Republic of Korea-Pacific Islands Climate Prediction Services Project
Summary: July to September 2021 (JAS)
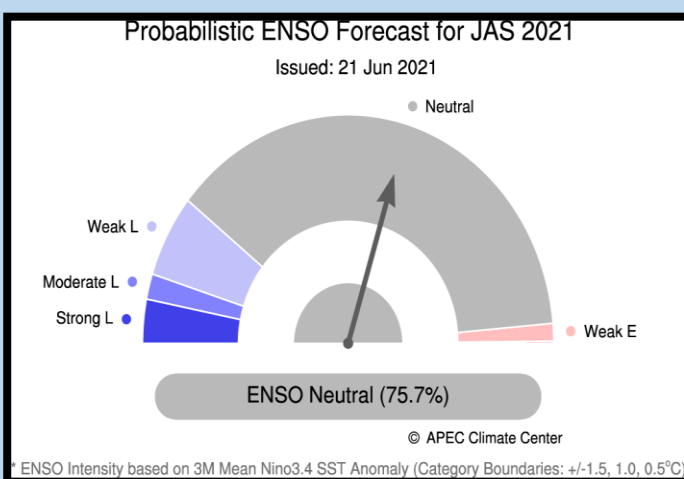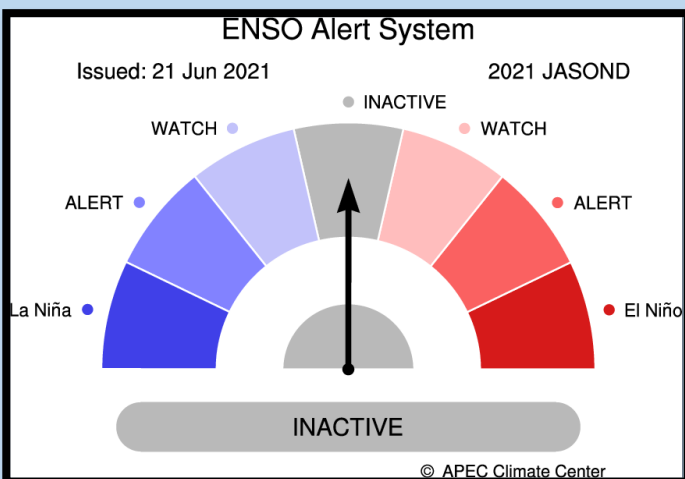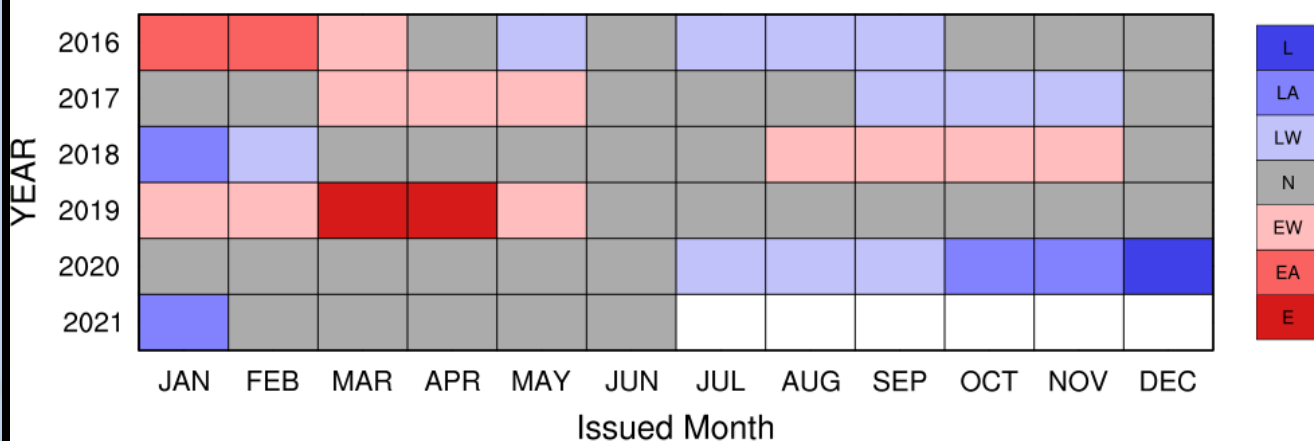
Climate Outlook for July ~ December 2021

- The APCC ENSO Alert suggests "INACTIVE". During May 2021, negative sea surface temperature anomalies were observed over the equatorial Pacific. The negative Niño3.4 index around decreasing from -0.16°C to -0.53°C is expected during July – December 2021. Based on the running 3-month mean Niño3.4 index, the latest APCC ENSO outlook suggests ENSO neutral conditions with a decreasing chance from 76% to 58% during the forecast period.

- Strongly enhanced probability for above normal temperatures is predicted for Micronesia, Melanesia (excluding equatorial region) and southern Polynesia for July – December 2021.

- Enhanced probability for below normal precipitation is predicted for off-equatorial southern region of Pacific Islands for July – December 2021.
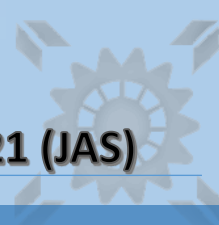
- Please see https://apcc21.org/ser/outlook.do?lang=en for more information.

