Republic of Korea-Pacific Islands
Climate Prediction Services Project
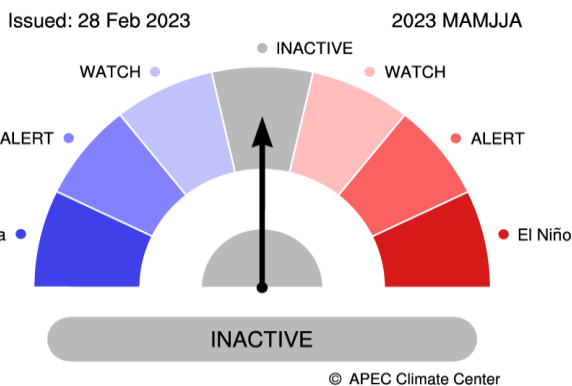## Summary: March to May 2023 (MAM)

Climate Outlook for March ~ August 2023

- The APCC ENSO Alert suggests "INACTIVE". During January 2023, negative sea surface temperature anomalies were observed over the tropical Pacific. The Niño3.4 index is expected to gradually increase from -0.2°C to 1.2°C during March–August 2023. As a result, the ENSO state is expected to change from neutral during March–May to El Niño during June – August 2023. El Niño intensity is expected to gradually increase from April – June to June – August 2023.
- Strongly enhanced probability for above normal temperatures is predicted for Micronesia, Melanesia, and Polynesia south of 15°S for March–August 2023. The equatorial region east of the Date Line is likely to experience near normal temperatures during March–May 2023 and a transition to above normal conditions during June–August 2023.
- Enhanced probability for above normal precipitation is predicted for Micronesia and Melanesia (excluding the equator) during March–May 2023, which is likely to decrease for Melanesia and be intensified for equatorial northern Polynesia during June–August 2023. Strongly enhanced probability for below normal precipitation is expected for off-equatorial southern Polynesia during the whole forecast period.
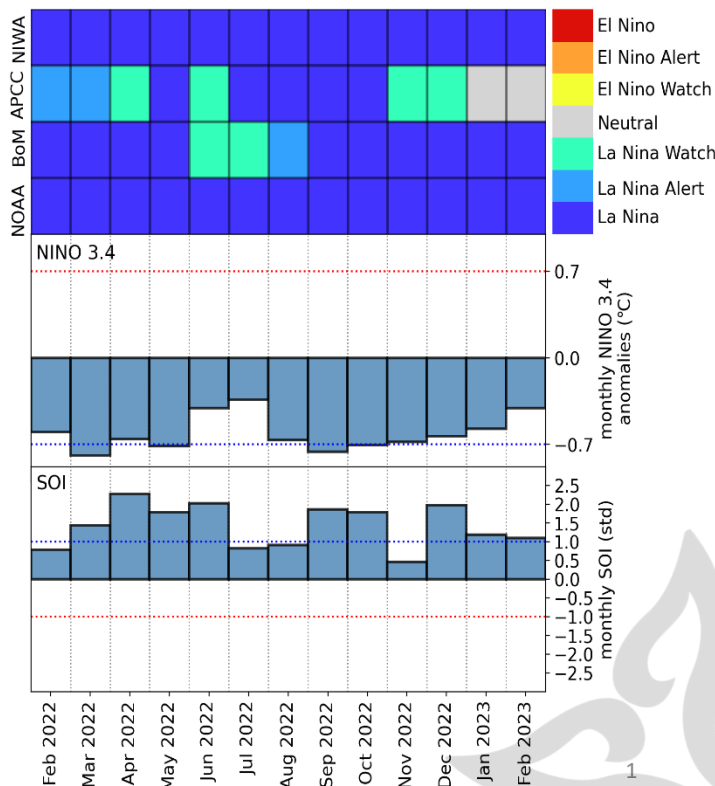- Please see https://apcc21.org/ser/outlook.do?lang=en for more information.

