

# Republic of Korea-Pacific Islands Climate Prediction Services Project Summary: July to September 2022 (JAS)

2022-06 Edition

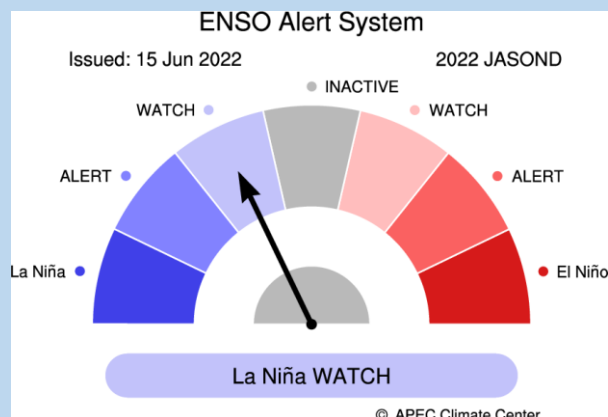


## Climate Outlook for July ~ December 2022

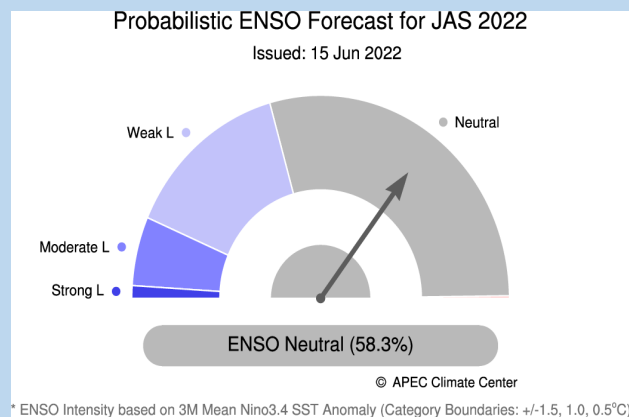
- The APCC ENSO Alert suggests “La Niña WATCH”. In May 2022, negative sea surface temperature anomalies were observed over the central and eastern tropical Pacific. The Niño3.4 index is expected to be around  $-0.5^{\circ}\text{C}$  through the whole forecast period, which suggests the La Niña conditions. Based on the running 3-month mean Niño3.4 index, the latest APCC ENSO outlook suggests an around 55.6% chance of ENSO-neutral conditions during July – September 2022, which is likely to gradually decrease. Meanwhile, a probability of La Niña conditions with weak intensity is expected to increase.
- Strongly enhanced probability for above normal temperatures is predicted for Micronesia and Melanesia (excluding the boundary between them near the Date Line), and southern Polynesia for July – December 2022.
- Strongly enhanced probability for below normal precipitation is predicted for the equatorial boundary between Micronesia and Melanesia during July – September 2022, which is likely to gradually decrease during October – December 2022.
- Please see <https://apcc21.org/ser/outlook.do?lang=en> for more information.

