impact activities. While the activities related to infrastructure development and installation of new observation equipment will require low-level monitoring, management of environmental and social risks will be a matter of following industry best practice. As a mitigation measure, environmental and sustainability

				considerations will be included in the procurement process, as selection criteria for suppliers. In addition, prior to sire works for upgrading stations or installing new stations, an environmental management plan will be prepared considering local conditions and approaches to minimise the environmental impact of construction activities.
NMHS staff depart after being trained	High	Possible	Major	To mitigate the risk of the staff departing, the Investment Phase will work on providing additional incentives for the staff including regular opportunities for regional trainings and workshops. It is recommended that the Compliance phase includes budget to cover salaries for the new staff, as well as to cover participation in some of the trainings and workshops which would contribute to the staff wellbeing.
Slow implementation and delays in procurement, installation and capacity building activities	Medium	Possible	Minor	Delays in the implementation, particularly transportation of materials to outer islands, might be caused by limited availability of shipping and scattered

				location of the islands. Seamless collaboration between the Implementing Entity, peer advisor, beneficiary country and technical partners will help to ensure that the project activities are executed without any delays.
After the conclusion of the Investment phase, GBON data are not collected or shared or are shared of insufficient quality	Medium	Rare	Moderate	The Investment Phase will include budget operations and maintenance of the equipment to ensure that GBON Infrastructure has been installed and internationally exchanges data. This will also help in smooth transition to the compliance phase. After this the country will receive SOFF support in the compliance phase which will help to ensure that all the equipment is properly functioning and sharing data. In addition, trainings held during the Investment Phase trainings will help to ensure that the beneficiary country has the capacity to manage quality of the data.
Destruction or theft of SOFF-financed equipment and infrastructure	Medium	Unlikely	Moderate	The Investment Phase will ensure that all the observation sites will be fenced and guarded to minimize risk of theft. However, given that

				Kiribati is very vulnerable to the impacts of climate change and might be subject to climate-related disasters, there is a risk that the equipment will be destroyed by a natural hazard. At the same time, improved availability of climate data as a result of SOFF investments will lead to more accurate forecasts and early warnings, which will enable to take early action for protection of the equipment and reduce the risk to low. The project will support Standard Operating Procedures (SOPs) for equipment, including early action protocol in case of climate-related hazards. Mitigation measures will be taken as a part of site preparation. The budget for the GBON equipment procurement will also cover additional equipment needed to safeguard against the climate-related hazards (such as sheltering, protective covers and clothes, torches etc) to the extent possible.
Countries cannot make optimal use of data, including accessing or	Medium	Unlikely	Moderate	To mitigate the risk, it is proposed that the Investment Phase includes extensive and

using improved forecasts products from the Global Producing Centers throughout the hydromet value chain				comprehensive training for the KMS staff from the peer advisor and technical partners. This will help to ensure that the country has enough capacity to make the optimal use of data, including accessing or using improved forecasts products from the Global Producing Centers throughout the hydromet value chain.

Annex 1: National Gap Analysis

The National Gap Analysis of Kiribati is available here.

Annex 2: National Contribution Plan

The National Contribution Plan of Kiribati is available here.

Annex 3: Country Hydromet Diagnostics

The Country Hydromet Diagnostic of Kiribati is available here.

Annex 4: Terms of Reference for the provision of technical advisory services during the SOFF Investment Phase

1. Purpose and scope

These Terms of Reference describe the provision of technical advisory services by Bureau of Meteorology to Kiribati to contribute to the delivery of the SOFF Investment Phase outputs as described in Section 3.

The Terms of Reference are based on the SOFF Operational Manual, Section 4.4.3 on the Operational Partners and Section 4.5.2 on the Investment Phase; as well as on the SOFF Investment Framework, Section 4.5 on the Peer Advisors and WMO Technical Authority.

2. Roles and responsibilities

Beneficiary country National Meteorological and Hydrological Service

- Is responsible for implementing the activities of the SOFF Investment Phase activities with the support of the Implementing Entity and the peer advisor.
- Submits the SOFF Investment Phase funding request using the standardized template provided by the SOFF Secretariat, including the Terms of References for the peer advisor's technical advisory services during the Investment Phase.
- Is responsible for collaborating with the Implementing Entity to provide all the necessary information, participate in and facilitate the national activities that the Implementing Entity and peer advisor need to conduct in order to deliver the SOFF Investment Phase outputs.
- Confirms the completion of all the Investment Phase activities and provides comments as needed on the final report prepared by the Implementing Entity.

