Republic of Korea-Pacific Islands Climate Prediction Services Project

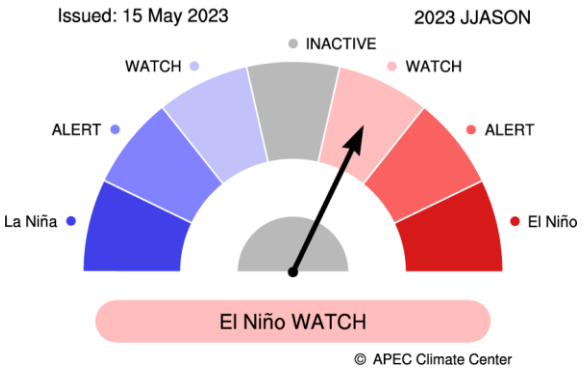
Summary: June to August 2023 (JJA)

Climate Outlook for June ~ November 2023

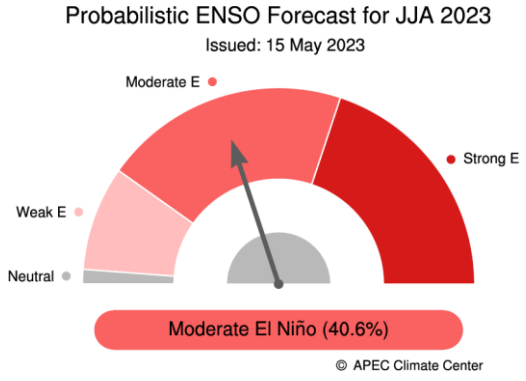
- The APCC ENSO Alert suggests “El Niño WATCH”. In April 2023, above normal sea surface temperature anomalies spanned the eastern equatorial Pacific. The Niño3.4 index is expected to increase from 1°C to 1.7°C for June – November 2023. The probability for El Niño conditions is expected to be above 94% for the same period.
- Strongly enhanced probability for above normal temperatures is predicted for most regions of the Pacific Islands for June – November 2023.
- For June – August 2023, a strongly enhanced probability for above normal precipitation is predicted for Micronesia and the equator, and a strongly enhanced probability for below normal precipitation is expected for off-equatorial Polynesia. For September – November 2023, the chances are likely to weaken.
- Please see https://apcc21.org/ser/outlook.do?lang=en for more information.

ENSO

Current Status

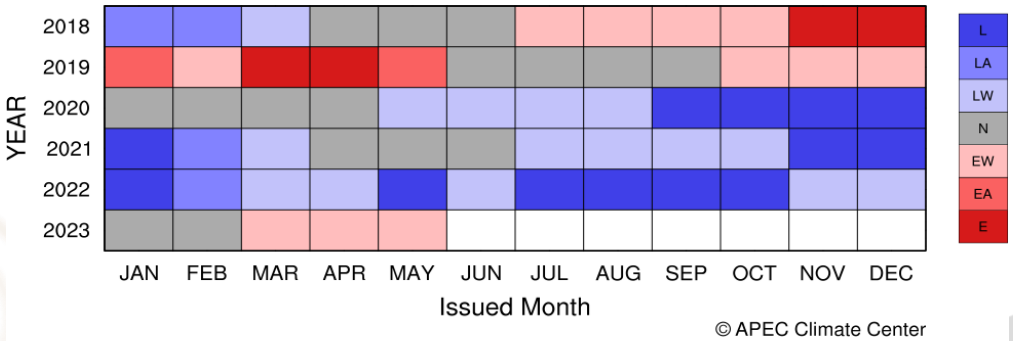


ENSO Forecast



* ENSO Intensity based on 3M Mean Nino3.4 SST Anomaly (Category Boundaries: +/-1.5, 1.0, 0.5°C)

ENSO Alert History



E: El Niño EA: El Niño Alert EW: El Niño Watch N: Neutral L: La Niña LA: La Niña Alert LW: La Niña Watch

