



Weather
and climate
data for
resilience

24 September 2024

Global Basic Observing Network (GBON) Systematic Observations Financing Facility (SOFF) Workshop

Meteorological Technology World Expo 2024
TECO-2024

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What is SOFF?

The Systematic Observations Financing Facility – SOFF

- **A specialized United Nations climate fund** co-created by the World Meteorological Organization, United Nations Environment Programme, and United Nations Development Programme
- Established to fill in **major gaps in basic weather and climate data** in the countries with the biggest capacity constraints – Least Developed Countries and Small Island Developing States
- Mandated to support the implementation of the Global Basic Observing Network – **GBON**
- **Foundational element** of the UN Early Warnings for All Initiative



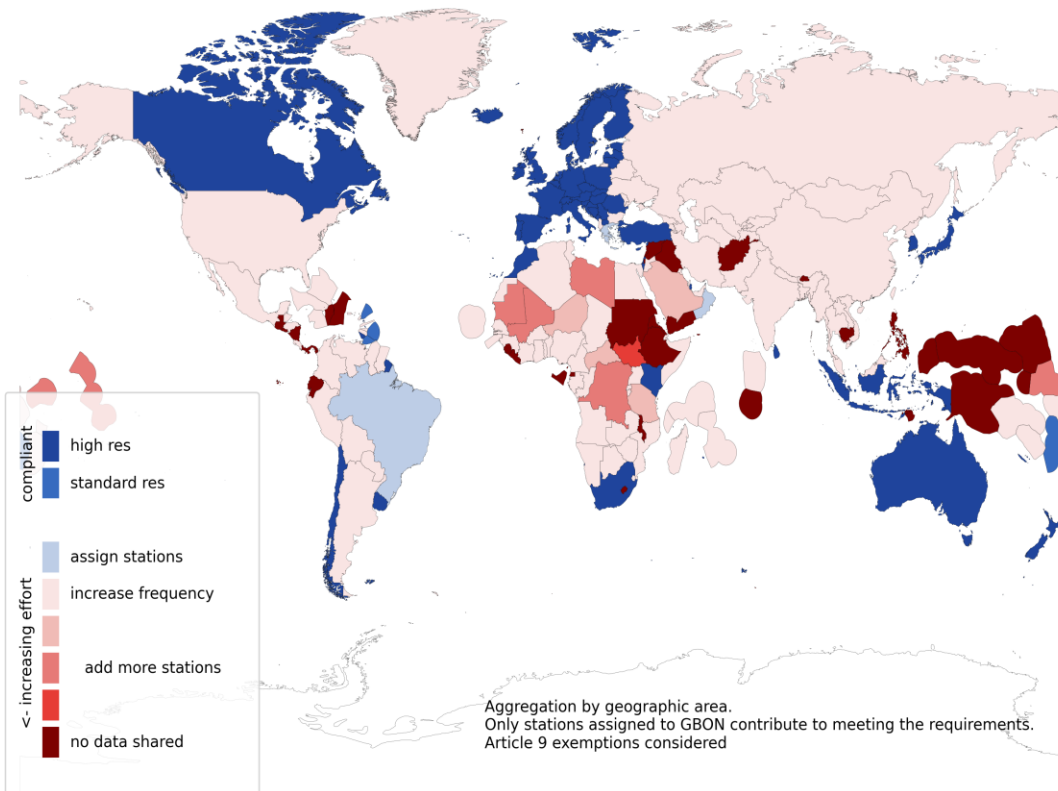
GBON – An International agreement on the mandatory basic weather and climate observations

- 193 countries and territories of the World Meteorological Congress established in 2021 for the first time the **minimum set of observations that all countries must generate and internationally exchange** - Global Basic Observing Network (GBON)
- While GBON compliance is mandatory, **major data and capacity gaps exist** in most developing countries, hampering effective climate action across the globe.
- Least Developed Countries (LDCs) and Small Island Developing States (SIDS) generate and exchange less than **10 %** of mandated GBON data.