## ENSO

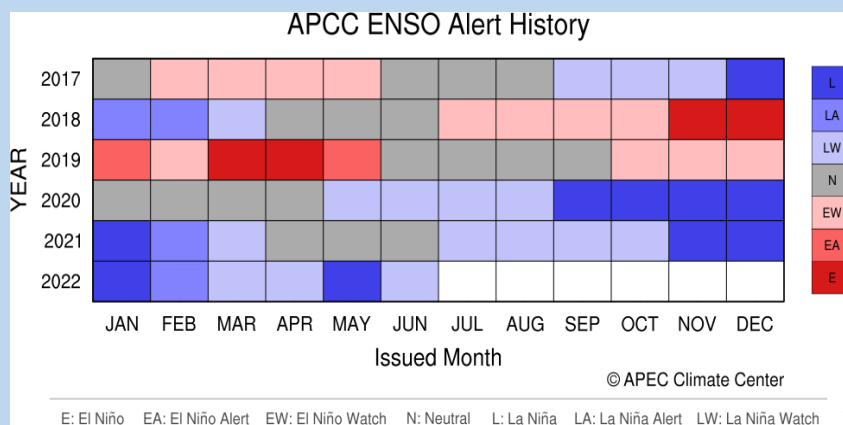
### CURRENT STATUS



### ENSO FORECAST



### ENSO ALERT HISTORY



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



## RAINFALL OUTLOOK

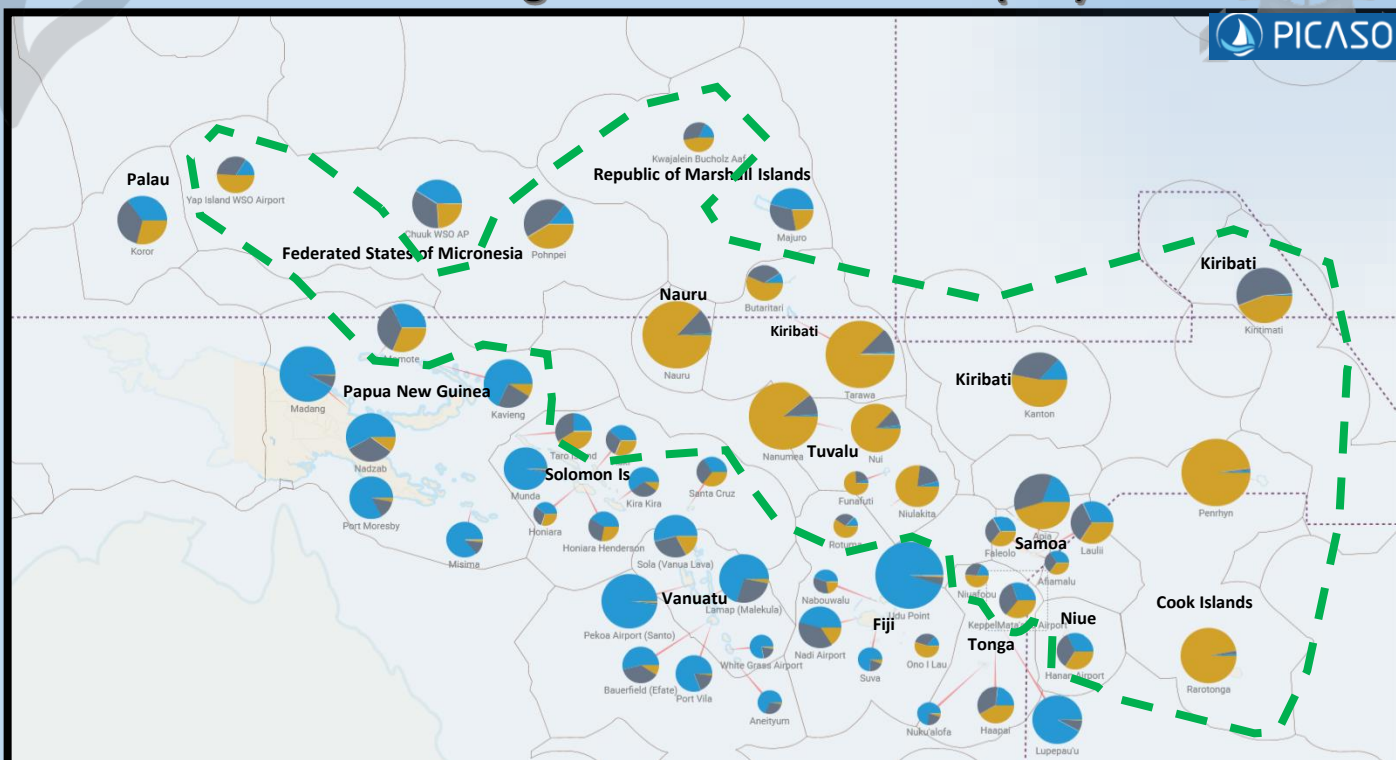
| Model        | PICASO  | CLIK®  |
|--------------|---|--|
| Status       | COUNTRY (Area)  |  |
| Above Normal | <b>Fiji</b> - (Suva, Udu Point, Nabouwalu, Nadi)<br><b>Republic of Marshall Islands</b> - (Majuro)<br><b>FSM</b> (Chuuk)<br><b>PNG</b> – (Port Moresby, Madang, Misima, Nadzab, Kavieng)<br>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