Republic of Korea-Pacific Islands Climate Prediction Services Project

PICASO & CLIK® Summary

RAINFALL OUTLOOK

Model	PICASO	CLIK® (APCC MME)
Status	**COUNTRY** (Area)	
Above Normal	**Cook Islands** (Rarotonga) **Fiji** (Udu Point, Nadi, Suva, Nabouwalu, Ono-i-lau) **FSM** (Chuuk, Pohnpei, Yap) **Kiribati** (Butaritari, Tarawa, Kiritimati) **Republic of Marshall Islands** (Kwajalein, Majuro) **Nauru** **Niue** (Hanan) **Palau** (Koror) **PNG** (Momote, Kavieng, Port Moresby) **Samoa** (Afiamalu, Faleolo) **Solomon Islands** (Munda, Auki, Henderson, Honiara, Santa Cruz) **Tonga** (Ha'apai, Nukualofa, Lupepau'u, Niuafo'ou, Keppel Mata'aho) **Tuvalu** (Nui) **Vanuatu** (Pekoa, Whitegrass, Aneityum, *Sola)	**FSM** (Chuuk, Pohnpei, Yap) **Kiribati** (Butaritari, Kanton, Tarawa, Kiritimati) **Nauru** **Palau** (Koror) **Republic of Marshall Islands** (Majuro, Kwajalein) **PNG** (Port Moresby, Madang, Nadzab, *Momote, *Kavieng, *Misima) **Solomon Islands** (Honiara, Henderson, Kirakira, (*Santa Cruz, *Munda, *Taro Island, *Auki)
Normal	**Fiji** (Rotuma) **Tuvalu** (Nanumea, *Funafuti, *Niulakita) **Vanuatu** (Port Vila)	**Fiji** (Udu Point, *Suva, *Nabouwalu, *Nadi, *Onoilau) **Niue** (*Hanan) **Tonga** (Lupepau'u, *Nukualofa, *Ha'apai) **Tuvalu (**Nanumea**)** **Vanuatu** (Pekoa, Sola, *Port Vila, *Aneityum, *Bauerfield, *Lamap, *Whitegrass)
Below Normal	**Cook Islands** (Penrhyn) **Kiribati** (Kanton) **PNG** (Misima, Madang, Nadzab) **Samoa** (Apia, *Lauli'i) **Solomon Islands** (Taro Island, Kirakira) **Vanuatu** (Lamap, Bauerfield)	**Cook Islands** (Penrhyn, Rarotonga) **Fiji** (Rotuma) **Samoa** **Tonga** (Niuafo'ou, Keppel Mata'aho,) **Tuvalu (**Funafuti, Nuilakita, Nui**)** **Tokelau**

Note: * *indicate stations that have an equal or similar probability of getting Above Normal, Normal, and Below Normal (Climatology)*

TEMPERATURE OUTLOOK : CLIK® toolkit

Status	**COUNTRY** (Area)
Above Normal	**Cook Is, FSM, Fiji, Kiribati , Republic of Marshall Is, Nauru, Niue, Palau, PNG, Samoa, Solomon Islands, Tonga, Tuvalu, Tokelau, Vanuatu**
Normal	
Below Normal	

Republic of Korea-Pacific Islands Climate Prediction Services Project

PICASO Regional Rainfall Forecast (JJA)

