Systematic Observations Financing Facility (SOFF) – 2nd contribution

Key results:
- Improved weather and climate prediction products
- Compliance with Global Basic Observing Network (GBON)
- GBON national contributions developed and verified
- GBON infrastructure and human and inst. capacity in place
- Data internationally shared and results-based finance provided

Justification for support:
- Danish commitments to enhance adaptation funding and engagement in addressing losses and damages with a focus on LDCs and SIDS.
- Responding to the UN Secretary-General's call at UNFCCC COP26 and supporting the implementation of the Early Warnings for All Initiative launched by UN Secretary-General in 2022.
- The SBSTA draft conclusion at COP29 *"emphasized the continued need to address gaps in systematic observations globally"*
- Closing large meteorological data gaps – a major bottleneck for effective climate modelling and early warning.
- Enabling informed and better preparedness, adaptation planning, and response.
- For every dollar invested in climate data, at least twenty-six dollars in socio-economic return could be realised (World Bank).

Major risks and challenges:
- *SOFF is not able to mobilize sufficient resources to reach the funding targets necessary to meet the operational targets.* SOFF has mobilised considerable funding from a range of donors but is still significantly below the fund mobilisation target. Mitigation: Proactive resource mobilisation.
- *After the conclusion of the investment phase, GBON data are not collected or shared, or are shared of insufficient quality, or do not improve forecast skills/climate services.* Only countries committed to GBON data sharing are supported. Results-based payments contribute to operation and maintenance. Mitigation: GBON compliance is monitored.
- *Sufficient longer-term funding for result-based financing for operation of maintenance is not mobilised.* SOFF still has a major funding gap and there is a history of donors not living fully up to the funding pledges made at UNFCCC COPs. Mitigation: the SOFF is a ten-year initiative, so there is considerable time to develop and strengthen the planned results-based finance mechanism.

File No.	25/41402			
Country	Global			
Responsible Unit	KLIMA (in collaboration with MCEU)			
Sector	Environment and climate change			
Partner	SOFF			
DKK million	**2025**	**2026**	**2027**	**Total**
Commitment	25			25
Projected disbursement	24.5	0.5		25
Duration	2025-2027			
Previous grants	DKK 25 million, 2022-2025			
Finance Act code	06.34.01.70 – Climate Envelope			
Head of unit	Mette Nørgaard Dissing-Spandet			
Desk officer	Pauline Søndergaard Kudsk			
Reviewed by CFO	Rie Høygaard Jensen			

Relevant SDGs

Objectives:

Strengthen climate adaptation and resilient development through improved weather forecasts and climate information services that save lives and livelihoods and protect property.

Environment and climate targeting - Principal objective (100%); Significant objective (50%)

	Climate adaptation	Climate mitigation	Biodiversity	Other green/environment
Indicate 0, 50% or 100%	100%	0%	0%	0%
Total green budget (DKK)	25m	0	0	0

Justification for choice of partner:

WMO is the designated UN agency for promoting international hydromet cooperation and coordination, and is responsible for the creation of global standards for observation. It is tasked with strengthening the provision of weather and climate services. UNDP has a network of 170 country offices and works directly with national and local authorities. UNEP is the UN's designated lead agency on tackling the triple planetary crisis of climate change, biodiversity loss, and pollution. UNEP has strong expertise in advocacy, making knowledge and information accessible, and environmental and social safeguards.

Summary:

SOFF is a financial mechanism for the implementation of GBON, focusing on creating the foundation for effective weather and climate information services. SOFF aims to massively boost the collection and international exchange of basic surface-based observational weather and climate data, benefitting SIDS and LDCs in particular, and to a lesser extent emerging economies. In particular, SOFF focuses on increasing capacities and systems for collecting weather data and sharing it globally through WMO, enabling compliance with GBON. SOFF provides capacity development support and financing (grants) for weather station installation and rehabilitation. It also aims to build a long-term global system for results-based financing (performance-based payment) of weather data collection to finance the data collection in LDCs and SIDS.

Budget (engagement as defined in FMI)**:**

Engagement 1 – the development project: Danish support to SOFF - 2nd contribution	DKK 24.5m
Engagement 2 – mid-term review	DKK 0.5m
Total	**DKK 25m**

Ministry of Foreign Affairs of Denmark

Danish Support for the UN Multi-Partner Trust Fund for the Systematic Observations Financing Facility (SOFF) – second contribution

2025-2027

Project Document

24 October 2025

Ref: 25/41402

List of contents

List of Acronyms

AF	Adaptation Fund
ADB	Asian Development Bank
AfDB	African Development Bank
AOSIS	Alliance of Small Island States
CIF	Climate Investment Funds
COP	Conference of the Parties
CREWS	Climate Risk and Early Warning Systems
CSO	Civil Society Organisation
DAC	Development Assistance Committee
DKK	Danish Krone
DMI	Denmark's Meteorological Institute
ELQ	Evaluation Learning and Quality unit
EUR	Euro
EW4All	Early Warnings for All
FPIC	Free Prior and Informed Consent
FRR	Final Results Report
GBON	Global Basic Observing Network
GCF	Green Climate Fund
KLIMA	Green Diplomacy and Climate unit
GEF	Global Environment Facility
GMet	Ghana Meteorological Agency
GNDR	Global Network of Civil Society Organisations for Disaster Reduction
hPa	Hecto Pascal
HRBA	Human Rights-Based Approach
IDB	Inter-American Development Bank
IE	Implementing Entity
IFAD	International Fund for Agricultural Development
IPCC	Intergovernmental Panel on Climate Change
IsDB	Islamic Development Bank
LDC	Least Developed Country
LNOB	Leave No-One Behind
MCEU	Ministry of Climate, Energy and Utilities of Denmark
MFA	Ministry of Foreign Affairs of Denmark
MoU	Memorandum of Understanding
MPTF	Multi-Partner Trust Fund
NDF	Nordic Development Fund

NMHS	National Meteorological and Hydrological Services
NWP	Numerical Weather Prediction
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
REDD	Reducing Emissions from Deforestation and Degradation
SAA	Standard Administrative Arrangement
SBSTA	Subsidiary Body for Scientific and Technological Advice
SDG	Sustainable Development Goal
SIDS	Small Island Developing State
SOFF	Systematic Observations Financing Facility
SSC	Strategic Sector Cooperation
TMA	Tanzania Meteorological Authority
ToC	Theory of Change
ToR	Terms of Reference
UN	United Nations
UN-REDD	United Nations REDD Programme
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNEG	United Nations Evaluation Group
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	US Dollar
WFP	World Food Programme
WIS	Weather Information System
WMO	World Meteorological Organization
WRPP	Weather Ready Pacific Programme

1 Introduction

The present project document outlines the background, rationale and justification, objectives and management arrangements for development cooperation concerning the accumulated Danish Support to the UN Multi-Partner Trust Fund for the Systematic Observations Financing Facility (SOFF) in 2025-2027, as agreed between the parties: the United Nations Multi-Partner Trust Fund Office (UN MPTF Office, hosted by UNDP) the World Meteorological Organization (WMO), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), and the Green Diplomacy and Climate (KLIMA) unit of the Ministry of Foreign Affairs of Denmark (MFA) in collaboration with the Ministry of Climate, Energy and Utilities of Denmark (MCEU). The support is a top-up to a previous grant of DKK 25 million to SOFF for the period 2022-2024. The project document is an annex to the legal bilateral agreement with the implementing partners and constitutes an integral part hereof together with the documentation specified below.

"The Documentation" refers to the partner documentation for the supported intervention, which is the "*Systematic Observations Financing Facility (SOFF) Terms of Reference*", the *"Standard Administrative Arrangement for Systematic Observations Financing Facility Using Pass-Through Fund Management"* (SAA), the *"Standard Memorandum of Understanding for Systematic Observations Financing Facility Using Pass-Through Fund Management, November 2021"* (MoU), and the "*SOFF Operational Manual*".

2 Context, strategic considerations, rationale and justification

2.1 Context

The climate crisis is rapidly accelerating, and the impacts are now visible everywhere, including record-breaking temperatures, and increased floods and wildfires. The number of disasters has increased by a factor of five over the past five decades, and economic losses have increased sevenfold with average daily losses of USD 383 million. There is thus an urgent need to enhance the level of ambition on climate change adaptation. The annual adaptation funding gap for developing countries is estimated to be USD 187-359 billion, so the current level of finance would need to increase significantly by the end of this decade to meet the needs (see Annex 1). Improved ability to forecast extreme weather events and predict the changing climate is critical to manage risks effectively, to understand adaptation needs, and to plan accordingly with systematic and anticipatory action. Surface-based weather observations underpin weather forecasts, early warning systems, and climate information everywhere, enabling anticipatory preparation for disasters as early as possible, as well as the creation of long-term policies for climate change adaptation.

2.2 Rationale and justification

At the 26th Conference of the Parties (COP26) of the United Nations Framework Convention on Climate Change (UNFCCC) in 2021, UN Secretary-General Guterres called for a breakthrough in addressing climate change adaptation needs and loss and damages, appealing to all donors to allocate 50 pct. of their climate financing to climate change adaptation, and emphasising that early warning systems save lives. At the World Meteorological Day (23 March 2022), the UN Secretary-General announced that the UN would spearhead *"new action to ensure every person on Earth is protected by early warning systems within five years"* and appointed WMO to lead the effort and present an action plan at COP27. At COP27 (November 2022), the UN Secretary-General launched the Early Warnings for All (EW4All) initiative, which aims to achieve universal access to multi-hazard early warning systems by 2027 to ensure universal protection from hazardous hydrometeorological, climatological, and related environmental events. EW4All comprises four pillars[1], with the second pillar being "*detection, observation, monitoring, analysis and forecasting*".

Effective climate change adaptation and responses to loss and damage require access to high-quality weather and climate information. However, large data gaps in basic weather and climate observations limit

[1] Pillar 1: Disaster risk knowledge; Pillar 2: Detection, observation, monitoring, analysis and forecasting; Pillar 3: Warning dissemination and communication; Pillar 4: Preparedness and response capabilities

the quality, accuracy and timeliness of weather forecasts and climate prediction, in particular in Least Developed Countries (LDCs) and Small Island Developing States (SIDS), which at the same time are the most vulnerable to weather hazards and climate change. While there has been considerable progress in establishing multi-hazard early warning systems, only 46 pct. of the LDCs, 39 pct. of the SIDS, and 59 pct. of land-locked developing countries have such systems in place[2] with considerable gaps in the underlying data necessary for timely and effective warning. Germany (357,596 km^2) alone has more Global Basic Observing Network (GBON) compliant land-based surface weather stations than the entire African continent (30,370,000 km^2)[3]. The current gaps in global surface-based data sharing significantly impact the quality of weather and climate information locally, regionally and globally. The principal reason for the mismatch between investments and limited improvement in global data sharing in SIDS and LDCs is the fact that these countries have not been able to operate and maintain their observational infrastructure. At COP29 in 2024, the Subsidiary Body for Scientific and Technological Advice (SBSTA) reached a draft conclusion on research and systemic observation, recognising the *"vital importance of robust Earth observation systems and related long-term data records… for enhanced understanding of changes in the global climate system and their attribution, mitigation and adaptation action, efforts to avert, minimize and address loss and damage, and early warning systems, and the importance of observational data..."*. Moreover, the SBSTA "*also emphasized the continued need to address gaps in systematic observations globally, noted with appreciation the support being provided for addressing gaps in systematic observations in developing countries, also noted the continued efforts of the Systematic Observations Financing Facility, which currently prioritizes systematic observations in the least developed countries and small island developing States, and invited the Facility to consider extending its support for systematic observations to more countries. It encouraged Parties and relevant organisations to further strengthen their provision of support to the systematic observation community*".

At COP25 in 2019, the major development and climate finance institutions formed the Alliance for Hydromet Development to scale up and unite efforts to generate better weather forecasts, early warnings, and climate information. As its first priority, the Alliance committed to establishing the Systematic Observations Financing Facility (SOFF) to close the weather and climate observation gap. WMO, UNDP, and UNEP decided to establish a Multi-Partner Trust Fund (MPTF) as a financial mechanism for SOFF. At COP26, the Danish Minister for Development Cooperation confirmed that Denmark would contribute to the SOFF MPTF.

The weather and climate data gap: Effective climate change adaptation decision-making requires quality weather and climate information, and investment in all six links of meteorological value chain presented in Box 1. However, most initiatives to improve climate modelling and early warning systems operate at the national level and focus mainly on the last three links of the value chain, and access to meteorological data remains a significant bottleneck for their accuracy and timeliness.

The weather and climate in any location is part of a global system, so the first three links in the value chain rely on a global implementation approach. Accurate forecasting and modelling require access to local, regional and global data of sufficient accuracy and geographical granularity. For a prediction horizon beyond 24 to 36 hours, global observational data and global models are needed to underpin the predictions in any location. At the same time, local observations are necessary for the models to generate the necessary data for effective forecasting at the national and local levels.

In 2019, the World Meteorological Congress established the Global Basic Observing Network (GBON), which specifies clear requirements for all WMO Members vis-a-vis gathering essential data at a minimum level of spatial resolution and time interval and freely exchange these internationally. However, LDCs and SIDS significantly lack the infrastructure and capacity to meet GBON requirements and need to rehabilitate or install approximately 2,000 weather stations to achieve the GBON target of about 2,300 stations. The data gaps are striking, with only 7 pct. of the mandatory GBON surface land data from SIDS, LDCs and lower middle-income countries being delivered. The total estimated funding needed to support LDCs and SIDS in closing the GBON gap corresponds to USD 400 million, which would support at least a tenfold increase of observations from LDCs and SIDS. Closing the GBON gap would be highly economically efficient; According to the World Bank, for every dollar invested at least twenty-five dollars

[2]https://www.undrr.org/reports/global-status-MHEWS-2023

[3] https://wmo.int/media/news/closing-gaps-observing-network

in socio-economic return could be realised. Investments in filling gaps in the surface-based observing and adding observations in data-scarce regions has higher impact per observation than further investments in data-rich regions.[4]

Box 1: The meteorological value chain

1. **Weather and climate observations** routinely made over all areas of the globe
2. **Observations exchanged internationally**
3. Numerical Weather Prediction (NWP) **output monitoring and prediction data** generated and shared internationally
4. **Global NWP output used** to generate weather and climate information (e.g. forecasts, warnings, seasonal outlooks, climate monitoring and prediction)
5. **Weather and climate information services** are delivered to users
6. **Effective decision-making** based on weather and climate information

SOFF's contribution: SOFF contributes to strengthening resilient development and climate adaptation. SOFF does this by supporting countries to generate and exchange basic surface-based observational data for better prediction and prevention of extreme weather events. Since its inception, SOFF has rolled out activities in 66 countries, of which 62 (95 pct.) are SIDS (61 pct.) and/or LDCs (39 pct.). SOFF is a financial mechanism for enabling compliance with GBON to create the foundation for effective weather and climate information services (see Figure 1) – benefitting SIDS and LDCs in particular, and to a lesser extent emerging economies. It is a ten-year initiative, comprising three implementation periods; the first period will end on 30 June 2027. SOFF focuses on addressing gaps in the first two links of the meteorological value chain (see Figure 1), namely: 1) increasing capacities and systems for collecting weather data (including the necessary weather data infrastructure and equipment), and 2) sharing weather data globally through WMO. SOFF promotes the establishment of a global results-based payment system, where LDCs and SIDS will receive international financing (grants) for continued operation and maintenance of national weather data collection systems, provided they collect and share weather data freely (results-based financing). SOFF currently focuses on implementing weather infrastructure in areas with a clear national jurisdiction. Therefore, marine stations are not supported, but may be considered at a later stage.

Figure 1. SOFF and the meteorological value chain

[4] https://www.un-soff.org/wp-content/uploads/2024/10/Decision-9.2-SOFF-Impact-Report.pdf

Coverage of Danish priorities: The Danish contribution to SOFF reaffirms Denmark's commitment to contribute to **climate change adaptation** and responding to **loss and damage**.

The support is aligned with the "***A Changing World, Partnerships in Development***" focusing on the "***a just, sustainable, and green transition***" prioritised focus area. Specifically, it contributes to promoting "***climate adaptation – a necessity for security and stability***". This is done by improving quality and availability of weather and climate data, to allow for better weather forecasting and climate modelling/projection of long-term climate change and weather patterns. In turn, this improves the evidence-base and informs decision-making at all levels (farmers, private sector, civil society, academia, local authorities, national authorities, regional bodies, international organisations), thus enabling better and more timely response strategies, as well as longer-term adaptation policy and planning. Thereby, disaster prevention measures and response strategies can be made more effective, which helps saving lives, reducing damage to infrastructure and assets, reducing crop losses, and increasing agricultural productivity, thereby reducing vulnerability and enhancing resilience.

Poverty alleviation, leave no-one behind, gender, and human rights: Given that the poor, including the poorest of the poor and women, are disproportionally vulnerable to climate change, an indirect contribution is made to *poverty reduction*, *inclusive development*, and *leaving no-one behind*. SOFF's strong focus on supporting LDCs and SIDS further contributes to this. Enhanced resilience may also reduce pressure on vulnerable people to migrate. However, SOFF is aimed at strengthening the upstream components of the meteorological value chain, such as data sharing and infrastructure at the national level, and does not directly engage in early warning or in adaptation efforts targeting vulnerable communities. Therefore, while SOFF may contribute to climate resilience and adaptation efforts, its impact on poverty reduction, inclusivity, and leaving no one behind is indirect. As such, SOFF contributes indirectly to strengthening *the link between development and humanitarian action*. Improved access to quality weather and climate-related information also enhances civil society and citizen capacities to engage in informed decision-making and advocacy, so while SOFF does not directly contribute to the promotion of human rights, it makes an indirect contribution to *empowering rights-holders to hold duty-bearers accountable*.

