Republic of Korea-Pacific Islands Climate Prediction Services Project

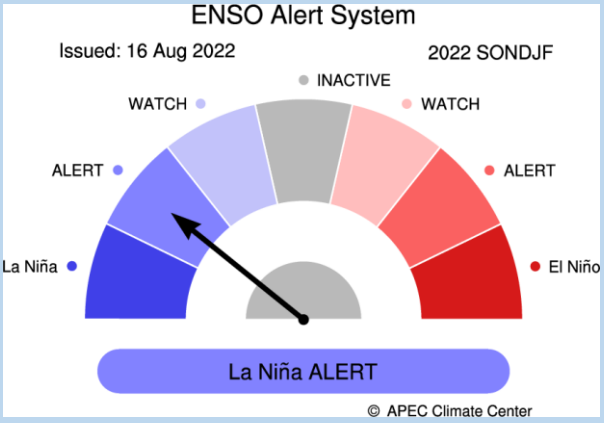
Summary: September to November 2022 (SON)

Climate Outlook for September 2022 ~ February 2023

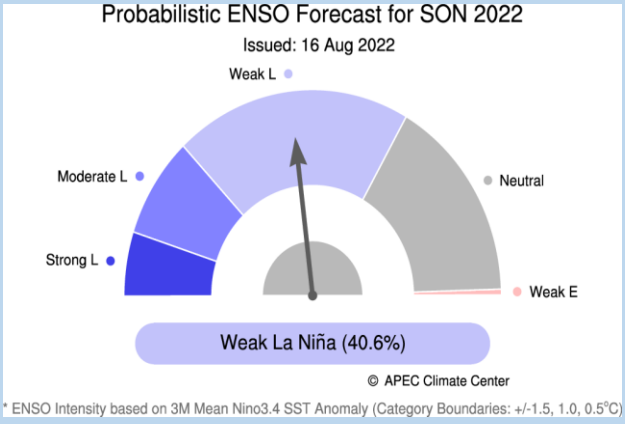
- The APCC ENSO Alert suggests “La Niña ALERT”. During July 2022, negative sea surface temperature anomalies were observed over the tropical Pacific. The Niño3.4 index is expected to be below -0.5°C during September – December 2022 and then gradually increase to 0°C. The probability for La Niña conditions is expected to be 66.5% during September – November 2022 and gradually decrease to 42.7%. Its intensity is likely to be weak.
- Strongly enhanced probability for above normal temperatures is predicted for Micronesia and Melanesia (excluding the equator), and Polynesia south of 10°S for September 2022 – February 2023.
- Strongly enhanced probability for above normal precipitation is predicted for southern Melanesia during September – November 2022, which is likely to gradually decrease during December 2022 – February 2023. Strongly enhanced probability for below normal precipitation is expected for southern Polynesia and the boundary between Micronesia and Melanesia during the first half of the forecast period, which is also likely to gradually decrease during the remaining period.
- Please see https://apcc21.org/ser/outlook.do?lang=en for more information.

ENSO

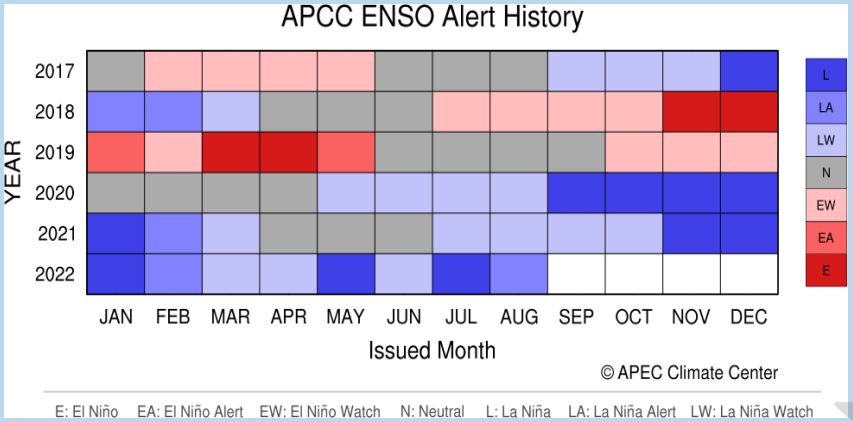
Current Status



ENSO Forecast



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

Republic of Korea-Pacific Islands Climate Prediction Services Project

PICASO Regional Rainfall Forecast (SON)