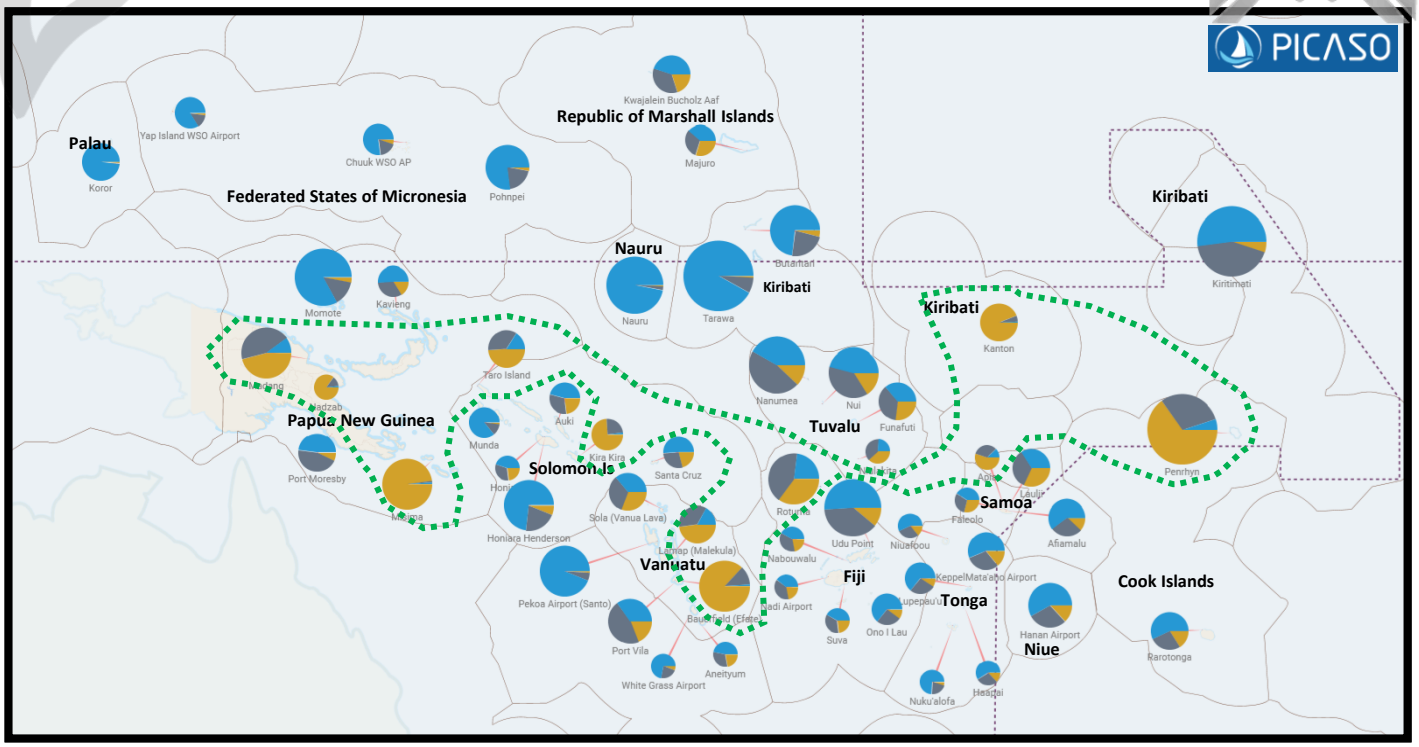


Figure 1: Regional outlook map of the Pacific. In general, all stations enclose within the green-dash line anticipated to have Below Normal (BN) rainfall. Normal (N) to Above Normal (AN) rainfall is predicted for stations outside the green-dashed line. *(Note: the larger the pie chart the higher the forecast skills.)*

OUTLOOK TABLE BY COUNTRY

Station	Tercile Probability			Verification Score (LEPS)		Verification Score (HSS)	Hit/NearMiss/Miss		
Cook Islands	KEY	BN	N	AN					
Penrhyn	65%	30%	5	52.6	Excellent	55.9	12	5	0
Rarotonga	16%	27%	57%	5.5	Moderate	2.9	6	2	9
Fiji									
Rotuma	35%	42%	23%	19	High	47.1	11	4	2
Udu Point	11	38%	51%	34.3	Very High	25	7	6	1
Nabouwalu	22%	36%	42%	-5.1	Very Low	-2.3	2	7	2
Nadi Airport	22%	38%	40%	-10.9	Very Low	-5.9	5	6	6
Suva	23%	35%	42%	-7.9	Very Low	-23.5	3	5	9
Ono I Lau	10	26%	64%	1.2	Low	20.3	7	6	3
Kiribati									
Kiritimati	5	43%	52%	36.8	Excellent	55.9	12	5	0
Butaritari	.	23%	73%	15.8	High	15.6	7	6	3
Tarawa	7	92%		53.5	Excellent	47.1	11	6	0
Kanton		94%	5	8.9	Moderate	7.7	5	5	3
Marshall Islands									
Kwajalein Bucholz Aaf	20%	35%	45%	9.5	Moderate	25	7	6	4
Majuro	30%	31%	39%	2	Low	77.9	10	2	5

