

# Republic of Korea-Pacific Islands Climate Prediction Services Project Summary: January to March 2022 (JFM)

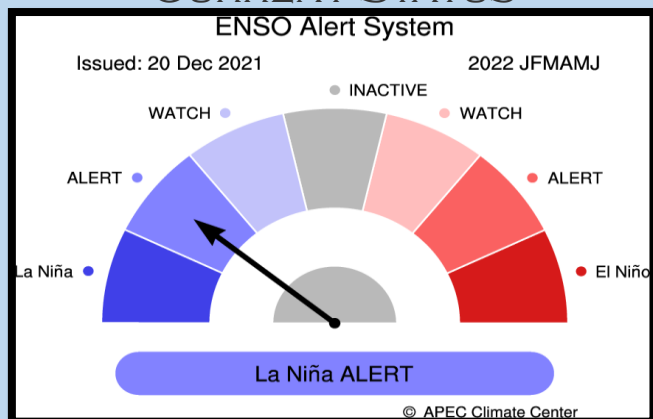


## Climate Outlook for January ~ June 2022

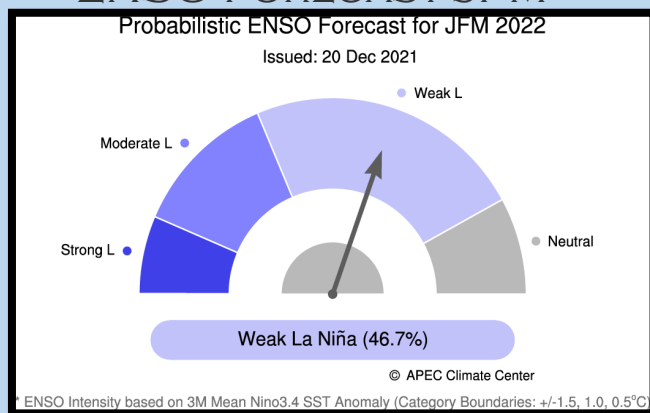
- The APCC ENSO Alert suggests “La Niña ALERT”. During November 2021, negative sea surface temperature anomalies were observed over the equatorial Pacific. The Niño3.4 index is expected to be below -1.2 °C and gradually increase to -0.1 °C through the forecast period. Based on the running 3-month mean Niño3.4 index, the latest APCC ENSO outlook suggests an around 84% chance of La Niña conditions with weak intensity for January – March 2022, which gradually decreases. Meanwhile, ENSO-neutral conditions are likely to be gradually increasing and then dominant during April – June 2022.
- Strongly enhanced probability for above normal temperatures is predicted for Micronesia and Melanesia (excluding equatorial region), and southern Polynesia for December 2021 – May 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