Moreover, a contribution is made to Denmark's aspirations to "*raise the global climate ambitions*", as expressed in "***A Green and Sustainable World – The Danish Government's long-term strategy for global climate action***". In particular, the support for SOFF contributes to *"driving adaptation and resilience initiatives in the fight against climate change"* and *"increasing the ability to adapt to the adverse impacts of climate change affecting the poorest most severely and foster climate resilience"*. By promoting the establishment of a global results-based financing system for meteorological data collection in developing countries, SOFF contributes to *"ensure green development cooperation rooted in solidarity"*. ***Danish competencies and solutions*** come into play through Denmark's Meteorological Institute (DMI) engagement as a SOFF peer advisor providing technical support to the Tanzania Meteorological Authority (TMA) (see section 7 for a description of the Peer Advisor role in SOFF). DMI's role as SOFF peer advisor may be expanded to other countries.

With the emphasis of strengthening the weather data collection and analysis capacities of national meteorological services in LDCs of which the majority are in Africa, the support for SOFF contributes directly to the ambition under the Danish "***Africa's Century***" strategy to **increase the support for climate change adaptation.** The strategy emphasises that Denmark will enhance the engagement in "*preparedness and monitoring systems for early warning of dangerous weather*" and enhancing local capacity. USD 63 million (corresponding to 54 pct.) of the total approved SOFF budget is allocated for African countries. Readiness support is provided for 24 African countries and three more are programmed to receive readiness support while investment support has been approved for eight African countries and conditionally approved (subject to funding availability) for one country.

SOFF contributes to achieving the internationally agreed adaptation targets under the United Nations Framework Convention on Climate Change (UNFCCC). It also contributes to the Sendai Framework for Disaster Risk Reduction, in particular priorities i) understanding disaster risk, and iv) enhancing disaster

preparedness for effective response. Supporting the implementation of SOFF is thus a tangible manifestation of the ***Danish commitment to promoting multilateralism*** and cooperating with the UN.

With an explicit focus on generating necessary data and information for effective climate change adaptation and enhance the resilience of communities, the climate change adaptation Rio marker is a principal objective of the project.

Annex 3 provides a justification of the project based on the six OECD/DAC quality criteria.

2.3 Strategic considerations

SOFF, the humanitarian-development nexus, and loss and damage: Access to better weather data with a finer spatial and temporal resolution allows for more accurate and more timely weather forecasts and early warning. It also allows better modelling/projection of the longer-term implications at the local level of climate change. This, in turn, allows for better policy-making and planning, adaptation and enhanced resilience of livelihoods to a changing climate as well as better preparedness and responses to weather hazards. In other words, better weather data can contribute to bridging the humanitarian-development nexus, both reducing the need for humanitarian assistance post-disaster and facilitating timely delivery of humanitarian assistance. Moreover, better preparedness can also contribute to the prevention of development investments (e.g. in infrastructure or in land productivity) being destroyed by extreme weather events. The access to better data will also improve responses to loss and damage in developing countries.

Links to other initiatives targeting the meteorological value chain: SOFF investments at the country level are not stand-alone initiatives but incorporated as a component in existing or planned hydro-meteorological or climate resilience and adaptation projects implemented by SOFF Implementing Entities (see Section 7). This is done to: a) ensure in-country coordination and action across the entire meteorological value chain, b) gain economies of scale in implementation and reporting, high-quality support from the Implementing Entities to the National Meteorological Hydrological Systems (NMHS) for GBON gap closure, and c) raise the profile of NMHS with central authorities (e.g. ministries of finance). Depending on the nature of the host project, it is also expected to provide a link from SOFF to the end-users.

Cooperation agreements have been entered between SOFF and other initiatives, such as:

- A framework for collaboration for enhancing systematic observation and improving the use of basic weather and climate data for effective climate action with the Adaptation Fund (AF), the Climate Investment Funds (CIF), Climate Risk and Early Warning Systems (CREWS) Initiative, the Global Environment Facility (GEF), and the Green Climate Fund (GCF)
- A letter of intent with the African Development Bank (AfDB)
- An agreement on complementarity and collaboration with the Weather Ready Pacific Programme (WRPP)

Most other related initiatives address the last three links of the meteorological value chain. While some of them also address elements of the first steps, this is primarily in an ad-hoc and localised manner to fill specific gaps, rather than a comprehensive, systemic, and sustainable approach to improve the provision of weather data. As such, SOFF is a unique initiative, as it specifically, systematically and comprehensively addresses the first two links of the value chain, as confirmed by the 2023 independent external review of SOFF: "*It is acknolweged as the essential pillar at the top of the metereological value chain to enable downstream investments to work*".

SOFF is complemented by three other WMO initiatives, which combined address the entire meteorological value chain (see figure 1). The third link is targeted with the designation of Global Producing Centre for Long-Range Forecasts, which form part of the WMO Global Data-Processing and Forecasting System; SOFF contributes by improving the data foundation for the forecasting. WMO addressed the three upstream links of the value chain as the lead implementing partner of the Climate Risk and Early Warning Systems (CREWS) and host of the CREWS secretariat. CREWS is represented in the

SOFF Steering Committee (see Section 7). To ensure complementary, SOFF regional workshops are, whenever possible, co-organised with CREWS. So far, joint workshops have been held in the Pacific,the Ivory Coast, and in the Caribbean in May 2025. CREWS thus provides a direct link between the upstream services provided by SOFF and the end-users of weather and climate information, such as government entities, the private sector, civil society, academia, and the wider population, incl. poor and vulnerable people, living in LDCs and SIDS. Moreover, WMO is lead agency for Pillar 2 (detection, observation, monitoring, analysis, and forecasting) of the Early Warnings for All (EW4All) initiative response; Denmark has supported EW4All since 2023 (see section 2.4).

Filling an urgent short-term financial gap: Due to funding constraints, SOFF is currently unable to fully meet the demand for support, and SOFF has had to pause granting new funding requests. Three countries (, Samoa, Nauru, Malawi) are currently approved for implementation, once additional funding becomes available to SOFF. While the SOFF Secretariat is in the process of mobilising further funding, there is an urgent short-term funding gap. By disbursing the second Danish contribution in a single tranche in 2025, it will fill a critical gap, until further financing is mobilised.

Financial sustainability: Over a ten-year period (2022-2032), SOFF is expected to become a long-term results-based international financing mechanism, where LDCs and SIDS, if they share weather data freely and internationally, can access funding for ensuring continued weather station functionality and data collection in LDCs and SIDS. Thereby, SOFF is intended to ensure long-term financial sustainability of the more comprehensive and thus more costly meteorological services required for GBON compliance (including weather station maintenance and maintaining a cadre of qualified staff). However, ensuring global political commitment and willingness to provide sufficient funding may prove difficult. Hence, Denmark will continue encouraging that a comprehensive strategy is pursued for mobilising financing from multiple sources, also with a view beyond the planned ten-year duration of SOFF. Such a strategy should systematically explore the scope and opportunities for including the private sector in the supported countries as well as developed countries, considering both philanthropic and commercial contributions. Denmark will also advocate in the SOFF Steering Committee agreement for adding "*sufficient longer-term funding for result-based financing for operation of maintenance is not mobilised*" (see section 9) to the SOFF risk matrix (see Annex 7), including mitigation measures.

Scope for Danish influence: Denmark (the MCEU with the MFA as alternate) has a seat in the SOFF Steering Committee and thus participates in the provision of strategic guidance, approval of work plans, and the selection of requests for support to be funded. This gives Denmark an opportunity to promote Danish priorities and interests, such as ensuring a strong link from the first two links of the value chain to the latter links and accessibility of data and information for end users of meteorological services as a means to enhance climate resilience, gender and the inclusion/empowerment of women, human rights, and private sector involvement in the financing of meteorological services. Moreover, Denmark will follow up on the implementation of the recommendations from the 2023 independent external review (see section 2.5 and Annex 2). Denmark has been active in the Steering Committee, highlighting the need for targeting LDCs and for synergy with other initiatives (incl. CREWS, EW4All). In June 2023, Denmark hosted the SOFF Steering Committee meeting.

Denmark and the other donors to SOFF are generally like-minded and have similar priorities in relation to SOFF, such as emphasis on LDCs and SIDS (including Sub-Saharan Africa), gender, and ensuring long-term financial sustainability for example through engaging the private sector. Four Nordic countries (Denmark, Norway, Finland, and Iceland) and the Nordic Development Fund (NDF) have contributed to SOFF. Moreover, European Union Member States figure prominently among the donors. There is thus scope for promoting joint Nordic and joint European positions in the Steering Committee. Overall, the donors to SOFF are very well coordinated through the Friends of Early Warnings (FoEW).

2.4 Links to other Danish engagements

Denmark provided support to SOFF in 2022 as one of the first funders with DKK 25 million for a three-year period. This support ends on 31 June 2025. Moreover, Denmark provides an additional indirect contribution to SOFF as a member and funder of NDF. DMI is among SOFF's peer advisors, which

provide technical advisory and support to developing countries vis-à-vis SOFF implementation (see section 7), with DMI currently supporting Tanzania. DMI also provides technical advice and support to the MFA and MCEU (DMI's parent ministry) vis-à-vis the Danish engagement in SOFF, including participation as an advisor to the Danish representation in the SOFF Steering Committee.

Denmark supports a number of initiatives related to weather data in early warning, forecasting, and vulnerability assessments, which can be reinforced by the strengthened collection and sharing of weather data that SOFF is expected to deliver (see Annex 1). The scope for achieving synergy is further enhanced by the fact that some of the implementing partners of the Danish support are also involved in SOFF (UNDP, UNEP, and WFP). Some of the other initiatives supported by Denmark could potentially also serve as vehicles for SOFF delivery. Denmark could help ensuring potential synergies are banked upon in practice, including through the participation in the SOFF Steering Committee. There is limited risk of duplication between SOFF and other Danish engagements, since the other engagements do not focus on addressing the first links in the value chain.

Of particular relevance to SOFF is the Danish support to the EW4All initiative provided through WMO, where Denmmark supports a) the rollout of multi-hazard early warning systems in five LDCs in Africa (Niger, Tanzania, Uganda, Somalia, South Sudan), which are all SOFF beneficiary countries; b) anticipatory action in fragile, conflict, and violence affected contexts, and c) development of regional capacity in Africa for climate impact, risk assessment, and information services. The delivery of this support will benefit from the improved access to weather and climate data emanating from SOFF. Moreover, Denmark is part of the Friends of Early Warnings (FoEW), which is an informal group of 17 bilateral donors committed to advancing the goals of the UN's Early Warnings for All (EW4All) initiative and maximizing the scale, impact, effectiveness and sustainability of Early Warnings. FoEW was established in March 2024, with a shared ambition to enhance and guide donor coordination, collaboration and engagement in the EW4All space.

Another highly relevant Danish initiative is the strategic sector cooperation (SSC) between DMI and Ghana Meteorological Agency (GMet). SSCs with meteorological services in a few other countries are envisaged. Moreover, DMI's SOFF peer advisor role in Tanzania allows for a complementary support package, and potential for further synergy with the EW4All support for Tanzania. DMI is to engage in two additional SSCs by 2027 (partner countries yet to be selected), with the first planned to be initiated in the second half of 2025.

Moreover, Danish support is provided to WFP in 2025-2026 for the use of artificial intelligence to improve predictions to timely activate financing to protect food security; the improved access to weather and climate data emanating from SOFF will contribute to improving the underlying information utilised for the generation of predictions. Similarly, Denmark supports IOM vis-à-vis migration, displacement and climate change in North, East and West Africa and improved weather and climate data can strengthen the migration research and analysis conducted by IOM to inform policy and planning. Denmark is also providing support to the Fund for Responding to Loss and Damage (FRLD) while playing an active role in the Board of the Fund and the Santiago Network on loss and damage through the United Nations Office for Disaster Risk Reduction (UNDRR).

2.5 Lessons learned from previous support

The overall findings of the 2023 independent external review of SOFF were very positive. The review confirmed the relevance of SOFF from both global and national/local perspectives, and that the design was "*innovative and fit-for-purpose*". Moreover, the efficiency and effectiveness of SOFF was found to be excellent, with transparency and speedy delivery, confirming the value of pairing the beneficiary countries with peer advisors, and commending the performance of the Advisory Board. The incentives built into SOFF design (results-based payments) were found largely adequate for ensuring long-term sustainability, albeit noting the need for SOFF to raise further funding to ensure sufficient support for countries in the longer term, despite having been successful in fundraising. Moreover, SOFF was found to be coherent with and complementary to the existing climate finance architecture, providing a "*foundational*" service for additional investments and with an important role vis-à-vis the EW4All initiative. The recommendations

provided focused on maintaining the current approach, avoiding overambition in terms of expansion, and preparing for the second SOFF implementation period (see Annex 2).

For the first Danish contribution to SOFF, the Financial management and reporting has overall been satisfactory, with no issues reported. Financial reports were complete and submitted to the MFA in a timely manner, and the documentation shared with the Steering Committee has been of high quality. Similarly, the dialogue and coordination in the SOFF Steering Committee, among donors and with the SOFF Secretariat has worked very well with proactive steering committee members and a responsive SOFF Secretariat. Moreover, SOFF is frequently discussed in the Friends of Early Warnings donor group, in which Denmark participates. The model of using peer advisors and the peer review process applied by SOFF has ensured that the plans developed by the beneficiary countries are of high quality. However, fund mobilisation has not followed the expected pace, despite concerted effort from the SOFF Secretariat, posing a singificnat bottleneck for the implementation of the plans.

Denmark has over the years supported various initiatives related to forecasting, early warning and disaster risk reduction, for example in Bangladesh, where Denmark has contributed to the considerable improvements Bangladesh has achieved vis-à-vis preventing that extreme weather lead to disaster with major reduction in the loss of lives to floods and cyclones. Denmark has over the years provided voluntary support to several UNDP and UNEP initiatives in other thematic areas (including core funding for UNEP), in addition to Denmark's contribution as a member state of the two agencies. Denmark pays member contributions to WMO and in addition, Denmark has in the past provided small-scale support to WMO related to: a) workshops and b) the provision of information inputs to negotiation processes. MPTFs is a well-established and thoroughly tested UN mechanism with clear operational procedures, which are in accordance with international standards. Denmark has since 2004 provided support to 48 different MPTFs with a total contribution of USD 563.8 million (DKK 4.0 billion).

2.6 Project identification and formulation process

In the development of SOFF, WMO carried out extensive consultations with several partners and stakeholders from beneficiary countries to heads of international organisations. Moreover, WMO in partnership with the Global Network of Civil Society Organisations for Disaster Reduction (GNDR) carried out regional consultations involving over 70 civil society organisations (CSOs) in Africa, Latin America and the Caribbean, and Asia and the Pacific, with a focus on maximising the benefits of SOFF at the community level and identifying the main barriers to SOFF implementation. For the programming of the first round of Danish support to SOFF, consultations were carried out with staff at WMO, the MFA, the Danish Ministry of Climate, Energy and Utilities (MCEU), DMI, NDF, the Norwegian Ministry of Foreign Affairs, and the Norwegian Meteorological Institute. For the programming of the new round of Danish support, consultations were carried out with staff of the SOFF Secretariat, MFA, MCEU, and DMI, while also drawing on the findings of the independent review carried out in 2023.

2.7 Choice of implementing partners and aid modalities

The lead implementing agencies for SOFF are WMO, UNDP, and UNEP. The Danish support is channelled through the UN MPTF Office, which acts as Administrative Agent (trustee) for the SOFF MPTF. The Danish support to SOFF is earmarked for countries eligible for development aid according to OECD/DAC.

SOFF focuses on enabling activities and directing support to countries eligible for official development assistance (ODA) according to the Organisation for Economic Cooperation and Development's (OECD) Development Assistance Committee (DAC), currently focusing on LDCs and SIDS (the planned support for middle-income countries has been postponed by the Steering Committee).

Funding from SOFF is grant-based. However, during the compliance phase, the grant funding will be tied to performance (results-based financing) in terms of sharing weather data freely and internationally, and will require co-financing from the country – the results-based financing will support operation and maintenance expenses for GBON data-sharing compliant stations.

3 Project objective

The development objective (SOFF goal) is to *strengthen climate adaptation and resilient development through improved weather forecasts, early warning systems and climate information services that save lives and livelihoods and protect property*.

SOFF is expected to deliver two outcomes: a high-level outcome '*Improved weather and climate prediction products'*, which is achieved through a lower-level outcome, '*sustained compliance with the GBON'*.

Eligible countries can upon request receive SOFF support in up to three phases (the timing and duration of each phase is country-specific):

1. The **Readiness Phase**, during which LDCs, SIDS, and other ODA-eligible countries can access technical and advisory assistance provided by national meteorological services as peer advisors to define their GBON gap and to develop a GBON National Contribution Plan.
2. The **Investment Phase**, during which LDCs and SIDS receive grants for investments and advisory support to establish the network of GBON stations and strengthen human and institutional capacity for GBON compliance.
3. The **Compliance Phase**, during which LDCs and SIDS receive results-based finance in support of operation and maintenance expenses for GBON data-sharing compliant stations.

4 Theory of change and key assumptions

The diagram in Annex 5 depicts the Theory of Change (ToC) for SOFF and can be summarised as follows:

- *If* LDCs and SIDS (and other ODA-eligible countries) identify their GBON gaps and develop plans for national GBON contributions (Readiness Phase outputs)
- *and if* the required weather data infrastructure is installed and human and institutional capacities are developed in LDCs and SIDS (Investment Phase outputs)
- *and if* LDCs and SIDS' share weather data freely and internationally, and therefore receive results-based finance or operation and maintenance of their weather infrastructure (Compliance Phase outputs)
- *then* GBON compliance can be sustained (Outcome)
- *and then* weather and climate prediction products is improved (High-level Outcome)
- *and then* improved weather forecasts, early warning systems and climate information services strengthen climate change adaptation and resilient development (Goal/Impact)

The main changes that need to take place for the transformation to happen are outlined in more detail in Annex 4.

