

Pacific Islands - Ocean and Climate Outlook Forum (OCOF) No. 188

Country: Papua New Guinea

Part 1: Recent climate

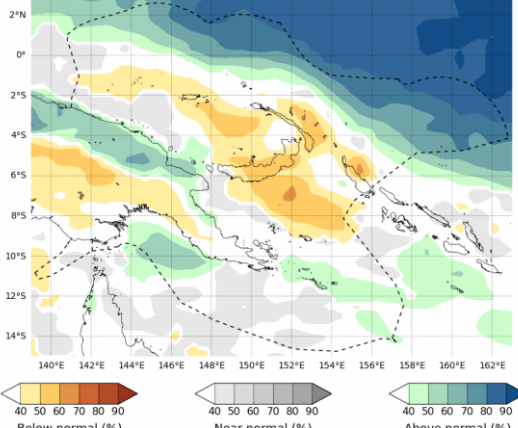
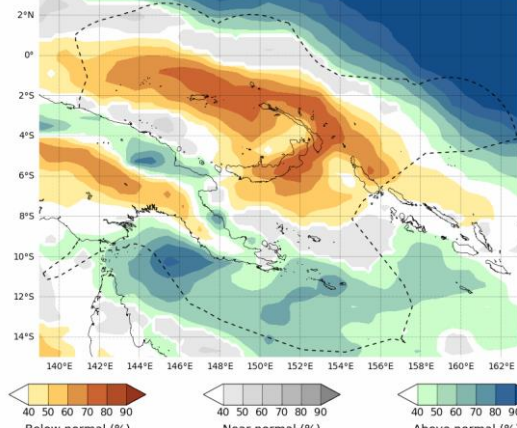
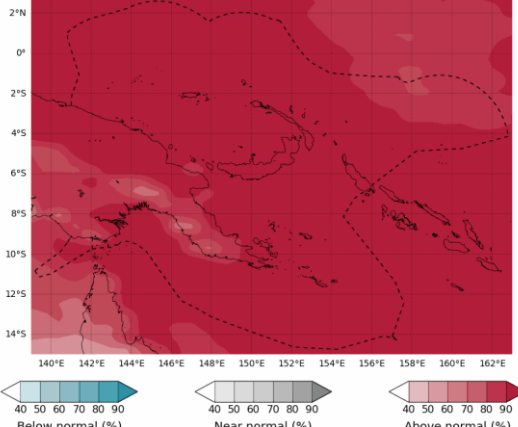
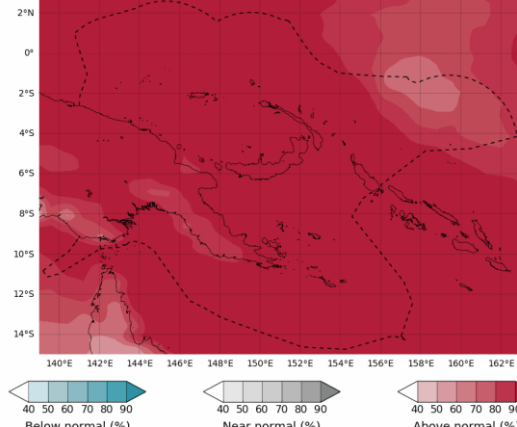
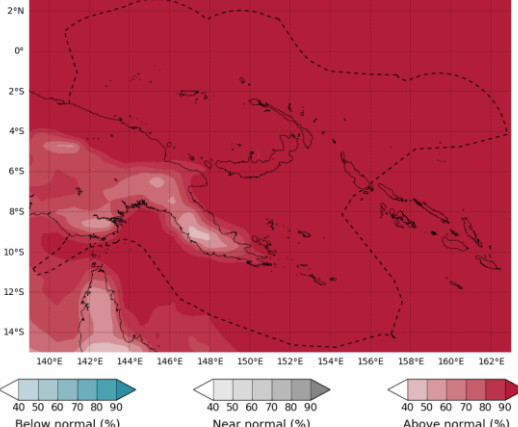
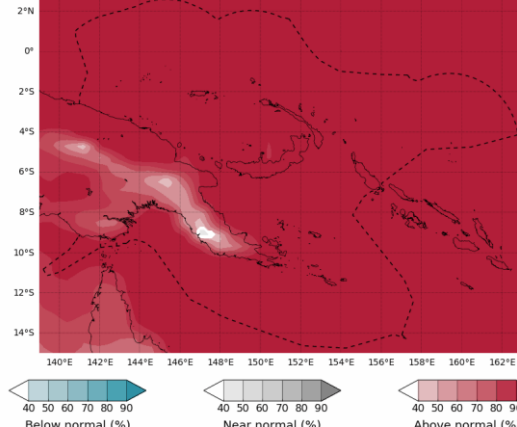
TABLE 1: Monthly Rainfall