ENSO

CURRENT STATUS
ENSO Alert System

Issued: 28 Feb 2023 — 2023 MAMJJA

INACTIVE

© APEC Climate Center

ENSO FORECAST

Probabilistic ENSO Forecast for MAM 2023

Issued: 15 Feb 2023

Neutral

Weak E
Moderate E
Weak L
Moderate L

ENSO Neutral (86.2%)

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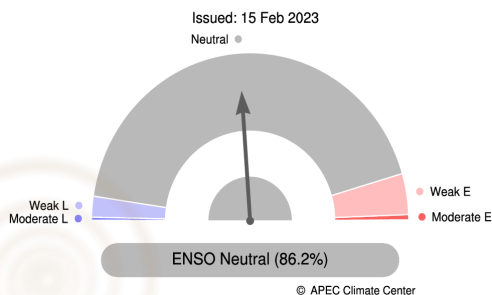
* ENSO Intensity based on 3M Mean Nino3.4 SST Anomaly (Category Boundaries: +/-1.5, 1.0, 0.5°C)

ENSO ALERT HISTORY

Pacific Regional Climate Centre ENSO tracker

		El Nino
		El Nino Alert
		El Nino Watch
		Neutral
		La Nina Watch
		La Nina Alert
		La Nina

NINO 3.4

SOI

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PICASO & CLIK℗ Summary
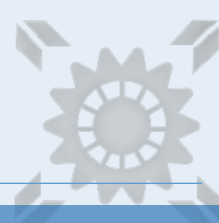
RAINFALL OUTLOOK

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

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

TEMPERATURE OUTLOOK : CLIK℗ toolkit

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

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Climate Prediction Services Project
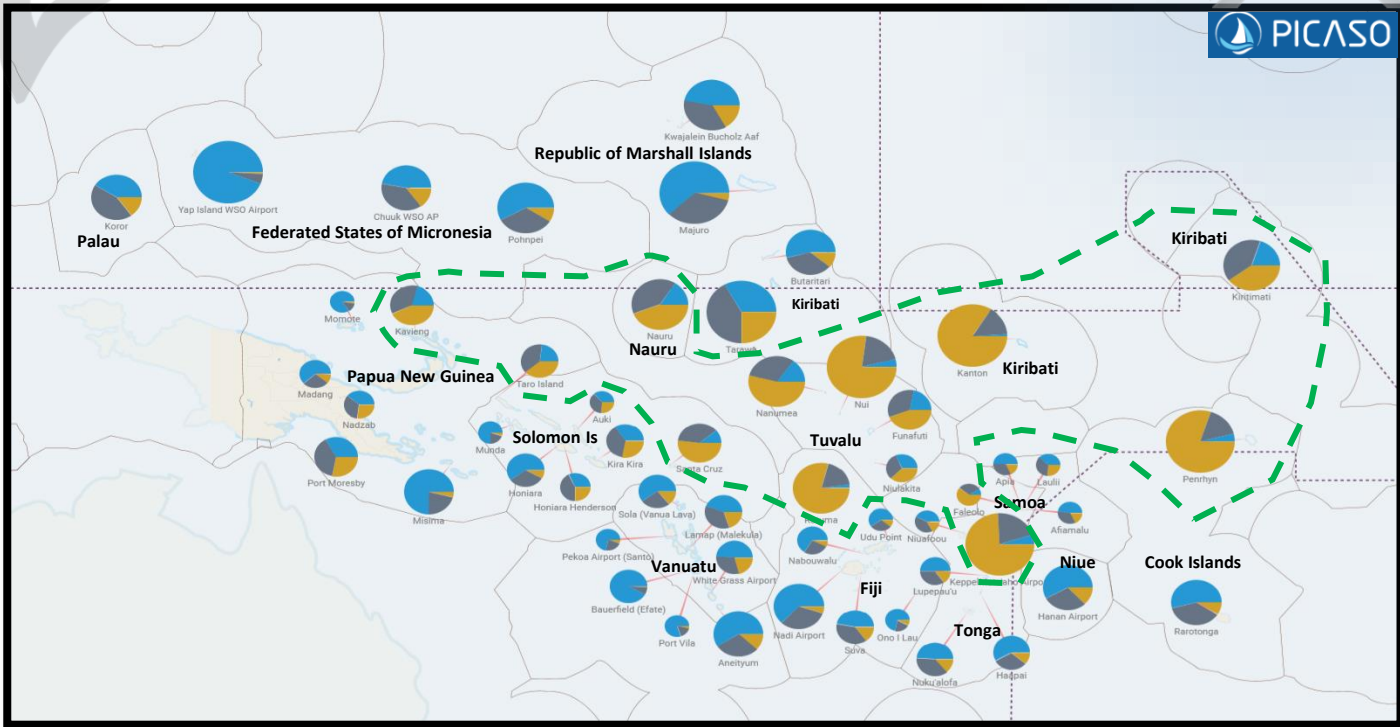### PICASO Regional Rainfall Forecast (MAM)