Major observation gaps in developing countries

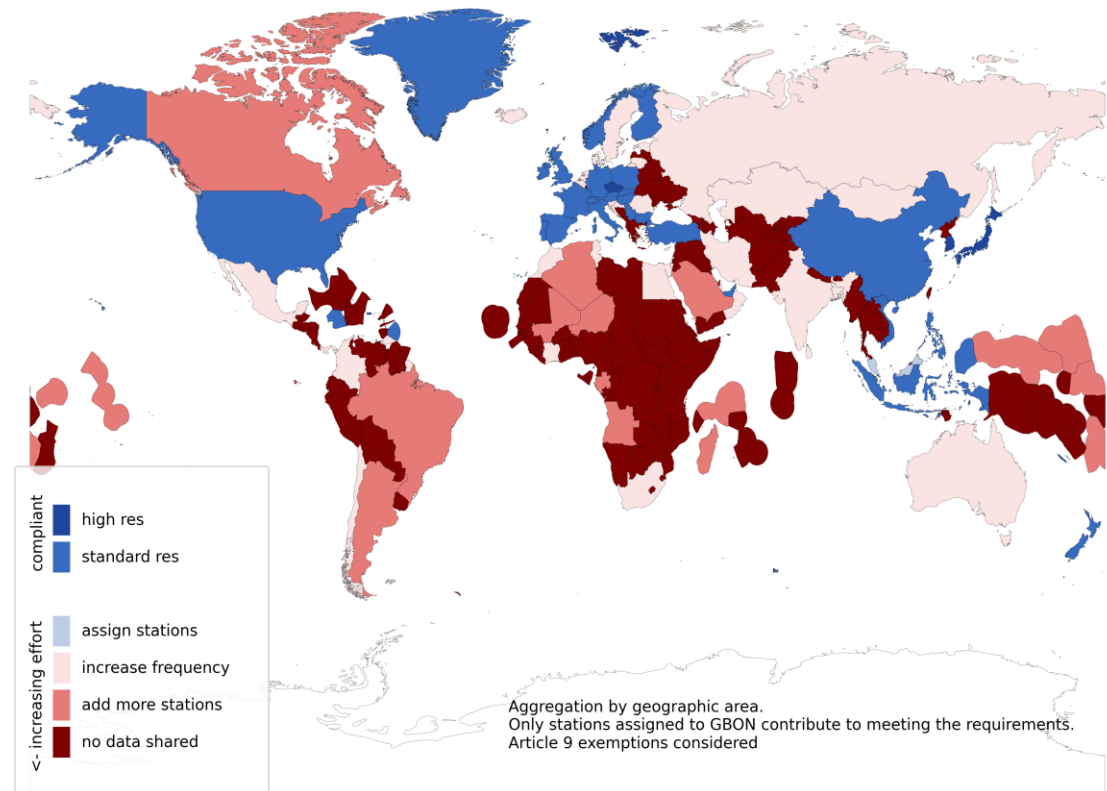
Surface stations

GBON Compliance Q2 2024 (Surface)