Station (include data period)	Feb-2023	Mar-2023	Apr-2023				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Momase Region							
Madang (1944-2022)				329.1	459.3	396.0	
Nadzab (1973-2023)	233.8	25.6	67.0	89.7	136.0	103.8	8/48
Wewak (1956-2023)	255.0	137.0	135.2	159.1	233.9	186.4	16/66
Vanimo (1918-2023)	367.8	145.4	237.0	184.0	278.2	228.1	37/68
Highlands Region							
Goroka (1948-2023)	225.0	172.0	213.0	162.8	214.8	191.8	38/61
New Guinea Islands Region							
Momote (1949-2023)	430.0	136.2		229.5	292.7	265.5	
Kavieng (1916-2023)	301.1	376.0	453.0	268.7	326.0	295.9	85/94
Southern Region							
Misima (1917-2021)				207.8	319.8	253.9	
Port Moresby (1875-2023)	188.2	132.2	247.0	83.5	135.0	105.8	122/131

TABLE 2: Three-month Total Rainfall for February to April 2023

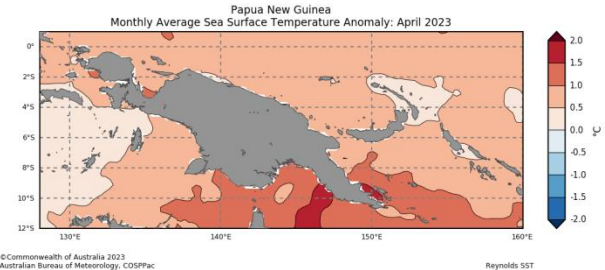
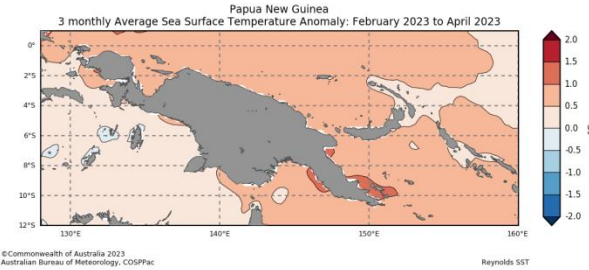
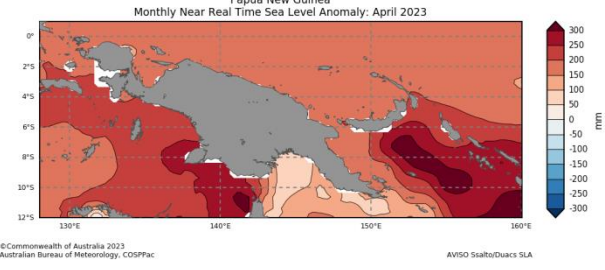
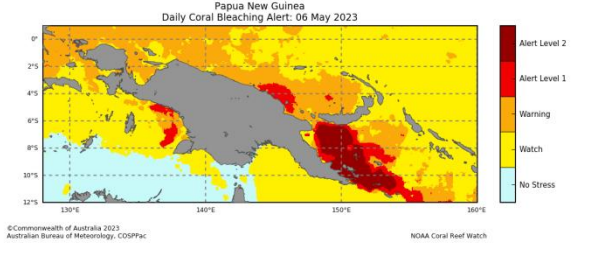
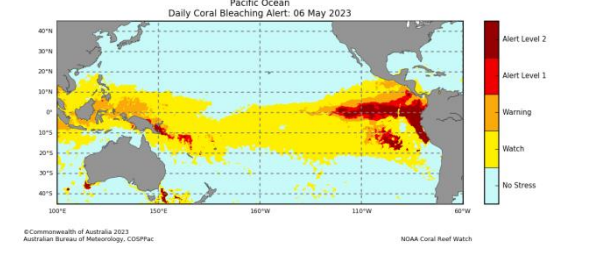
Station	Three-month Total		33%tile	67%tile	Median	Rank
	Rainfall (mm)					
Momase Region						
Madang (1944-2023)			945.2	1149.4	1046.4	
Nadzab (1973-2023)	326.4	Below normal	397.6	495.9	454.6	11/45
Wewak (1894-2023)	527.2	Above normal	431.6	519.8	475.9	44/65
Vanimo (1918-2023)	750.2	Normal	731.5	920.5	836.7	26/66
Highlands Region						
Goroka (1948-2023)	610.0	Normal	608.3	745.8	671.0	20/59
New Guinea Islands Region						
Momote (1949-2023)			748.9	901.7	797.9	
Kavieng (1917-2023)	1130.1	Above normal	823.4	958.1	893.6	80/91
Southern Region						
Misima (1917-2023)			709.9	940.9	827.2	
Port Moresby (1875-2023)	567.4	Normal	465.2	592.9	531.7	81/130