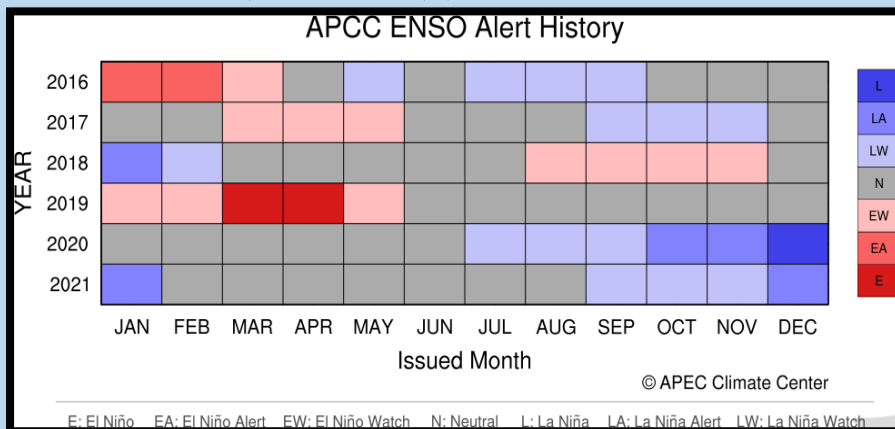
### CURRENT STATUS



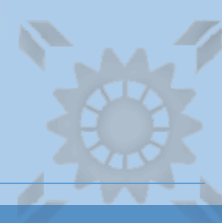
### ENSO FORECAST JFM



## ENSO ALERT HISTORY



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



## RAINFALL OUTLOOK

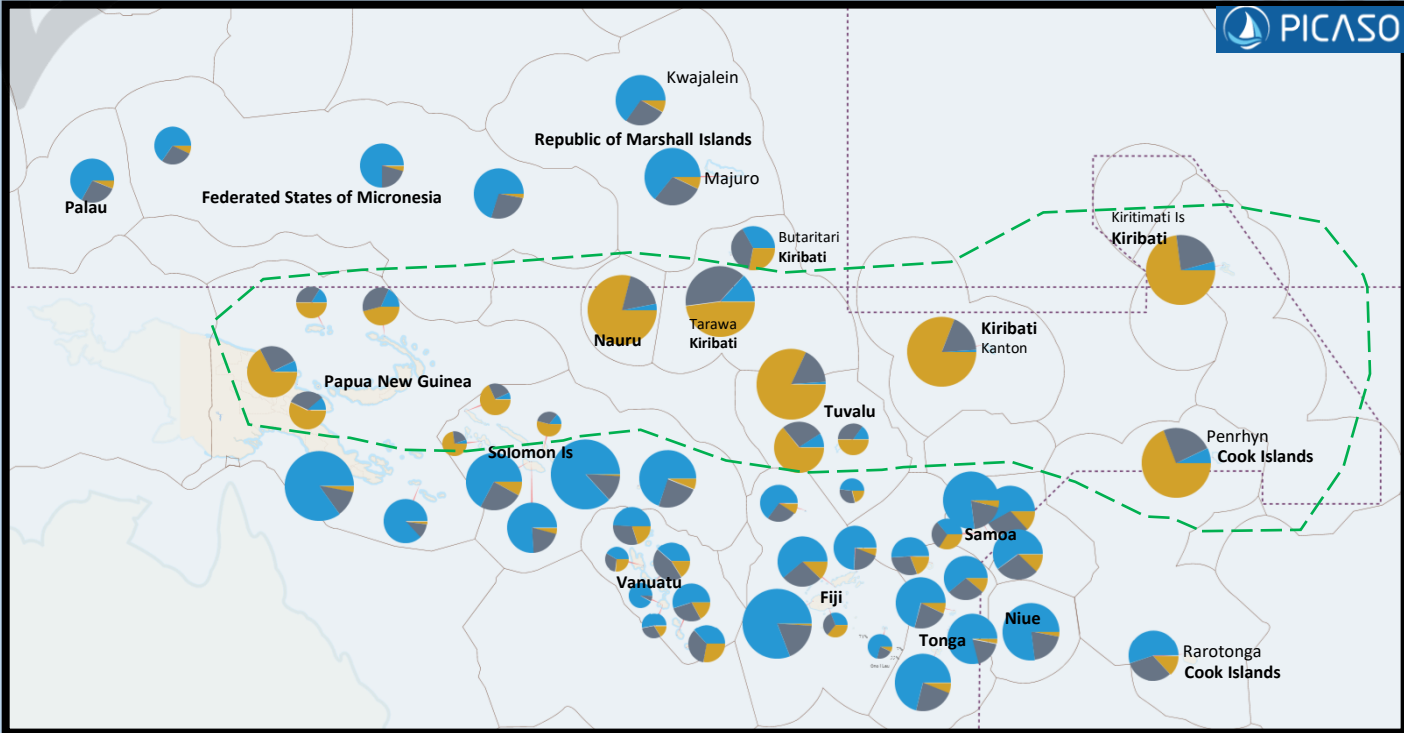
| Model        | PICASO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CLIK®                                                                                                                                                                                                                                                                                              |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Status       | COUNTRY (Area)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                    |
| Above Normal | <b>Cook Islands</b> - (Rarotonga)<br><b>Fiji</b> - (*Suva, Rotuma, Udu Point, Nabouwalu, Nadi, Ono-i-lau)<br><b>FSM</b><br><b>Republic of Marshall Islands</b><br><b>Niue</b><br><b>Palau</b><br><b>PNG</b> – (Port Moresby, Misima)<br><b>Samoa</b> – (Afiamalu, *Faleolo, Apia, Lauli'i)<br><b>Solomon Islands</b> (Honiara, Henderson, Kirakira, Santa Cruz)<br><b>Tonga</b><br><b>Tuvalu</b> – (Niulakita)<br><b>Vanuatu</b> – (Sola, Pekoa, Bauerfield, Port Vila, Whitegrass, *Aneityum) | <b>Cook Islands</b> – (Rarotonga)<br><b>Fiji</b><br><b>FSM</b><br><b>Republic of Marshall Islands</b><br><b>Niue</b><br><b>Palau</b><br><b>PNG</b> – (Port Moresby, Misima)<br><b>Samoa</b><br><b>Solomon Islands</b> (Honiara, Henderson, Santa Cruz, Kirakira)<br><b>Tonga</b><br><b>Vanuatu</b> |
| Normal       | <b>Kiribati</b> - (Butaritari)<br><b>Vanuatu</b> – (Lamap)                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>PNG</b> – (Nadzab)                                                                                                                                                                                                                                                                              |
| Below Normal | <b>Cook Islands</b> - (Penrhyn)<br><b>Kiribati</b> - (Tarawa, Kanton, Kiritimati)<br><b>Nauru</b><br><b>PNG</b> – (Madang, Momote, Nadzab, Kavieng)<br><b>Solomon Islands</b> – (Taro Is., Munda, Auki)<br><b>Tuvalu</b> - (Nanumea, Nui, Funafuti)                                                                                                                                                                                                                                            | <b>Cook Islands</b> - (Penrhyn)<br><b>Kiribati</b><br><b>Nauru</b><br><b>PNG</b> – (Momote, Kavieng, Madang)<br><b>Solomon Islands</b> – (Taro, Munda, Auki)<br><b>Tuvalu</b><br><b>Tokelau</b>                                                                                                    |

