

January 2024

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# GBON National Gap Analysis

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Systematic Observations  
Financing Facility

**Weather  
and climate  
data for  
resilience**





## Screening of the National Gap Analysis (NGA) of Tanzania

WMO Technical Authority screens the GBON National Gap Analysis to ensure consistency with the GBON regulations and provides feedback for revisions as needed. *The screening of the NGA is conducted according to the SOFF Operational Guidance Handbook, version: 04.07.2023 and the provisions in Decision 5.7 of the SOFF Steering Committee.*

Following iterations with the peer advisor and beneficiary country, WMO Technical Authority confirms that the National Gap Analysis is consistent with GBON regulations.

While the WMO GBON Global Gap Analysis identified the need for 24 surface stations and 4 upper air stations over land, the WMO Technical Authority confirms the NGA results which indicate the need for 27 surface land stations and 5 upper air stations to ensure adequate horizontal resolution for GBON.

Date: 31 January 2024

Signature:

Albert Fischer

Director, WIGOS Branch, Infrastructure Department, WMO

## Annex I. Template for GBON Gap Analysis Report by the Peer Advisor

### GBON Gap Analysis Report United Republic of Tanzania

<b>Beneficiary Country Focal Point</b>	TMA: Dr. Ladislaus Benedict Chang'a,
<b>Peer Advisor Focal Point and Institute</b>	DML: Mr. Christian Robdrup Johansen
<b>WMO Technical Authority</b>	

#### 1. Country information from the GBON Global Gap Analysis

Please provide in this table the country information as provided by the WMO Global GBON Gap Analysis

GBON horizontal resolution requirements	GBON target	Reporting	Gap improve	Gap new	Gap total
<b>Surface stations</b> Horizontal resolution: 200km	24	0	16	8	24
<b>Upper-air stations</b> Horizontal resolution: 500km	4	0	2	1	3

#### 2. Analysis of existing GBON stations and their status against GBON requirements

Please complete the two tables below and add remarks and Annexes with technical details as needed

GBON Requirements	Existing observation stations (# of stations)			
	NMHS network		Third-party network	
	Reporting	Improve	Reporting	Improve
<b>Surface stations</b> Horizontal resolution: 200km Variables: SLP, T, H, W, P, SD	0	18	0	0
<b>Upper-air stations</b> Horizontal resolution: 500km Vertical resolution: 100m, up to 30 hPa Variables: T, H, W	0	1	0	0

In order to ensure GBON compliance a total of nine (9) new surface stations are needed and 18 stations need to be improved. Out of the 18 stations to be improved, the Tanzanian Government has procured new stations to improve existing eleven (11) stations. Therefore, the project will improve seven (7) stations. Further, out of the five (5) Upper-air stations required to become GBON compliant, one station in Dar Es Salaam is currently functioning and reporting once daily. This station can be improved, while a total of four (4) new stations are needed. The Tanzanian Government has plans to procure one (1) upper air station. The project will therefore procure three (3) upper-air stations.

Station name	Station type (S/U A)	Owner (NMHS /third-party)	Funding source	GBON variable measured						Reporting cycle	GBON Compliance (Y/N)
				SLP	T	H	W	P	SD		
Bukoba	S	TMA	TMA	x	x	x	x	x		3hours	N
Muleba	S	TMA	TMA	x	x	x	x	x		1hour	N
Musoma	S	TMA	TMA	x	x	x	x	x		3hours	N
Tarime	S	TMA	TMA	x	x	x	x	x		1hour	N
Chato	S	TMA	TMA	x	x	x	x	x		1hour	N
Kibondo	S	TMA	TMA	x	x	x	x	x		Not reporting	N
Mwanza	S	TMA	TMA	x	x	x	x	x		3 hours	N
Ibadakuli	S	TMA	TMA	x	x	x	x	x		3 hours	N
Ukerewe	S	TMA	TMA	x	x	x	x	x		1hour	N
Ngorongoro	S	TMA	TMA	x	x	x	x	x		Not reporting	N
Manyara	S	TMA	TMA	x	x	x	x	x		Not reporting	N
Babati	S	TMA	TMA	x	x	x	x	x		Not reporting	N
Arusha	S	TMA	TMA	x	x	x	x	x		3 hours	N
KIA	S	TMA	TMA	x	x	x	x	x		3 hours	N
Moshi	S	TMA	TMA	x	x	x	x	x		3 hours	N
Lyamungo	S	TMA	TMA	x	x	x	x	x		Not reporting	N
Kigoma	S	TMA	TMA	x	x	x	x	x		3 hours	N
Kigoma National Meteorological Training Centre	S	TMA	TMA	x	x	x	x	x		Not reporting	N
Kigoma Marine	S	TMA	TMA	x	x	x	x	x		Not reporting	N
Kaliua	S	TMA	TMA	x	x	x	x	x		Not reporting	N
Tabora	S	TMA	TMA	x	x	x	x	x		3 hours	N