Republic of Korea-Pacific Islands Climate Prediction Services Project

PICASO Regional Rainfall Forecast (JJA)

Station	Tercile Probability				Verification Score (LEPS)		Verification Score (HSS)			
	KEY	BN	N	AN				Hit	NearMiss	Miss
Micronesia										
Chuuk WSO AP	5	18%		77%	4.6	Low	2.9	6	4	7
Pohnpei		20%		77%	10.7	Good	-14.7	4	11	2
Yap Island WSO Airport		14%		84%	4.1	Low	25	7	5	5
Nauru										
Nauru				97%	26.2	Very High	50	6	2	1
Niue										
Hanan Airport		13%	29%	58%	10.3	Good	16.2	6	9	2
Palau										
Koror				98%	7.2	Moderate	2.9	6	6	5
Papua New Guinea										
Madang		46%	44%	10	21.5	High	25	7	6	1
Port Moresby	7	45%		48%	6.4	Moderate	-5.9	5	10	2
Momote		14%		83%	27.6	Very High	64.7	13	3	1
Nadzab			85%	13%	-1.5	Very Low	2.9	6	6	5
Kavieng		16%	33%	51%	4.8	Low	11.8	7	3	7
Misima				98%	20.6	High	6.3	6	9	1
Samoa										
Afiamalu	12	28%		60%	6.3	Moderate	7.4	5	8	4
Laulii		32%	34%	34%	5.1	Moderate	38.2	10	3	4
Faleolo		29%	30%	41%	-2.2	Very Low	11.8	5	5	7
Apia			55%	33%	12	-0.9	Very Low	2.9	6	5
Solomon Islands										
Taro Island			49%	35%	16%	9.1	Moderate	6.3	6	9
Munda		12		86%		4.9	Low	11.8	7	6
Auki		23%	31%	46%		2.7	Low	-5.9	5	9
Honiara		23%	32%	45%		-1.6	Very Low	7.4	6	6
Honiara Henderson	6	21%		73%		24.6	High	34.4	9	5
Kira Kira			74%	24%		3.8	Low	2.9	3	13
Santa Cruz		21%	28%	51%		3	Low	2.9	6	8
Tonga										
Niuafoou		14%	29%	57%		-2.4	Very Low	11.8	5	6
KeppelMata'aho Airport		14%	30%	56%		8	Moderate	-14.7	4	11
Lupepau'u	9	27%		64%		0.6	Low	7.4	6	6
Haapai		13%	28%	59%		-7.5	Very Low	-14.7	4	7
Nuku'alofa	5	21%		74%		-12.2	Very Low	-14.7	4	9
Tuvalu										
Nanumea		12	46%	42%		30.7	Very High	38.2	10	5
Nui		16%	38%	46%		15.2	High	20.6	8	6
Funafuti		27%	37%	36%		8.5	Moderate	2.9	6	6
Niulakita		38%	38%	24%		-3.8	Very Low	-10.3	3	10
Vanuatu										
Sola (Vanua Lava)		31%	33%	36%		7.5	Moderate	57.1	10	2
Pekoa Airport (Santo)	5			94%		17.6	High	38.2	10	1
Lamap (Malekula)		48%	35%	17%		9.3	Moderate	6.3	6	7
Bauerfield (Efate)			87%	12		18.4	High	38.2	10	4
Port Vila		19%	46%	35%		11.3	Good	11.8	7	8
White Grass Airport	6	22%		72%		-21.1	Very Low	-14.7	4	3
Aneityum		22%	31%	47%		-6.5	Very Low	-3	5	6

Republic of Korea-Pacific Islands Climate Prediction Services Project

CLIK® Rainfall Forecast (JJA)