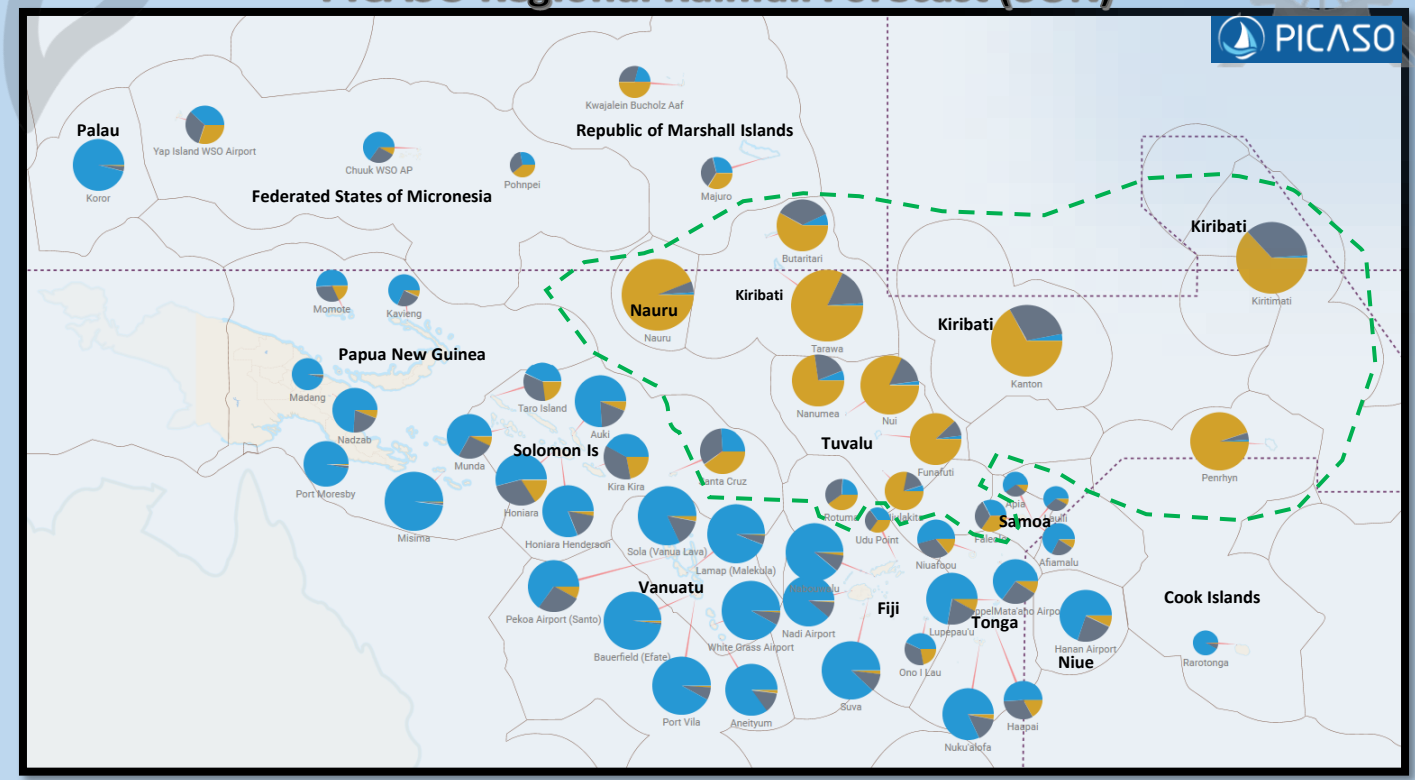


Figure 1: Regional outlook map of the Pacific. In general, all stations enclose within the green-dash line anticipated to have Below Normal (BN) rainfall. Normal (N) to Above Normal (AN) rainfall is predicted for stations outside the green-dashed line. *(Note: the larger the pie chart the higher the 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		95%		4%	29.9	Very High	43.8	10	5	1
Rarotonga	7%	92%			-13.4	Very Low	-21.9	3	5	8
Fiji										
Rotuma	40%	36%		24%	3.9	Low	15.6	7	7	2
Udu Point	35%	30%		35%	-0.6	Very Low	25	4	1	7
Nabouwalu	9%	89%			26.7	Very High	33.3	5	4	0
Nadi Airport	10%	89%			23.8	High	43.8	10	3	3
Suva	10%	88%			30.1	Very High	34.4	9	6	1
Ono I Lau	22%	35%		43%	2.8	Low	0	5	7	3
Kiribati										
Kiritimati	63%	36%			51.1	Excellent	62.5	12	4	0
Butaritari	58%	35%		7%	16.6	High	15.6	7	8	1
Tarawa	82%	17%			48.4	Excellent	43.8	10	5	1
Kanton	67%	30%		3	52.8	Excellent	62.5	9	3	0
Marshall Islands										
Kwajalein Bucholz Aaf	50%	29%		21%	1.7	Low	25	8	4	4
Majuro	34%	37%		29%	2.3	Low	6.3	6	5	5

Republic of Korea-Pacific Islands Climate Prediction Services Project

PICASO Regional Rainfall Forecast (SON)

PICASO

Station	Tercile Probability (KEY: BN / N / AN)	Verification Score (LEPS)		Verification Score (HSS)	Hit/NearMiss/Miss
Micronesia					
Chuuk WSO AP	8% / 27% / 65%	1.4	Low	6.3	6 6 4
Pohnpei	39% / 33% / 28%	-1.9	Very Low	-7.8	4 8 4
Yap Island WSO Airport	30% / 32% / 38%	9.9	Moderate	85.9	14 0 2
Nauru					
Nauru	94% / 5%	38.5	Excellent	57.1	5 2 0
Niue					
Hanan Airport	7% / 23% / 70%	23.2	High	34.4	9 6 1
Palau					
Koror	3% / 96%	23.6	High	29.7	7 6 3