Assumptions: The SOFF ToC and results framework do not specify any assumptions. A preliminary set of assumptions is presented below.

1. The improved weather and climate prediction (global prediction models outputs) resulting from the increased data shared from the countries that SOFF support will be taken up by other initiatives working on the downstream part of the value chain (such as early warning interventions), thereby ensuring that weather and climate services reach and benefit the most vulnerable populations with improved availability of weather data and information contributing to more effective adaptation and increased resilience.
2. All supported countries will exchange weather data.
3. International donors are willing to provide medium- to long-term finance to cover running costs of enhanced weather data collection in LDCs and SIDS.

Annex 6 provides a detailed description of the assumptions.

Risks: The main risks are presented in Section 9. Annex 7 provides SOFF's detailed risk matrix.

5 Summary of the results framework

For results-based management, learning and reporting purposes Denmark will base the support on progress attained in the implementation of the project as described in the documentation. Progress will be measured through SOFF's monitoring framework focusing on the indicators for the two outcomes and the four outputs of the readiness and investment phases, since only few LDCs or SIDS are expected to embark on the compliance phase during the first implementation period and only a small proportion of SOFF resources are planned to be spent on compliance phase support. The full SOFF results framework including outputs is presented in Annex 5. As stipulated in the SOFF Operational Manual, the Steering Committee reviews and adopts the results framework targets and baselines on an annual basis. The intended outcome of sustained compliance with GBON will not be fully achieved within the first implementation period of SOFF, hence the 2027 target is zero.

Table 1: Results framework for SOFF

Project		Systematic Observations Financing Facility (SOFF) – 2nd Danish contribution	
Project Objective		Strengthen climate adaptation and resilient development through improved weather forecasts, early warning systems and climate information services that save lives and livelihoods and protect property	
High-level Outcome		Improved weather and climate prediction products	
Outcome indicator 1		Improvement in NWP standard measures of skill	
Baseline	2022	0	Countries
Progress	2025	0	Countries
Target	2027	tbd[5]	Countries
Outcome		Sustained compliance with GBON	
Outcome indicator 2		Countries progress against the GBON gap analysis baseline	
Baseline	2022	0	Countries
Progress	2025	2	Countries
Target	2027	10[6]	Countries

6 Inputs/budget

The indicative total budget in the preliminary work programme (approved by the Steering Committee in June 2022) for the extended first implementation period of SOFF is USD 295.1 million (see Table 2) if the entire work porgramme is to be delivered. So far, USD 104.1 million have been mobilised from Denmark (including the second Danish contribution), the Nordic Development Fund (NDF), Norway, Finland, Iceland, Austria, Belgium, Ireland, the Netherlands, Spain, Canada, and the United States of America. Moreover, WMO is in dialogue with the European Commission, Sweden, Germany, France, Italy, Luxembourg, Portugal, Slovenia, the United Kingdom, Australia, Japan, Korea, and New Zealand, but these have so far not committed to provide funding. Any budget changes will follow the standard procedures for UN MPTFs and be subject to approval by the Steering Committee. For the Secretariat costs, annual budgets are prepared every year (see Annex 8 for the 2025-2026 budget). However, for the

[5] The SOFF Secretariat, together with the European Centre for Medium Range Weather Forecasts (ECMWF), is making significant efforts to define a clear scientific definition of the metric to measure progress against the SOFF high level outcome on improved NWP. To date, SOFF has funded a series of impact studies to define the potential impact of SOFF observations on NWP through the Impact Experiments carried out by ECMWF and approved by the SOFF Steering Committee. SOFF have now prepared a proposal for the 12 SOFF Steering Committee for funding for a Phase III study together with ECMWF. Upon finalizing these results, SOFF will use the outputs of the impact experiments as a basis to define the metric and targets for approval by the SOFF Steering Committee in the updated results framework to be approved at the 13SC in February 2026 as stated in the Steering Committee Decision 11.3.

[6] The Steering Committee will be looking into this target as part of the updated results framework in February 2026. The target therefore might be redefined upon request of the Steering Committee members.

country support, annual budgets are not made, but spending is estimated based on commitments, transfers, and fund mobilisation (see Table 2).

The **second Danish contribution to** SOFF (2025-2027) totals DKK 25 million, of which DKK 24.5 million will be transferred to the SOFF MPTF (see table 3). DKK 500,000 will be retained at the MFA for a Danish mid-term review of SOFF, if possible, conducted jointly with other donors. Any currency risks (exchange rate losses and gains) are to be borne by the SOFF MPTF.

The funds disbursed to the SOFF MPTF will be spent on activities in the readiness and investment phases. However, the Steeering Committee may decide to reallocate part of the budget, and part of the Danish support, for the compliance phase. In addition to the funds spent on activities, DKK 750,000 will cover SOFF secretariat costs (direct costs). Furthermore, seven pct. of the component costs will cover administrative costs (indirect support costs) of WMO and the Implementing Entities (standard percentage for UN agencies) and one pct. of the total disbursement to the SOFF MPTF will cover the Trustee/Administrative Agent fee (standard percentage for MPTFs). Funds for Implementing Entities will be disbursed directly from the UN MPTF Office. The anticipated proportion of funding for each SOFF phase and other costs is aligned with the overall SOFF work plan and budget for the first Implementation Phase.

The Danish contribution to outputs and activities is earmarked to countries eligible for development aid according to OECD/DAC. Moreover, Denmark cannot fund global activities; hence, Outputs 5 and 8 under the Compliance phase will not be funded by Denmark. The Danish funding will exclusively be for activities under Outputs 1, 2, 3, 4, 6, and 7. Moreover, Denmark will not contribute to any SOFF support that the Steering Committee may decide to allocate to countries that are not ODA eligible. Denmark is not the only donor earmarking its support, for example, NDF has earmarked its SOFF contribution for countries in Sub-Saharan Africa.

The UN MPTF Office, WMO and the Implementing Entities are responsible for ensuring that the Danish funds are spent in compliance with the agreement, and with due consideration to economy, efficiency and effectiveness in achieving the results intended. Details will be specified in the Standard Administrative Arrangement (SAA) that Denmark will sign with the UN MPTF Office, as well as the MoU signed by WMO, UNDP, and the UN MPTF Office.

Table 2: Budget for the extended SOFF First Implementation Period

	TARGET		APPROVALS AS OF APRIL 2025		REMAINING APPROVALS TO ACHIEVE WORK PROGRAMME		TOTAL
	Countries	Million USD	Countries	Million USD	Countries	Million USD	Million USD
Country support							
Readiness	**75**	10.4	61	8.6	14	2.0	10.6
Investment	**50**	170.0	15	84.9	35	167.9	252.8
Regional		0.2		0.2		0.2	0.4
Studies							
Impact Studies		0.3		0.3		0.2	0.5
External Review		0.1		-		0.1	0.1
Sub Total		**181.0**		**94.0**		**170.4**	**264.4**
Percentage of the total		**90%**		**88%**		**90%**	**90%**
Administrative costs (overhead)							
SOFF Secretariat		5.1		5.1		4.4	9.5
IE Fees		10.0		5.4		10.6	16.0
WMO Fees Peer Advisors		2.1		1.1		1.1	2.2
Trustee Fees		2.0		1.1		1.9	3.0
Sub Total		**19.2**		**12.7**		**18.0**	**30.7**
Percentage of the total		**10%**		**12%**		**10%**	**10%**
TOTAL		**200.2**		**106.7**		**188.4**	**295.1**

Notes:
1) Regional: Regional workshops, e.g. to foster regionally coordinated SOFF implementation.
2) Costs of O&M for countries in the SOFF Investment Phase are fully considered under investment funding.
3) Report to assess the impact of observations in the Numerical Weather Prediction models to be prepared by WMO in collaboration with selected Global Producing Centres.
4) SOFF Secreriat.
5) IE Fees: Up to 7% fee - Percentage calculated based on the total allocation expected for the Investment phase; some SOFF Implementing Entities are expected to charge less than 7%.
6) WMO Fees, Peer Advisors: 7% fee - Percentage for managing the pass-through mechanism and corresponding contracts for the provision of SOFF peer advisory services; calculated based on the total allocation expected for the Readiness phase and Compliance phase.
7) Trustee Fees: 1% fee - Based on expected contributions required to implement the SOFF work programme.
8) WMO fees are separated and non-cumulative with fees for Implementing Entities – they only apply to funds disbursed to WMO, whereas Implementing Entities receive funds directly from the UN MPTF, e.g. for Secretariat costs and for Peer Advisers.

Table 3: Donor mobilisation

Donor	Commitments USD	Deposits USD	DKK
NDF	16,356,740	16,356,740	
Austria	6,249,267	6,249,267	
Belgium	11,837,518	11,837,518	
Canada	736,635	736,635	
Finland	5,850,013	5,850,013	
Iceland	1,005,000	1,005,000	
Ireland	10,762,576	10,762,576	
Norway	14,403,379	14,403,379	
Spain	3,194,700	3,194,700	

Netherlands	15,891,647	15,102,592	
USA	13,337,000	13,337,000	
Denmark (1st contribution)	**3,573,363**		**25,000,000**
- Transfer to SOFF MPTF	3,501,896	3,501,896	24,500,000
- MTR, retained by MF	71,467		500,000
Denmark (2nd contribution – estimated USD amount, subject to currency change)	***3,573,363***		***25,000,000***
- *Transfer to SOFF MPTF*	*3,501,896*	-	*24,500,000*
- *MTR, retained by MF*	*71,467*		*500,000*
Donor total (less Danish MTRs)	**106,771,201**	**102,337,316**	
Orginial target budget for SOFF MPTF	200,000,000	200,000,000	
Budget required to achieve work programme	295,100,000	295,100,000	
Remaining gap	-188,328,799	-192,762,684	

Table 4: Budget for second Danish contribution to SOFF (indicative)

	Year 1 (2025) DKK	**Year 2** (2026) DKK	**Year 3** (2027) DKK	**Total** DKK
Tranche	**First**			
Readiness phase: outputs 1-2	1,500,000.00	-	-	1,500,000.00
Investment phase: outputs 3-4	20,467,289.72	-	-	20,467,289.72
Compliance phase: outputs 6 and 7	-	-	-	-
Total outputs	**21,967,289.72**	**-**	**-**	**21,967,289.72**
Administration fee (7%)[1]	1,537,710.28	-	-	1,537,710.28
Total SOFF components	**23,505,000.00**	**-**	**-**	**23,505,000.00**
SOFF Secretariat – direct staff costs	750,000.00	-	-	750,000.00
Trustee/Administrative Agent fee[2]	245,000.00	-	-	245,000.00
Total transfer to SOFF MPTF	**24,500,000.00**	**-**	**-**	**24,500,000.00**
Mid-term review, retained by MFA	-	500,000.00	-	500,000.00
Total Danish contribution	**24,500,000.00**	**500,000.00**	**-**	**25,000,000.00**

Notes:
1) Administration fee of 7% to be shared among WMO and Implementing Agencies for indirect costs.
2) 1% of funds disbursed to UN MPTR Office.

7 Institutional and management arrangements

The already established governance arrangements for the SOFF MPTF are based on standard UN MPTFs arrangements. Figure 3 provides an overview of the SOFF governance structure. The SOFF Operational Manual describes in detail the governance arrangements and the roles of the Steering Committee, the Advisory Board, the SOFF Secretariat, and the Trustee/Administrative Agent (UN MPTF Office).

The **Steering Committee** is the decision-making body of SOFF, providing strategic direction in line with the objective and scope of SOFF, taking into account the recommendations from the Advisory Board. It reviews and endorses strategic documents, manuals, work programmes, budgets, financial reports, monitoring/progress reports, and the commissioning of external evaluations. It meets at least twice annually to monitor implementation progress, address major implementation issues, and provide strategic advice. The Steering Committee comprises WMO and donors/funders as decision-making members. The meetings are co-chaired by the Secretary-General of WMO and one representative of the funders (nominated on a rotating basis). Moreover, the following participate in the Steering Committee discussions but not in decision-making: the Least Developed Countries Group on Climate Change (LDC Group), the Alliance of Small Island States (AOSIS), prospective funders that have notified the SOFF Secretariat that they consider making a pledge, UNDP, UNEP, the Climate Risk and Early Warnings Initiative (CREWS), the SOFF Secretariat (ex-officio), and the Administrative Agent (UN MPTF Office, ex-officio). The

MCEU, in coordination with the MFA, will represent Denmark in the Steering Committee. The co-chairs may invite other participants to the Steering Committee meetings at their discretion and taking into account Steering Committee members' views. Such ad-hoc participants may be asked to intervene in specific sessions. Peer advisors and SOFF Implementing Entities may also be asked to participate in particular sessions to present or respond to questions from the Steering Committee, and Trustee/Administrative Agent.

The **Advisory Board** comprises a range of stakeholders across the meteorological value chain to provide advice to the Steering Committee in relation to strategic direction, and operations and programming (e.g. the SOFF portfolio of operations/interventions). Moreover, the Advisory Board a) contributes to the assessment and maximisation of the results of SOFF; b) facilitates synergies and dialogue between SOFF, the Advisory Board members and other relevant stakeholders with activities across the meteorological value chain; and c) provides insights to foster learning and innovation. The Steering Committee endorses the composition of the Advisory Board and reviews it regularly, taking into account the recommendations of the Advisory Board. The Advisory Board is co-chaired by UNDP and UNEP. Advisory Board recommendations are publicly disclosed on the SOFF website.

The **SOFF Secretariat** is administratively hosted by WMO. It serves the Steering Committee and the SOFF Advisory Board in performing their functions. The SOFF Secretariat coordinates SOFF operations, including programming and appraisal processes, and facilitates coordination and collaboration between beneficiary countries, Implementing Entities, peer advisors and the WMO Technical Authority. Moreover, it liaises with the Administrative Agent/Trustee to ensure the Steering Committee is informed about the SOFF MPTF administration and fiduciary oversight and to ensure Administrative Agent has the required information to perform its duties. The SOFF Secretariat also monitors the progress and performance of SOFF portfolio, based on information provided by peer advisors, Implementing Entities, beneficiary countries and the Administrative Agent. Furthermore, it engages with SOFF stakeholders and facilitates information sharing and learning, transparent communication and outreach. The SOFF Secretariat coordinates SOFF resource mobilisation and outreach activities in close collaboration with the Steering Committee. The Steering Committee approves the budget of the SOFF Secretariat (staff costs and operational costs). It comprises a team of professional and administrative staff and operates under the overall guidance of the Steering Committee and is accountable to it. As co-creators, UNDP and UNEP may each second one staff member to the SOFF Secretariat to be funded by the SOFF MTPF. Three Global Facilitators have been appointed to provide support for fundraising and outreach, leveraging their extensive experience and network. The Global Facilitators are renowned international high-level experts.

The **Administrative Agent (trustee)** function is performed by the UN MPTF Office, hosted by UNDP in New York. The Administrative Agent executes and coordinate all administrative and management functions, ensures monitoring and control of operational risks, and administers funds in accordance with MPTF regulations, rules, policies, and procedures. The UN MPTF Office has signed a **standard Memorandum of Understanding (MoU)** with WMO, UNDP and UNEP and signs a **Standard Administrative Arrangement (SAA**) with each contributing donor. The Administrative Agent receives, administers, and releases funds to Implementing Entities, WMO and other parties in accordance with decisions from the Steering Committee, prepares consolidated financial reports, and coordinates the necessary audits. Moreover, it supports the financial aspects of SOFF programming and operations and provides advice on operational and strategic documents.

Implementation is carried out by SOFF **Implementing Entities**, including UNDP and UNEP, and national partners in the supported countries. Existing or planned programmes/projects of the Implementing Entities are used as vehicles for SOFF implementation – SOFF support is not implemented as stand-alone projects. The Implementing Entities are responsible for preparing and managing the

implementation of investment phase grants within the specified terms of the approved funding requests. The Implementing Entities collaborate with the peer advisors and the countries, including by providing information on ongoing or planned partnerships to strengthen the countries' hydromet capacities and GBON-related investments. Current Implementing Entities include UNDP, UNEP, the World Food Programme (WFP), the International Fund for Agricultural Development (IFAD), the Asian Development Bank (ADB), the Inter-American Development Bank (IDB), the Islamic Development Bank (IsDB), and the World Bank. All SOFF Implementing Entities are members of the Alliance for Hydromet Development.

SOFF **peer advisors** provide technical assistance to the supported countries. Peer advisors provide advice and analysis to support beneficiary countries and Implementing Entities in designing and implementing activities related to the Readiness, Investment, and Compliance phases. They are also responsible for carrying out country hydromet diagnostics (mandatory requirement for the transition to the readiness phase), national GBON gap analyses in collaboration with the countries, and support the development of national contribution plans in coordination with the designated Implementing Entities.

The **WMO Technical Authority** screens the gap analysis reports to ensure consistency with GBON regulations.

Figure 3: SOFF governance and operational partners

The **SOFF Operational Manual** specifies the roles and responsibilities of WMO, UNDP, UNEP, other Implementing Entities, peer advisors, and other stakeholders. An updated Operational Manual is envisaged to be approved by the Steering Committee in May 2025.

An **operational guidance handbook** provides practical guidance to Implementing Entities, peer advisors, and beneficiary countries.