Part 1i. Monthly and Seasonal Outlooks for June and June to August 2023

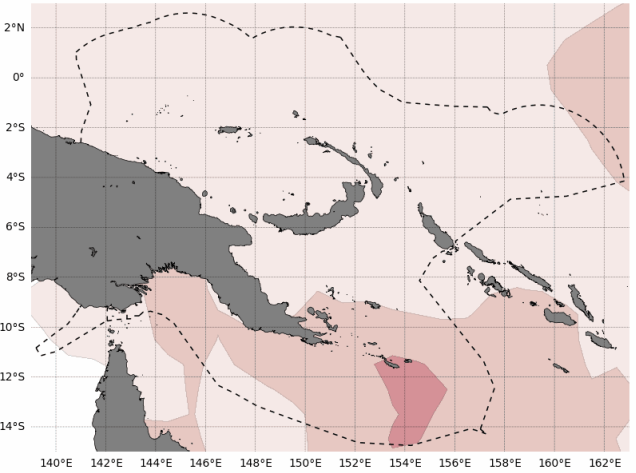
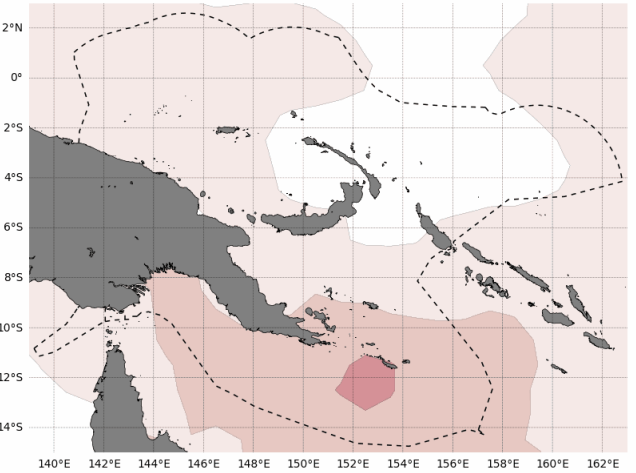
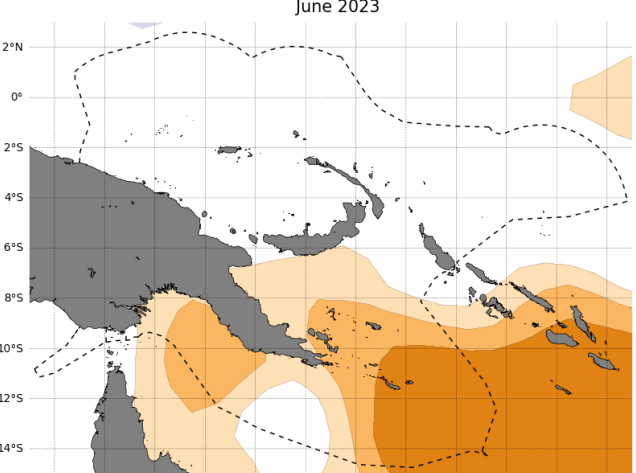
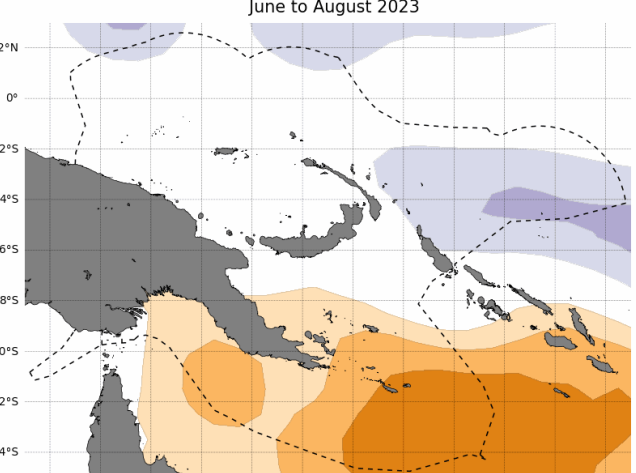
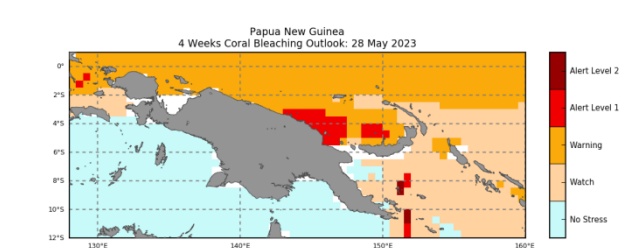
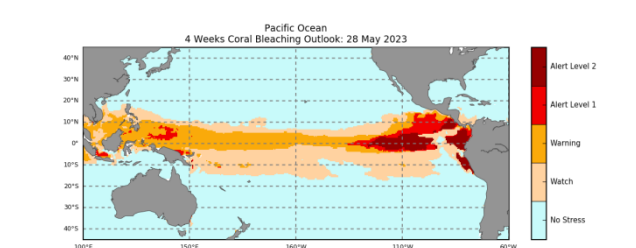
Monthly: June	Seasonal: June to August
Rainfall (Image 1)	Rainfall (Image 2)
<p>Tercile rainfall probabilities for June 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Map data extracted from Flinders Marine Institute (2019), Maritime Boundaries Database: Maritime Boundaries and Exclusive Economic Zones (2008N), version 11. Available online at http://www.marinegifs.org</p>	<p>Tercile rainfall probabilities for June to August 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Map data extracted from Flinders Marine Institute (2019), Maritime Boundaries Database: Maritime Boundaries and Exclusive Economic Zones (2008N), version 11. Available online at http://www.marinegifs.org</p>
Monthly Maximum temperature (Image 3):	Seasonal maximum temperature (Image 4):
<p>Tercile maximum temperature probabilities for June 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Map data extracted from Flinders Marine Institute (2019), Maritime Boundaries Database: Maritime Boundaries and Exclusive Economic Zones (2008N), version 11. Available online at http://www.marinegifs.org</p>	<p>Tercile maximum temperature probabilities for June to August 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Map data extracted from Flinders Marine Institute (2019), Maritime Boundaries Database: Maritime Boundaries and Exclusive Economic Zones (2008N), version 11. Available online at http://www.marinegifs.org</p>
Monthly minimum temperature (Image 5):	Seasonal minimum temperature (Image 6):
<p>Tercile minimum temperature probabilities for June 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Map data extracted from Flinders Marine Institute (2019), Maritime Boundaries Database: Maritime Boundaries and Exclusive Economic Zones (2008N), version 11. Available online at http://www.marinegifs.org</p>	<p>Tercile minimum temperature probabilities for June to August 2023</p>  <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Map data extracted from Flinders Marine Institute (2019), Maritime Boundaries Database: Maritime Boundaries and Exclusive Economic Zones (2008N), version 11. Available online at http://www.marinegifs.org</p>