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	80%		16%	4%	40.6	Excellent	73.5		11	6	0
☑ Rarotonga	9%	37%	54%		17.3	High	11.8		7	7	3
Fiji										
☑ Rotuma	79%		19%		29.9	Very High	29.4		9	5	3
☑ Udu Point	11%	29%	60%		-16	Very Low	-10		4	5	6
☑ Nabouwalu	7%	27%	66%		2.9	Low	12.5		5	5	2
☑ Nadi Airport	5%	32%	63%		23.3	High	2.9		6	10	1
☑ Suva	15%	38%	47%		5.2	Moderate	2.9		6	7	4
☑ Ono I Lau	8%	20%	72%		-27.8	Very Low	-12.5		4	3	9
Kiribati										
☑ Kiritimati	40%	40%	20%		28.5	Very High	53.1		11	4	1
☑ Butaritari	11%	35%	54%		21.8	High	20.6		8	7	2
☑ Tarawa	25%	42%	33%		36.3	Excellent	47.1		11	6	0
☑ Kanton	84%		15%		48.8	Excellent	14.3		6	8	0
Marshall Islands										
☑ Kwajalein Bucholz Aaf	17%	36%	47%		26.7	Very High	42.6		10	7	0
☑ Majuro	4%	34%	62%		38	Excellent	20.6		8	8	1

Republic of Korea-Pacific Islands
# Climate Prediction Services Project
PICASO Regional Rainfall Forecast (MAM)

Station	Tercile Probability			Verification Score (LEPS)		Verification Score (HSS)		Hit/NearMiss/Miss		
	KEY	BN	N	AN						
Micronesia										
Chuuk WSO AP	15%	38%	47%	24.7	High	55.9		12	3	2
Pohnpei	9%	33%	58%	25.8	Very High	29.4		9	6	2
Yap Island WSO Airport	5%	94%		62.5	Excellent	91.2		16	1	0
Nauru										
Nauru	44%	40%	16%	30.3	Very High	43.8		5	2	1
Niue										
Hanan Airport	13%	29%	58%	24.4	High	47.1		11	5	1
Palau										
Koror	15%	44%	41%	15.5	High	25		8	6	2
Papua New Guinea										
Madang	11%	27%	62%	0.7	Low	-12.5		4	6	6
Port Moresby	28%	39%	33%	10.8	Good	29.4		9	7	1
Momote	3% 13%	84%		-9.9	Very Low	11.8		7	3	7
Nadzab	27%	34%	39%	1.8	Low	-1.5		4	9	4
Kavieng	43%	36%	21%	12.3	Good	7.4		6	8	3
Misima	4% 21%	75%		17.6	High	-3.1		5	11	0
Samoa										
Afiamalu	18%	34%	48%	-18.9	Very Low	-19.1		2	7	8
Laulii	26%	36%	38%	-17.3	Very Low	-31.2		2	7	7
Faleolo	61%	30%	9%	-4.5	Very Low	2.9		6	4	4
Apia	18%	32%	50%	-15.3	Very Low	2.9		4	5	8
Solomon Islands										
Taro Island	39%	38%	23%	6.2	Moderate	11.8		7	6	4
Munda	5% 20%	75%		-20.8	Very Low	-23.5		3	7	7
Auki	26%	38%	36%	-13.4	Very Low	-19.1		2	10	5
Honiara	8% 32%	60%		9.1	Moderate	11.8		7	6	4
Honiara Henderson	25%	43%	32%	2.1	Low	7.4		6	8	3
Kira Kira	28%	38%	34%	6.4	Moderate	-1.5		4	9	4
Santa Cruz	52%	37%	11%	14.9	Good	2.9		6	7	4
Tonga										
Niuafoou	17%	40%	43%	-13.5	Very Low	-5.9		5	8	4
KeppelMata'aho Airport	74%	21%	5%	35.4	Excellent	64.7		13	2	2
Lupepau'u	15%	35%	50%	3.5	Low	38.2		9	6	2
Haapai	11%	31%	58%	6.1	Moderate	11.8		7	5	5
Nuku'alofa	14%	37%	49%	6.7	Moderate	-14.7		4	9	4
Tuvalu										
Nanumea	54%	31%	15%	31.2	Very High	64.7		13	3	1
Nui	77%	19%	4%	39.5	Excellent	60.3		12	3	2
Funafuti	44%	34%	22%	13.2	Good	20.6		8	6	3
Niulakita	37%	31%	31%	4.2	Low	47.1		9	5	3
Vanuatu										
Sola (Vanua Lava)	14%	26%	60%	8.7	Moderate	7.7		5	4	4
Pekoa Airport (Santo)	6% 22%	72%		-11.1	Very Low	-14.7		4	9	4
Lamap (Malekula)	20%	36%	44%	5.6	Moderate	33.8		9	4	4
Bauerfield (Efate)	7%	92%		5.8	Moderate	2.9		6	7	4
Port Vila	4% 16%	80%		-10.7	Very Low	-23.5		3	8	6
White Grass Airport	21%	30%	49%	7.7	Moderate	25		8	6	2
Aneityum	12%	29%	59%	17.6	High	38.2		10	3	4