Papua New Guinea					
Madang	3% / 96%	2.7	Low	-10	4 9 2
Port Moresby	2% / 97%	11.2	Good	6.3	6 7 3
Momote	18% / 31% / 51%	1.7	Low	-3.1	5 5 6
Nadzab	6% / 20% / 74%	14.6	Good	39.1	9 5 2
Kavieng	7% / 25% / 68%	4.7	Low	6.3	6 5 5
Misima	1% / 98%	32.7	Very High	15.6	7 8 1
Samoa					
Afiamalu	9% / 23% / 68%	3.5	Low	6.3	6 5 5
Laulii	8% / 31% / 61%	-5.8	Very Low	10.9	6 8 2
Faleolo	35% / 32% / 33%	0.3	Low	39.1	7 4 5
Apia	11% / 29% / 60%	-1.2	Very Low	6.3	6 3 7
Solomon Islands					
Taro Island	23% / 34% / 43%	6.3	Moderate	-12.5	4 9 3
Munda	7% / 26% / 67%	12.7	Good	-3.1	5 7 4
Auki	6% / 18% / 76%	20.5	High	34.4	9 5 2
Honiara	16% / 30% / 54%	23	High	20.3	6 9 1
Honiara Henderson	3% / 16% / 81%	21.1	High	34.4	9 6 1
Kira Kira	22% / 36% / 42%	12.3	Good	-3.1	5 6 5
Santa Cruz	40% / 34% / 26%	12.4	Good	15.6	7 6 3
Tonga					
Niuafoou	14% / 32% / 54%	9.5	Moderate	25	8 3 5
KeppelMata'aho Airport	9% / 26% / 65%	14.5	Good	65	11 2 2
Lupepau'u	8% / 20% / 72%	17.5	High	6.3	6 9 1
Haapai	17% / 32% / 51%	9	Moderate	39.1	8 6 2
Nuku'alofa	3% / 15% / 82%	17.9	High	15.6	7 8 1
Tuvalu					
Nanumea	73% / 21% / 6%	24.6	High	57.8	11 3 2
Nui	82% / 16% / 2%	33	Very High	43.8	10 4 2
Funafuti	88% / 10% / 2%	22.2	High	34.4	9 5 2
Niulakita	78% / 17% / 5%	9	Moderate	15.6	7 3 6
Vanuatu					
Sola (Vanua Lava)	3% / 15% / 82%	26	Very High	36.5	6 6 1
Pekoa Airport (Santo)	8% / 27% / 65%	24.9	High	57.8	11 4 1
Lamap (Malekula)	5% / 94%	30.6	Very High	43.8	10 5 1
Bauerfield (Efate)	1% / 98%	30.2	Very High	53.1	11 2 3
Port Vila	7% / 92%	29.2	Very High	34.4	9 5 2
White Grass Airport	7% / 92%	34.5	Very High	53.1	11 4 1
Aneityum	2% / 13% / 85%	15.1	High	43.8	10 3 3