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 | <b>Cook Is</b> (Rarotonga, southern group), <b>FSM</b> , <b>Fiji</b> , <b>Niue</b> , <b>Palau</b> , <b>PNG</b> , <b>Solomon Islands</b> , <b>Tonga</b> , <b>Vanuatu</b> . |
| Normal       | <b>Fiji</b> (Rotuma), <b>Republic of Marshall Is</b> , <b>Samoa</b>   |
| Below Normal | <b>Cook Is</b> (Penrhyn, northern group), <b>Fiji</b> – (Rotuma), <b>Kiribati</b> , <b>Nauru</b> , <b>Tuvalu</b> , <b>Tokelau</b>   |

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



**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 |    |   |
|-----------------------|---------------------|-----|-----|---------------------------|-------|--------------------------|-------|-------------------|----|---|
|                       | KEY                 | BN  | N   | AN                        |       |                          |       |                   |    |   |
| Cook Islands          |                     |     |     |                           |       |                          |       |                   |    |   |
| Penrhyn               |                     | 98% |     |                           | 41.5  | Excellent                | 57.8  | 11                | 4  | 1 |
| Rarotonga             |                     | 97% |     |                           | 27.6  | Very High                | 25    | 8                 | 6  | 2 |
| Fiji                  |                     |     |     |                           |       |                          |       |                   |    |   |
| Rotuma                |                     | 59% | 28% | 13%                       | -8.5  | Very Low                 | -50   | 0                 | 13 | 2 |
| Udu Point             |                     |     | 95% |                           | 46.5  | Excellent                | 37.5  | 7                 | 4  | 1 |
| Nabouwalu             |                     | 22% | 34% | 44%                       | -24.6 | Very Low                 | -22.7 | 2                 | 6  | 3 |
| Nadi Airport          |                     | 16% | 38% | 46%                       | 10.5  | Good                     | 25    | 8                 | 5  | 3 |
| Suva                  | 6                   | 20% |     | 74%                       | -12.6 | Very Low                 | -12.5 | 4                 | 6  | 6 |
| Ono I Lau             |                     | 55% | 31% | 14%                       | -0.5  | Very Low                 | -10   | 4                 | 6  | 5 |
| Kiribati              |                     |     |     |                           |       |                          |       |                   |    |   |
| Kiritimati            |                     | 44% |     | 55%                       | 31.3  | Very High                | 25    | 8                 | 8  | 0 |
| Butaritari            |                     | 56% |     | 35%                       | 5.5   | Moderate                 | -3.1  | 5                 | 8  | 3 |
| Tarawa                |                     | 87% |     | 12%                       | 57.4  | Excellent                | 62.5  | 12                | 4  | 0 |
| Kanton                |                     | 53% |     | 34%                       | 26.2  | Very High                | 62.5  | 9                 | 3  | 0 |
| Marshall Islands      |                     |     |     |                           |       |                          |       |                   |    |   |
| Kwajalein Bucholz Aaf |                     | 47% |     | 35%                       | 3.7   | Low                      | -7.8  | 4                 | 8  | 4 |
| Majuro                |                     | 22% |     | 32%                       | 14.7  | Good                     | 43.8  | 10                | 1  | 5 |