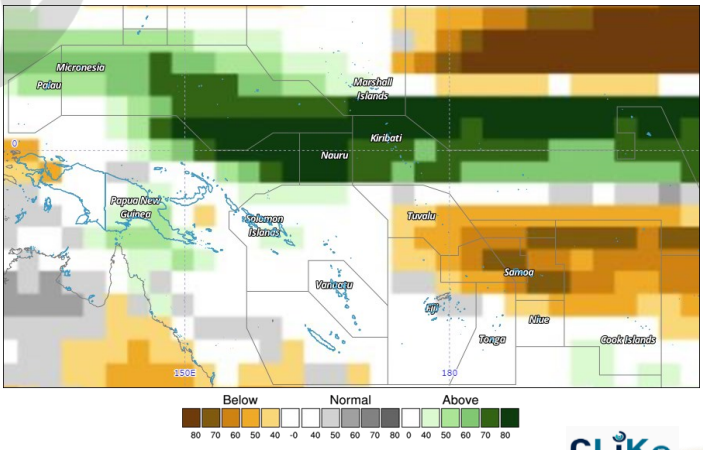


Figure 1: MME Rainfall Forecast for the Pacific Islands – JJA 2023 period

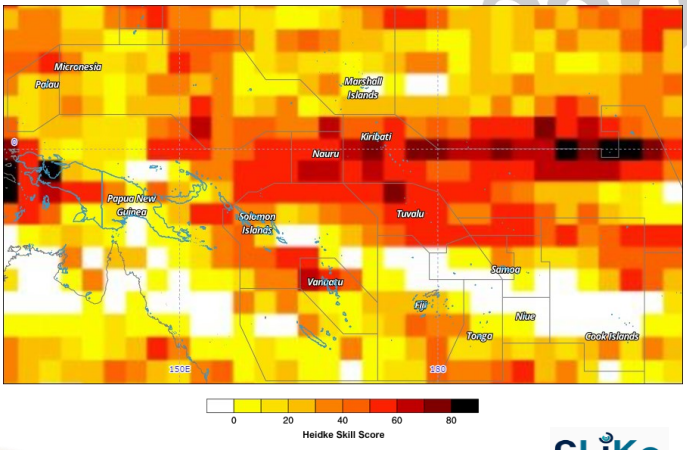


Figure 2: Rainfall Forecast Skill for the Pacific Islands – JJA 2023 period

Country	Rainfall Outlook	Skill
Cook Islands	Below Normal – Penrhyn, Rarotonga	Very Low - High
FSM	Above Normal	Very Low - Moderate
Fiji	Normal – Udu Point Below Normal – Rotuma Little guidance elsewhere	Very Low - Low
Kiribati	Above Normal – Tarawa, Butaritari, Kanton, Kiritimati	Moderate - High
Marshall Islands	Above Normal	Very Low - Moderate
Nauru	Above Normal	High
Niue	Little guidance	Very Low
Palau	Above Normal	Low
PNG	Above Normal – Port Moresby, Madang, Nadzab, Little guidance – Momote, Kavieng, Misima	Very Low – Low
Samoa	Below Normal	Very Low
Solomon Islands	Above Normal – Honiara, Henderson, Kirakira Little guidance – Santa Cruz, Auki, Munda, Taro Island	Very Low - Moderate
Tonga	Normal – Lupepauu Below Normal - Niuafoou, Keppel Mataaho Little guidance – Nukualofa, Haapai	Very Low
Tokelau	Below Normal	High
Tuvalu	Below Normal – Funafuti, Nuilakita, Nui Normal - Nanumea	High
Vanuatu	Normal – Pekoa, Sola Little guidance elsewhere	Very Low – High

Table 1: *Rainfall Outlook and Skill for the Pacific Islands.*

Note: *Variation in the skill is due to model agreement and data availability at each location.*

Republic of Korea-Pacific Islands Climate Prediction Services Project

CLIK® Temperature Forecast (JJA)

