

## Summary: November 2021 to January 2022 (NDJ)



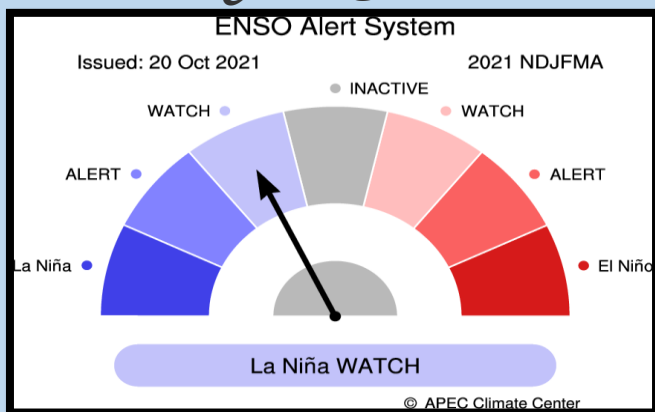
## Climate Outlook for November 2021 ~ April 2022

- The APCC ENSO Alert suggests “La Niña WATCH”. During September 2021, negative sea surface temperature anomalies were observed over the equatorial Pacific. The Niño3.4 index below  $-1^{\circ}\text{C}$  is expected to gradually increase to  $-0.24^{\circ}\text{C}$  during the forecast period. Based on the running 3-month mean Niño3.4 index, the latest APCC ENSO outlook suggests a 90% chance of La Niña conditions with weak intensity for November 2021 – January 2022, which gradually decreases. Meanwhile, ENSO-neutral conditions are likely to be gradually increasing and then dominant during February – April 2022.
- Strongly enhanced probability for above normal temperatures is predicted for Micronesia and Melanesia (excluding equatorial region), and southern Polynesia for November 2021 – April 2022.
- Enhanced probability for above normal precipitation is predicted for the Pacific Islands (excluding equatorial regions) for the same period.
- Please see <https://apcc21.org/ser/outlook.do?lang=en> for more information.

