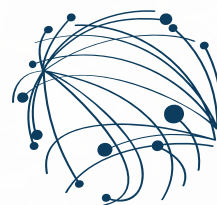


# Establishing the Systematic Observations Financing Facility

A new way of financing  
basic observations

**SYSTEMATIC OBSERVATIONS FINANCING FACILITY**

Weather and climate information for the global public good



**SOFF**

Systematic Observations  
Financing Facility

# THE CHALLENGE



## Missing foundational data for climate adaptation and resilient development

**Improving our ability to forecast extreme weather events and predict the changing climate is critical to manage risks effectively, understand adaptation needs and plan accordingly with systematic and anticipatory action.** Climate change and extreme weather events are now threatening lives and hampering global efforts to reduce poverty. Accurate weather forecasts and climate prediction is critical for all sectors and in particular for those that rely heavily on weather and climate, such as agriculture, transport, renewable energy and insurance.

**Surface-based weather observations underpin weather forecasts, early warning systems, and climate information everywhere.** Global Numerical Weather Prediction models are the backbones of all weather forecasts and climate prediction products. These systems require continued access to a wealth of real-time weather data from the entire globe. Surface-based observations are fundamental to the quality of the output of these models. These observations are essential to measure certain weather parameters that cannot yet be reliably measured from space and they play a vital role for calibration and validation of satellite weather data.

**The current gaps in global surface-based data sharing significantly impact the quality of weather and climate information locally, regionally and globally.** While some parts of the globe provide a reliable feed of these data, many others contribute only limited amounts and, in several instances the amount of data shared is even declining.

**In Small Islands Developing States (SIDS) and Least Developed Countries (LDCs) the data gaps are striking.** Despite substantial investments in observational infrastructure supported by development finance institutions in these countries, there has been limited lasting improvement in global data sharing. In fact, the European Centre for Medium-Range Weather Forecasts observed a dramatic decrease in the number of shared radiosonde data (the most important surface-based data for weather prediction models) of almost 50% in Africa from 2015 to 2020. This situation does not include the further decline in observations since January 2020 due to the impact of COVID-19.

**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.** Providing these countries with the means and the incentives to invest, operate and maintain weather observation systems will have a large payoff in terms of long-term weather data collection and sharing and, ultimately, improvements in national and global development outcomes.



Find out more - SOFF information brief: The gaps in the Global Basic Observing Network

# THE OPPORTUNITY



## The Global Basic Observing Network

In 2019, the World Meteorological Congress and its 193 member countries and territories agreed to establish the Global Basic Observing Network (GBON).

**GBON is a landmark agreement and offers a new approach in which the basic surface-based weather observing network is designed, defined and monitored at the global level.** GBON sets out a clear requirement for all World Meteorological Organization (WMO) Members to acquire and internationally exchange the most essential surface-based observational data at a minimum level of spatial resolution and time interval.

**Achieving sustained compliance with the GBON requirements needs substantial investments, strengthened capacity and long-term resources for operation and maintenance in many countries.** The Systematic Observations Financing Facility (SOFF) is being established to provide technical and financial assistance in new – more effective - ways.

**1:26**

According to the World Bank, for every dollar invested in surface-based weather observations, at least twenty-six dollars in socio-economic return could be realized.



Find out more - SOFF information brief: The value of Surface-Based Meteorological Observation Data: Costs and benefits of the Global Basic Observing Network

# THE SOLUTION



## A new way of financing surface-based observations

The Systematic Observations Financing Facility (SOFF) will support countries to generate and exchange basic surface-based observational data critical for improved weather forecasts and climate services.

SOFF will contribute to strengthen resilient development and climate adaptation locally, regionally and across the globe, particularly benefiting the most vulnerable.

SOFF has three novel design features to provide long-term financing and technical assistance in an effective way. It has a unique focus and complements and supports existing funding mechanisms.

### Applying internationally agreed metrics to guide investments

SOFF support is based on the global optimal and internationally agreed design to guide investments – the GBON. By using the GBON concept, SOFF will be in a position to allocate scarce resources most effectively.

### Using long-term, sustained data sharing as a measure of success

SOFF will provide grant support to LDCs and SIDS for capital investments and contribute to cover operations and maintenance. This will ensure that the benefits of investments in observational capacity are sustained and translate into long-term weather data sharing.