Note: \* indicate stations that have 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>Republic of Marshall Is</b> , <b>Kiribati</b> (Tarawa, Butaritari), <b>Nauru</b> , <b>Niue</b> , <b>Palau</b> , <b>PNG</b> , <b>Samoa</b> , <b>Solomon Islands</b> , <b>Tonga</b> , <b>Tuvalu</b> (Nanumea), <b>Vanuatu</b> . |
| Normal       | <b>Kiribati</b> (Kiritimati, Kanton), <b>Tuvalu</b> - (Nui, Niulakita, Funafuti), <b>Tokelau</b>                                                                                                                                                                                                        |
| Below Normal | <b>Cook Is</b> (Penrhyn, northern group)                                                                                                                                                                                                                                                                |

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



**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.)

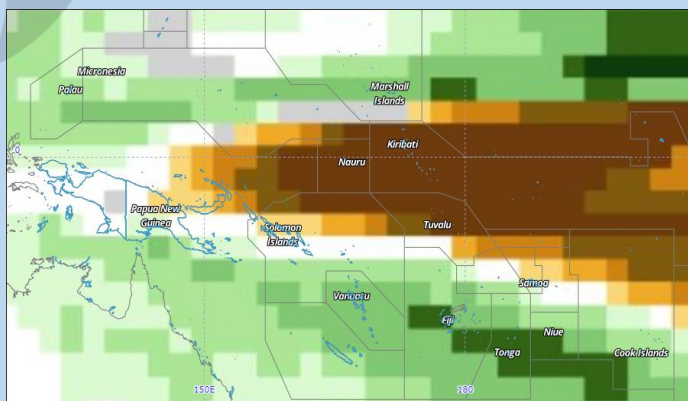
| Station                 | Tercile Probability |     |     | Verification Score (LEPS) | Verification Score (HSS) | Hit/NearMiss/Miss |      |        |
|-------------------------|---------------------|-----|-----|---------------------------|--------------------------|-------------------|------|--------|
|                         | KEY                 | BN  | N   |                           |                          | AN                |      |        |
| <b>Cook Islands</b>     |                     |     |     |                           |                          |                   |      |        |
| Penrhyn                 |                     | 69% | 24% | 7                         | 36.2                     | Excellent         | 71.9 | 13 3 0 |
| Rarotonga               | 13%                 | 32% | 55% |                           | 23.1                     | High              | 25   | 8 8 0  |
| <b>Fiji</b>             |                     |     |     |                           |                          |                   |      |        |
| Rotuma                  | 9%                  | 26% | 65% | 7                         | 7.1                      | Moderate          | 10.9 | 5 9 2  |
| Udu Point               | 6                   | 20% | 74% |                           | 11.9                     | Good              | 19.2 | 6 4 3  |
| Nabouwalu               | 12%                 | 27% | 61% |                           | 15                       | High              | 62.5 | 9 1 2  |
| Nadi Airport            | 18%                 |     | 81% |                           | 39                       | Excellent         | 53.1 | 11 3 2 |
| Suva                    | 36%                 | 33% | 31% |                           | -0.6                     | Very Low          | 1.6  | 5 3 8  |
| Ono I Lau               | 7                   | 22% | 71% |                           | -1.8                     | Very Low          | 10   | 6 3 6  |
| <b>Kiribati</b>         |                     |     |     |                           |                          |                   |      |        |
| Kiritimati              |                     | 73% | 23% |                           | 40.5                     | Excellent         | 34.4 | 9 6 1  |
| Butaritari              | 28%                 | 39% | 33% |                           | 11.1                     | Good              | 6.3  | 6 5 5  |
| Tarawa                  | 48%                 | 39% | 13% |                           | 51.3                     | Excellent         | 71.9 | 13 3 0 |
| Kanton                  |                     | 81% | 18% |                           | 65.1                     | Excellent         | 70   | 12 3 0 |
| <b>Marshall Islands</b> |                     |     |     |                           |                          |                   |      |        |
| Kwajalein Bucholz Aaf   | 8                   | 27% | 65% |                           | 21.1                     | High              | 15.6 | 7 8 1  |
| Majuro                  | 7                   | 29% | 64% |                           | 26.5                     | Very High         | 25   | 8 7 1  |