## ENSO

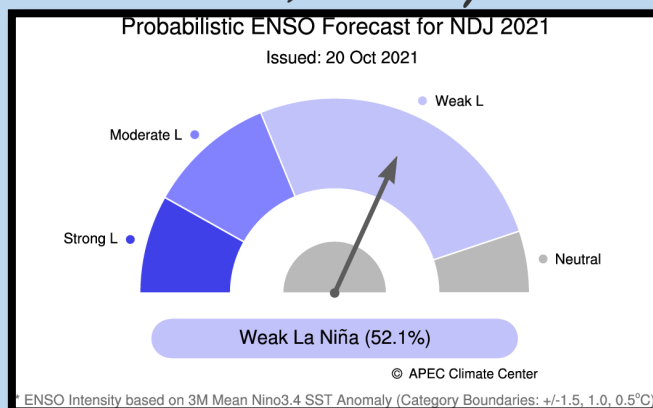
### Current Status

#### ENSO Alert System



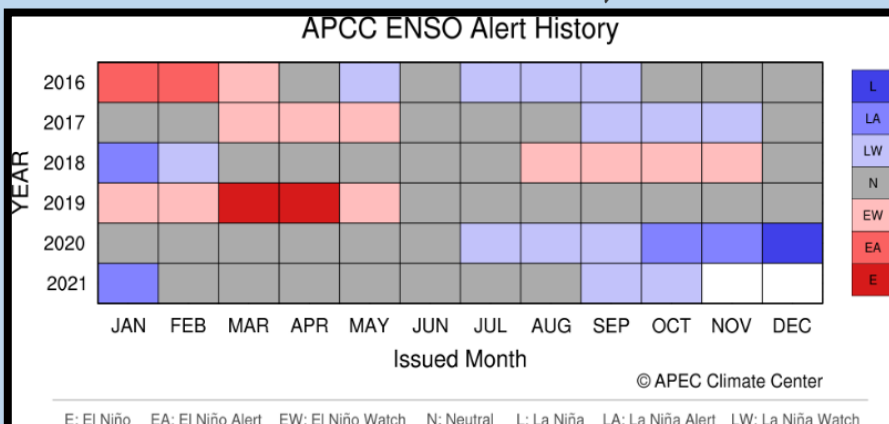
### ENSO Forecast NDJ

#### Probabilistic ENSO Forecast for NDJ 2021



### ENSO Alert History

#### APCC ENSO Alert History



# Republic of Korea-Pacific Islands Climate Prediction Services Project PICASO & CLIK® Summary



## RAINFALL OUTLOOK

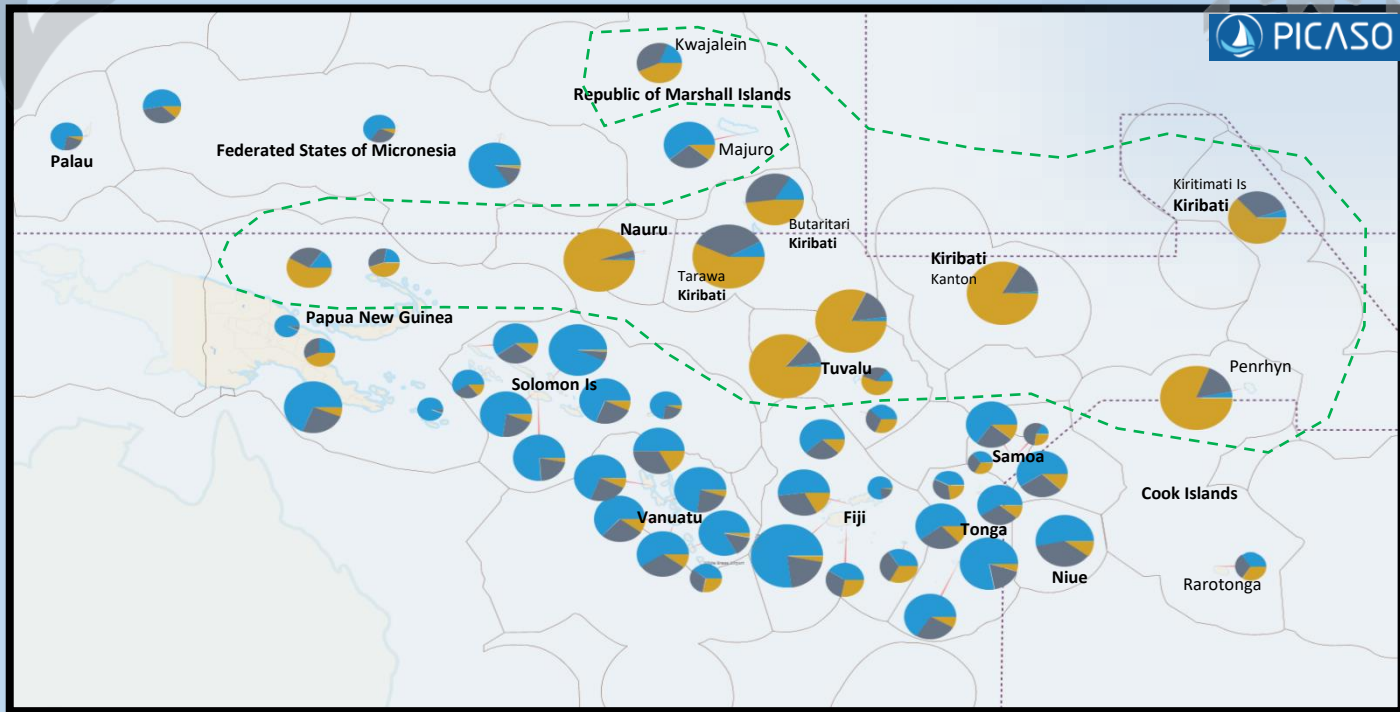
Model	PICASO	CLIK®
Status	COUNTRY (Area)	
Above Normal	<b>Cook Islands - (Rarotonga)</b> <b>Fiji</b> <b>FSM</b> <b>Republic of Marshall Island – (Majuro)</b> <b>Niue</b> <b>Palau</b> <b>PNG – (Madang, Port Moresby, Misima)</b> <b>Samoa – (Afiamalua, Faleolo, Apia)</b> <b>Solomon Islands</b> <b>Tonga</b> <b>Tuvalu – (Niulakita)</b> <b>Vanuatu</b>	<b>Cook Islands – (Rarotonga)</b> <b>Fiji</b> <b>FSM</b> <b>Republic of Marshall Island</b> <b>Niue</b> <b>Palau</b> <b>PNG – (Port Moresby, Misima, Nadzab, Madang)</b> <b>Samoa</b> <b>Solomon Islands</b> <b>Tonga</b> <b>Vanuatu</b>
Normal	<b>Republic of Marshall Island – (Kwajalein)</b> <b>Samoa – (Lauli'i)</b>	
Below Normal	<b>Cook Islands - (Penrhyn)</b> <b>Kiribati</b> <b>Nauru</b> <b>PNG – (Momote, Nadzab, Kavieng)</b> <b>Tuvalu - (Nanumea, Nui, Funafuti)</b>	<b>Cook Islands - (Penrhyn)</b> <b>Kiribati</b> <b>Nauru</b> <b>PNG – (Momote, Kavieng)</b> <b>Solomon Islands – (Auki)</b> <b>Tuvalu</b> <b>Tokelau</b>