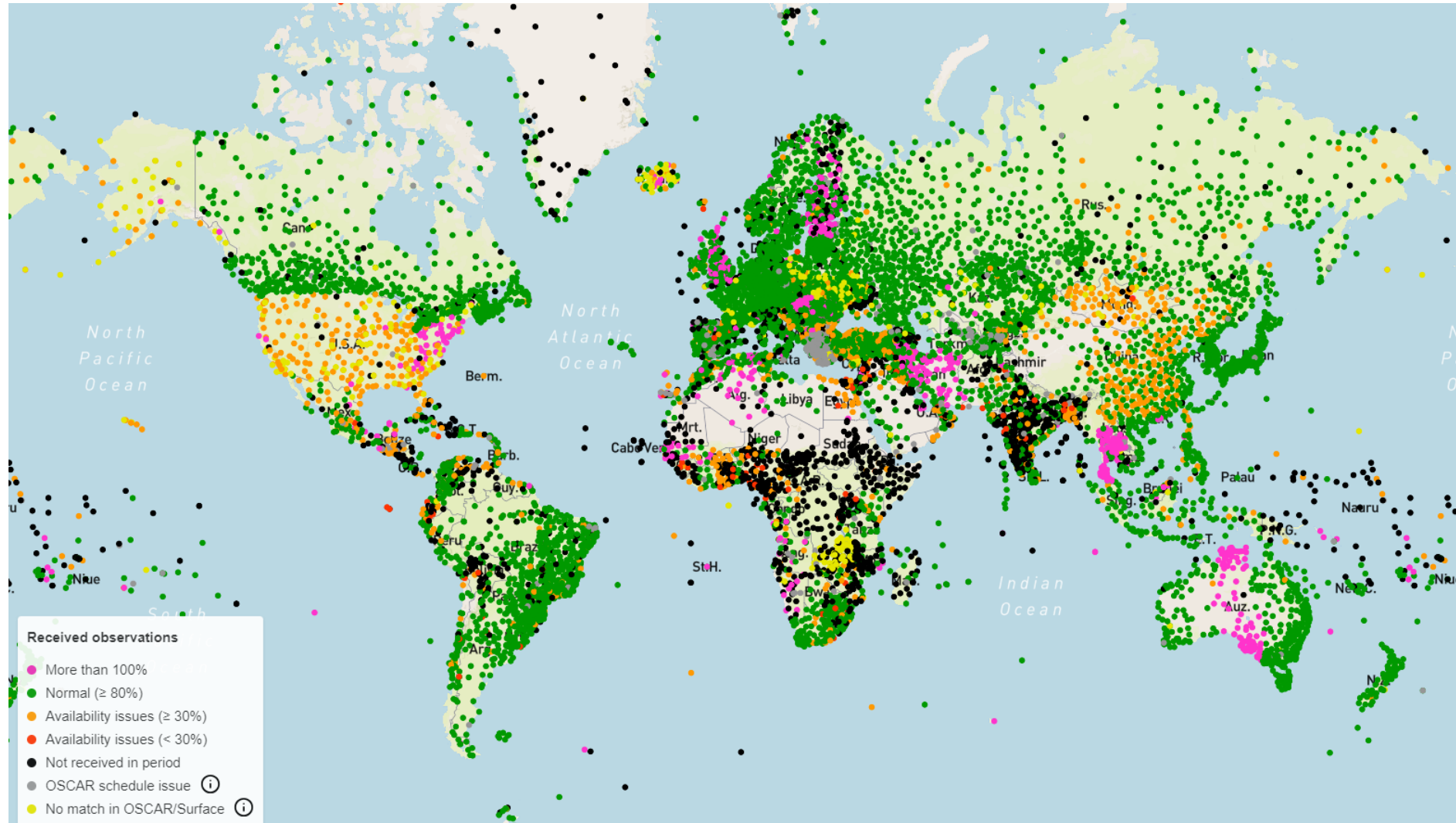
Upper air stations

GBON Compliance Q2 2024 (Upper-air)