7.1 Prioritisation and allocation of SOFF support

SOFF support is based on requests from eligible countries. The SOFF Secretariat prepares and proposes the prioritisation of beneficiary countries' requests for Steering Committee consideration and decision, based on the criteria presented in box 2 below and on information provided by beneficiary countries, the WMO Technical Authority, peer advisors and Implementing Entities, (see 4.5.1). The SOFF Secretariat informs the Steering Committee on how the programming criteria are applied to each funding request. The Steering Committee monitors how the programming criteria are applied and provide recommendations for the fine tuning as needed. Donors contributing to SOFF, including Denmark, have seats in the Steering Committee, and thus participate in, and directly influence, decisions related to the periodisation of requests and fine tuning of the prioritisation criteria.

Box 2: Programming criteria for SOFF support

- **Close the most significant data gaps**: Emphasis on those geographic areas that currently have the poorest observational coverage, where strengthening the observing network would yield the largest results regarding the quality of the numerical weather prediction products
- **Target "easy fixes":** Countries where through relatively small interventions, stations and related infrastructure could be fixed to start quickly delivering the data into the global system per GBON regulations
- **Maximize delivery capacity**: Countries where Implementing Entities and peer advisors can operate and deliver SOFF support efficiently and effectively
- **Create leverage**: Opportunities for complementarity of SOFF with larger operations under implementation or preparation by the Implementing Entities and other funds, including by the Advisory Board Members
- **Sub-regional gains**: Opportunities to create economies of scale and optimize the design of the observing networks through multi-country/sub-regional implementation
- **Ensure country balance:** Balanced support among SIDS and LDCs and across regions, including fragile and conflict-affected states

Source: WMO Secretariat, 2021

7.2 Communication of results

A Communication Strategy (see Annex 10) and a Resource Mobilisation and Outreach Strategy contain provisions for outreach and advocacy. The Communicaiton Strategy specifies that SOFF will regularly develop more Detailed Communicaiton Plans for the implementation of the Communicaton Strategy as well as the Outreach elements of the Resource Mobilisation and Outreach Strategy. Key communation channels include the SOFF website, social media, media, and communication products, e.g. with human interst stories. Emerging opportunities for communication and visibility will be utilised. For example, sessions and side events at the UNFCCC Conferences of the Parties (COPs) have been used for making SOFF visible to high-level decision-makers and the broader public. SOFF's Annual Reports are launched at the UNFCCC COPs.

Learning: A detailed learning strategy has not been elaborated for SOFF. The SOFF Secretariat collects and disseminates lessons learned in the progress reports. The Steering Committee, Advisory Board, SOFF secretariat, and Implementing Entities will take lessons into consideration in the oversight, management and implementation of decisions, incl. findings and recommendations emanating from evaluations and reviews.

7.3 Monitoring, review, and evaluation

The SOFF Secretariat is responsible for monitoring and reporting on the overall progress of SOFF. Based on the SOFF results framework, the SOFF Secretariat coordinates the monitoring of SOFF and the elaboration of annual action reports (reports are available for 2023 and 2024). An overview of SOFF progress and country readiness is made publicly available in an online dashboard (https://www.un-soff.org/dashboard/). The SOFF Secretariat draws on information from the beneficiary countries, the peer advisors, the Implementing Entities (which are responsible for monitoring the progress of the specific initiatives funded by SOFF), and the WMO Technical Authority. Moreover, the Advisory Board contributes to SOFF monitoring and evaluation, particularly of "last-mile impact". The monitoring provisions are described in the standard SAA for MPTFs and the SOFF MoU signed by WMO, UNDP, and UNEP. WMO, the UN MPTF Office, UNDP, UNEP and the donors hold consultations at least annually to review the status of the Fund.

Evaluation of the SOFF MPTF is subject to the provisions of described in the standard SAA for MPTFs and the SOFF MoU, in accordance with the UN evaluation policies for MPTFs and the UN Evaluation Group Standards (UNEG). In line with the ToR for SOFF, an independent evaluation of SOFF was carried out in 2023 by an external consultant.

The Green Diplomacy and Climate Unit of the Ministry of Foreign Affairs of Denmark shall have the right to carry out any technical or financial supervision mission that is considered necessary to monitor the implementation of the project. This include a planned mid-term review in the latter half of the second year of implementation for which DKK 500,000 are retained by the MFA. It will inform the programming of any potential future Danish support for SOFF. The mid-term review will most likely be conducted jointly with other funders and/or WMO, unless the MFA finds there is reason to conduct it separately.

After the termination of the project/programme support, the Green Diplomacy and Climate unit of the Ministry of Foreign Affairs of Denmark reserves the right to carry out evaluations in accordance with this article.

8 Financial Management and reporting

The Danish support will be disbursed to the MPTF in a single tranche of DKK 24.5 million in November 2025. The DKK 0.5 million retained by MFA for the mid-term review will be spent in 2026.

The SOFF Secretariat can reallocate up to ten pct. of the budget line to other budget lines, whereas changes exceeding ten pct. must be presented to, and approved by, the Steering Committee. Any reallocations to budget items for salaries and staff costs must be approved by the Steering Committee.

Both parties will strive for full alignment of the Danish support to the implementing partner rules and procedures, while respecting sound international principles for financial management and reporting.

Overall, SOFF adheres to all financial management-related rules and regulation of the UN MPTF Office and participating UN agencies and multilateral development banks; which have been approved by the Member States, including Denmark.

The fiduciary requirements for the Danish support are spelled out in the standard SAA that will be signed by Denmark and the Administrative Agent and adhere to Danish requirements. The standard SAA also adheres to the general rules, regulations and fiduciary requirement that apply for UN MPTFs (Denmark has in the past supported several MPTFs under the same provisions).

Procurement is done in accordance with UN rules and regulations, the standard provisions for MPTFs, and the rules and regulations of the concerned party, i.e. WMO (including peer advisors), UNDP, UNEP, and other Implementing Entities (UN agencies and multilateral development banks).

The UN MPTF office has a separate account for the SOFF MPTF. WMO, UNDP, UNEP and other Implementing Entities also have separate accounts for SOFF in their respective financial systems, which for all the concerned UN entities and multilateral development banks are compliant with International Public Sector Accounting Standards (IPSAS). The budgets are prepared in accordance with UN harmonised budget categories (see box 3). At the reporting deadlines (as per the MoU), UNDP and UNEP provide separate financial reports for each account and submit annual financial reports to the UN MPTF Office no later than 30 April. The UN MPTF Office consolidates the annual financial flows and reports to the MFA and other donors. The reporting allows for clear distinguishing of resource utilised for non ODA-eligible countries (not funded by Denmark), and ODA-eligible countries. WMO, UNDP and UNEP provide additional information on resource utilisation by phase in the narrative reports. UN MPTF Office manually tracks the earmarked contribution and makes sure that no transfer is made from the contribution to progamme activities that target countries that are not eligible for ODA.

Reporting is done in accordance with the provisions stipulated in the SOFF Operational Manual, the SOFF Terms of Reference, the legal agreements between the UN MPTF Office and the SOFF Implementing Entities, the umbrella legal agreements signed between WMO and the SOFF peer advisors, the MoU, and the SAA. Based on consolidated reports prepared by the SOFF Secretariat with information provided by WMO, UNDP, UNEP and Implementing Entities, the Administrative Agent prepares and submits the following reports to the donors:

- Annual consolidated narrative progress reports (following the calendar year), no later than five months after the end of the calendar year (31 May)
- Annual consolidated financial reports following the calendar year (31 December cut-off), no later than five months after the end of the calendar year (31 May)
- Certified annual financial statement from the Administrative Agent, no later than five months after the end of the calendar year (31 May)
- A final consolidated narrative report, after the completion of the activities in the approved programmatic document, no later than six months after the end of the calendar year of operational closure (30 June 2028)
- A final consolidated financial report, based on certified final financial statements and final financial reports received from participating UN organisations and multilateral development banks after the completion of the activities in the approved programmatic document, no later than five months after the end of the calendar year of financial closure (31 May 2028)
- A certified final financial statement ("Source and Use of Funds"), no later than five months after the end of the calendar year of the financial closure (31 May 2028)

In addition to the above, the SOFF Secretariat will provide the following annually:

- Summary of the WMO GBON Compliance report (30 June cut-off)
- Analysis of the impact of observations (30 June cut-off), prepared by WMO

The overall reporting for SOFF will be submitted to Denmark. Denmark will not require separate technical reporting for the Danish support.

The SOFF MPTF is subject to UN external and internal audit procedures as per UN rules and regulations for MPTFs and the participating UN organisations, as described in the standard SAA and the MoU. This includes audit provisions for the Administrative Agent, the participating UN organisations, and implementing partners (e.g. Implementing Entities, peer advisors).

Box 3: Harmonised expense categories for UN system reporting

1. Staff and other personnel costs

2. Supplies, commodities and materials
3. Equipment, vehicles and furniture, including depreciation
4. Contractual services
5. Travel
6. Transfers and grants to counterparts
7. General operating and other direct costs
8. Indirect support costs

9 Risk management

SOFF has adopted a detailed global risk management framework with the risks identified, risk levels and intensity, and response measures (see Annex 7). Other risks may apply to the individual engagements at country level. Individual risk frameworks are elaborated for each grant provided to countries. The main risks are the following:

- *Insufficient institutional capacity and/or political commitment in recipient countries to ensure successful implementation of SOFF.*
  SOFF only provides support, when quested by a country's meteorological services. Implementing entities and peer advisors proved technicial support and advice to countries. Results-based payment provides an incentive for countries to engage. However, capacity constraints in LDCs and SIDS are likely to persist and governments change regularly, which may lead to a shift in political priorities, and trained counterpart staff may leave agencies. The residual risk is medium.
- *SOFF is not able to mobilise sufficient resources to reach the funding targets necessary to meet the operational targets.*
  SOFF has already mobilised sufficient funding from a range of donors for the readiness phase in 60 countries, while 18 have already approved investment funding and the SOFF Secretariat is in dialogue with other donors. However, a total of 101 countries have requested SOFF support, and the funds mobilised are still significantly below the fund mobilisation target of USD 200 million. The residual risk is medium.
- *After the conclusion of the investment phase, GBON data are not collected or shared, or are shared of insufficient quality, or do not improve forecast skills/climate services.*
  Only countries committed to GBON data sharing are supported by SOFF. Results-based payments contribute to operation and maintenance. GBON compliance is monitored. Some countries may not be able to make the required operation and maintance contributions, or security or political conditions interfere with the data collection and sharing. The residual risk is medium to high.
- *Countries cannot make optimal use of data, including accessing or using improved forecasts products from the Global Producing Centers throughout the hydromet value chain.*
  SOFF is working closely with WMO, peer advisors, and Global Producing Centers to ensure that SOFF-supported countries can access and use the forecast products. SOFF strives to ensure that countries receive further support and have the required capacity through coordination with Implementing Entities, major climate and environment funds, CREWS, and peer advisors. For example, the European Centre for Medium-Range Weather Forecasts (ECMWF) support has agreed to supply its forecasts to SOFF countries as well as basic support on the use of these[7]. However, some countries may still not have adequate capacity to make optimal use improved forecast products, or encounter difficulties in accessing additional funding. The residual risk is medium.

[7] https://www.un-soff.org/news/ecmwf-supports-soff-to-provide-more-weather-observations/

- *Sufficient longer-term funding for result-based financing for operation of maintenance is not mobilised.* (Note: this risk is not included in the SOFF Secretariat's risk matrix)
  SOFF still has a major funding gap and there is a history of donors not living fully up to the funding pledges made at UNFCCC COPs. On the other hand, SOFF is a ten-year initiative, so there is considerable time to develop and strengthen the planned results-based finance mechanism. Overall, the likelihood of this risk occurring is medium.

Overall risk monitoring and reporting on risk factors and mitigation measures applied is done by the SOFF Secretariat as part of the regular reporting to the Steering Committee. Moreover, the quality assurance and risk mitigation procedures of the Implementing Entities are relied upon for SOFF implementation.

UNDP, UNEP and the other Implementing Entities have strong capacities vis-à-vis environmental and social safeguards. This includes the principles of free prior and informed consent (FPIC). All activities will adhere to the safeguards of WMO, UNDP, UNEP and other Implementing Entities and relevant UN policies.

10 Closure

The SOFF MPTF is envisaged to run for ten years up to end 2032, with three implementation periods, thereby providing continuity, stability, and the possibility for medium-long term exit strategies. Moreover, SOFF aims at facilitating the establishment of a longer-term global results-based finance/payment system to enable LDCs and SIDS to operate and maintain the infrastructure installed/rehabilitated and continue gathering and reporting weather data in compliance with GBON.

Within six months after the end of year of operational closure (2027) of the first implementation period, i.e. no later than 30 June 2028, a narrative completion report will be submitted to the donors, including MFA. Moreover, within five months after the end of the year of completion of the activities, i.e. no later than 31 May 2028, a certified final financial statement and final financial reports will be submitted to the donors to SOFF, including Denmark. Any unspent funds with interest will be returned to the donors in proportion to the contribution of each donor, as decided upon by the donor and the Steering Committee.

Annex 1: Context Analysis

1. Overall Development Challenges, Opportunities and Risks

The climate crisis is rapidly accelerating. The Sixth Assessment Report of the United Nations (UN) Intergovernmental Panel on Climate Change (IPCC) provides evidence of intensifying climate change across the globe and of the need to act with much greater urgency. Greenhouse gas emissions have been growing more rapidly than ever expected and the impacts are now visible everywhere, including record-breaking temperatures, and increased floods and wildfires. Indeed, according to the World Meteorological Organization (WMO) Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes, the number of disasters has increased by a factor of five over the past five decades, and economic losses have increased sevenfold with average daily losses of USD 383 million. The latest estimates put the world on course for a temperature rise of 2.6-3.1°C in this century.

Thus, there is an urgent need to enhance the level of ambition on climate mitigation and adaptation. According to the UNEP's 2024 Adaptation Gap Report, international public adaptation finance flows to developing countries increased from USD 22 billion in 2021 to USD 28 billion in 2022 – the largest year-on-year increase since the Paris Agreement was entered, but still well below the targets of the Glasgow Climate Pact, which urged developed countries to double the level of adaptation finance to developing countries in 2019 by 2025. Moreover, even achieving this goal would only reduce the adaptation finance gap by approx. five per cent. The annual adaptation funding gap for developing countries is estimated to be USD 187-359 billion annually, so the current level of finance would need to increase significantly by the end of this decade to meet the expected needs.

The UN Secretary-General has called for a breakthrough in climate adaptation and climate finance. This will require new instruments, actors and innovative solutions through which adaptation finance can be delivered. It will also need to be underpinned by the best available science and data. At COP27 (November 2022), the UN Secretary-General launched the Early Warnings for All (EW4All) initiative, which aims to achieve universal access to multi-hazard early warning systems by 2027 to ensure universal protection from hazardous hydrometeorological, climatological, and related environmental events. EW4All comprises four pillars[8], with the second pillar being "*detection, observation, monitoring, analysis and forecasting*".

However, there are currently large data gaps in basic weather and climate observations, negatively affecting the quality of weather forecasts and climate prediction everywhere. Closing these data gaps, especially in Small Island Developing States (SIDS) and Least Developed Countries (LDCs), is essential for the world to be better prepared and to effectively adapt to a changing climate.

The weather and climate in any location is part of a global system. Hence, accurate forecasting and modelling require access to both local, regional and global data of sufficient accuracy and adequately fine geographical granularity/coverage of weather field data collection. Good outcomes – users taking action in response to weather and climate prediction, resulting in lives and livelihoods saved, protection of property, and increased economic activity – happen when all links in the chain work and are working effectively together. The value chain comprises six links, three globally coordinated links followed by three links at the regional, national and/or local level:

1. **Weather and climate observations** routinely made over all areas of the globe
2. **Observations are exchanged internationally** in particular with global Numerical Weather Prediction (NWP) systems
3. **NWP output monitoring and prediction data** for weather and climate are generated and shared with all WMO Members (193 countries and territories)

[8] Pillar 1: Disaster risk knowledge; Pillar 2: Detection, observation, monitoring, analysis and forecasting; Pillar 3: Warning dissemination and communication; Pillar 4: Preparedness and response capabilities

4. **The global NWP output** is used by National Hydrological and Meteorological Services (NMHSs) and other entities (incl. the private sector), to generate weather and climate information: i.e., local forecast products, watches and warnings, seasonal outlooks, climate monitoring and prediction products, etc.
5. **Weather and climate information services are delivered to users**, including national and local authorities, businesses, media, academia, Civil Society Organisations (CSOs), and the general public.
6. **Effective decisions** in response to weather and climate information are made by authorities, agents in all economic sectors, and individuals.

The first three links in the value chain constitute the global meteorological infrastructure and rely on a global implementation approach. In contrast, the last three links are typically implemented nationally. The importance of the global nature of the first three links cannot be overstated. For a prediction horizon beyond 24 to 36 hours, the use of global observational data and global models to underpin the predictions in any location is needed, even if the target area for a given prediction is very small and local. Conversely, without local efforts everywhere to make and exchange observations, the models cannot generate the data needed for effective forecasting at the national and local levels. All countries, therefore, share an interest in the first three links in the chain, while they handle the last three primarily individually.

There are numerous initiatives to improve climate modelling and early warning systems implemented by several actors within both development cooperation and humanitarian assistance, including UN agencies, NGOs, and bilateral donor interventions. These mostly operate at the national level, addressing mainly the last three links of the value chain. However, without complementary investments in the first three links, investments in the last three will often not have the expected benefits. Access to meteorological data remains a significant bottleneck.