Republic of Korea-Pacific Islands
Climate Prediction Services Project
CLIK℗ Rainfall Forecast (MAM)
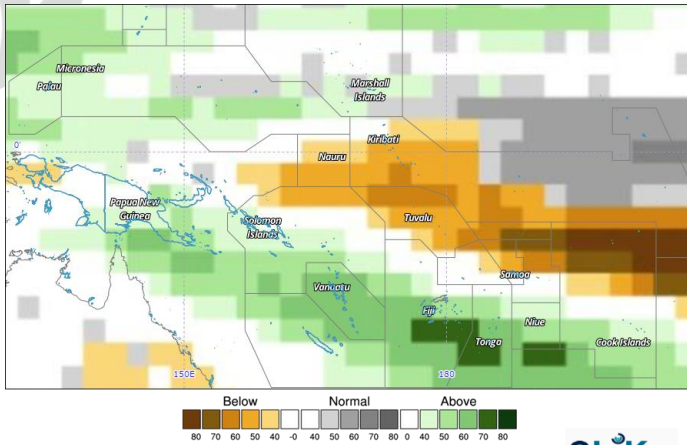
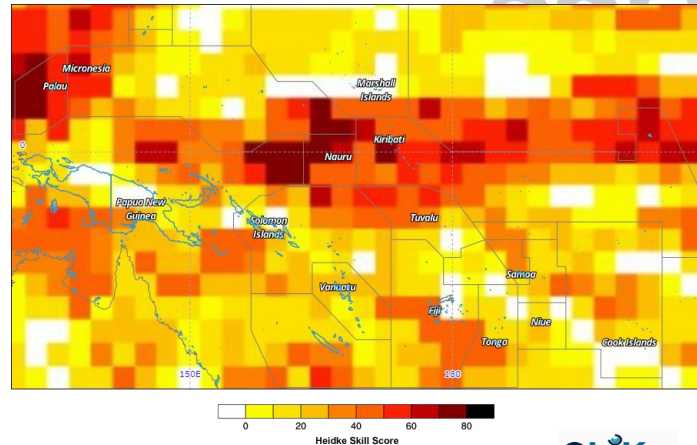Year: 2023, Season: MAM, Lead Month: 3, Method: GAUS
Model: APCC, BOM, CWB, MSC, NASA, NCEP, PNU
Generated using CLIK℗ (2023-3-7)
© APEC Climate Center
Figure 1: MME Rainfall Forecast for the Pacific Islands – MAM 2023 period

Year: 2023, Season: MAM, Lead Month: 3, Method: GAUS
Model: APCC, BOM, CWB, MSC, NASA, NCEP, PNU
Generated using CLIK℗ (2023-3-7)
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Figure 2: Rainfall Forecast Skill for the Pacific Islands – MAM 2023 period

Country	Rainfall Outlook	Skill
Cook Islands	Below Normal - Penrhyn Above Normal - Rarotonga	Low
FSM	Above Normal - Yap Normal – Chuuk, Pohnpei	Very Low - High
Fiji	Above Normal Little guidance - Rotuma	Very Low - Moderate
Kiribati	Below Normal – Tarawa, Butaritari Normal – Kanton, Kiritimati	Moderate - High
Marshall Islands	Above Normal	Very Low
Nauru	Below Normal	High
Niue	Above Normal	Low
Palau	Above Normal	High
PNG	Normal – Momote, Madang, Kavieng Above Normal – Port Moresby, Nadzab, Misima	Very Low – Moderate
Samoa	Little guidance	Low
Solomon Islands	Normal – Honiara, Henderson, Munda, Taro Island, Santa Cruz, Kirakira Little guidance – Auki	Very Low - Low
Tonga	Above Normal – Ha'apai, Lupepauu, Nukualofa Little guidance – Keppel Mata'aho, Niuafo'ou	Very Low - Low
Tokelau	Below Normal	Moderate
Tuvalu	Below Normal	Very Low - Moderate
Vanuatu	Above Normal	Very Low – Low