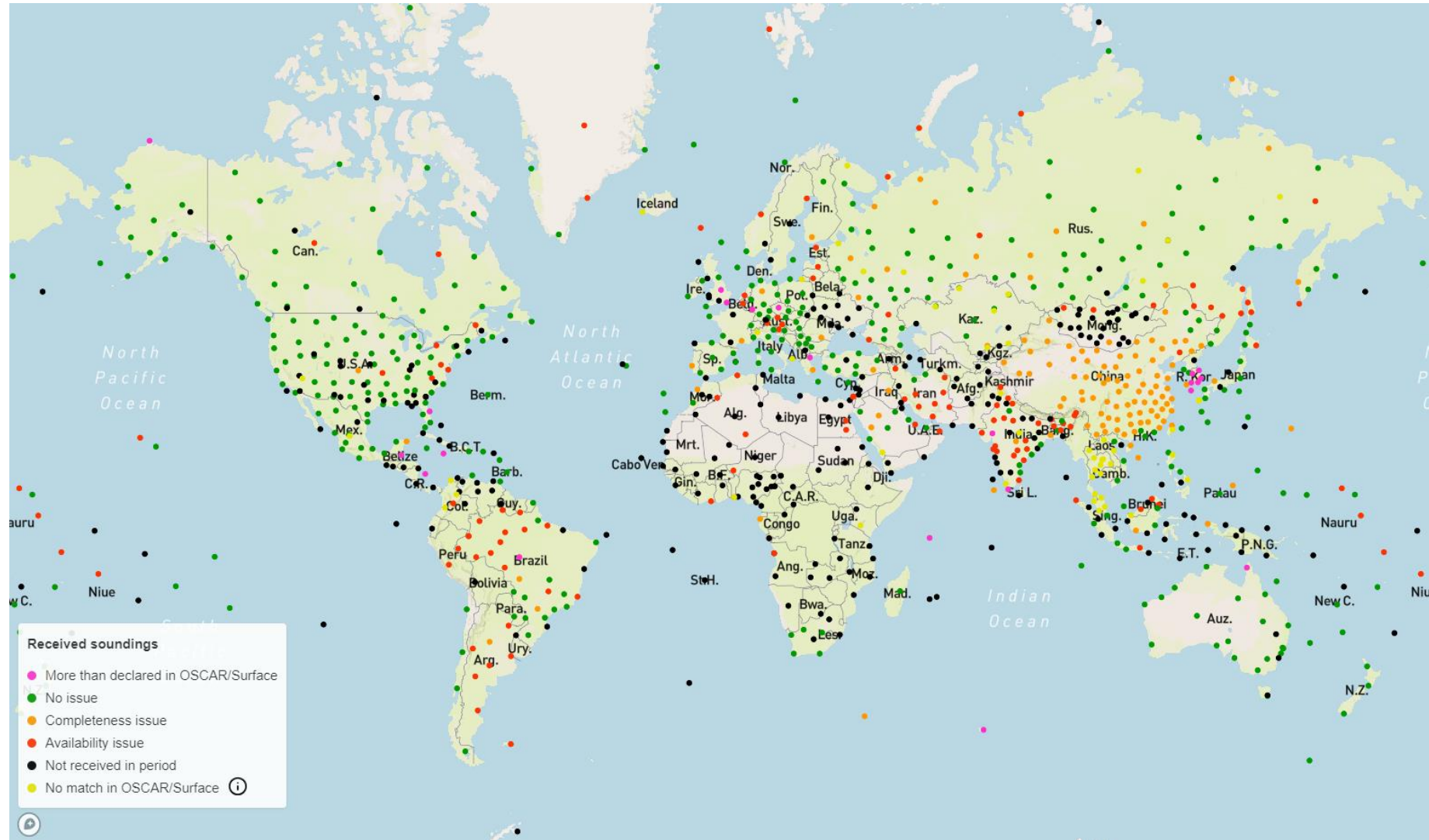


[GBON compliance app \(wmo.int\)](https://wmo.int)

Availability of surface land observations



Availability of upper-air observations



Why are there major weather and climate data gaps despite substantial investments?

The substantial investments in observing systems have not translated into increased observational data sharing.