Part 2: Recent Ocean Observation

Monthly/Three months: April and February to April 2023

<u>Monthly: April</u>	<u>Last three months: February to April 2023:</u>
Sea Surface Temperature (Image 1):  <p>Papua New Guinea Monthly Average Sea Surface Temperature Anomaly: April 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>Reynolds SST</p>	Sea Surface Temperature (Image 4):  <p>Papua New Guinea 3 monthly Average Sea Surface Temperature Anomaly: February 2023 to April 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>Reynolds SST</p>
Sea level (Image 2):  <p>Papua New Guinea Monthly Near Real Time Sea Level Anomaly: April 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>AVISO SeaWiFS SLA</p>	
Daily coral bleaching alert (Image 3):  <p>Papua New Guinea Daily Coral Bleaching Alert: 06 May 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NOAA Coral Reef Watch</p>	 <p>Pacific Ocean Daily Coral Bleaching Alert: 06 May 2023</p> <p>©Commonwealth of Australia 2023 Australian Bureau of Meteorology, COSPPac</p> <p>NOAA Coral Reef Watch</p>

Part 2i. Monthly and Seasonal Outlooks for June and June to August 2023

Monthly: June	Seasonal: June to August
Monthly sea surface temperature (Image 5):	Seasonal sea surface temperature (Image 6):
<p>Difference from average sea surface temperature forecast for June 2023</p>  <p>Difference from average (°C)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimerregions.org/</p> <p>Model run: 13/05/2023 Issued: 16/05/2023</p>	<p>Difference from average sea surface temperature forecast for June to August 2023</p>  <p>Difference from average (°C)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimerregions.org/</p> <p>Model run: 13/05/2023 Issued: 16/05/2023</p>
Monthly sea level (Image 7):	Seasonal sea level (Image 8):
<p>Difference from average sea surface height forecast for June 2023</p>  <p>Difference from average (mm)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimerregions.org/</p> <p>Model run: 13/05/2023 Issued: 16/05/2023</p>	<p>Difference from average sea surface height forecast for June to August 2023</p>  <p>Difference from average (mm)</p> <p>Base period: 1981-2018 Model: ACCESS-S2 © Commonwealth of Australia 2023, Australian Bureau of Meteorology Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at http://www.maritimerregions.org/</p> <p>Model run: 13/05/2023 Issued: 16/05/2023</p>
4-week Coral Bleaching (Image 9):	
<p>Papua New Guinea 4 Weeks Coral Bleaching Outlook: 28 May 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, CSIRO</p> <p>NOAA Coral Reef Watch</p>	<p>Pacific Ocean 4 Weeks Coral Bleaching Outlook: 28 May 2023</p>  <p>© Commonwealth of Australia 2023 Australian Bureau of Meteorology, CSIRO</p> <p>NOAA Coral Reef Watch</p>

Summary Statement

Monthly and last three months: April 2023/February to April 2023 statement

Rainfall for April was below normal for Nadzab and Wewak, above normal for Kavieng and Port Moresby, and near-normal for Vanimo and Goroka. Kavieng and Port Moresby recorded their tenth wettest April on record.

April rainfall was not available for Madang, Misima and Momote.

Rainfall for February to April was below normal at Nadzab, above normal at Wewak and Kavieng, and near-normal at Vanimo, Goroka and Port Moresby.

Part 1i. Monthly and Seasonal Outlooks for June and June to August 2023

Monthly /Seasonal rainfall and temperature Outlook statements

June rainfall is likely to be above normal over the Momase region and the eastern Milne Bay Islands. Near-normal to below normal is likely for the rest of the country, although there is little guidance across much of the southern coastal areas.

