

6 May 2024, V1.0

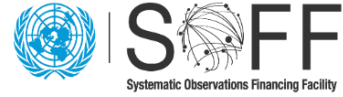


GBON National Gap Analysis of Papua New Guinea

Systematic Observations
Financing Facility

**Weather
and climate
data for
resilience**





Screening of the National Gap Analysis (NGA) of Papua New Guinea

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.

Date: 17 October 2024

Signature:

Albert Fischer

Director, WIGOS Branch, Infrastructure Department, WMO

GBON National Gap Analysis Report

Papua New Guinea

Beneficiary Country Focal Point and Institute	Jimmy Gomoga, Director, National Weather Service, Papua New Guinea
Peer Advisor Focal Point and Institute	Andrew Jones, General Manager International Development, Bureau of Meteorology, Australia

1. Country information from the GBON Global Gap Analysis

Table I. WMO GBON Global Gap Analysis (June 2023). Illustration of the information that the WMO Secretariat provides to each country.

A. GBON horizontal resolution requirements	B. Target	C. Reporting to req.	D. Gap to improve	E. Gap new	F. Gap total
Surface stations Standard density 200 km	12	0	12	0	12
Upper-air stations over land Standard density 500km	3	0	2	1	3

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

Table II. Assessment of existent stations per their operational status and network ownership

GBON Requirements	Existing observation stations (# of stations)			
	NMHS network		Third-party network	
	Reporting to req. *	To improve **	Reporting to req.	To improve
Surface land stations *Standard density 200km Variables: SLP, T, H, W, P, SD	0	24	0	9
Upper-air stations operated from land Horizontal resolution: 500km Vertical resolution: 100m, up to 30 hPa Variables: T, H, W	0	7	0	0
Surface marine stations in Exclusive Economic Zones: 500 km Variables: SLP, SST	0	0	0	1

* Stations with data availability more than 80% in the WDQMS Webtool as of July 2023 at least 80% of days, are considered as reporting.

**This is the number theoretically possible to improve, not the proposed number to improve. This is based on all existing or closed stations, regardless of whether they are operational or not. Some (especially upper air) would require major restoration works with costs equivalent to a new station.

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

Reporting cycles are estimated based on WDQMS information and information received during the Peer visit.

Station name	Station type (S/UA/M)	Owner	Funding source	GBON variable measured						Reporting cycle (obs/day)	GBON Compliant (Y/N)
				SLP	T	H	W	P	SST		
Madang WO	S (Manual)	NWS	NWS	X	X	X	X	X		0	N
Momote WO	S (Manual)	NWS	NWS							Out/service	N
Kavieng WO	S (Manual)	NWS	NWS	X	X	X	X	X		1	N
Goroka WO	S (Manual)	NWS	NWS	X	X	X	X	X		0	N
Nadzab WO	S (Manual)	NWS	NWS	X	X	X	X	X		2	N
Hoskins WO	S (Manual)	NWS	NWS							Out/service	N
Tokua WO	S (Manual)	NWS	NWS	X	X	X	X	X		0	N
Misima WO	S (Manual)	NWS	NWS							Out/service	N
Gurney WO	S (Manual)	NWS	NWS	X	X	X	X	X		1	N
Port Moresby WO	S (Manual)	NWS	NWS	X	X	X	X	X		6	N
Daru WO	S (Manual)	NWS	NWS							Out/service	N
Kiunga WO	S (Manual)	NWS	NWS	X	X	X	X	X		0	N
Wewak WO	S (Manual)	NWS	NWS	X	X	X	X	X		2	N
Vanimo WO	S (Manual)	NWS	NWS	X	X	X	X	X		2	N
Madang	S (AWS)	NWS	Aid/NiWA							Out/service	N
Kavieng	S (AWS)	NWS	Aid/NiWA							Out/service	N
Aiyura NARI	S (AWS)	NWS	Aid	X	X	X	X	X		0	N
Nadzab	S (AWS)	NWS	Aid/NiWA	X	X	X	X	X		0	N
Girua	S (AWS)	NWS	Aid/NiWA							Out/service	N
Misima	S (AWS)	NWS	Aid/NiWA							Out/service	N
Port Moresby	S (AWS)	NWS	Aid/NiWA							Out/service	N
Tambul HAES	S (AWS)	NWS	Aid	X	X	X	X	X		0	N
Wewak	S (AWS)	NWS	Aid/NiWA							Out/service	N
Kundiawa	S (AWS)	NWS	Aid/NiWA							Out/service	N
Port Moresby	UA	NWS	Nil							Out/service	N
Momote	UA	NWS	Nil							Out/service	N
Misima	UA	NWS	Nil							Out/service	N
Rabaul	UA	NWS	Nil							Out/service	N
Madang	UA	NWS	Nil							Out/service	N
Lae	UA	NWS	Nil							Out/service	N
Kavieng	UA	NWS	Nil							Out/service	N
Jacksons Aero	S (AWOS)	NSPL*	Aviation	X	X	X	X	X		0	N
Tokua Aero	S (AWOS)	NSPL	Aviation	X	X	X	X	X		0	N
Madang Aero	S (AWOS)	NSPL	Aviation	X	X	X	X	X		0	N
Wewak Aero	S (AWOS)	NSPL	Aviation							Out/service	N

Kavieng Aero	S (AWOS)	NSPL	Aviation							Out/service	N
Kiunga Aero	S (AWOS)	NSPL	Aviation							Out/service	N
Mt Hagen Aero	S (AWOS)	NSPL	Aviation	X	X	X	X	X		0	N
Nadzab Aero	S (AWOS)	NSPL	Aviation	X	X	X	X	X		0	N
Kokoda Airstrip	S (AWOS)	NSPL	Aviation	X	X	X	X	X		0	N
Lombrum, Manus Island (NTC)	M (Sea level)	BoM	BoM	X	X		X			0	N

X - is currently being measured

*Niusky Pacific Limited (formerly PNG Air Services)

3. Results of the GBON National Gap Analysis

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.