Republic of Korea-Pacific Islands Climate Prediction Services Project

CLIK® Rainfall Forecast (SON)

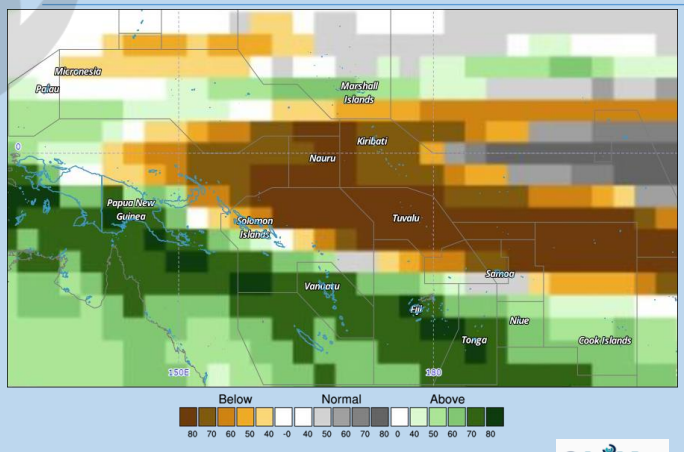


Figure 1: MME Rainfall Forecast for the Pacific Islands – SON 2022 period

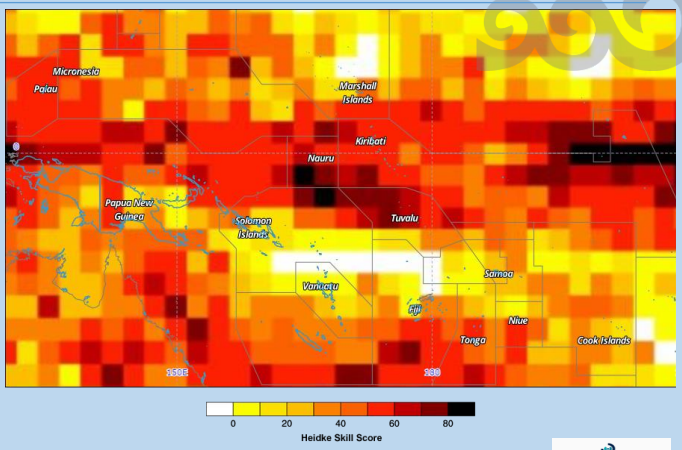


Figure 2: Rainfall Forecast Skill for the Pacific Islands – SON 2022 period

Country	Rainfall Outlook	Skill
Cook Islands	Below Normal - Penrhyn Above Normal - Rarotonga	High Low
FSM	Above Normal – Pohnpei / Chuuk Below Normal – Yap	Moderate - High
Fiji	Above Normal except Rotuma (BN)	Very Low - Moderate
Kiribati	Below Normal except for Kiritimati (N)	High
Marshall Islands	Above Normal	Low - Moderate
Nauru	Below Normal	High
Niue	Above Normal	High
Palau	Above Normal	High
PNG	Below Normal –Momote, Kavieng Above Normal – Port Moresby, Nadzab, Misima, Madang	Low – High
Samoa	Normal	Low