Note: \* indicate stations that have equal or similar probability of getting Above normal, Normal and Below normal

## TEMPERATURE OUTLOOK : CLIK® toolkit

Status	COUNTRY (Area)
Above Normal	<b>Cook Is (Rarotonga, southern group), FSM, Fiji, Republic of Marshall Is, Kiribati (Tarawa, Butaritari), Nauru, Niue, Palau, PNG, Samoa, Solomon Islands, Tonga, Tuvalu (Nanumea), Vanuatu.</b>
Normal	<b>Kiribati (Kiritimati, Kanton), Tuvalu - (Nui, Niulakita, Funafuti), Tokelau</b>
Below Normal	<b>Cook Is (Penrhyn, northern group)</b>

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



**Figure 1:** Regional outlook map of the Pacific. In general, all stations enclosed 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											
	Penrhyn	81%		16%	35.4	Excellent	50		10	3	2
	Rarotonga	34%	31%	35%	0.8	Low	10		6	4	5
 Fiji											
	Rotuma	12%	26%	62%	11.5	Good	5		4	10	1
	Udu Point	19%		78%	-15	Very Low	18.8		5	2	5
	Nabouwalu	17%	31%	52%	16.5	High	79.5		8	2	1
	Nadi Airport	20%		77%	42.8	Excellent	50		10	5	0
	Suva	28%	31%	41%	7.6	Moderate	60		11	1	3
	Ono I Lau	33%	33%	34%	6.5	Moderate	46.4		9	1	4
 Kiribati											
	Kiritimati	63%	32%		31.8	Very High	10		6	8	1
	Butaritari	48%	36%	16%	30.7	Very High	30		8	6	1
	Tarawa	57%	35%	8%	41.8	Excellent	55		9	4	2
	Kanton	83%		16%	44.4	Excellent	50		8	2	2
 Marshall Islands											
	Kwajalein Bucholz Aaf	43%	38%	19%	12	Good	20		7	7	1
	Majuro	11%	28%	61%	24.7	High	45		9	5	1

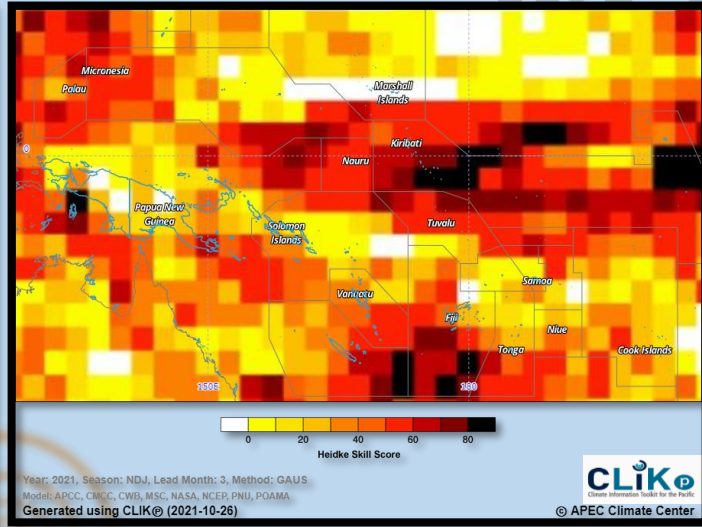
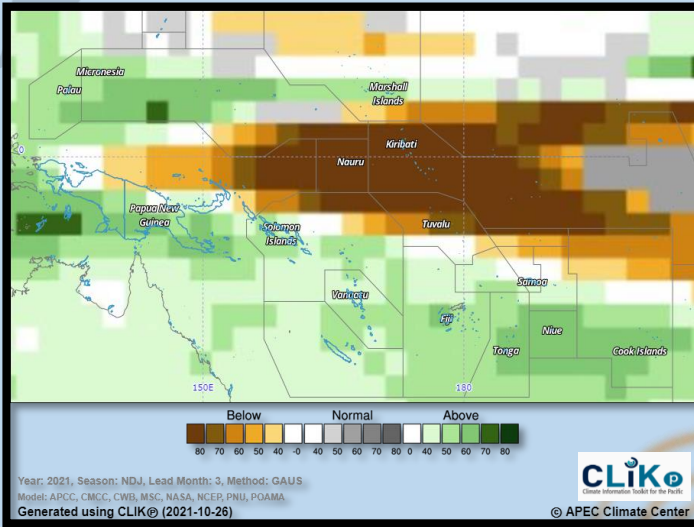
# Republic of Korea-Pacific Islands Climate Prediction Services Project PICASO Regional Rainfall Forecast (NDJ)