# Republic of Korea-Pacific Islands

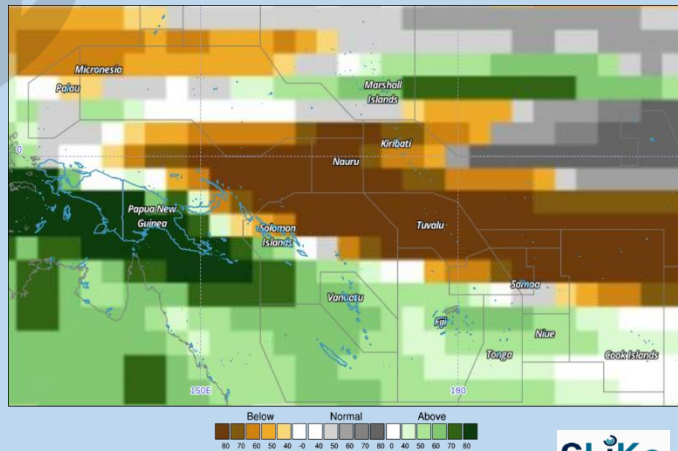
## Climate Prediction Services Project

### PICASO Regional Rainfall Forecast (JAS)



| Station                  | Tercile Probability |     |     |     | Verification Score (LEPS) |           | Verification Score (HSS) |  | Hit/NearMiss/Miss |    |   |
|--------------------------|---------------------|-----|-----|-----|---------------------------|-----------|--------------------------|--|-------------------|----|---|
|                          | KEY                 | BN  | N   | AN  |                           |           |                          |  |                   |    |   |
| Micronesia               |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Chuuk WSO AP           | 24%                 | 35% |     | 41% | 17.2                      | High      | 43.8                     |  | 10                | 3  | 3 |
| ✓ Pohnpei                | 41%                 |     | 45% | 14% | 19.5                      | High      | 6.3                      |  | 6                 | 8  | 2 |
| ✓ Yap Island WSO Airport | 51%                 |     | 33% | 16% | 7.5                       | Moderate  | 53.1                     |  | 10                | 3  | 3 |
| Nauru                    |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Nauru                  |                     | 87% |     |     | 129                       | Excellent | -7.1                     |  | 2                 | 5  | 0 |
| Niue                     |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Hanan Airport          | 34%                 |     | 34% | 32% | 8.3                       | Moderate  | 29.7                     |  | 8                 | 7  | 1 |
| Palau                    |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Koror                  | 29%                 |     | 36% | 35% | 24.9                      | High      | 34.4                     |  | 9                 | 6  | 1 |
| Papua New Guinea         |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Madang                 | 7                   |     | 92% |     | 27.2                      | Very High | 20                       |  | 7                 | 7  | 1 |
| ✓ Port Moresby           | 14%                 |     | 83% |     | 12.7                      | Good      | 10.9                     |  | 5                 | 9  | 2 |
| ✓ Momote                 | 31%                 |     | 37% | 32% | 21                        | High      | 53.1                     |  | 11                | 2  | 3 |
| ✓ Nadzab                 | 10                  | 32% |     | 58% | 18.3                      | High      | 34.4                     |  | 9                 | 4  | 3 |
| ✓ Kavieng                | 99                  | 23% |     | 68% | 17.5                      | High      | 48.4                     |  | 9                 | 3  | 4 |
| ✓ Misima                 | 129                 |     | 86% |     | 8                         | Moderate  | 15.6                     |  | 7                 | 6  | 3 |
| Samoa                    |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Afiamalu               | 35%                 |     | 31% | 34% | -7.1                      | Very Low  | -3.1                     |  | 5                 | 6  | 5 |
| ✓ Laulii                 | 34%                 |     | 34% | 32% | 12.8                      | Good      | 48.4                     |  | 9                 | 6  | 1 |
| ✓ Faleolo                | 36%                 |     | 31% | 33% | 0.5                       | Low       | 6.3                      |  | 6                 | 6  | 4 |
| ✓ Apia                   | 45%                 |     | 36% | 19% | 31.9                      | Very High | 62.5                     |  | 12                | 4  | 0 |
| Solomon Islands          |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Taro Island            | 41%                 |     | 34% | 25% | 9.4                       | Moderate  | 62.5                     |  | 10                | 4  | 2 |