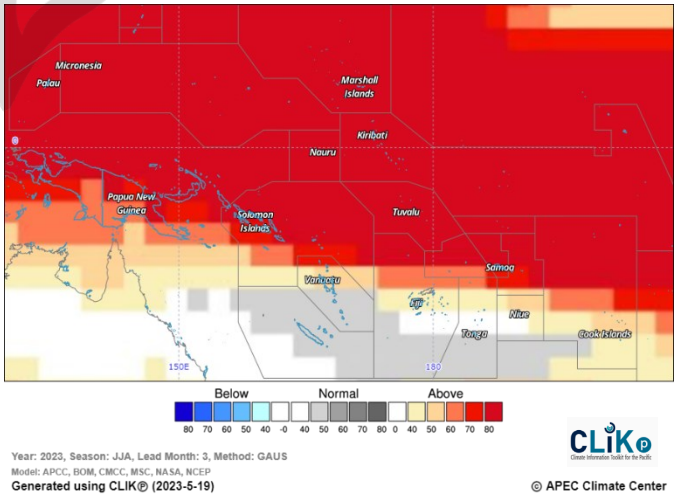


Figure 3: *MME Temperature Forecast for the Pacific Islands – JJA 2023 period*

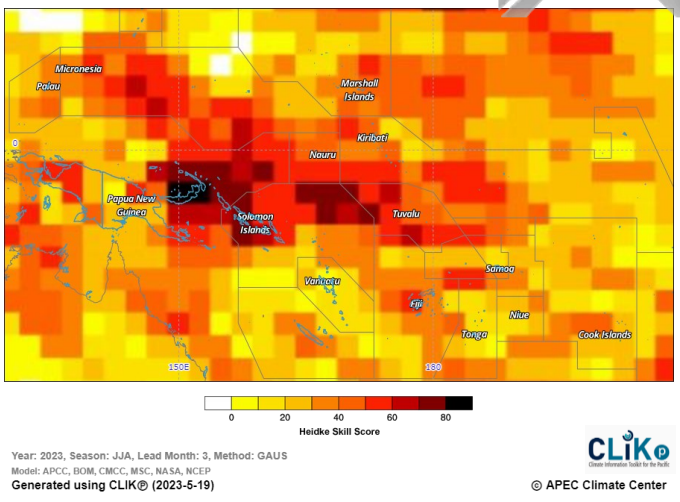


Figure 4: *Air Temperature Forecast Skill for the Pacific Islands – JJA 2023 period*

Country	Air Temperature Outlook	Skill
Cook Islands	Above Normal	Low – Moderate
FSM	Above Normal	Low - Moderate
Fiji	Above Normal	Low - High
Kiribati	Above Normal	Low - Moderate
Marshall Islands	Above Normal	Moderate
Nauru	Above Normal	Moderate
Niue	Above Normal	Low
Palau	Above Normal	Moderate
PNG	Above Normal	Low – High
Samoa	Above Normal	Moderate
Solomon Islands	Above Normal	Low - High
Tonga	Above Normal	Low - High
Tokelau	Above Normal	Moderate
Tuvalu	Above Normal	Moderate - High
Vanuatu	Normal - Above Normal	Very Low – Low

Table 2: *Temperature Outlook and Skill for the Pacific Islands.*

Republic of Korea-Pacific Islands Climate Prediction Services Project

Important:
This publication is developed from information in PICASO and CLIK®, products of the Republic of Korea-Pacific Islands Climate Prediction Services Project (ROK-PI CliPS).

This resource is compiled to provide dynamical model data to support and complement information generated by Pacific Islands NMHS.

Contact your location Meteorology Service for site specific forecasts.

PICASO
PICASO (Pacific Island Countries Advanced Seasonal Outlook) is a PC-based seasonal prediction tool tailored for the Pacific Island countries jointly developed by APCC and SPREP through the ROK-PI CliPS project.

PICASO produces probabilistic forecasts of the seasonal mean rainfall of the given weather stations by customizing the data from the APCC dynamical seasonal prediction multi-model ensemble.

CLIK®
The rainfall and temperature forecasts are derived from a multi-model ensemble (MME) of all available Dynamical Models that are provided by WMO Global Producing Centers (GPCs) available on the Climate Services Toolkit for the Pacific (CLIK Pacific or CLIK®).

CLIK® is a product of the Republic of Korea-Pacific Islands Climate Prediction Services Project (ROK-PI CliPS).

Visit the CLIK® Online Climate Prediction System: clikp.sprep.org

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