In 2019, the World Meteorological Congress and its 193 member countries and territories agreed to establish the Global Basic Observing Network (GBON) and committed to improving data collection and sharing of weather data freely across countries. GBON sets out an obligation and clear requirements for all WMO Members to acquire and internationally exchange the most essential observational data at a minimum level of spatial resolution and time interval. However, LDCs and SIDS significantly lack the infrastructure and capacity to meet GBON requirements. This adversely impacts the accuracy of weather and climate products, both locally and in areas far from the missing data. In order to achieve the GBON target of 2,300 observation stations (surface and upper air stations) in these countries, approx. 2,000 stations need to be rehabilitated or installed. **In June 2023, a updated global baseline as established for GBON.**

One out of three people, especially in LDCs and SIDS, lack access to multi-hazard early warning systems. The global Early Warnings For All (EW4All) initiative, launched in 2022, emphasise the critical need for reliable weather data and observations and emphasise that closing the gap on GBON is an essential step for supporting early warnings for all. EW4all seeks to ensure that everyone is protected by life-saving early warnings by the end of 2027.

List the key documentation and sources used for the analysis:

- **SOFF ToR (2021)**
- **UNEP Adaptation Gap report (2024)**
- Project Document for the Danish support to EW4All (2023)

Are additional studies/analytic work needed? How and when will it be done?

For each country receiving SOFF support, a GBON gap analysis (output 1 in the SOFF results framework) is carried out to identify key policy, institutional and capacity gaps and constraints and identify the key entry points and priorities vis-à-vis SOFF implementation and GBON compliance.

2. Political Economy and Stakeholder Analysis

SOFF is a global initiative, which will support all LDCs and SIDS as well as provide readiness support for other ODA-eligible countries, based on requests for support. As such, the political economy context varies significantly; some countries are conflict-affected, others are institutionally and socially fragile, and yet others are stable. Similarly, government capacities and accountability vary significantly among countries, as do capacities of the private sector, and civil society.

Since SOFF has a very specific and mainly technical focus on improving the collection of weather data (setting up policies and institutional frameworks, building capacities, and installing equipment), it will only to a limited extent be linked to vested and economic interests and power relations. Nonetheless, the expected improved access to weather and climate information will contribute to an increased understanding the impacts of climate by authorities, the private sector, civil society, academia and citizens – thereby contributing to both a) enabling informed decision-making at all levels vis-à-vis climate change adaptation, preparedness and disaster risk reduction, and b) increasing the ability to hold governments accountable vis-à-vis climate action and disaster management. This in turn, may affect government interest in investing in and creating an enabling environment for the collection of weather data.

Stakeholder analysis: The key implementing partners in the project are briefly described in Annex 2. The main stakeholders and beneficiaries of SOFF are:

- SOFF donors: Role: financing SOFF, including the results-based financing system. Interest: enhancing the effectiveness of their investments in climate change adaptation, disaster risk reduction, and humanitarian action. Influence: high, through participation in SOFF Steering Committee.
- SOFF Implementing Entities: Role: implementing SOFF support at national/regional level through existing initiatives. Interest: strengthened effectiveness and sustainability of their initiatives vis-a-vis climate change adaptation, early warning and disaster risk reduction, and humanitarian action. Influence: high, through the and execution of SOFF support.
- SOFF peer advisors: Role: technical assistance to beneficiary NHMS and Implementing Entities. Interest: transfer of knowledge and technical skills. Influence: medium, the provision of technical assistance can ensure the quality and appropriateness of SOFF investments, provided it is taken on board.
- National Hydrological and Meteorological Services (NHMS): Role: collection of (GBON compliant) weather data. Interest: improved collection of data and improved delivery of weather services. Influence: high, as the direct responsible parties for weather data collection and sharing.
- Central government institutions: Role: user of weather data, establishment of policy and institutional framework for weather data collection. Interest: improved evidence for decision-making vis-à-vis policies, plans and investments in climate change adaptation, early warning, disaster risk reduction, and emergency responses. Influence: high, as key national decision-makers providing the policy and institutional framework and public financing for weather data collection.
- Local governments: Role: user of weather data. Interest: improved evidence for decision-making vis-à-vis policies, plans and investments in climate change adaptation, early warning, disaster risk reduction, and emergency responses. Influence: low, user of weather data.
- Private sector: Role: user of weather data, weather data service provider (potentially paying for some services), and/or supplier of equipment. Interest: improved access to forecasts for investment and business decision-making, or business opportunities as services provider/supplier. Influence: low, user of weather data, service provider.
- Civil society: Role: user of weather data. Interest: improved access to forecasts for community-projects, advocacy and holding governments accountable. Influence: low, user of weather data.
- Academia: Role: user of weather data, education of meteorologists. Interest: improved access to data for research and modelling. Influence: low, user of weather data.
- Citizens: Role: user of weather forecasts, which in turn require quality weather data. Interest: access

to better forecasts for livelihoods and disaster risk reduction decision-making. Influence: low, user of weather forecast.

List the key documentation and sources used for the analysis:
- SOFF ToR (2021)

Are additional studies/analytic work needed? How and when will it be done?
GBON gap analysis (see section 1 of this annex).

3. Fragility, Conflict and Resilience

SOFF in particular targets LDCs and SIDS, of which several are conflict-affected or others are institutionally and socially fragile (see Annex 4).

Migration from LDCs and SIDS to seek opportunities for improved livelihoods and safety is significant, and expected to be further exacerbated as climate change increasingly impacts on livelihoods, food security, and resilience. Improved weather data will improve the accuracy and timeliness of weather forecasting and climate modelling/projection, which in turn can enhance the effectiveness of a) of, and investments in, climate change adaptation, b) early warning and disaster risk reduction measures, c) emergency responses and humanitarian action. Better forecasts will also facilitate better agricultural planning, thereby reducing the risk of crop and livestock losses. This will lead to enhanced resilience, which is expected to reduce the push to migrate. With these anticipated effects, SOFF is contributes significantly to the implementation of the **humanitarian-development-peace nexus**.

List the key documentation and sources used for the analysis:
- SOFF ToR (2021)

Are additional studies/analytic work needed? How and when will it be done?
GBON gap analysis (see section 1 of this annex).

4. Human Rights, Gender, Youth and applying a Human Rights Based Approach

Women, the poor, and vulnerable groups are particularly at risk to the impacts of climate change and exteme weather. Hence, SOFF contributes indirectly to gender equality and leaving no-one behind, as the improved accuracy and timeliness of weather forecasting and climate modelling/projection that SOFF enables, can enhance the effectiveness of a) planning of, and investments in, climate change adaptation, b) early warning and disaster risk reduction measures, c) emergency responses and humanitarian action.

Moreover, the operation and maintenance of weather stations could provide local livelihoods opportunities, which could be targeted to women, youth, and vulnerable people.

Improved access to weather and climate information and knowledge will also contribute to enabling civil society and citizens as rights-holders to hold governments as duty-bearers accountable for decision-making, investments and service provision vis-à-vis climate action, disaster risk reduction, and emergency responses. It will also contribute to strengthening the ability of the duty bearers to provide appropriate and timely services in these areas.

UNDP and UNEP (and the other UN agencies and multilateral development banks that will act as SOFF Implementing Agencies) embrace a human rights-based and gender-sensitive approaches (albeit with room for further improvement) and have strong social safeguards in place.

List the key documentation and sources used for the analysis:
- SOFF ToR (2021)
- MOPAN assessments of UNDP and UNEP (2020)

Are additional studies/analytic work needed? How and when will it be done?
GBON gap analysis (see section 1 of this annex).

5. Inclusive sustainable growth, climate change and environment

The project has a strong focus on climate change adaptation. Since SOFF's investments are exclusively related to weather data collection, with an emphasis on capacity development and installation of weather stations, the risk of negative effects on inclusive sustainable growth and environmental degradation is low, and any negative effects would be localised to the vicinity of weather stations and thus easy to mitigate. Hence, environmental impact assessment are not foreseen to be required. All envisaged implementing entities have policies and procedures in place vis-à-vis environmental safeguards.

As described above, SOFF indirectly contributes to gender equality and leaving no-one behind, since women and vulnerable groups are particularly susceptible to the impacts of climate change.

Moreover, the improved availability of weather data will contribute to improved climate modelling, which in turn can contribute to advocacy efforts vis-à-vis more ambitious climate mitigation action, including in the context of UNFCCC negotiations and national implementation.

Are additional studies/analytic work needed? How and when will it be done?
GBON gap analysis (see section 1 of this annex).

6. Capacity of public sector, public financial management and corruption

SOFF will benefit from the financial management and fiduciary standards and capacities of the UN and multilateral development banks, including well established procedures for MPTFs. Moreover, SOFF support to beneficiary countries will be delivered through existing initiatives, benefitting from their systems, procedures, and oversight. Peer advisors (e.g. DMI) will provide technical assistance, e.g. in relation to policy, technical solutions, and selection of appropriate meteorological equipment. An independent external review of SOFF, conducted in 2023, found that the SOFF Secretariat worked efficiently and in a transparent manner. All Steering Committee documents, incl. documents on financial decisions, are available and searchable on the SOFF website while the dashboard on the website provides detailed information on each country operation and corresponding peer advisor and implementing entity engagement. However, there are potential information gaps at lower tiers in beneficiary countries and operational partner agencies (peer advisors and implementing entities).

List the key documentation and sources used for the analysis:
- SOFF independent External Review (2023)
- MOPAN assessments of UNDP and UNEP (2020)
- SOFF and standard MPTF documentation: SAA, MoU (2021)

Are additional studies/analytic work needed? How and when will it be done?
GBON gap analysis (see section 1 of this annex).

7. Matching with Danish strengths and interests, engaging Danish actors and seeking synergies

The table below provides an overview of ongoing and planned initiatives related weather data supported by Denmark, outlining the potential for synergy and mapping the risk of duplication.

Programme	Partner	Countries	Weather data element	Synergy potential	Duplication risk
SOFF (support for 1st implementation period)	SOFF MPTF	LDC and SIDS	SOFF aims to massively boost the collection and international exchange of basic surface-based observational weather and climate data.	The support for the 2nd implementation period is a continuation of the previous Danish support for SOFF.	None
Early Warnings for All (EW4All)	WMO	5 African LDCs (Niger,	Production, analysis, interpretation and use of climate and risk	The five countries are also SOFF target countries.	None

		Somalia, South Sudan, Uganda, Tanzania)	information to strengthen multi-hazard early warning systems.	DMI is engaged in Tanzania as SOFF peer advisor and will actively seek synergies.	
Santiago Network on loss and damage	UNDRR and UNOPS	Global	TA for developing countries to avert, minimise and address loss and damage associated with the effects of climate change, incl. urgent and timely responses to climate change impacts.	SOFF complements with better data for more accurate forecasting, climate information, and early warning.	None
Fund for responding to Loss and Damage	Financial Intermediary Fund (FIF) in the World Bank	Global	Addressing insufficient climate information and data is an area within the scope of the Fund. Weather and climate data is required to establish losses and damage and planning appropriate action.	SOFF complements with better data for the Fund.	Low
Artificial Intelligence (AI), Anticipatory Action & Climate Risk Financing: Protecting Food Security from Climate Risks in Eastern Africa 2025-2026	WFP	Ethiopia, Rwanda, and Uganda	AI generated forecasts to activate anticipatory action and forecast index insurance (FII).	SOFF complements with better data for more accurate data for AI forecasting. The AI project will capitalise on the TA provided under SOFF to support holistic capacity strengthening that enables early warning to be used for decision-making and action.	Low
SSC	DMI	Ghana	Strategic sector cooperation between the Danish and partner country meteorological services.	DMI is a SOFF peer advisor and seeks synergy between its SOFF and SSC engagements, although Ghana is not supported by SOFF.	None
Core funding	NDF	Sub-Saharan Africa	NDF provides a large grant for SOFF, earmarked or Sub-Saharan Africa.	Opportunity for Nordic coordination on messages and priorities in SOFF Steering Committee.	None
Sahel Adaptive Social Protection Program	World Bank	Burkina Faso, Chad, Mali,	Early warning systems on natural hazards and food and nutrition insecurity.	SOFF complements with better data for more accurate forecasting, climate	None

(SASSP) – phase 2		Mauritania, Niger		information, and early warning.	
Enhanced Adaptation for Smallholder Agriculture Programme (ASAP+)	IFAD	Burkina Faso, Mali	Provision of access to climate information services.	SOFF complements with better data for more accurate forecasting, climate information, and early warning.	None
Regional Programme on Climate Security in the Western Sahel	UNDP (SOFF Implementing Entity)		Early warning on climate risks: a) enhancing access to information, b) regional seasonal forecasting forum for discussing and validating climate forecasting and the potential impacts.	SOFF complements with better data for more accurate forecasting, climate information, and early warning. Could be used for delivery of SOFF support.	None
Scaling Up Anticipatory Actions for Climate Shocks in the Horn of Africa	WFP (SOFF Implementing Entity)	Djibouti, Ethiopia, Kenya, Uganda	Integration of new methodologies for drought forecasting, incl. impact-based forecasting, into national meteorological services' operational systems. Forecast-based financing for anticipatory actions.	SOFF complements with better data for more accurate forecasting, climate information, and early warning. Could be used for delivery of SOFF support.	Low
Local Climate Adaptive Living (LoCAL) Facility	UNCDF	21 African countries (incl. earmarked funding for Somalia, Uganda)	Grants for local adaptation investments based on vulnerability assessments. Decentralisation of climate risk and vulnerability assessments to local level.	SOFF contributes to filling a major gap: limited availability of local weather data.	Low
Core funding	UNEP (SOFF Implementing Entity)	Global	World Environment Situation Room: Global climate information on website, incl. links to other websites, incl. essential climate variables on WMO website.	SOFF complements with better weather data and information.	None

- Identify areas/sectors where we have the most at stake – interests and values.	Climate change adaptation and addressing loss and damages, incl. early warning and disaster risk reduction are key Danish priorities –SOFF is intended to strengthening action in these areas with better weather and climate data.
- Identify where we can have influence through strategic use of positions of strengths, expertise and experiences.	Denmark can influence SOFF through participation in the Steering Committee. DMI's expertise will benefit SOFF delivery, as DMI is a peer advisor to Tanzania. Moreover, some of the initiatives supported by Denmark could serve as vehicles for SOFF support to countries.
- Identify where Denmark can play a role through active partnerships for a common aim/agenda or where is there a need for	Nordic countries (incl. NDF, which Denmark co-finances) and EU Member States figure prominently among SOFF donors – there is thus scope for

Denmark to take lead in pushing an agenda forward.	promoting shared Nordic and European priorities in the Steering Committee.
- Mapping of Danish foreign policy engagement, commercial engagement, trade relations and investment, Danish local and central authorities, civil society organisations, IFU and academia. Identify concrete opportunities for synergies.	DMI is a peer advisor to SOFF and provides technical support to MFA and MCEU vis-à-vis the engagement in the SOFF Steering Committee and oversight of SOFF.
- Assessment of the donor landscape and coordination, and opportunities for Denmark to deliver results through partners including through multilaterals and EU.	Nordic countries (incl. NDF, which Denmark co-finances) and EU Member States figure prominently among SOFF donors – there is thus scope for promoting shared Nordic and European priorities in the Steering Committee. SOFF is a UN initiative and the Implementing Entities are UN agencies and multilateral development banks.
Are additional studies/analytic work needed? How and when will it be done? No additional studies or analytical work are required.	

Annex 2: Partner Assessment

1. Brief presentation of partners

The lead implementing agencies for SOFF are WMO, UNDP, and UNEP. The Danish grant will be channelled through the UN MPTF Office, which acts as Administrative Agent (fund administrator) for the SOFF MPTF. The principal UN agencies engaged in SOFF are centrally placed in the international architecture for addressing the impacts of climate change.

The project is underpinned by a) the 2019 World Meteorological Congress agreement on the Global Basic Observing Network (GBON) and commitment to improving data collection and sharing of weather data freely across countries, and b) the formation of the Alliance for Hydromet Development (at UNFCCC COP 25) and the Alliance's commitment to establishing SOFF to close the weather and climate observations gap.

WMO is the designated UN agency for promoting international cooperation and coordination on the state and behaviour of the atmosphere, its interaction with the land and oceans, the weather and climate it produces, and the resulting distribution of water resources. WMO thus promotes the establishment of an integrated global observation network to provide and exchange weather, climate and water-related data, and is responsible for the creation of global standards for observation and monitoring. It is also tasked with strengthening the provision of weather, climate and water-related services to reduce disaster risks and contribute to climate change adaptation. With this mandate, WMO is uniquely positioned and has a key role vis-à-vis supporting the roll-out of GBON and assisting LDCs, SIDS and other countries in obtaining better weather data for informed decision-making vis-à-vis climate change adaptation and early warning.

UNDP is the largest UN agency and responsible for promoting sustainable economic growth and human development to eliminate poverty. Climate change, and in particular adaptation, is a priority area of engagement for UNDP. UNDP is a primary actor on climate change within the UN. SOFF implementation will benefit from UNDP's wide network of 170 country offices and experience with working directly with national and local authorities.

UNEP is the UN's designated lead agency on environment and tackling the triple planetary crisis of climate change, biodiversity loss, and pollution. UNEP is a primary actor on climate change within the UN. SOFF will benefit from UNEP's expertise in advocacy, making knowledge and information available and accessible, and environmental and social safeguards.

The **UN MPTF Office** has decades of experience with administering MPTF's, governed by tested standard procedures, rules, and regulations.

2. Summary of partner capacity assessment

Denmark has over the years provided voluntary support to several UNDP and UNEP initiatives (including core funding for UNEP), in addition to Denmark's contribution as a member state of the two agencies. However, support for WMO has been limited to Denmark's member contributions and small-scale support related to workshops and the provision of information inputs to negotiation processes.