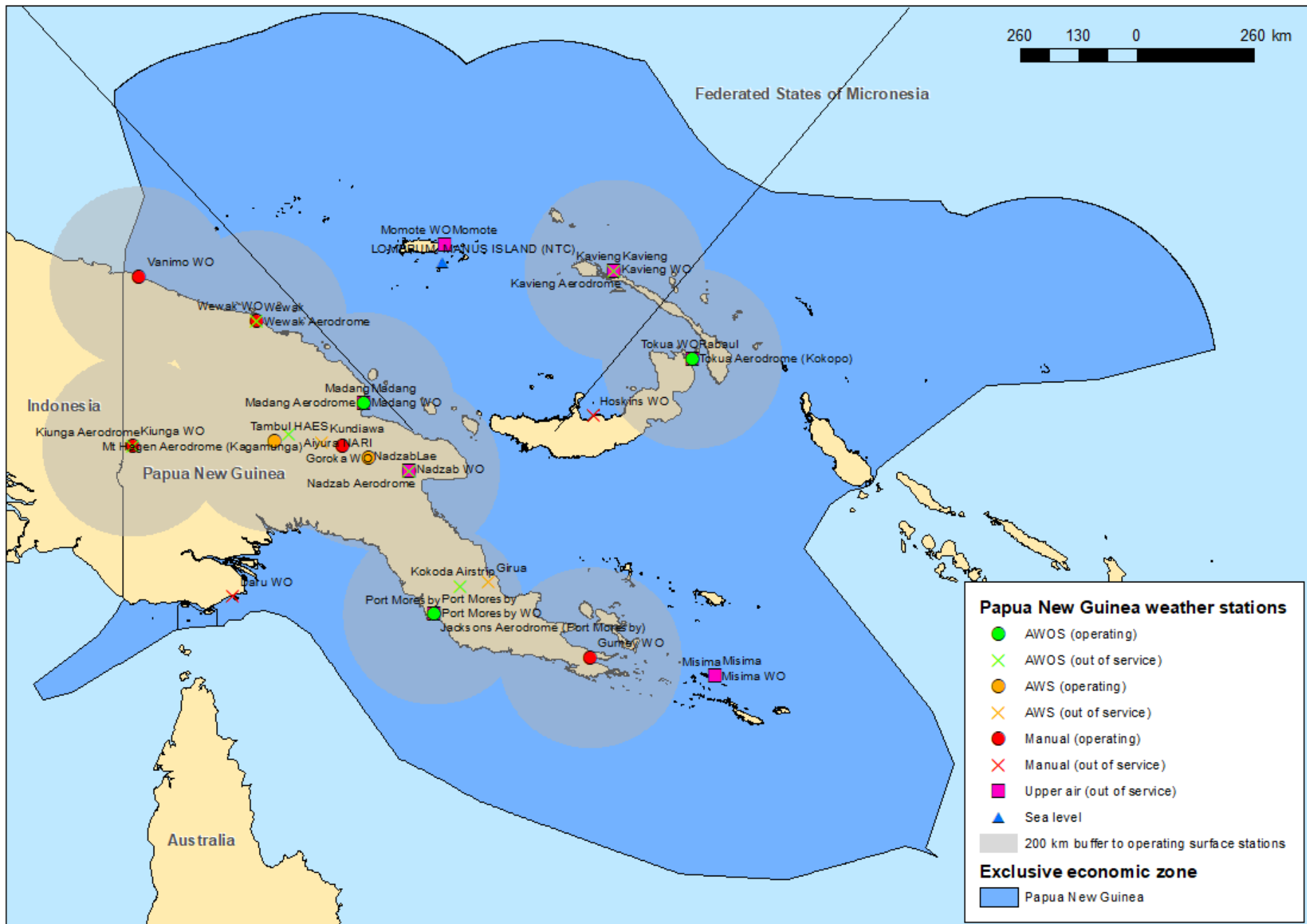
GBON requirements	GBON target (# of stations)	GBON Compliant stations (#)	Stations gap	
			To improve	New
Surface land stations Standard density ⁷ 200km Variables: SLP, T, H, W, SD Observing cycle: 1h	12	0	12	0
Upper-air stations operated from land Standard density 500km Vertical resolution: 100m, up to 30 hpa Variables: T, H, W Observing cycle: twice a day	3	0	3*	0
Surface marine stations in Exclusive Economic Zones: Density 500 km Variables: SLP, SST Observing cycle: 1h	N/A		1	
Upper-air stations operated in Exclusive Economic Zones: Density 1000 km Vertical resolution: 100 m, up to 30 hPa Variables: T, H, W Observing cycle: twice a day	N/A			

*The Upper Air improves will require major restoration works with costs equivalent to a new station.

3.1 Recommended existing surface, upper-air and marine¹¹ stations to be designated to GBON

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

Station name	Station type (S/UA/M ¹²)
Nil currently compliant. To be designated following improvements.	



Report completion signatures: PNG

Peer Advisor signature

Dr Andrew Jones
General Manager International Development
Bureau of Meteorology



WMO Technical Authority screening signature



Beneficiary Country signature