Station	Tercile Probability				Verification Score (LEPS)		Verification Score (HSS)		Hit/Near/Miss		
	KEY	BN	N	AN							
<b>Micronesia</b>											
✓ Chuuk WSO AP	6	29%	65%		0.5	Low	0		5	4	6
✓ Pohnpei	14%		84%		16.7	High	20		7	6	2
✓ Yap Island WSO Airport	129	35%	53%		8.1	Moderate	30		8	2	5
<b>Nauru</b>											
✓ Nauru		95%			56.9	Excellent	57.1		5	2	0
<b>Niue</b>											
✓ Hanan Airport	10	37%	53%		26.2	Very High	55		9	5	1
<b>Palau</b>											
✓ Koror	4	23%	72%		1.4	Low	5		5	8	2
<b>Papua New Guinea</b>											
✓ Madang	6		93%		-44.8	Very Low	-28.6		2	7	5
✓ Port Moresby	6	25%	69%		33.9	Very High	57.1		10	3	1
✓ Momote		58%	27%	15%	11.1	Good	25		7	3	4
✓ Nadzab		43%	32%	25%	1.5	Low	-7.1		4	7	3
✓ Kavieng		45%	33%	22%	3.8	Low	8.9		4	8	2
✓ Misima	4		94%		-15.4	Very Low	-23.2		1	11	2
<b>Samoa</b>											
✓ Afiamalu	129	29%	59%		16.5	High	10		6	7	2
✓ Lautli		27%	57%	16%	-13.9	Very Low	-30		2	11	2
✓ Faleolo		33%	32%	35%	-14	Very Low	20		6	1	8
✓ Apia	111	24%	65%		16.6	High	40		9	3	3
<b>Solomon Islands</b>											
✓ Taro Island	111	29%	60%		13.9	Good	20		7	6	2
✓ Munda	14%	27%	59%		4.1	Low	10		6	4	5
✓ Auki	6		93%		30	Very High	20		7	7	1
✓ Honiara	6	21%	73%		24.8	High	40		9	2	4
✓ Honiara Henderson		21%	76%		17.4	High	40		9	3	3
✓ Kira Kira	7	24%	69%		21.2	High	20		7	6	2
✓ Santa Cruz	4	23%	72%		2.4	Low	-10		4	6	5
<b>Tonga</b>											
✓ Niuafuou		23%	34%	43%	3.3	Low	-10		4	6	5
✓ KeppelMata'aho Airport	111	30%	59%		10	Good	3.6		5	6	3
✓ Lupepau'u	13%	27%	60%		22.7	High	65		11	1	3
✓ Haapai	4	17%	78%		34.5	Very High	60		11	2	2
✓ Nuku'alofa	85	26%	66%		21.4	High	40		9	3	3
<b>Tuvalu</b>											
✓ Nanumea		82%	16%		39.1	Excellent	30		8	6	1
✓ Nui		86%	12%		48.8	Excellent	50		10	5	0
✓ Funafuti		56%	30%	14%	3.4	Low	5		4	6	5
✓ Niulakita		31%	31%	38%	2.2	Low	15		6	5	4
<b>Vanuatu</b>											
✓ Sola (Vanua Lava)		17%	33%	50%	22	High	0		4	7	1
✓ Pekoa Airport (Santo)	7	24%	69%		22.7	High	50		10	2	3
✓ Lamap (Malekula)	4	22%	73%		24.1	High	55		10	3	2
✓ Bauerfield (Efate)	10	27%	63%		24	High	30		8	5	2
✓ Port Vila	10	31%	59%		20.8	High	30		8	6	1
✓ White Grass Airport		14%	83%		20.1	High	10		6	7	2
✓ Aneityum		28%	32%	40%	3	Low	15		6	5	4