<b>Sikonge</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Singida</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Bahi</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Same</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Simanjiro</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Mombo</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Kilindi</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Gunge</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Tanga</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Pemba</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Handeni</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Lushoto</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Kigomasha</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Mpanda</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Sumbawanga</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Kalema Port</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Kirando</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Rungwa</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Dodoma</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Iringa</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Morogoro</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Dar es Salaam</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Kibaha</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Zanzibar</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Msoga</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Nungwi</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Kasanga</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Songwe</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Tukuyu</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Mbeya_Old</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Itungi</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Saadani</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Kibengu</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Mahenge</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Ifakara</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Liwale</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Kilwa Masoko</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Mafia</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Lindi</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Ruangwa</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Songea</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N

<b>Mbinga</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Mbamba bay</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Mhukuru</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Namtumbo</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Muhuvesi</b>	S	TMA	TMA	x	x	x	x	x		Not reporting	N
<b>Mtwara</b>	S	TMA	TMA	x	x	x	x	x		3 hours	N
<b>Julius Nyerere International Airport (JNIA)</b>	UA	TMA	TMA		x	x	x			Once per day (at 1200GMT)	N

**Notes: Assessment of existing GBON stations per station characteristics.** Station type: S: Surface, US: Upper-Air; Owner of the station: NMHS or name of third-party; GBON variables: SLP: Sea-level pressure; T: Temperature; H: Humidity; W: wind; P: Precipitation; SD: Snow depth; Reporting cycle: Number of observation reports exchanged internationally per day (0-24); GBON compliance: whether the station is GBON compliant or not (see GBON guide on compliance criteria).