- Lack of a **global approach** to address the global nature of the problem
- Lack of an appropriate **measure of success**
- Lack of a **long-term** and systematic approach to **strengthen capacity**
- Lack of a **coordinated** and **integrated implementation** approach
- Lack of a **realistic financing** and **effective technical assistance** model

SOFF partners


MENU

Home

Readiness

Investment

Compliance



 Systemic Observations Financing Facility

Portfolio
 Overview
 SOFF Partners

SIDS and LDC
 SIDS
 LDCs

All
 All
 All

Clear all filters

Peer Advisors
 Implementing Entities

Number of SOFF Readiness Countries per Peer Advisor

Finland	Australia	Netherlands	New Zealand	Nigeria
9				
Austria	6	5	3	3
7	Spain	Switzerland	Morocco	Norway...
	3	2	1	1
United Kingdom	Finland-Indonesia	Austria-China	Norway-Iceland	Spain-Nig...
	2	1	1	
	South Africa	Denmark	Portugal	1
7	2	1	South Africa-India	Switzerlan...
		1	1	1

Total Number of Peer Advisors

 28

Countries

- Antigua and Barbuda
- Bahamas
- Bangladesh
- Barbados
- Belize
- Bhutan
- Burkina Faso
- Cabo Verde
- Cambodia
- Chad
- Comoros
- Cuba
- Democratic Republic of the Congo
- Djibouti
- Dominica
- Dominican Republic
- Ecuador
- Ethiopia
- Fiji
- Grenada
- Guinea Bissau

Click on Peer Advisor(s) to see the country(ies) it(they) is(are) working with in the table on the right

ADVISORY BOARD

- UNDP (Advisory Board co-chair)
- UNEP (Advisory Board co-chair)
- Adaptation Fund
- Global Environment Facility
- Green Climate Fund
- Climate Investment Funds

OPERATIONAL PARTNERS

PEER ADVISORS

- Argentina
- Australia
- Austria
- China
- Colombia
- Denmark
- Egypt
- Fiji
- Finland
- Germany
- Iceland
- India
- Indonesia
- Ireland
- Morocco
- Netherlands (Kingdom of the)
- New Zealand
- Nigeria
- Norway
- Portugal
- South Africa
- Spain
- Sweden
- Switzerland
- Türkiye
- United Kingdom of Great Britain and Northern Ireland
- United Republic of Tanzania
- Argentina

IMPLEMENTING ENTITIES

- Asian Development Bank (ADB)
- African Development Bank (AfDB)
- International Fund for Agriculture Development (IFAD)
- Islamic Development Bank (IsDB)
- Inter-American Development Bank (IADB)
- United Nation Development Programme (UNDP)
- United Nations Environment Programme (UNEP)
- World Food Programme (WFP)
- World Bank

SOFF phases of support

Readiness

GBON gap analysed and screened (NGA)
GBON national contribution developed and screened (NCP)
Country Hydromet Diagnostics undertaken (CHD)



SOFF funding for peer advisory services to support the country in developing these products

Investment

GBON infrastructure in place
GBON human and institutional capacity developed



SOFF provides a grant for the implementation of the GBON National Contribution Plan, i.e., GBON stations and capacity building

Compliance

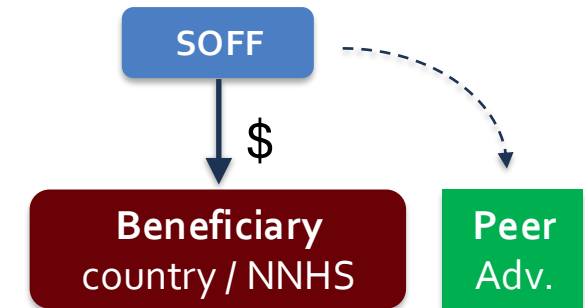
GBON data internationally shared and results-based finance provided



SOFF provides annual results-based payments for GBON-verified data sharing.

The Compliance phase

A unique element of SOFF



Direct results-based payment from **SOFF to Beneficiary country** (ideally directly to met service)

- to cover operations and maintenance, **conceptually - whatever it takes**: hardware, staff costs, training, inspections, site security/vandalism, maintenance, repair and replacement of equipment, communications, IT costs.
- Peer advisory services by need
- **Performance monitoring.** Regular, routine monitoring and verification of the performance will be carried out by WMO through the WIGOS Data Quality Monitoring System - WDQMS.
- **Expected co-investment** from Beneficiary country (% to be defined) for co-ownership
- **Two-way street:** expected better access to improved prediction products ([ECMWF support to SOFF beneficiary countries](#)), but funded by SOFF partners / other projects, with SOFF specializing in the basic observations as a foundation