### Creating local benefits while providing a global public good

In addition to local and regional benefits, better weather data from LDCs and SIDS will improve the quality of weather forecasts globally, especially medium to long-range forecasts, with benefits for all countries, in all sectors.



Find out more - SOFF information brief:  
A new way of financing basic observations  
- How will SOFF work?

# THE IMPLEMENTATION



Female technician by USAID/Oussama Benbila/CC BY-NC 2.0

## A sequenced approach

It is envisioned that SOFF will start operating with an initial five-year implementation period, during which it will prioritize support to SIDS and LDCs.

**An independent external evaluation is envisaged in the fourth year of the initial implementation period.** The evaluation will include an assessment of the results-based funding approach to ensure that it is working as intended.

**Based on the results of the evaluation and lessons learned, SOFF operational design can be further adjusted for subsequent funding periods.** This could include considering a potential expansion to other OECD Official Development Assistance eligible countries, as well as to other domains of basic and internationally mandated earth observations as the GBON concept evolves.

SOFF is expected to provide its support in three phases

### Readiness

SOFF will support countries to assess their national hydromet status, define the national GBON gap and develop a plan to close the gap. All beneficiary countries will undergo the Readiness phase.

### Investment

Countries will receive support for capital investments in GBON infrastructure and to developing GBON human and institutional capacity to operate and maintain the observing network.

### Compliance

Countries will receive support to sustain compliance with GBON in the long-term and to access improved weather forecast and climate analysis products. This includes the provision of results-based finance for GBON-compliant countries to contribute to cover operational and maintenance costs and ensure continuous data sharing.



Find out more - SOFF information brief:  
A new way of financing basic observations - How will SOFF work?

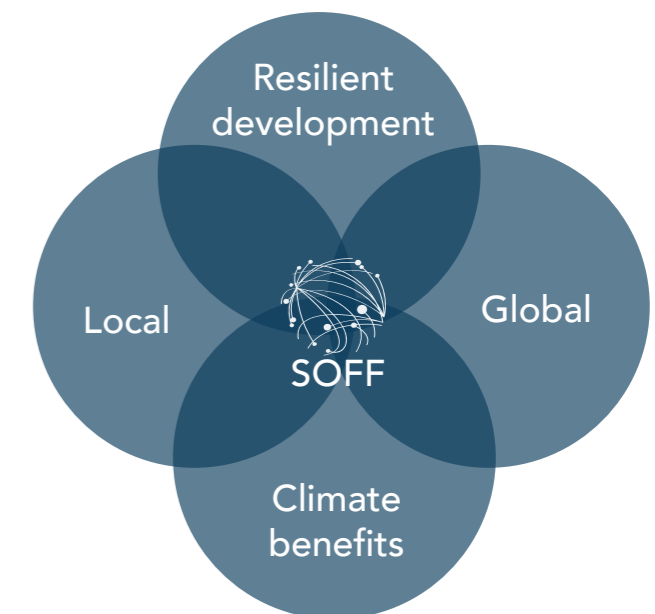
# THE TARGET




## An ambitious undertaking

- 5** Year initial implementation period
- USD 400 M** Funding needs for the five-year initial implementation period
- 68** SIDS and LDCs supported to become GBON compliant and accessing improved weather and climate products
- 10x** More data shared from upper air stations
- 20x** More data shared from surface stations

SOFF at the intersection of national and global, resilient development and climate benefits



 Find out more - SOFF information brief: A new way of financing basic observations - How will SOFF work?

# THE PARTNERSHIP

## A new, structured, and results-based partnership

SOFF will be a partnership between the beneficiary countries, bilateral and multilateral SOFF funding partners, envisioned private sector contributors, and the SOFF operational partners.

### SOFF operational partners

#### WMO Technical Authority

WMO is responsible for verifying the GBON national contribution and GBON compliance. This function will be performed by the WMO Secretariat, guided by the WMO Infrastructure Commission and supported by the WMO Global Producing Centres.

#### Implementing Entities

Major development partners, including Multilateral Development Banks and UN organizations, will become SOFF implementing entities.

#### Advisory Partners

The WMO Country Support Initiative will advise countries and implementing entities on achieving and maintaining GBON compliance. It provides hands-on peer-to-peer support through national meteorological services.