### 3.Results of the GBON National Gap Analysis

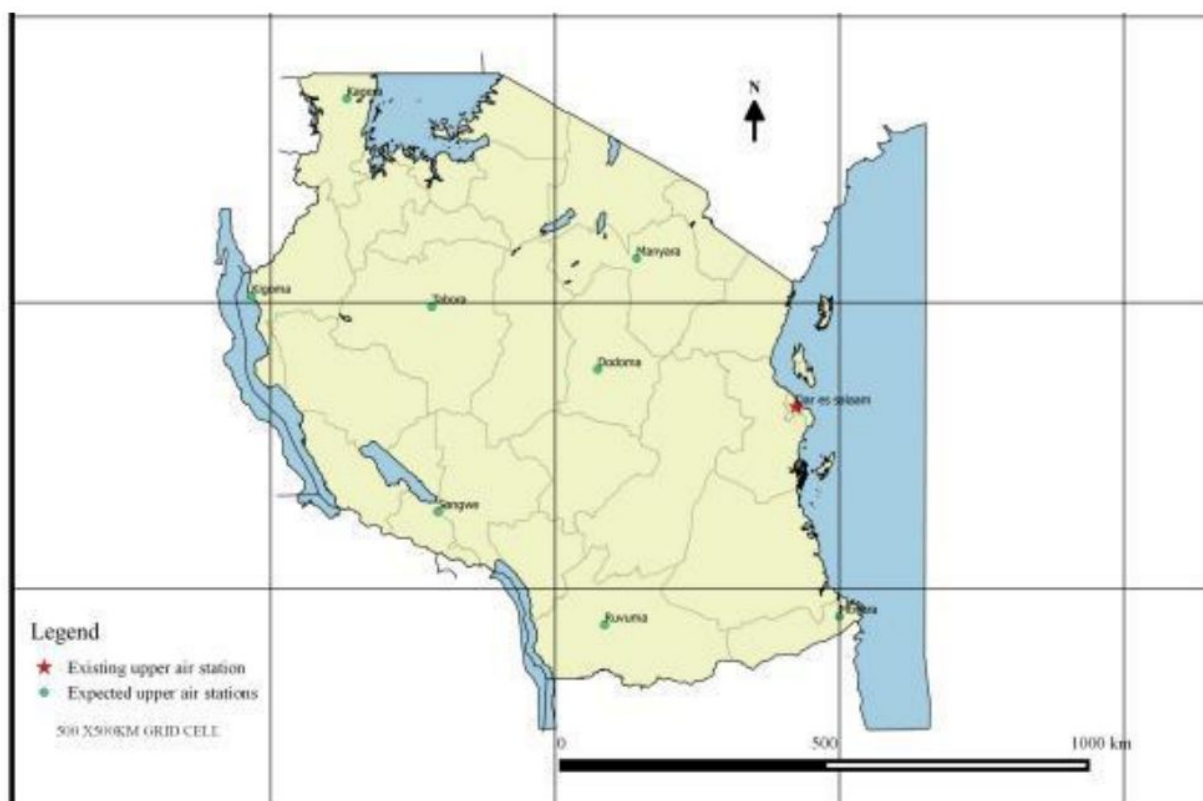
Please complete the two tables below and add remarks and technical details in Annexes as needed

**Table IV. Results of the GBON national gap analysis.** SLP: Atmospheric pressure; T: Temperature; H: Humidity; W: wind; P: Precipitation; SD: Snow depth; SST: Sea surface temperature.

GBON requirements	Target (# of stations)	GBON Compliant stations (#)	Stations gap	
			New	Improved
<b>Surface stations</b> <ul style="list-style-type: none"> <li><b>Horizontal resolution:</b> 200km</li> <li><b>Variables:</b> SLP, T, H, W, SD</li> <li><b>Observation cycle:</b> 1h</li> </ul>	27	0	9	18
<b>Upper-air stations</b> <ul style="list-style-type: none"> <li><b>Horizontal resolution:</b> 500km</li> <li><b>Vertical resolution:</b> 100m, up to 30 hpa</li> <li><b>Variables:</b> T, H, W</li> <li><b>Reporting cycle:</b> twice a day</li> </ul>	5	0	4	1



**Figure 1:** Map of The United Republic of Tanzania showing existing surface stations network



**Figure 2:** Map of The United Republic of Tanzania showing existing upper air stations network

**Table V. Recommended existing surface, upper-air and marine stations to be designated to GBON.**

Station name	Station type (S/UA/M <sup>3</sup> )
Bukoba	Surface Station
Musoma	Surface Station
Tarime	Surface Station
Kibondo	Surface Station
Mwanza	Surface Station
Manyara	Surface Station

<sup>3</sup> Please see guidance on marine stations in Section 2 on Scope.



KIA	Surface Station
Kaliua	Surface Station
Tabora	Surface Station
Mpanda	Surface Station
Rungwa	Surface Station
Dodoma	Surface Station
Dar es Salaam	Surface Station
Songwe	Surface Station
Kibengu	Surface Station
Songea	Surface Station
Muhuvesi	Surface Station
Mtwara	Surface Station
Dar es Salaam	Upper Air Station

#### 4. Report completion signatures

**Peer Advisor signature**



**WMO Technical Authority screening remarks and signature**



**Beneficiary Country remarks and signature**



Dr. Ladislaus Benedict Chang'a

**Acting Director General of Tanzania Meteorological Authority (TMA) and Permanent Representative of Tanzania with WMO**