While the SOFF MPTF itself is a fairly new financing mechanism, the UN has decades of experience with MPTFs for joint interagency collaboration towards achieving shared objectives. As such, the MPTF is a well-established and thoroughly tested mechanism with clear operational procedures, which are in accordance with international standards. Denmark has since 2004 provided support to 39 different MPTFs with a total contribution to date of USD 452 million (DKK 3.1 billion), mainly with a humanitarian-, peace-building- and governance-related focus. Moreover, in 2009-2013, Denmark provided USD 9.9 million (DKK 68 million) for the UN-REDD MTPF, an initiative implemented by UNEP, UNDP, and

FAO with a focus on preventing deforestation-related greenhouse gas emissions. While no longer receiving financial support from Denmark, the UN-REDD initiative is still operational and widely seen as a particularly successful example of UN interagency collaboration. SOFF's delivery model has similarities with UN-REDD, e.g. with a joint fund secretariat hosted by WMO, fund administration handled by the UN MPTF Office and a flexible division of labour based on a combination of each agency's technical capacity, existing partnerships, and in-country presence.

SOFF MPTF

All donor contributions to SOFF are chanelled through the UN MPTF Office (hosted by UNDP), which has decades of experience with administering trust funds for joint multi-donor and interagency collaboration. As such, the UN MPTF is a well-established and thoroughly tested mechanism with clear operational procedures, which are in accordance with international standards. Denmark has since 2004 provided support to 40+ different MPTFs with a total contribution of more DKK three billion. For the first Danish contribution to SOFF, the Financial management and reporting has overall been satisfactory, with no issues reported. Financial reports were complete and submitted to the MFA in a timely manner.

In 2023, an independent external review of SOFF was conducted. The overall findings of the review were very positive. The review confirmed the relevance of SOFF from both global and national/local perspectives, and that the design was "*innovative and fit-for-purpose*". SOFF delivers benefits beyond addressing GBON data gaps, laying a systemic foundation for countries to meet long-term needs in weather, climate, and early-warning systems. Moreover, the efficiency and effectiveness of SOFF was found to be excellent, with transparency and speedy delivery, confirming the value of pairing the beneficiary countries with peer advisors, and commending the performance of the Advisory Board. SOFF was viewed as the best option for countries to upgrade, maintain and operate their observation systems. The incentives built into the SOFF design (results-based payments) were found largely adequate for ensuring long-term sustainability, albeit noting the need for SOFF to raise further funding to ensure sufficient support for countries in the longer term, despite having been successful in fundraising. Moreover, SOFF was found to be coherent with, and complementary to, the existing climate finance architecture, providing a "f*oundational*" service for additional investments and with an important role vis-à-vis the EW4All initiative. The recommendations provided focused on maintaining the current approach, avoiding overambition in terms of expansion, and preparing for the second SOFF implementation period as outlined in the table below:

What SOFF should do right now – external review recommendations	
Transparency	Make efforts to reach the lower tiers in beneficiary countries NMHSs and operational partner agencies (transparency)
SOFF Secretariat	Be aware of the tension between ambition vs realism, notably in the more complex investment phase
Advisory Board	Do not fix what is not broken
Competency and capacity	Do not expand the group of Implementing Entities and Peer Advisors
Financing and fundraising	Clearly position SOFF fundraising as foundational investment, as important delivery vehicle of the UN Early Warnings for All initiative, and as part of donors' contribution to avoid/decrease future losses and damages
Scaling and expansion	Scaling to Middle-Income Countries makes sense, but do not go too fast and follow a phased approach
How to prepare for SOFF's next phase(s) – external review recommendations	

Regional approaches	Explore regional approaches to SOFF implementation, including regional entities as executing agencies
Procurement	Explore options to speed up procurement
Stronger connections	Foster stronger relationships between beneficiary country agencies, Peer Advisors and Implementing Entities and involve Implementing Entities as soon as possible in the readiness phase
Compliance framework	Develop the compliance framework now
Fundrasing	Fundraising from bilateral donors is essential, but also develop a plan for contributions to the SOFF fund from international development and climate finance institutions and foundations
Multilateral climate funds	Closely cooperate with the multilateral climate funds to seamlessly integrate SOFF
Country fundraising	Enable countries to raise financing for the latter parts of the value chain, including through IFIs and the private sector

WMO

No MOPAN assessment or external organisational evaluation of WMO are available. Key performance indicators are assessed in WMOs internally conducted performance assessment reports, but these focus on the progress (by both WMO and WMO members) on the achievement WMO's five long-term goals, not on WMO's overall performance as an institution.

Denmark has in recent years provided support for interventions with WMO as a key partner, i.e. the first contribution to SOFF and support for EW4All. The management, including the financial management, of both engagements has been satisfactory with timely submission of financial and technical reprots.

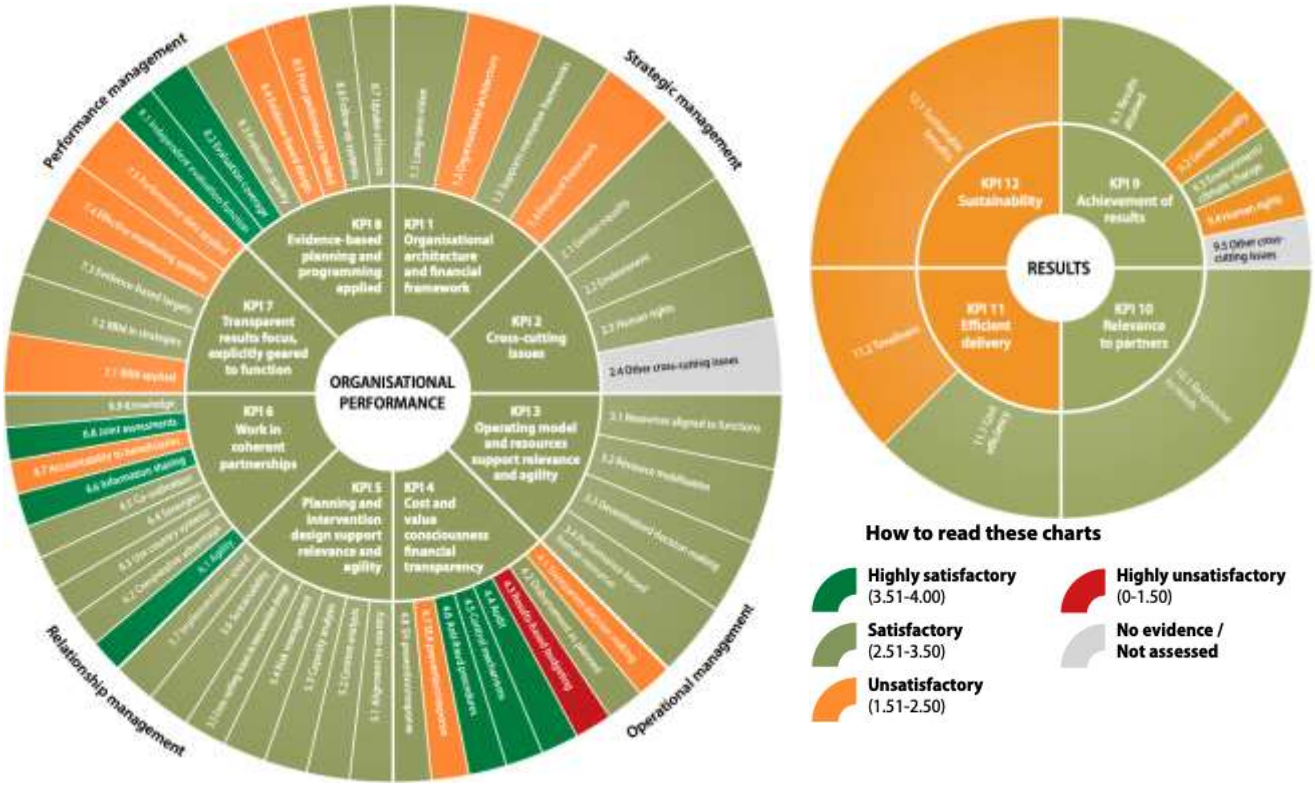
WMO is UN specialised agency dedicated to promoting and facilitating international cooperation and coordination on the state and behaviour of the Earth's atmosphere, its interaction with the land and oceans, the weather and climate it produces, and the resulting distribution of water resources. It is a neutral and independent technical authority on weather/climate data gathering, analysis, modelling, and standards. WMO leads international hydromet processes and coordinate and has strong links to NMHS. However, being one of the smaller UN agencies, WMO is of small size and has limited resources, and no no regional or country offices. As such, WMO is more geared towards a normative and standard-setting role than project implementation.

UNDP

The MOPAN assessment (2020) found that UNDP is recognised and valued for its traditional programmatic and "operational backbone" roles. UNDP has improved its internal policies, business processes, systems, tools and instruments, risk management, and people management. It has a robust approach to detect potential fraud and corruption and is recognised as the most transparent UN organisation UNDP is a decentralised project implementing agency delivering approx. 5,000 active development projects, most resources are project-based, and 93 pct. of its workforce based at the country level. However, gaps remain between central/corporate policies and strategies and country level practice, as decentralised country offices are not obliged to implement signature solutions. UNDP is strongly committed to partnership approaches, in particular with strong partnerships with national governments, whose priorities define UNDP's engagement at the country level and supports nationally led action. However, this has raised questions about its contribution to upstream "whole-of-society" policies and strategies, a lack of thematic focus, its concept of "beneficiaries" and measures to ensure that "no one is left behind". Moreover, there is little evidence of vertical and horizontal development and systematic use

of knowledge, and the integration of lessons learned is insufficient. UNDP's interventions are relevant and responding to the needs and priorities of partners. There is mixed evidence of UNDP's development results; performance is relatively strong in poverty reduction, governance, climate change and environment, but less so in resilience, energy, and gender. Cost-efficiency appears to be satisfactory, but timeliness is a concern, as is sustainability. UNDP has made progress in its approach to gender equality and women's empowerment; but performance is constrained by under-resourcing and progress is limited. UNDP's social and environmental safeguards have improved. A human rights-based approach is mandatory for all UNDP programming, but the performance is unclear. UNDP has a designated policy on sexual harassment, aligned to UN standards. The figures below show the findings of the MOPAN assessment.

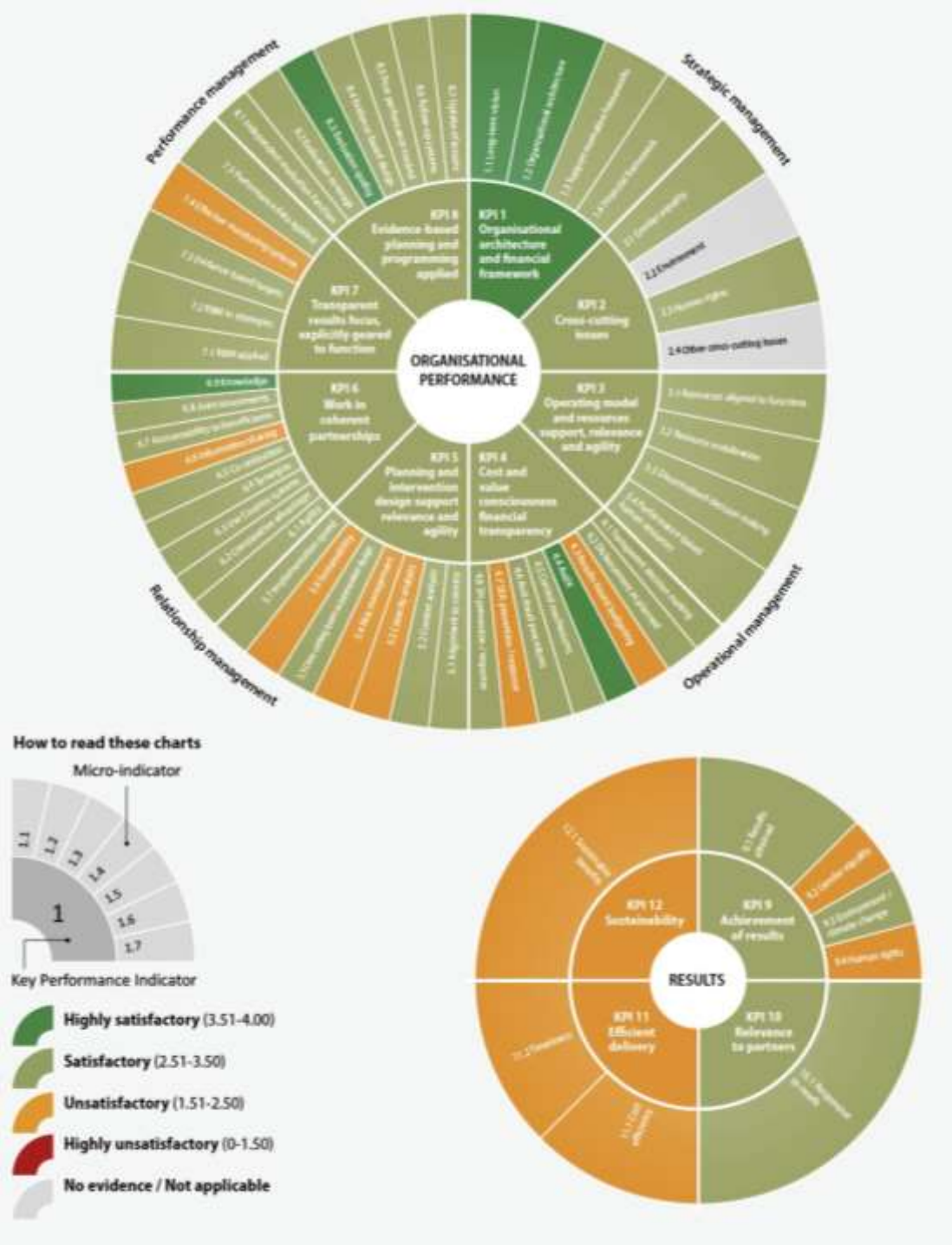
Overview of 2020 MOPAN assessment findings – UNDP



UNEP

The MOPAN assessment (2020) highlights UNEP's strong technical capacity, ability to produce high-quality knowledge products, and consultative strategic planning processes. UNEP continues to demonstrate strengths in global environmental leadership, aligning its work with the environmental dimensions of the 2030 Agenda. However, the report identifies key areas for improvement, including areas mentioned in the previous 2016 MOPAN: 1) results-based budgeting 2) ex-post monitoring and evaluation of projects 3) capacity analysis and 4) monitoring and reporting specifically on outcomes. Other areas for improvement include increasing flexibility in resource allocation, and addressing tensions between UNEP's normative and operational roles. Progress has been noted in strengthening accountability and integrating gender and human rights, but gaps remain in scaling insights from projects and ensuring sustainable impacts. UNEP's recent internal reforms, strategic shifts, and response to UN Development System reforms indicate a positive trajectory, aiming to bolster operational efficiency and coherence. The figures below show the findings of the MOPAN assessment.

Overview of 2020 MOPAN assessment findings – UNEP



3. Summary of key partner features

Name of Partner	Core business	Impor-tance	Influe nce	Contribution	Capacity	Exit strategy
UN MPTF Office (hosted by UNDP)	A UN centre of expertise on multi-donor and multi-agency finance mechanisms.	High	Low	Fund administrator for the MPTF	Well-established and thoroughly tested mechanism with clear operational procedures, which are in accordance with international standards. Joint financing and donor coordination capacities. No technical capacity.	No special requirements after end of project. The SOFF MPTF is envisaged to run for 10 years (three implementation periods), thereby providing continuity, stability and the possibility for medium-long term planning and exit strategies.
WMO	WMO is dedicated to international cooperation and coordination on the state and behaviour of the Earth's atmosphere, its interaction with the land and oceans, the weather and climate it produces, and the resulting distribution of water resources.	High	High	Oversight, technical and administrative support. Co-chairs the SOFF Steering Committee. Hosts the SOFF Secretariat. Screens gap analysis reports to ensure consistency with GBON regulations. Elaborates operational manuals and guidelines for Implementing Entities, peer advisors, and beneficiary countries. Enters contracts with peer advisers	Neutral and independent technical authority on weather/climate data gathering, analysis, modelling, and standards. Leads international hydromet processes and coordination. Strong links to NMHS. Weaknesses include: small size, limited resources, no regional or country offices.	No special requirements after end of project – WMO will continue to pursue objectives related to the project as part of its core mandate and build on project results.
UNDP	UN lead agency on international development. UNDP helps countries to	Medium	High	SOFF Implementing Entity. Co-chairs the AOFF Advisory Board. Implements SOFF	UNDP has a wide network of 170 country offices and strong experience with working directly with national and local authorities, including on climate change adaptation and	No special requirements after end of project – UNDP will continue to pursue objectives related

	develop policies, leadership skills, partnering abilities, institutional capabilities, and to build resilience to achieve the SDGs. Focus areas; sustainable development, democratic governance and peace building, and climate and disaster resilience.			support countries – delivered through existing UNDP interventions.	resilience and the link to poverty eradication and economic development. Strong links to planning ministries and a range of sectorial ministries. Weaknesses include limited resources and hydromet science not being a core area expertise. Threats include potential competition with other Implementing Entities, however perceived unlikely to affect the project.	to the project as part of its Strategic Plan and build on project results.
UNEP	Global authority that sets the environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the UNs system and serves as an authoritative advocate for the global environment.	Medium	High	SOFF Implementing Entity. Co-chairs the SOFF Advisory Board. Implements SOFF support countries – delivered through existing UNDP interventions.	Neutral and independent technical authority on environmental policy. Provision of high-level environment policy forum within the UN system, and focal point for a wide range of international environment processes and networks. Strong links to environment ministries, regional and other environmental bodies and with the business and private sector. Experience and leadership working at the science-policy interface, facilitating multi-stakeholder processes, and promoting cooperation. Weaknesses include: small size, limited resources, no regional or country offices. Threats include potential competition with other Implementing Entities, however, perceived unlikely to affect the project.	No special requirements after end of project – UNEP will continue to pursue objectives related to the project as part of its MTS and build on project results.