#### Knowledge Partners

It is expected that the participating WMO Global Producing Centres will offer free access to their improved weather and climate products for GBON compliant countries. They will provide on-demand standard support for the optimal use of these products.

## A dedicated partnership and financing mechanism

**SOFF is expected to become the one-stop-shop for GBON financing and technical assistance.** SOFF financing will be embedded into larger early warnings, climate information services and adaptation projects and programs supported by the SOFF implementing entities. They will blend SOFF resources with their own funding. This will ensure an integrated approach that links GBON compliance with broader countries' efforts to strengthen resilient development and adaptation to climate change.

**SOFF is a dedicated partnership.** Investments in basic observations are operationally complex. Supporting countries in complying with GBON involves provision of specialized and standardized scientific and technical assistance based on a global design. The provision of this type of support requires a dedicated mechanism to facilitate streamlined collaboration among the many SOFF operational and scientific partners.

**SOFF will ideally be integrated into an existing climate or environment Financial Intermediary Fund.** It is envisioned that the announcement of the creation of the SOFF will happen at the UNFCCC COP26 in November 2021.



Find out more - SOFF information brief: A new way of financing basic observations - How will SOFF work?



Find out more - SOFF information brief: The value of GBON - Exploring the insurance sector

## Creating SOFF is a commitment of the Alliance for Hydromet Development

The Alliance was launched at the UNFCCC COP25 and unites efforts of major development and climate finance partners to close the capacity gap on high-quality weather forecasts, early warning systems and climate information.

The Alliance members committed to seeking innovative ways to finance developing country surface-based observations, aiming at the creation of a Systematic Observations Financing Facility.

The members of the Alliance for Hydromet Development include 12 founding members: Adaptation Fund, African Development Bank, Asian Development Bank, Climate Investment Funds, European Bank for Reconstruction and Development, Global Environment Facility, Green Climate Fund, Islamic Development Bank, United Nations Development Programme, United Nations Environment Programme, World Bank, World Food Programme, and World Meteorological Organization. The Climate Investment Funds joined the Alliance in October 2020.





## SPECIAL THANKS TO:

This document has been produced by the World Meteorological Organization in collaboration with Zoï. It is based on the work of the SOFF Working Groups established in February 2020 with members from: Adaptation Fund, African Development Bank, African Risk Capacity, Asian Development Bank, Austrian Central Agency for Meteorology and Geodynamics, Climate Investment Funds, Climate Policy Initiative, Climate Risk and Early Warning Systems Initiative, Coalition for Climate Resilient Investment, Deutsche Gesellschaft für Internationale Zusammenarbeit, Deutscher Wetterdienst, Direction de la Météorologie nationale de la SODEXAM Côte d'Ivoire, European Bank for Reconstruction and Development, European Centre for Medium-Range Weather Forecasts, Global Environment Facility, Green Climate Fund, Inter-American Development Bank, Insurance Development Forum, InsuResilience Investment Fund, Islamic Development Bank, Lloyds of London, Munich Climate Insurance Initiative, Oasis Loss Modelling Framework, Switzerland Federal Office for the Environment, UK Met Office, United Nations Development Programme, United Nations Environment Programme, World Bank, Willis Towers Watson, World Food Programme, and World Meteorological Organization.

## FURTHER RESOURCES

SOFF

[Follow link here.](#)

Alliance for Hydromet Development

[Follow link here.](#)

WMO

[Follow link here.](#)

## CONTACT INFORMATION:

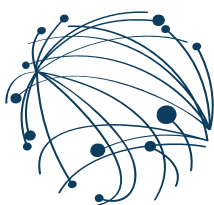
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Cover page: Cyclone Idai on 13 March 2019 west of Madagascar and heading for Mozambique. The storm went on to cause widespread destruction in Mozambique, Malawi, and Zimbabwe, with thousands of people losing their lives, and houses, roads and croplands submerged. Relatively few observations from East Africa are available to Global NWP Centres. Full implementation of GBON over this region will improve the accuracy of cyclone intensity and track forecasts.

Credits for the cover photo: European Space Agency. Captured by the Copernicus Sentinel-3 mission. ESA/Rosetta/NavCam – CC BY-SA IGO 3.

Version 2. December 2020



# SOFF

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