| ✓ Munda                  |                     |     | 97% |     | 10.3                      | Good      | 6.3                      |  | 6                 | 8  | 2 |
| ✓ Auki                   | 31%                 |     | 30% | 39% | 3.7                       | Low       | 48.4                     |  | 9                 | 5  | 2 |
| ✓ Honiara                | 30%                 |     | 31% | 39% | -0.3                      | Very Low  | -40.6                    |  | 1                 | 12 | 3 |
| ✓ Honiara Henderson      | 28%                 |     | 31% | 41% | 2.2                       | Low       | -10                      |  | 4                 | 6  | 5 |
| ✓ Kira Kira              | 10                  | 30% |     | 60% | 0.6                       | Low       | 6.3                      |  | 6                 | 6  | 4 |
| ✓ Santa Cruz             | 35%                 |     | 31% | 34% | 0.9                       | Low       | 6.3                      |  | 6                 | 7  | 3 |
| Tonga                    |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Niuafuou               | 51%                 |     | 31% | 18% | -2                        | Very Low  | -3.1                     |  | 5                 | 6  | 5 |
| ✓ KeppelMata'aho Airport | 36%                 |     | 34% | 30% | 5.5                       | Moderate  | 29.7                     |  | 5                 | 9  | 2 |
| ✓ Lupepau'u              | 7                   |     | 92% |     | 16.1                      | High      | 6.3                      |  | 6                 | 6  | 4 |
| ✓ Haapai                 | 42%                 |     | 35% | 23% | 8.5                       | Moderate  | 6.3                      |  | 6                 | 8  | 2 |
| ✓ Nuku'alofa             | 22%                 |     | 73% |     | -7.3                      | Very Low  | -3.1                     |  | 5                 | 6  | 5 |
| Tuvalu                   |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Nanumea                |                     | 89% |     |     | 10                        | Excellent | 43.8                     |  | 10                | 6  | 0 |
| ✓ Nui                    |                     | 87% |     |     | 11                        | High      | 34.4                     |  | 9                 | 6  | 1 |
| ✓ Funafuti               |                     | 74% | 21% |     | -16.5                     | Very Low  | -31.2                    |  | 2                 | 9  | 5 |
| ✓ Niulakita              |                     | 77% | 19% |     | 11.5                      | Good      | 15.6                     |  | 7                 | 6  | 3 |
| Vanuatu                  |                     |     |     |     |                           |           |                          |  |                   |    |   |
| ✓ Sola (Vanua Lava)      | 17%                 | 29% |     | 54% | 14.9                      | Good      | 48.1                     |  | 7                 | 6  | 0 |
| ✓ Pekoa Airport (Santo)  |                     |     | 98% |     | 29.2                      | Very High | 57.8                     |  | 10                | 2  | 4 |
| ✓ Lamap (Malekula)       | 27%                 |     | 70% |     | 20.7                      | High      | 20                       |  | 7                 | 7  | 1 |
| ✓ Bauerfield (Efate)     | 99                  | 37% |     | 54% | 5.6                       | Moderate  | -3.1                     |  | 5                 | 10 | 1 |
| ✓ Port Vila              | 17%                 |     | 81% |     | 5.6                       | Moderate  | 25                       |  | 7                 | 7  | 2 |
| ✓ White Grass Airport    | 19%                 |     | 78% |     | -7.8                      | Very Low  | -3.1                     |  | 5                 | 8  | 3 |
| ✓ Aniityum               |                     | 29% |     | 68% | -1.1                      | Very Low  | 25                       |  | 8                 | 5  | 3 |