Annex 3: SOFF Responsiveness to OECD/DAC Quality Criteria

OECD/DAC has defined six quality criteria, which serve as the reference framework for evaluating international cooperation interventions. They are also a useful framework for the justification of the project.

Relevance
The project addresses SDG 13 (Climate Action). By improving access to weather and climate data, which in turn will inform climate modelling and risk assessments, SOFF contributes to the delivery of the globally agreed adaptation commitments under UNFCCC and the Sendai Framework for Disaster Risk Reduction. It also contributes indirectly to SDG 1 (No Poverty) SDG 2 (Zero Hunger) by improving access to weather and climate data, which in turn will inform decision-making enabling increased agricultural productivity and reduced losses of crops and assets. SOFF is considered highly relevant from both global and national/local perspectives, according to the 2023 review of SOFF.

Internal and external coherence
SOFF is fully integrated in the UN system. It brings together many of the key global and regional weather data actors both within and outside the UN, some of which Denmark is also supporting. SOFF is considered as coherent with and complementary to the existing climate finance architecture, as expressed in the 2023 review.

Effectiveness
SOFF provides a clear strategy for building national capacities for improved collection, analysis and sharing of weather data. It specifically addresses the first two links of the meteorological value chain, whereas most early warning initiatives mainly focus on the last four links of the value chain. Thereby, SOFF fills a gap. The 2023 review found SOFF to be highly effective.

Efficiency
SOFF draws upon the well-established and thoroughly tested UN MPTF model for delivery. It draws upon the comparatives strengths of WMO (meteorological data collection and analysis), UNDP (capacity, policy and institutional development support for developing countries), and UNEP (environmental expertise, advocacy and knowledge management). Moreover, SOFF mobilises the skills and capacities of a broad range of partners, incl. international organisations, governments, meteorological services, science and research bodies, and the private sector. SOFF support to countries will be delivered through already existing programmes, thereby tapping into already existing structures and delivery mechanisms. The 2023 review found SOFF's setup and processes to be efficient, noting that it is a newly established programme and a learning phase, with expectations of improved efficiency in the future.

Impact
SOFF aims at contributing to and catalysing largescale improvement in climate resilience. This will be done through improving weather data collection and analysis, and making knowledge and information available for decision-making and adaptation planning.

Sustainability
SOFF is envisaged to run for ten years (three periods), thereby providing continuity, stability and the possibility for medium-long term planning and exit strategies. It also aims to build a long-term global system for results-based financing of weather data collection in LDCs and SIDS. According to the 2023 review the incentives provided by SOFF design are considered largely adequate to lead to long-term sustainability. However, SOFF will need to raise additional funding to be able to support countries in the long run.

Annex 4: Assessment of SOFF According to Danida AMG Standard Questions

The project is briefly summarised below using the eight standard questions in the Danida Guidelines.

1) Political, economic, societal and institutional context

The impacts of climate change are now visible everywhere. The number of weather-related disasters has increased fivefold over the past five decades and economic losses have increased sevenfold with average daily losses of USD 383 million. Developing countries, in particular LDCs and SIDS, are disproportionally affected the impacts of climate change and face major financial, capacity and data constraints vis-a-vis adapting to climate change. Poor and vulnerable segments of the population in developing countries are particularly vulnerable to the impacts of climate due to several factors, including a larger degree of dependency on agriculture and natural resources, little economic capacity to compensate for the loss of income and assets due to extreme weather.

2) The development problem or issue and the desired transformation

Effective and cost-effective climate change adaptation require access to scientific knowledge and data, to understand what climate change will mean in the local context and what appropriate adaption measures would look like, as well as to enable effective early warning and timely measures to prevent that extreme weather events lead to disasters. Accurate forecasting and modelling require access to both local, regional and global data of sufficient accuracy and adequately fine geographical granularity. Currently, the data gaps in basic weather and climate observations, in particular in LDCs and SIDS, negatively affect the quality of weather forecasts and climate prediction. Closing these data gaps is thus essential for enabling the development and implementation of appropriate response strategies. Improved collection of weather data with significantly higher spatial and temporal resolution than today, and improved sharing of weather data internationally will improve weather predictions and climate models and enable the provision of more accurate and more timely weather and climate information (incl. forecasts and early warnings) to users, who in turn will be able to make more effective responses to extreme weather events as well as long term changes in the climate.

3) The main changes that will need to take place for the transformation to happen

The goal of SOFF is to "Strengthen climate adaption and resilient development through improved weather forecasts, early warning systems and climate information services", and the expected high-level outcome of SOFF is "improved weather and climate prediction products". SOFF will contribute to this by strengthening the first two links of the meteorological value chain, namely the collection of weather data, and the international sharing of weather data, thereby creating the foundation for effective weather and climate information services. This is articulated with SOFF's expected direct outcome "sustained compliance with the GBON". To this end, SOFF will take countries through three phases with eight related outputs, which can be summarised as follows: 1) Readiness Phase – developing countries will be supported in identifying their gaps vis-à-vis GBON compliance and developing national plans for achieving GBON compliance; 2) investment Phase – LDCs and SIDS will be supported technically and financially in putting the necessary infrastructure (weather stations, meteorological equipment) and capacities (institutional and human) in place for GBON compliance; and 3) compliance phase – LDCs and SIDS will through results-based financing/payments be supported in the continued operation and maintenance of weather stations – payments will be based on annual reporting and sharing of data internationally in line with GBON requirements.

4) The most important drivers/champions of change

SOFF in particular targets national hydrological and meteorological services (NHMS) as they have the direct responsibility for the weather data collection and analysis and provision of weather information. SOFF peer advisors play an enabling role by providing technical support, expertise and capacity development for NHMS in LDCs and SIDS. Implementing Entities provide through their existing initiatives vehicles for the delivery and integration of SOFF support in national systems and processes. The private sector is increasingly playing a role, both as providers of equipment and services and as users of weather information. In some countries, private firms are contracted by the NHMS to operate weather stations, and in some cases the private firms own weather stations. Private businesses are not just

consumers of data, they also play an important role as technology providers as well as providers of information and services to parts of the public sector, other businesses, and the wider society. SOFF will support countries in developing the most appropriate approach to partnering with the private sector to achieve the goal of GBON compliance. SOFF funds can be used to engage the private sector engage public-private partnerships. Civil society organisations are data users vis-à-vis early warning, disaster risk reduction, and humanitarian action. Moreover, civil society plays a role vis-à-vis ensuring the needs of poor and vulnerable people and women are addressed in weather data services. At the global level, the Alliance for Hydromet Development plays an important role in promoting sustainable financing models for weather data collection and mobilising international support.

5) Modalities and instruments Denmark will use to contribute to the change
SOFF will provide support for institutional and human capacity development, technical assistance, rehabilitation and installation of weather stations, and equipment for weather data collection. Denmark will provide financing for the SOFF MPTF, which is earmarked for support to ODA-eligible countries, including LDCs and SIDS.

6) The main conditions in place for the change to happen
Governments across the world have over the years become increasingly committed to climate change adaptation, in part due to a growing demand from the public, and part due to an increased awareness an increased understanding of the economic and social importance of climate resilience. There is also an understanding of the importance of weather data or informed decision-making and effective adaptation, disaster risk reduction, and humanitarian responses. This includes a commitment to sharing weather data freely and internationally. The increased momentum for strengthening weather service as an important input to climate change adaption is evidenced by formation of the Alliance for Hydromet Development at the UNFCCC COP 25 in 2019, and the agreement by 193 countries to establish GBON the same year. In June 2023, a global baseline as established for GBON.

7) The main assumptions that will need to hold true for the change to happen
The SOFF ToC and results framework do not specify any assumptions. A preliminary set of assumptions is presented in Annex 6.

8) The main risk factors that may prevent, delay or limit the changes from taking place
The SOFF Secretariat has elaborated a risk matrix with mitigation measures (see Annex 6). Individual risk frameworks will be elaborated for each grant provided to countries.

Annex 5: Theory of Change and Results Framework

Project	Systematic Observations Financing Facility (SOFF) – 2nd Danish contribution
Project Objective	Strengthen climate adaptation and resilient development through improved weather forecasts, early warning systems and climate information services that save lives and livelihoods and protect property

High-level Outcome		Improved weather and climate prediction products	
Outcome indicator 1		Improvement in NWP standard measures of skill	
Baseline	2022	0	Countries
Progress	2025	0	Countries
Target	2027	tbd[9]	Countries
Outcome		Sustained compliance with GBON	
Outcome indicator 2		Countries progress against the GBON gap analysis baseline (will not be fully achieved within the first implementation period of SOFF)	
Baseline	2022	0	Countries
Progress	2025	2	Countries
Target	2027	10[10]	Countries
Readiness phase			
Output 1		GBON gap established and verified	
Output indicator 1		Number of GBON gap reports produced and reviewed	
Baseline	2022	0	Countries
Progress	2025	58	Countries
Target	2027	75	Countries
Output 2		GBON national contribution plan developed and verified	
Output indicator 2		Number of GBON national contribution plans developed	
Baseline	2022	0	Countries
Progress	2025	43	Countries
Target	2027	75	Countries
Investment phase			
Output 3		GBON infrastructure in place	
Output indicator 3.1		Number of surface stations rehabilitated and/or installed with SOFF support	
Baseline	2022	0	Stations
Progress	2025	8	Stations
Target	2027	40	Stations
Output indicator 3.2		Number of upper air stations rehabilitated and/or installed with SOFF support	
Baseline	2022	0	Stations
Target	2027	1	Stations
Output 4		GBON human and institutional capacity in place	
Output indicator 4.1		Number of NMHS staff trained	
Baseline	2022	0	Persons
Progress	2025	137	Persons
Target	2027	120	Persons
Output indicator 4.2		Number of institutional capacity building activities	
Baseline	2022	0	Activities (e.g. training workshops)
Progress	2025	10	Activities (e.g. training workshops)

[9] The SOFF Secretariat, together with the European Centre for Medium Range Weather Forecasts (ECMWF), is making significant efforts to define a clear scientific definition of the metric to measure progress against the SOFF high level outcome on improved NWP. To date, SOFF has funded a series of impact studies to define the potential impact of SOFF observations on NWP through the Impact Experiments carried out by ECMWF and approved by the SOFF Steering Committee. SOFF have now prepared a proposal for the 12 SOFF Steering Committee for funding for a Phase III study together with ECMWF. Upon finalizing these results, SOFF will use the outputs of the impact experiments as a basis to define the metric and targets for approval by the SOFF Steering Committee in the updated results framework to be approved at the 13SC in February 2026 as stated in the Steering Committee Decision 11.3.

[10] The Steering Committee will be looking into this target as part of the updated results framework in February 2026. The target therefore might be redefined upon request of the Steering Committee members.

Target	2027	20	Activities (e.g. training workshops)
Output indicator 4.3		Number of national consultations	
Baseline	2022	0	Consultations (e.g. workshops)
Progress	2025	60	Consultations (e.g. workshops and inception meetings)
Target	2027	60	Consultations (e.g. workshops)
Compliance phase			
Output 5		Annual GBON compliance report and SOFF impact report produced	
Output indicator 5		Annual reports produced	
Baseline	2022	0	Reports
Progress	2025	2	Reports
Target	2027	2	Reports

Annex 6: Assumptions

The SOFF ToC and results framework do not specify any assumptions. A set of assumptions is presented below.

1) The improved weather and climate prediction (global prediction models outputs) resulting from the increased data shared from the countries supported by SOFF will be taken up by other initiatives working on the downstream part of the value chain.
SOFF addresses and directly contributes to the first three links of the value chain (observations acquisition, exchange and global modelling), while other initiatives address the lather three links. It is assumed that all actors working on any activity related to early warnings and climate services use and depend on the weather and climate prediction products that will be improved through SOFF. It is assumed that other entities (including international financial institutions (IFIs) and the private sector) and initiatives (such as early warning interventions) beyond the influence of SOFF, address the downstream links and ensure that weather and climate services reach and benefit the most vulnerable populations – thereby ensuring that weather and climate services reach and benefit the most vulnerable populations with improved availability of weather data and information contributing to more effective adaptation and increased resilience.

2) All supported countries will exchange weather data.
193 WMO Members have committed to the WMO Unified Data Policy, GBON, and SOFF. The Unified Data Policy and GBON oblige countries to exchange GBON data and will help the WMO community strengthen and better sustain monitoring and prediction of all Earth-system components, which is expected to lead to major socio-economic benefits as a result. It is thus assumed that all supported countries will exchange the data, given that it is an obligation that they committed to as part of the WMO Unified Data Policy agreement, which in turn will enable all WMO Members to deliver better, more accurate and timely weather- and climate-related services to their constituencies. Moreover, countries will only receive results-based financing from SOFF, if they comply with GBON regulations for data sharing. GBON defines the specific requirements for the acquisition and unrestricted exchange of basic weather and climate observations.

3) International donors are willing to provide medium- to long-term finance to cover running costs of enhanced weather data collection in LDCs and SIDS.
Operating and maintaining additional weather data stations and equipment to meet GBON requirement require financial resources at a level, which LDCs and SIDS cannot mobilise themselves. Hence, SOFF compliance phase aims at providing results-based financing to ensure continued functionality of weather stations and data collection. This model is based on the premise that governments and possibly the private sector and philanthropies are willing to provide continued finance (for the SOFF compliance phase and beyond) for weather data collection and sharing, since such data will be a global good directly benefitting all countries, in addition to the supported LDCs and SIDS.

Annex 7: Risk Management

The matrix presents the risks and mitigation measures identified by the SOFF Secretariat.

Contextual Risks

Risk Factor	Likelihood	Impact	Risk response	Residual risk
Insufficient institutional capacity and/or political commitment in recipient countries to ensure successful implementation of SOFF	Possible	Moderate	• SOFF programming approach responds only to country demand and a specific request from the head of the National Meteorological and Hydrological Service (NMHS). It considers the capacity to deliver support in the country and its capacity to absorb SOFF support. • During the Readiness phase the peer advisors conduct an in-depth assessment of the country's capacity and challenges. Based on this assessment, and in dialogue with the country, they recommend feasible activities in light of the expected institutional and political constraints. • The peer advisors and Implementing Entities regularly communicate with national counterparts to build effective engagement and political support. • SOFF long-term, open-ended results-based payments significantly incentivise countries to prioritise the operation and maintenance of SOFF investments.	Capacity constraints in LDCs and SIDS are likely to persist despite risk mitigation measures. Governments change regularly, which may lead to a shift in political priorities and de-prioritisation of SOFF country activities. Trained counterpart staff may leave agencies leading to loss of built institutional capacity.
Programmatic targets cannot be reached because of conflict and/or political insecurity negatively	Possible	Major	• The SOFF Secretariat works with the Implementing Entities (incl. those with experience in fragile and conflict-affected states) to assess the situation in countries and explore the most appropriate approaches to provide SOFF support.	

			• During the preparation and implementation of the Readiness phase peers and countries are expected to communicate to the Secretariat if they encounter early difficulties and potential institutional and political risks that need to be monitored. • For each SOFF-supported country, a risk management framework is developed during the Readiness and Investment Phase. This includes a high- level risk country/regional assessment and mitigation measures for political risks with a focus on possible conflict or instability in cooperation with the Implementing Entities. • SOFF favours a regional programmatic approach. If a country is affected by insecurity/conflict, the operations in the neighbouring countries can provide some helpful observations coverage.	
Multi-country or single-country SOFF operations may not appeal to all Implementing Entities	Unlikely	Minor	• SOFF programming is the result of consultations with the Implementing Entities and the peer advisors where their interest in working with either single or multi-country operations is explored and expectations clarified. • The SOFF Secretariat facilitates the matching between countries, peers, and implementing entities based on expressions of interest by the three partners and their indication of capacity and long-term commitment to deliver SOFF support.	Despite the consultation, some Implementing Entities and peers are unwilling to support specific operations. The Secretariat identifies alternative peers and Implementing Entities to lead those specific operations.
SOFF is not able to	Possible	Major (depending	• Active resource mobilisation continues	The implementation of the

mobilise sufficient resources to reach the funding targets necessary to meet the operational targets		on the size of the gap)	during SOFF implementation, with the support of UNDP, UNEP, and WMO leadership. SOFF as an element of the UN Early Warnings for All initiative is expected to facilitate fundraising. • The Steering Committee members actively reach out to additional potential funding partners to promote SOFF and help to mobilise resources to reach the funding targets. • The SOFF Communication Strategy developed in collaboration with the Steering Committee members identifies opportunities for outreach and fundraising. • The SOFF Secretariat and the MPTFO monitor and regularly report to the Steering Committee the status of funds and alert them of potential critical financial gaps ahead of financial decisions. • The SOFF Secretariat works with WMO, World Bank and other partners in advancing the understanding on and advocacy of the socio-economic value of GBON observations and the importance of financing a global public good.	investment phase is delayed. Fewer countries can be supported and SOFF is not able to meet the programmatic targets. The programmatic targets need to be adjusted in line with the available resources.