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



| Station                  | Tercile Probability |     |     |     | Verification Score (LEPS) |           |       | Verification Score (HSS) |    |   | Hit/NearMiss/Miss |
|--------------------------|---------------------|-----|-----|-----|---------------------------|-----------|-------|--------------------------|----|---|-------------------|
|                          | KEY                 | BN  | N   | AN  |                           |           |       |                          |    |   |                   |
| <b>Micronesia</b>        |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Chuuk WSO AP           | 21%                 |     | 75% |     | 12.3                      | Good      | 15.6  | 7                        | 5  | 4 |                   |
| ✓ Pohnpei                | 27%                 |     | 70% |     | 21.2                      | High      | 15.6  | 7                        | 8  | 1 |                   |
| ✓ Yap Island WSO Airport | 28%                 |     | 65% |     | 5.4                       | Moderate  | 15.6  | 7                        | 4  | 5 |                   |
| <b>Nauru</b>             |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Nauru                  |                     | 79% |     | 18% | 56.8                      | Excellent | 81.2  | 7                        | 1  | 0 |                   |
| <b>Niue</b>              |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Hanan Airport          | 20%                 |     | 77% |     | 27.5                      | Very High | 43.8  | 10                       | 5  | 1 |                   |
| <b>Palau</b>             |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Koror                  | 27%                 |     | 67% |     | 14.2                      | Good      | 10    | 6                        | 6  | 3 |                   |
| <b>Papua New Guinea</b>  |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Madang                 | 67%                 |     | 26% | 7   | 22                        | High      | 15.6  | 7                        | 6  | 3 |                   |
| ✓ Port Moresby           | 129                 |     | 85% |     | 36.8                      | Excellent | 53.1  | 11                       | 4  | 1 |                   |
| ✓ Momote                 | 50%                 |     | 34% | 16% | 4.2                       | Low       | 15.6  | 7                        | 7  | 2 |                   |
| ✓ Nadzab                 | 57%                 |     | 32% | 11% | 8                         | Moderate  | -12.5 | 4                        | 9  | 3 |                   |
| ✓ Kavieng                | 46%                 |     | 36% | 18% | 9.5                       | Moderate  | -3.1  | 5                        | 7  | 4 |                   |
| ✓ Misima                 | 11%                 |     | 87% |     | 11.1                      | Good      | -3.1  | 5                        | 8  | 3 |                   |
| <b>Samoa</b>             |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Afiamalu               | 129                 | 28% | 60% |     | 23.6                      | High      | 43.8  | 10                       | 5  | 1 |                   |
| ✓ Laulii                 | 139                 | 29% | 58% |     | 20.3                      | High      | 20    | 7                        | 7  | 1 |                   |
| ✓ Faleolo                | 34%                 | 30% | 36% |     | 0.3                       | Low       | 15.6  | 5                        | 2  | 9 |                   |
| ✓ Apia                   | 19%                 |     | 77% |     | 26.8                      | Very High | 53.1  | 11                       | 2  | 3 |                   |
| <b>Solomon Islands</b>   |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Taro Island            | 68%                 |     | 25% | 7   | 3.9                       | Low       | -3.1  | 5                        | 6  | 5 |                   |
| ✓ Munda                  | 73%                 |     | 22% |     | -12.7                     | Very Low  | -12.5 | 4                        | 7  | 5 |                   |
| ✓ Auki                   | 54%                 |     | 32% | 14% | -14.4                     | Very Low  | -21.9 | 3                        | 6  | 7 |                   |
| ✓ Honiara                | 8%                  | 25% | 67% |     | 29.1                      | Very High | 62.5  | 12                       | 2  | 2 |                   |
| ✓ Honiara Henderson      | 20%                 |     | 76% |     | 21.2                      | High      | 25    | 8                        | 5  | 3 |                   |
| ✓ Kira Kira              | 129                 |     | 87% |     | 43.7                      | Excellent | 43.8  | 10                       | 5  | 1 |                   |
| ✓ Santa Cruz             | 6                   | 24% | 70% |     | 30.7                      | Very High | 43.8  | 10                       | 5  | 1 |                   |
| <b>Tonga</b>             |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Niuafuou               | 19%                 | 30% | 51% |     | 7.6                       | Moderate  | 25    | 8                        | 4  | 4 |                   |
| ✓ KeppelMata'aho Airport | 11%                 | 28% | 61% |     | 14.1                      | Good      | 30    | 8                        | 5  | 2 |                   |
| ✓ Lupepau'u              | 7                   | 22% | 71% |     | 20.5                      | High      | 25    | 8                        | 5  | 3 |                   |
| ✓ Haapai                 | 18%                 |     | 79% |     | 18.6                      | High      | 39.1  | 8                        | 5  | 3 |                   |
| ✓ Nuku'alofa             | 6                   | 23% | 71% |     | 26.4                      | Very High | 57.8  | 11                       | 3  | 2 |                   |
| <b>Tuvalu</b>            |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Nanumea                |                     | 82% | 17% |     | 53.6                      | Excellent | 43.8  | 10                       | 6  | 0 |                   |
| ✓ Nui                    |                     | 64% | 27% | 99  | 17.7                      | High      | 25    | 8                        | 6  | 2 |                   |
| ✓ Funafuti               |                     | 50% | 35% | 15% | 4.5                       | Low       | 6.3   | 6                        | 6  | 4 |                   |
| ✓ Niulakita              | 21%                 | 31% | 48% |     | -7.6                      | Very Low  | -21.9 | 3                        | 4  | 9 |                   |
| <b>Vanuatu</b>           |                     |     |     |     |                           |           |       |                          |    |   |                   |
| ✓ Sola (Vanua Lava)      | 20%                 | 31% | 49% |     | 5.8                       | Moderate  | 0     | 4                        | 5  | 3 |                   |
| ✓ Pekoa Airport (Santo)  | 27%                 | 31% | 42% |     | -0.1                      | Very Low  | 15.6  | 7                        | 3  | 6 |                   |
| ✓ Lamap (Malekula)       | 16%                 | 45% | 39% |     | -8.6                      | Moderate  | 6.3   | 6                        | 10 | 0 |                   |
| ✓ Bauerfield (Efate)     | 7                   |     | 92% |     | -5.1                      | Very Low  | -3.1  | 5                        | 3  | 8 |                   |
| ✓ Port Vila              | 16%                 | 31% | 53% |     | -8.2                      | Very Low  | 10.9  | 5                        | 4  | 7 |                   |
| ✓ White Grass Airport    | 17%                 | 28% | 55% |     | 8.5                       | Moderate  | 6.3   | 6                        | 6  | 4 |                   |
| ✓ Ancityum               | 28%                 | 35% | 37% |     | 6                         | Moderate  | 25    | 8                        | 7  | 1 |                   |