The rainfall for June to August is very likely to be below normal for the Islands and Highlands Regions. Near-normal to below normal rainfall is likely for the Western, Gulf and Central Regions, while above normal is likely over much of the Momase Region, together with Oro and Milne Bay Provinces.

In general, maximum and minimum temperatures during June and averaged over June to August are very likely to be above normal over PNG. The only exception is Central Province during June to August where the outlook offers little guidance for minimum temperatures.

Part 2: Recent Ocean summary statement

Monthly and last three months: April 2023/February to April 2023

April ocean temperatures around PNG were 0.5 to 2.0 °C above normal.

Averaged over February to April, ocean temperatures around PNG were 0.5 to 1.5 °C above normal.

April sea levels around PNG were 50mm to 300mm above normal.

PNG has a 'Alert Level 2' coral bleaching status over the western Solomon Sea. 'Watch to Alert level 1' status for most of PNG.

Part 2i. Monthly and Seasonal Outlooks for June and June to August 2023

Ocean Variable statement

June ocean temperatures around PNG are predicted to be 0.4 to 2.0 °C above normal.

Averaged over June to August, ocean temperatures around PNG are predicted to be 0.4 to 2.0 °C above normal.

June sea levels around PNG are predicted to be 30mm to 200mm above normal.

Averaged over June to August, sea levels around PNG are predicted to be 30mm to 200mm above normal.

The four-week coral bleaching outlook to 28 May shows PNG has patches of 'Alert level 2' status over the southern Solomon Sea. 'No Stress to Alert level 1' for most of PNG.

TABLE 3: Stakeholder Engagement- Evaluations of how effective NMS engage with stakeholders

Product	Date: April 2023	Stakeholder	Total Number of Participants	Number of Male	Number of Female	Comments (If there are comments from you Stakeholders)
Seasonal Climate Outlook	24 th	Govt: National Disaster Centre, Dept. of Agriculture and Livestock, Climate Change Development Authority, National Agriculture Research Institute, Dept. of Transport, Dept. Of Mineral Policy and Geohazard Management, Dept. of Works, PNG Fire, National Maritime Safety Authority, Civil Aviation Safety Authority, PNG Forest Authority, National Capital District Commission, PNG Customs Authority, National Dept. Of Health, Dept. of Education, Centre for Environmental Protection Authority, Water PNG. UN agencies: UNDP, IOM, UNOCH. Private: PNG Air Services Limited, ExxonMobil, Ok Tedi Mining Ltd, PNG Power Ltd, Global Construction Ltd, Datec, Interoil, Air Niugini, Bank South Pacific, Kina Bank, SMEC, PNG Ports, Media and Universities.	154	110	44	
Monthly Drought Update	28th	Govt: National Disaster Centre, Dept. of Agriculture and Livestock, Climate Change Development Authority, National Agriculture Research Institute, Dept. of Transport, Dept. Of Mineral Policy and Geohazard Management, Dept. of Works, PNG Fire, National Maritime	120	75	45	

		Safety Authority, Civil Aviation Safety Authority, PNG Forest Authority, National Capital District Commission, PNG Customs Authority, National Dept. Of Health, Dept. of Education, Centre for Environmental Protection 120 75 45 Authority, Water PNG. UN agencies: UNDP, IOM, UNOCH. Private: PNG Air Services Limited, ExxonMobil, Ok Tedi Mining Ltd, PNG Power Ltd, Global Construction Ltd, Datec, InterOil, Air Niugini, Bank South Pacific, Kina Bank, SMEC, PNG Ports, Media and Universities				
Monthly OTML Climate Briefing	6th	Ok Tedi Mine Limited, PNGNWS, BOM	14	11	3	
Climate data request		UniTech, Uni Star Engineering & Constructions, PNGCE, Kramer Ausenco, Hebou Constructions Ltd	17	13	4	
Total			305	209	96	