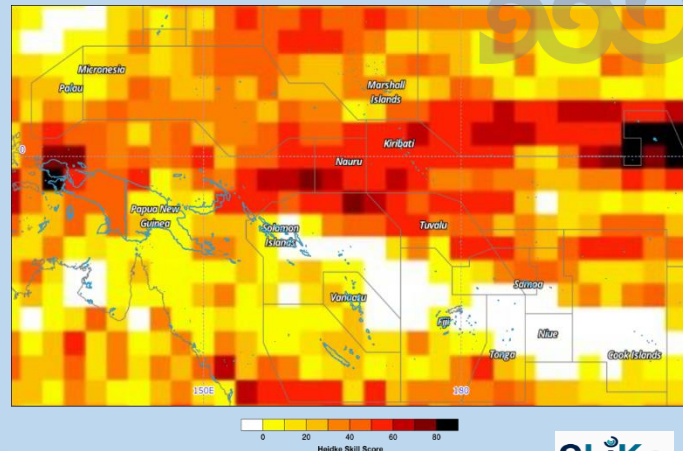
# Republic of Korea-Pacific Islands Climate Prediction Services Project CLIK® Rainfall Forecast (JAS)



Year: 2022, Season: JAS, Lead Month: 3, Method: GAUS  
Model: APCC, CMCC, MSC, NCEP, PNIL, POAMA  
Generated using CLIK® (2022-6-28)



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Year: 2022, Season: JAS, Lead Month: 3, Method: GAUS  
Model: APCC, CMCC, MSC, NCEP, PNIL, POAMA  
Generated using CLIK® (2022-6-28)



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

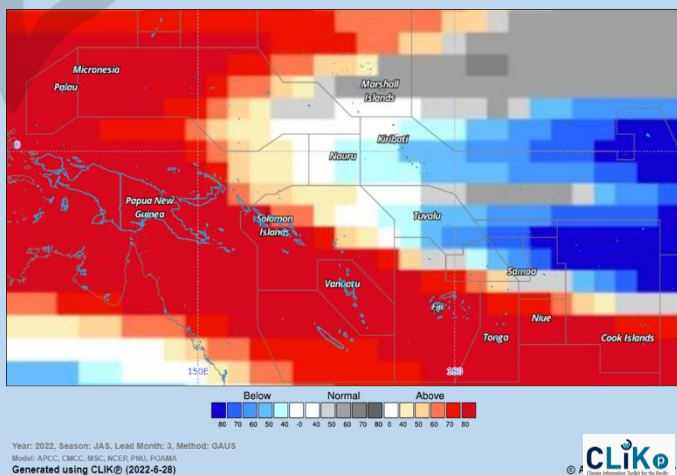
Figure 2: Rainfall Forecast Skill for the Pacific Islands – JAS 2022 period

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

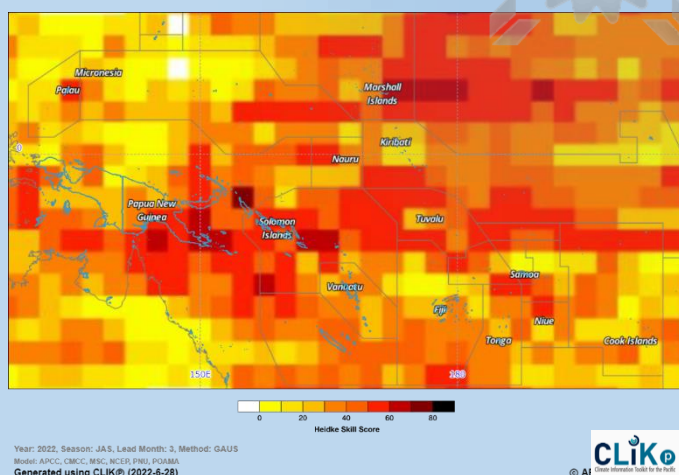
**Table 1: Rainfall Outlook and Skill for the Pacific Islands.**

**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 (JAS)



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



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

| Country          | Air Temperature Outlook                            | Skill           |
|------------------|--|-----------------|
| Cook Islands     | Above Normal (Rarotonga)<br>Below Normal (Penrhyn) | Low - High      |
| FSM              | Above Normal                                       | Low - Moderate  |
| Fiji             | Above Normal except Rotuma (N)                     | Low - Moderate  |
| Kiribati         | Below Normal                                       | Low - Moderate  |
| Marshall Islands | Normal   | Low - High      |
| Nauru            | Below Normal                                       | Moderate        |
| Niue             | Above Normal                                       | Low             |
| Palau            | Above Normal                                       | High            |
| PNG              | Above Normal                                       | Low – High      |
| Samoa            | Normal   | High            |
| Solomon Islands  | Above Normal                                       | Moderate – High |
| Tonga            | Above Normal                                       | Low – High      |
| Tokelau          | Below Normal                                       | Moderate        |
| Tuvalu           | Normal - Below Normal                              | Moderate - High |
| Vanuatu          | Above Normal                                       | Low – 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](http://clikp.sprep.org)

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