SOFF status update

SOFF implementation progress:

- As of June 2023, **66 countries programmed**, 60 receiving Readiness support
- Investment funding has been **approved for 13 countries**, amounting to a total of USD 80 million. An additional five countries have received conditional approval of Investment funding, pending availability of additional funding in the SOFF trust fund, totalling USD 26 million. **Overall, USD 115 million has been approved or conditionally approved in Readiness and Investment support** within less than two years of operations.

High country demand: 35 additional countries have requested SOFF support



Photo: Denmark Meteorological Institute in Tanzania

Stations funded to date

The **18 countries** with approved or submitted funding requests, have a mandatory GBON target of **183 for surface and 41 for upper air stations**

Based on WMO June 2023 GBON Global Gap Analysis, **16 surface and 2 upper air stations** are reporting in all 18 countries

Country	surface	upper-air
Belize	2	1
Bhutan	1	1
Cabo Verde	4	1
Chad	33	3
Ethiopia	29	5
Kiribati	14	3
Madagascar	15	1
Malawi	4	1
Maldives	5	1
Mozambique	21	4
Nauru	2	1
Rwanda	3	1
Samoa	2	1
Solomon Islands	8	3
South Sudan	16	3
Tanzania	27	5
Timor-Leste	1	1
Uganda	9	2
Total	196	38

Private sector engagement

- SOFF recognizes the important role of the private sector to achieve a **cost-effective** and **efficient implementation** of GBON
- In collaboration with the **Association of Hydro-meteorological Equipment Industry (HMEI)**, SOFF developed **4 business models** for implementation – including options for public-private partnerships
- SOFF Peer advisors works with countries to explore models based on country circumstances and on the assessment of specific **technical, political, and legal preconditions** needed for a model to be suitable for the specific country.
- **Countries identify the best model**, including exploring innovative options with the involvement of the private sector to ensure GBON compliance.
- **Regardless of the selected model, NMHS will be strengthened** to have basic capacity related to the generation and exchange of observations, including regulatory capacity and the ability to supervise the contracts as needed.

SOFF PPP implementation – Countries experiences

Country	Public private model (Conclusions made)
Cabo Verde	Country plans to use a private-public model
Chad	Country does not plan to use a private public mode. However, to understand the potential role of other private sectors for future sustainability, private sector partners will be invited to join stakeholder engagement workshops.
Ethiopia	Country does not plan to use a private public model
Mozambique	Country plans to use a private public model
Rwanda	Country uses a public-model. The private sector involvement in this project will include the supply and installation of station equipment and consumables, construction of basic infrastructure and provision of training and maintenance.
South Sudan	South Sudan does not plan to use a private public model

SOFF PPP implementation – Countries experiences

Country	Public private model (Conclusions made)
Tanzania	Tanzania does not plan to use a private public model
Uganda	For the SOFF program, private sector involvement may be limited to maintenance services and contracts, and possibly involvement calibration services.
Madagascar	Madagascar does not plan to use a private public model
Malawi	Malawi plans to involve the private sector

Questions

- What are the main impediments from the side of NMHS to engage in PPP? Are countries aware of good examples of PPP?
- How to incentivize strong private sector engagement on SOFF implementation?
- Which partners could help to get the process going?

Thank you



SOFF – bringing together multiple partners under one roof

28

Peer Advisors

meteorological
offices from
advanced
countries to
provide
technical
assistance

9

Implementing Entities

Multilateral
Development
Banks and UN
agencies

18

Steering Committee members

donors, co-
founders and
other
stakeholders,
incl. LDC Group,
AOSIS, CREWS

17

Advisory Board members

“enablers”
incl. REAP, IFRC,
UNDRR, climate
funds, private
sector,
civil society

WMO

Technical
Authority and
SOFF
Secretariat host