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
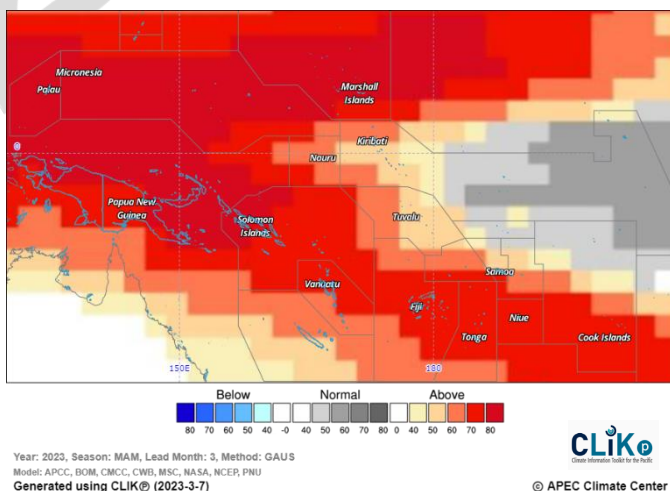## Climate Prediction Services Project
CLIK℗ Temperature Forecast (MAM)

Year: 2023, Season: MAM, Lead Month: 3, Method: GAUS
Model: APCC, BOM, CMCC, CWB, MSC, NASA, NCEP, PNU
Generated using CLIK℗ (2023-3-7)

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

Year: 2023, Season: MAM, Lead Month: 3, Method: GAUS
Model: APCC, BOM, CMCC, CWB, MSC, NASA, NCEP, PNU
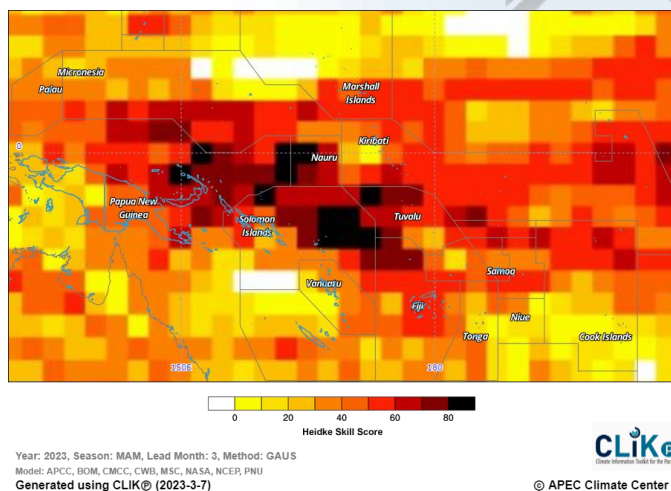Generated using CLIK℗ (2023-3-7)

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

Country	Air Temperature Outlook	Skill
Cook Islands	Above Normal (Rarotonga) Normal (Penrhyn)	Very Low - High
FSM	Above Normal	Low - Moderate
Fiji	Above Normal	Moderate - High
Kiribati	Above Normal – Tarawa, Butaritari Normal – Kanton, Kiritimati	Moderate - High
Marshall Islands	Above Normal	High
Nauru	Above Normal	High
Niue	Above Normal	Low
Palau	Above Normal	Moderate
PNG	Above Normal	Moderate – High
Samoa	Above Normal	High
Solomon Islands	Above Normal	Low - High
Tonga	Above Normal	Low – Moderate
Tokelau	Above Normal	High
Tuvalu	Above Normal	Low - High
Vanuatu	Above Normal	Very Low – Moderate

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

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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

CONTACT INFORMATION:

For more information, please contact Mr. Tile Tofaeono, Climate Prediction Services Coordinator, SPREP tilet@sprep.org

PO Box 240, Apia, Samoa
E: sprep@sprep.org
T: +685 21929
F: +685 20231
W: www.sprep.org

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