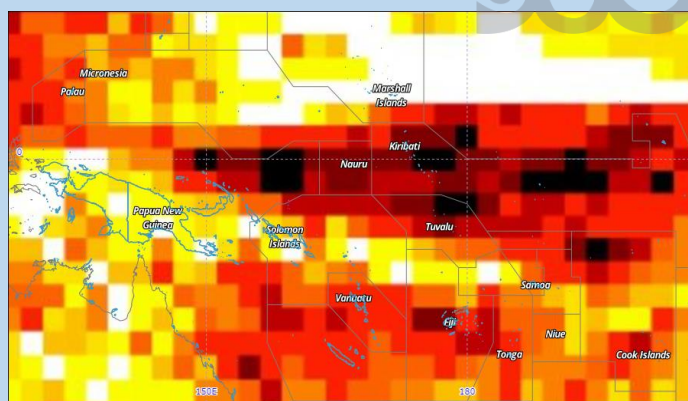
# Republic of Korea-Pacific Islands Climate Prediction Services Project CLIK® Rainfall Forecast (JFM)



Year: 2022, Season: JFM, Lead Month: 3, Method: GAUS  
Model: APCC, CMCC, CWB, NASA, NCEP, PNU, POAMA  
Generated using CLIK® (2021-12-22)



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Generated using CLIK® (2021-12-22)



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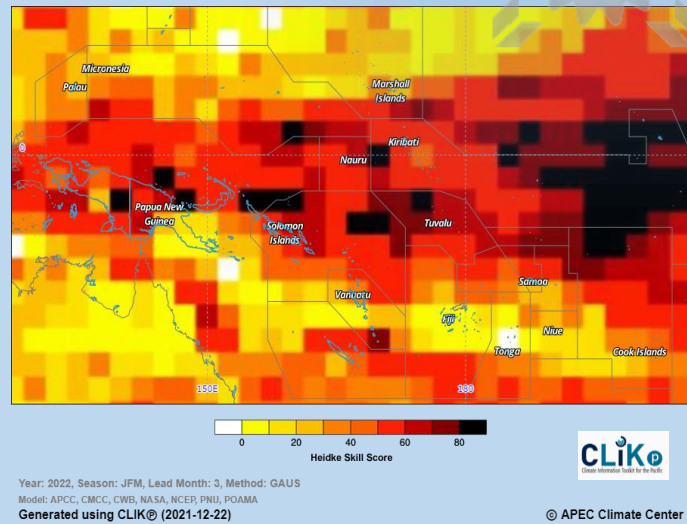
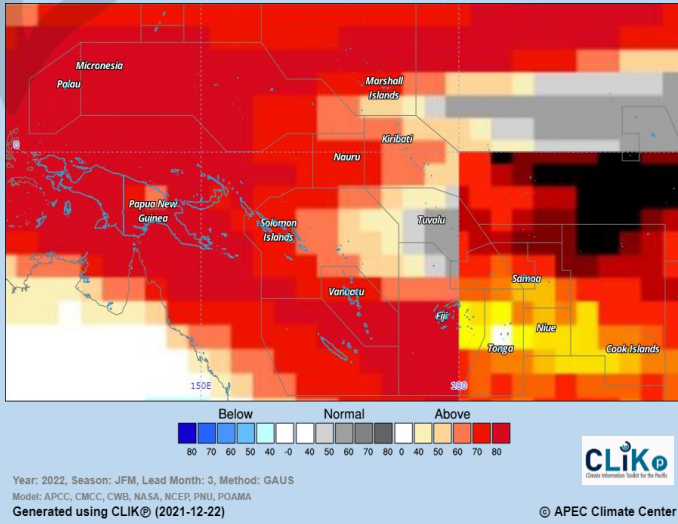
**Figure 1:** MME Rainfall Forecast for the Pacific Islands – JFM 2022 period **Figure 2:** Rainfall Forecast Skill for the Pacific Islands –JFM 2022 period

| Country          | Rainfall Outlook                                                                                 | Skill               |
|------------------|--------------------------------------------------------------------------------------------------|---------------------|
| Cook Islands     | Below Normal - Penrhyn<br>Above Normal - Rarotonga                                               | Moderate - High     |
| FSM              | Above Normal                                                                                     | Very Low - Low      |
| Fiji             | Above Normal                                                                                     | Low - High          |
| Kiribati         | Below Normal                                                                                     | Very High           |
| Marshall Islands | Above Normal                                                                                     | Very Low            |
| Nauru            | Below Normal                                                                                     | Very High           |
| Niue             | Above Normal                                                                                     | Moderate            |
| Palau            | Above Normal                                                                                     | Moderate            |
| PNG              | Below Normal – Momote, Kavieng, Madang<br>Normal - Nadzab<br>Above Normal – Port Moresby, Misima | Very Low - High     |
| Samoa            | Above Normal                                                                                     | Moderate            |
| Solomon Islands  | Below Normal – Taro Is., Munda, Auki<br>Above Normal - elsewhere                                 | Very Low - Moderate |
| Tonga            | Above Normal                                                                                     | Moderate - High     |
| Tokelau          | Below Normal                                                                                     | Moderate            |
| Tuvalu           | Below Normal                                                                                     | Moderate - High     |
| 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 (JFM)



**Figure 3: MME Temperature Forecast for the Pacific Islands – JFM 2022 period** **Figure 4: Air Temperature Forecast Skill for the Pacific Islands – JFM 2022 period**

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

**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: [klikp.sprep.org](http://klikp.sprep.org)

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