Peer advisor

- Is accountable to the beneficiary country and the Implementing Entity.
- Is contracted via the WMO pass-through mechanism and operates on a cost-recovery basis.
- Provides technical advisory services to support beneficiary countries and Implementing Entities in the design and implementation of the SOFF Investment Phase activities.
- Contributes to the final report of the SOFF Investment Phase.

Implementing Entity

- Prepares the Investment Phase funding request in collaboration with the beneficiary country and the peer advisor, including the Terms of References for the provision of technical advisory services during the SOFF Investment Phase.
- Manages the Investment Phase activities following the terms specified in the funding request and in collaboration with relevant national partners, including civil society organizations.

- Delivers the Investment phase outputs and is responsible for their quality and timely delivery, in coordination with the country and the peer advisor.
- Provides quarterly updates to the SOFF Secretariat according to a simple standardized form and annual reports according to the United Nations Multi-Partner Trust Fund Office's reporting requirements indicated in the legal agreements.
- Informs the SOFF Secretariat of circumstances that could materially impede the implementation of the Investment phase or any considerable deviation in the conditions of the funding request to achieve its objectives.
- Submits the final report to the SOFF Secretariat including the beneficiary country's comments and the peer advisors' feedback. The final report describes the institutional arrangements to secure sustained operation and maintenance of the investments made.

WMO Technical Authority

- Provides basic on-demand technical assistance to the beneficiary country, Implementing Entity and peer advisor on GBON regulations, including on monitoring and assessing the data-sharing status of the stations using the WDQMS web tool[13]
- Is responsible for the verification of data sharing of the new or rehabilitated surface and upper -air stations as per GBON regulations.
- WMO provides a verification report to the SOFF Secretariat, upon which the Investment Phase can be considered completed.
- Establishes and administers the pass-through mechanism for contracting and funding of the advisory services provided by the peer advisors.

SOFF Secretariat

- Facilitates communication, coordination and collaboration between the beneficiary country, the Implementing Entity, the peer advisor and WMO Technical Authority.
- Reviews the SOFF Investment Phase funding request, including the Terms of Reference for the provision of technical advisory services and provides feedback as needed. Then transmits the funding request to the SOFF Steering Committee for their decision.
- Compiles quarterly updates and annual reports and monitors implementation based on information received from the Implementing entity, the peer advisor and the beneficiary country. Regularly informs the Steering Committee of progress.
- Coordinates regional implementation approaches to the SOFF Investment Phase.
- Confirms receipt of the final report by the Implementing Entity and completion of the Investment Phase based on WMO verification of data sharing.
- Organizes exchange of knowledge and experiences and captures lessons learned.

[13] The WDQMS web tool monitors the availability and quality of observational data based on near -real-time information from the four participating global Numerical Weather Prediction centres: the German Weather Service (DWD), the European Centre for Medium range Weather Forecasts (ECMWF), the Japan Meteorological Agency (JMA) and the United States National Centers for Environmental Pre diction (NCEP). These are four of the ten World Meteorological Centres, designated by WMO to provide global numerical weather prediction products for all WMO Members.

3. Peer advisors' activities during the SOFF Investment Phase

The peer advisor, the Australian Bureau of Meteorology (Bureau), will provide the following advisory services to Kiribati Meteorological Services (KMS) during the SOFF Investment Phase:

- **Technical advice and support**– The Bureau will facilitate access to subject matter experts (SME) within its organisation to be available for on-call consultation, advice and support to KMS via telephone or videoconference. This could include topics such as:
    - Station siting and exposure assessment
    - Equipment or communications issues
    - Quality management
    - WIS2.0 configuration and setup
    - WIGOS, OSCAR/Surface metadata setup and configuration
    - Suggestions for suppliers of equipment and services
    - Assistance with budgeting for operation and maintenance of stations during compliance phase

  The fee in this Investment Proposal amount allows for up to 40 hours of Bureau SME consultation per year. Should further support be required, this would need to be requested as additional financing.

- **Regional engagement support** – The Bureau will assist KMS to connect with other met services, regional bodies and other hydromet initiatives in the region. This could include activities such facilitating introductions and multi-party discussions.

- **Periodic peer reviews** – The Bureau will undertake annual in-country peer reviews of progress during the Investment Phase and contribute to reporting as relevant. Each review will include a short assessment report and recommendations for adjustments to the Investment Phase approach if required. The regular reviews will aim to identify and head off any emerging problems or issues to avoid waste or investment funds or delays to the investment program.

The peer advisor may also undertake or have some involvement in some of the activities listed under Outputs 1 and 2 above, particularly relating capacity-building (e.g. BIP-MT training). However, this would done through a transparent procurement process and covered under the budget allowed for these Outputs by the Implementing Entity.