# Republic of Korea-Pacific Islands Climate Prediction Services Project CLIK® Rainfall Forecast (NDJ)



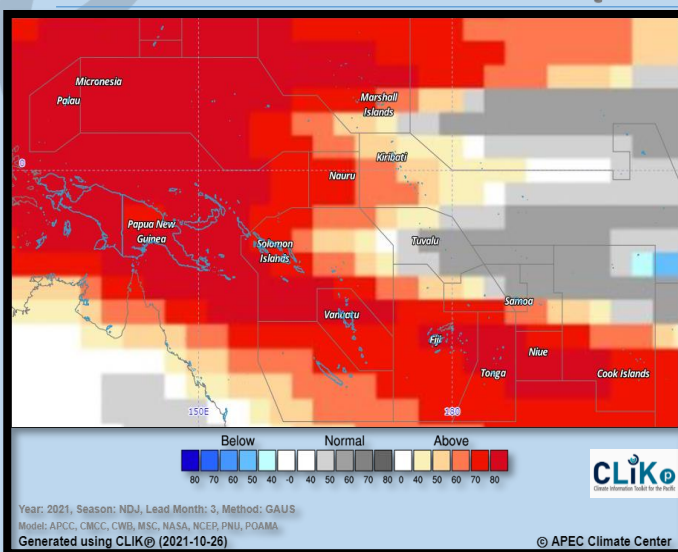
**Figure 1: MME Rainfall Forecast for the Pacific Islands – NDJ 2021 period** **Figure 2: Rainfall Forecast Skill for the Pacific Islands – NDJ 2021 period**

Country	Rainfall Outlook	Skill
Cook Islands	Below Normal - Penrhyn Above Normal - Rarotonga	High Low
FSM	Above Normal	Low – Chuuk/Pohnpei High - Yap
Fiji	Above Normal	Moderate
Kiribati	Below Normal	Moderate - Kiritimasi High
Marshall Islands	Above Normal	Very Low
Nauru	Below Normal	High
Niue	Above Normal	Moderate
Palau	Above Normal	Moderate
PNG	Below Normal – (Momote, Kavieng) Above Normal (Elsewhere)	Low Very Low - Moderate
Samoa	Above Normal	Moderate
Solomon Islands	Above Normal	Very Low - Moderate
Tonga	Above Normal	Low
Tokelau	Below Normal	Moderate
Tuvalu	Below Normal	Low - Niulakita High - elsewhere
Vanuatu	Above Normal	Moderate - High

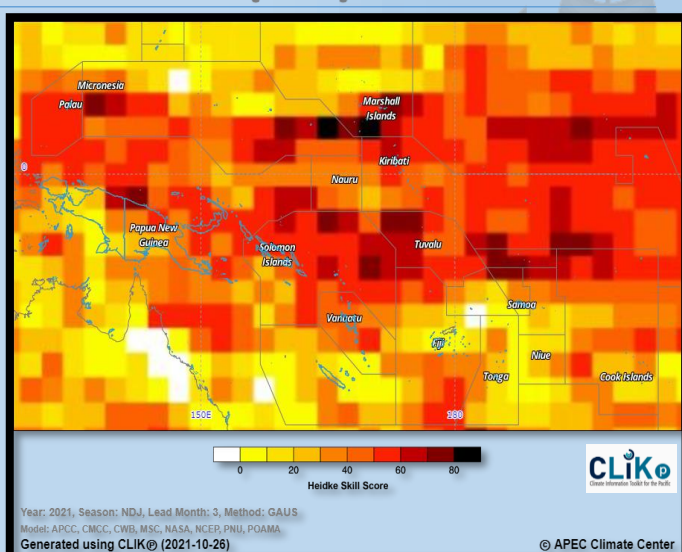
**Table 1: Rainfall Outlook and Skill for the Pacific Islands.**

**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 (NDJ)



**Figure 3:** MME Temperature Forecast for the Pacific Islands – NDJ 2021 period



**Figure 4:** Air Temperature Forecast Skill for the Pacific Islands – NDJ 2021 period

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

**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).

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Visit the CLIK® Online Climate Prediction System: [clikp.sprep.org](http://clikp.sprep.org)

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