Solomon Islands	Below Normal – Taro Is., Munda, Auki, Santa Cruz Above Normal – Honiara, Henderson Little guidance (Climatology) – Kirakira	Very Low - Moderate
Tonga	Above Normal – Nukualofa, Ha'apai, Lupepau'u Normal– Niuafoou, Keppel Mata'aho	Very Low - High
Tokelau	Below Normal	Moderate
Tuvalu	Below Normal	Moderate - High
Vanuatu	Above Normal	Very Low – Moderate

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.*

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CLIK® Temperature Forecast (SON)

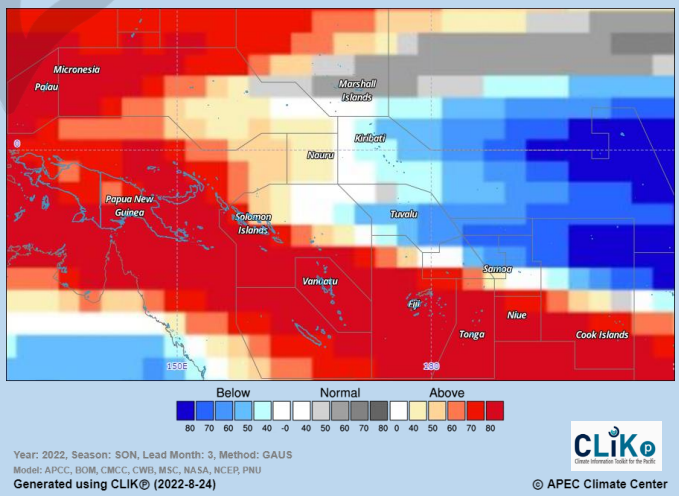

Figure 3: *MME Temperature Forecast for the Pacific Islands – SON 2022 period*

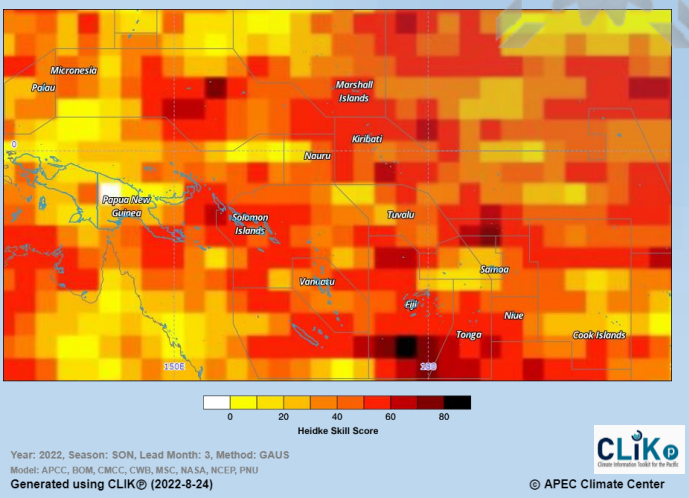

Figure 4: *Air Temperature Forecast Skill for the Pacific Islands – SON 2022 period*

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

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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