Programmatic risks

Risk Factor	Likelihood	Impact	Risk response	Residual risk
Non-compliance with fiduciary and procurement standards in some SOFF activities	Unlikely	Major	• SOFF relies on the Implementing Entities' fiduciary and procurement standards during the Investment phase, as per MPTFO standard practice. The Implementing Entities need to sign an agreement with MPTFO before receiving funds that includes fiduciary and	Even with strong fiduciary and procurement standards, procedures, and oversight in place, there is a residual risk of non-compliance in weak governance environments.

			procurement standards. • WMO Technical Authority guidance. Peer advisors and Implementing Entities are provided with extensive WMO guidance on standards and good practices for implementing GBON. • Through the annual reports of the Implementing Entities and regular monitoring of the activities, the SOFF Secretariat is informed of any possible risks of actual non-compliance situations and the corrective actions that the Implementing Entities are planning to take.	
NMHS staff depart after being trained	Possible	Major	• During the SOFF Readiness Phase the country capacity needs are assessed, including human resources. The Investment phase provides support to build human and institutional capacity in the country. The Compliance phase provides O&M support, which includes staff-costs. These measures are expected to help to hire/retain staff when this was due to financial constraints. • SOFF requests countries to explore public-private partnerships to achieve a cost-effective and efficient implementation of the GBON National Contribution Plan. Through a partnership with the private sector the country could potentially access intermediate financial resources and employ trained personal under private sector conditions in cases where public sector salaries are not adequate to keep this type of personal.	Even with SOFF support, trained staff might decide to leave for other reasons, leaving a capacity gap in the NMHS. Countries that opt for a fully public business model may have challenges providing competitive salaries.

SOFF-funded investments cause environmental or social impacts	Unlikely	Major	• SOFF relies on the environmental and social standards, guidelines, and procedures of the Implementing Entities, as per MPTFO standard practice. • The grievance and control mechanisms of SOFF Implementing Entities' are applied, as per MPTFO standard practice. • The large majority of investments to be financed by SOFF are expected to have modest environmental and social impacts that can be appropriately handled with clear mitigation measures.	Even with strong environmental and social standards, procedures, and oversight in place, there is some residual risk of non-compliance.
Slow implementation and delays in procurement, installation and capacity building activities	Likely	Moderate	• SOFF programming criteria ensure that in the beneficiary countries, Implementing Entities and peer advisors have delivery capacities. It also focuses on balancing the SOFF portfolio between countries with challenging contexts and countries with opportunities for "easy fixes"[1]. • SOFF peer advisors provide technical advice to the Implementing Entities of the countries they are supporting when facing technical difficulties. • The funding requests are the result of multiple consultation processes with the countries, the peer advisors and the Implementing Entities where foreseeable issues related to procurement and installation are discussed and potential solutions identified. • The SOFF Secretariat closely monitors implementation and facilitate troubleshooting among SOFF partners to find solutions or corrective measures. • The WMO Technical Authority provides additional ad hoc technical guidance on	Even with strong risk mitigation measures, situations where factors outside SOFF control delay the implementation may arise (from economic crises to conflict).

			GBON implementation to peer advisors and Implementing Entities.	
After the conclusion of the Investment phase, GBON data are not collected or shared or are shared of insufficient quality or do not improve forecast skills/climate services	Unlikely to likely (depending on country)	Major	• SOFF support is strictly conditioned to GBON requirements. Investment decisions are grounded on the data sharing commitment. Only countries committed to GBON data sharing are supported by SOFF. • SOFF contributes to O&M expenses through result-based finance provided upon sharing of data by the beneficiary country. The SOFF Investment Phase includes upfront O&M funding for the GBON network during the first year after the GBON infrastructure has been installed to ensure countries can share the data before the first annual results-based payments kick in. • WMO Technical Authority provides extensive guidance to peer advisors and Implementing Entities on standards and good practices for implementing GBON. • SOFF implementation includes specific capacity-building activities and institutional enhancement measures to ensure the data is collected and shared with the GBON quality requirements. • SOFF Secretariat and WMO Technical Authority monitor progress toward GBON compliance, as part of the SOFF Compliance Framework, including data quality and provide quarterly feedback to countries and their peers. Peers provide on demand support to countries when facing • technical difficulties in sharing the data.	Even with the innovative payment mechanism, there may be some cases where the country is not able to make the required minimum contribution to O&M (to be complemented by SOFF result-based finance), or security and political conditions interfere with the operation of observation facilities or with the sharing of data.

			• SOFF Secretariat facilitates actions of SOFF operational partners to support countries when challenges related to O&M are encountered. • Countries are requested to explore options for private- public partnerships in collaboration with the peers and the Implementing Entities. In some countries such partnerships are essential for a cost-effective and efficient implementation of the GBON National Contribution Plan and to ensure sustained GBON compliance. Four basic business models ranging from full public ownership to full private ownership have been developed.	
Destruction or theft of SOFF-financed equipment and infrastructure	Possible	Major	• The GBON National Contribution Plan includes measures and considerations for resilient, safeguarded infrastructure. • During the Investment phase a risk management framework is developed which identifies specific risk mitigation measures to address this risk within the specific country context. • Additional financial resources can be requested for the Steering Committee's decision in cases where the GBON stations are affected by exceptional circumstances (e.g., extreme events, security crisis etc.). the country is allowed to submit a request for an additional investment. • Civil society organisations are involved in building community ownership of SOFF-supported infrastructure and awareness of their value,	Even with strong security measures and engagement of the local community, this risk may materialise in very rare situations in very few countries

			potentially identifying a role for the community in protecting the infrastructure and ultimately reducing the risk of theft or vandalism. • The SOFF Secretariat closely monitors those countries where such risk is the highest e.g., conflict-affected countries.	
Countries cannot make optimal use of data, including accessing or using improved forecasts products from the Global Producing Centers throughout the hydromet value chain	Possible	Major	• SOFF is working closely with WMO, the peer advisors, and the Global Producing Centers to ensure that SOFF- supported countries can access and use the improved forecast products in their daily operations. • Through intensive coordination efforts with SOFF Implementing Entities, the major climate and environment funds, CREWS and the peer advisors, SOFF strives to ensure that beneficiary countries receive further support and have the capacity to use the improved forecast products. • The Country Hydromet Diagnostics identifies specific capacity and institutional needs across the value chain to ensure that hydromet investments in the country are better targeted, particularly in areas related to the use of data, forecasts, and products made available by the Global Producing Centres. • The SOFF Secretariat is working closely with the major climate and environment funds, namely the Green Climate Fund, the Adaptation Fund, the Climate Investment Funds and the Global Environment Facility to develop collaboration modalities which will allow	Despite receiving SOFF support, some countries may still not have adequate capacity to make optimal use of the freely accessible and improved forecast products. These countries might also encounter difficulties in accessing additional funding to build such capacity.

			SOFF beneficiary countries to receive complementary support in other areas of the hydrometeorological value chain, including strengthening the capacity to use the data.	

Institutional risks

Risk Factor	Likelihood	Impact	Risk response	Residual risk
SOFF Secretariat capacity is insufficient to manage SOFF operations	Unlikely	Moderate	• The SOFF Steering Committee assesses the performance of the SOFF Secretariat and ensures the Secretariat is appropriately staffed and resourced. • The SOFF Secretariat informs the Steering Committee of any capacity constraints before it starts affecting its functioning.	The workload increases exponentially during SOFF implementation and the Secretariat staff resources do not grow as quickly. The Secretariat will work closely with its partners to hire staff and mobilise secondments and young professionals as needed.
WMO Secretariat capacity is insufficient to carry out its duties as SOFF Technical Authority effectively	Unlikely	Moderate	• The WMO Technical Authority in collaboration with the SOFF Secretariat and based on the SOFF Operational Manual has defined terms of reference, and annual projections of expected workload and the required human resources to efficiently carry out their duties are developed. • The SOFF Secretariat maintains a regular engagement and coordination with the WMO Technical Authority to ensure smooth delivery of its functions, including informing WMO of changes to the expected workload and technical support demands. • The SOFF Secretariat regularly monitors the operations and facilitates the communication between the peer advisors, beneficiary countries and the WMO Technical Authority.	Despite careful planning, potential peaks of workload might occur and might affect the capacity of the Technical Authority to provide just-in time support, hence slowing down the implementation of SOFF operations in the beneficiary countries.
SOFF Trust Fund is	Unlikely	Moderate	• As a UN-MPTF, SOFF is governed by	External circumstances outside of

mismanaged, compromising its operations and causing reputational damage			UNDP policies including UNDP Procurement ethics, Fraud and Corrupt Practices Policy and other relevant policies. • The governance structure is designed to ensure appropriate policies are developed, implemented and monitored, ensuring full oversight, reporting, transparency, and accountability functions	SOFF control may affect its operations and reputation.
Some peer advisory services are of insufficient quality to support SOFF implementation	Possible	Moderate	• Early and proactive engagement with the peer advisors to ensure an adequate understanding of SOFF technical requirements and quality control. • Through the SOFF Operational Guidance Handbook the peer advisors receive detailed technical guidance including templates and as needed technical support from WMO Technical Authority. • The peer advisory services can be provided in tandem by two NMHSs, allowing peers to strengthen their capacity jointly. • SOFF Secretariat promotes and facilitates a strong network among peers with constant review of lessons • learned and knowledge sharing. • Continuous feedback from beneficiary countries and Implementing Entities on the work of the peer advisor is collected and reviewed by the SOFF Secretariat.	A very small number of peer advisors may not be capable of providing high-quality products in new geographies and in challenging contexts.
SOFF Co-creators, Steering Committee and Advisory Board do not agree on the trajectory of SOFF scope and operations	Rare	Moderate	• Highly participatory decision processes, strong commitment by the co-founders, the Steering Committee and the Advisory Board members are essential to ensure successful implementation. • The SOFF Operational Manual clearly defines the SOFF decision-making	A small number of stakeholders may not agree with the overall SOFF trajectory.

			processes.	

Annex 8: Budget Details

Budget for the extended SOFF First Implementation Period until June 2027.

	TARGET		APPROVALS AS OF APRIL 2025		REMAINING APPROVALS TO ACHIEVE WORK PROGRAMME		TOTAL
	Countries	Million USD	Countries	Million USD	Countries	Million USD	Million USD
Country support							
Readiness	**75**	10.4	61	8.6	14	2.0	10.6
Investment	**50**	170.0	15	84.9	35	167.9	252.8
Regional		0.2		0.2		0.2	0.4
Studies							
Impact Studies		0.3		0.3		0.2	0.5
External Review		0.1		-		0.1	0.1
Sub Total		**181.0**		**94.0**		**170.4**	**264.4**
Percentage of the total		**90%**		**88%**		**90%**	**90%**
Administrative costs (overhead)							
SOFF Secretariat		5.1		5.1		4.4	9.5
IE Fees		10.0		5.4		10.6	16.0
WMO Fees Peer Advisors		2.1		1.1		1.1	2.2
Trustee Fees		2.0		1.1		1.9	3.0
Sub Total		**19.2**		**12.7**		**18.0**	**30.7**
Percentage of the total		**10%**		**12%**		**10%**	**10%**
TOTAL		**200.2**		**106.7**		**188.4**	**295.1**

Notes:
1) Regional: Regional workshops, e.g. to foster regionally coordinated SOFF implementation.
2) Costs of O&M for countries in the SOFF Investment Phase are fully considered under investment funding.
3) Report to assess the impact of observations in the Numerical Weather Prediction models to be prepared by WMO in collaboration with selected Global Producing Centres.
4) SOFF Secreriat: Includes 7% WMO indirect support cost for administratively hosting the SOFF Secretariat.
5) IE Fees: Up to 7% fee - Percentage calculated based on the total allocation expected for the Investment phase; some SOFF Implementing Entities are expected to charge less than 7%.
6) WMO Fees, Peer Advisors: 7% fee - Percentage for managing the pass-through mechanism and corresponding contracts for the provision of SOFF peer advisory services; calculated based on the total allocation expected for the Readiness phase and Compliance phase.
7) Trustee Fees: 1% fee - Based on expected contributions required to implement the SOFF work programme.
8) WMO fees are separated and non-cumulative with fees for Implementing Entities – they only apply to funds disbursed to WMO, whereas Implementing Entities receive funds directly from the UN MPTF, e.g. for Secretariat costs and for Peer Advisers.

SOFF Secretariat annual budget, 2025-2026

Budget Class	USD
Staff and other personnel costs	1,957,041
Equipment, Vehicles and Furniture	5,000
Contractual Services	150,000
Travel	60,000
Total Programme Costs	**2,172,041**
Indirect Support Costs (7%)	152,043
Total Budget	**2,324,084**
Projected balance June 2025	312,497
Required resources for July 2025 – June 2026 reflecting projected balance	**2,011,587**

Evolution in SOFF portfolio (readiness, investment, compliance phases)

Annex 9: List of Supplementary Materials

#	Document / Material	Source
1	SOFF Terms of Reference	SOFF Secretariat
2	SOFF Operational Manual	SOFF Secretariat
3	SPFF Operational Guidance Handbook, July 2023	SOFF Secretariat
4	Standard Administrative Arrangement for Systematic Observations Financing Facility Using Pass-Through Fund Management, October 2021	UN MPTF Office
5	Standard Memorandum of Understanding for Systematic Observations Financing Facility Using Pass-Through Fund Management, November 2021	UN MPTF Office
6	SOFF Communication Strategy, June 2023	SOFF Secretariat

7	Updated Resource Mobilization and Outreach Strategy, June 2024	SOFF Secretariat
8	SOFF Advisory Board Terms of Reference, adopted by SC in October 2023	SOFF Secretariat
9	SOFF updated work programme 2022-2025, November 2023	SOFF Secretariat
10	GBON National Contribution Plan – Operational guidance for SOFF beneficiary countries, peer advisors and Implementing Entities, template, June 2024	SOFF Secretariat
11	Agreement on complementary and collaboration between Systematic Observations Financing Facility (SOFF) and Weather Ready Pacific Programme (WRPP), November 2024	SOFF Secretariat
12	Letter of intent between AfDB and WMO on behalf of SOFF, November 2024	SOFF Secretariat
13	SOFF 2023 action report – weather and climate data for resilience	SOFF Secretariat
14	Framework for Collaboration between the Secretariats of the Systematic Observations Financing Facility and Adaptation Fund, Climate Investment Funds, Climate Risk and Early Warning Systems Initiative, Global Environment Facility, Green Climate Fund – for enhancing systematic observation and improving the use of basic weather and climate data for effective climate action, December 2023	SOFF Secretariat
15	Steering Committee documents	SOFF Secretariat
16	UNEP Adaptation Gap Report 2024	UNEP

Annex 10: Plan for Communication of Results

SOFF has a Communication Strategy. The key elements are outlined below.

Objectives:

- Maximise visibility and understanding of SOFF, and the importance of closing the basic weather and climate data gap as a global public good.
- Position SOFF and showcase its crucial role within the global climate finance architecture and the UN Early Warnings for All initiative, demonstrating complementarity and collaboration.
- Leverage SOFF communications through partners, building on their existing campaigns and initiatives.
- Ensure consistency across all means of communications, while demonstrating full transparency.

Target Audience:

- Partners: co-founders, Steering Committee members, Advisory Board members, peer advisors, Implementing Entities, beneficiaries
- Public: broader public, civil society, practitioners
- Media

Key messages:

SOFF:

- is a UN Fund, co-created by World Meteorological Organization (WMO), United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP) in 2021, to support countries for the provision of basic weather and climate data, a global public good.
- exclusively focuses on closing the weather and climate data gap in countries with the most severe shortfalls in observations, prioritizing Least Developed Countries and Small Island Developing States.
- supports countries in achieving sustained compliance with the internationally agreed Global Basic Observing Network (GBON) requirements.
- provides long-term grant-based financing and peer-and-peer technical advice, ensuring sustainability of investments.
- is an integral element of the global climate finance architecture and fully complementary as a vertical fund, supporting the provision of data, underpinning other funds' investments.
- is the foundational element of the meteorological value chain; SOFF investments underpin action in latter parts of the value chain for effective policy and decision making, contributing to increased resilience.
- works to improve the availability of weather and climate observations for better weather forecasts, early warning systems and climate information services that save lives and livelihoods as well as protect property across the whole globe. The lack of such observations limits countries' capacity to adapt to climate change and build resilience.
- is a delivery vehicle and foundational element of the UN Early Warnings for All initiative – early warnings are only as good as data they are built upon.

Means of communication:

- Social media: LinkedIn and Twitter (X) accounts
- Media: web stories for SOFF milestones
- SOFF website

- SOFF Annual Report
- Voicing local perspectives: e.g. interviews, human interest stories, best practice stories (SOFF beneficiary countries, peer advisors and Implementing Entities are expected to provide the SOFF Secretariat with stories)
- Multimedia: videos and photos

Communication Plans:

- Regular Communication Plans to operationalise and implement the Resource Mobilisation and Outreach Strategy and the Communication Strategy
- The Communication Plans will consist of chapters reflecting SOFF's means of communication
- The Communication Plans will aim to achieve the main communication objectives and provide a consistent strategic approach to reach SOFF's target audience
- Commuinicaiton Plan chapters should include details on delivery dates, measurable targets and specific content ideas
- Success will be evaluated based on the measurable targets in the Communication Plans

Annex 11: Process Action Plan

Action/product	Deadlines	Responsible/involved Person and unit	Comment/status
Formulation, quality assurance and approval			
Submit draft programme document to KLIMA management for review and approval	Mid January 2025	Consultant	Completed
Review draft programme document	Mid January	KLIMA	Completed
Address comments from KLIMA management	Mid January 2025	Consultant	Completed
KLIMA submits document to PC	23 January 2025	KLIMA	Completed
Programme Committee	4 February 2025		Completed
Address comments from PC	February 2025	Consultant	Completed
Appraisal (internal)	August 2025	KLIMA	Completed
Address comments and submit final programme document to KLIMA	September 2025	Consultant	Completed
End of consultant contract	31 August 2025		
Initial actions following the Minister's approval			
Publication on Danida OpenAid	November 2025	KLIMA	
Signing of MFA-SOFF agreement	November 2025	KLIMA	Signing of agreement, immediately upon approval by Minister
Registration of commitment(s) in MFA's financial systems	November 2025	KLIMA	
Disbursement of funds	Q4 2025	KLIMA	
Submission of annual report to MFA	2025	SOFF Secretariat/UN MPTF Office	
Mid-term review	2026	KLIMA	Jointly with other donors, if possible