ENSO

RAINFALL OUTLOOK

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

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

TEMPERATURE OUTLOOK

Status	COUNTRY
	CLIK℗
Above Normal	**Cook Is (**Rarotonga, southern group**), FSM, Fiji, Marshall Is, Kiribati -** (Tarawa, Butaritari), **Nauru, Niue, Palau, PNG, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu**.
Normal	**Cook Is (**Penrhyn, northern group**), Kiribati -** (Kanton, Kiritimati), **Tokelau**
Below Normal	

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Republic of Korea-Pacific Islands
Climate Prediction Services Project
PICASO Regional Rainfall Forecast (JAS)
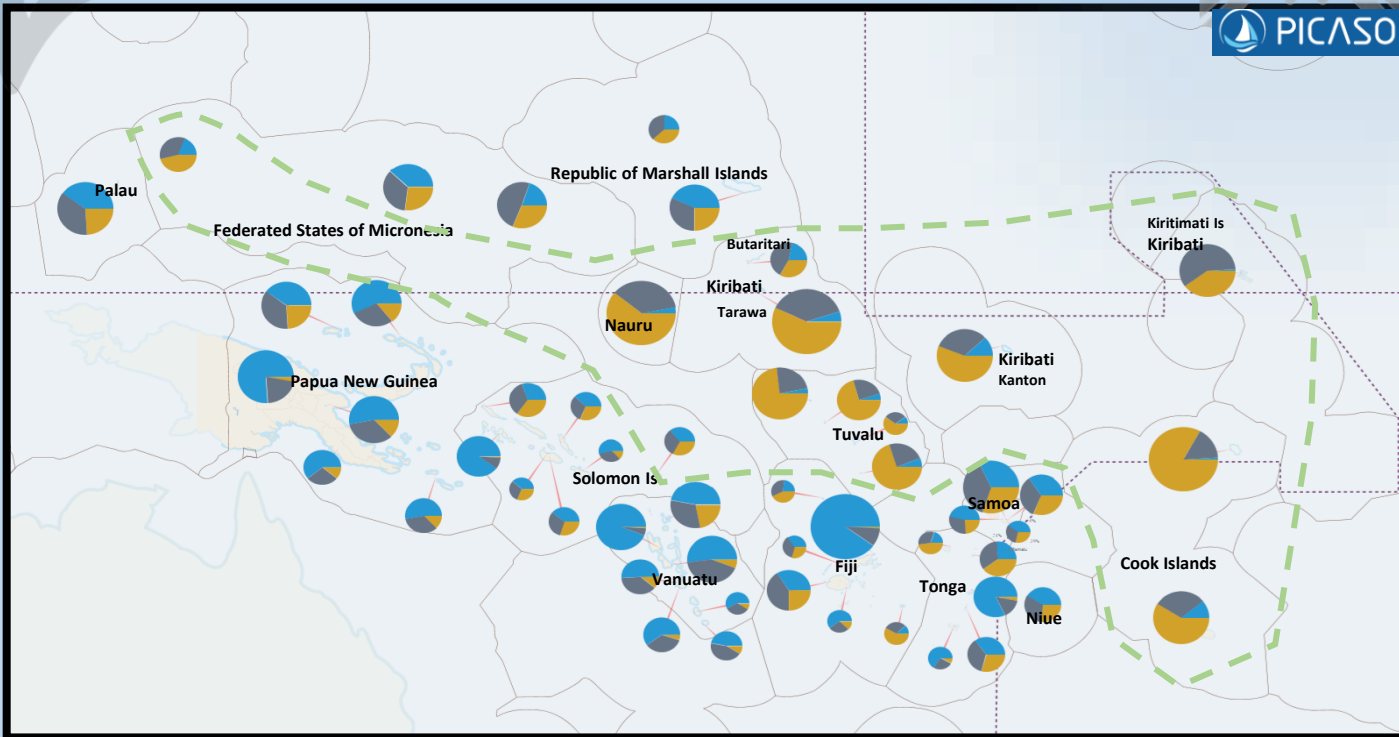
Figure 1: Regional outlook map of the Pacific. In general, all stations enclose within the green-dash line anticipated to have Below Normal (BN) rainfall. Normal (N) to Above Normal (AN) rainfall is predicted for stations outside the green-dashed line. *(Note: the larger the pie chart the higher the 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	83%		16%	38.5	Excellent	55	10	4	1
Rarotonga	59%	30%	11%	28.3	Very High	30	8	5	2
Fiji									
Rotuma	43%	34%	23%	-8.8	Very Low	-50	0	12	2
Udu Point	9%	90%		41.8	Excellent	31.8	6	4	1
Nabouwalu	29%	36%	35%	-24.6	Very Low	-22.7	2	6	3
Nadi Airport	25%	41%	34%	12.1	Good	30	8	4	3
Suva	12%	28%	60%	-8.4	Very Low	-10	4	6	5
Ono I Lau	58%	30%	12%	-6.2	Very Low	-17.9	3	6	5
Kiribati									
Kiritimati	40%	59%		31.2	Very High	20	7	8	0
Butaritari	33%	45%	22%	6.9	Moderate	0	5	7	3
Tarawa	57%	38%	5%	58.3	Excellent	60	11	4	0
Kanton	56%	32%	12%	26.2	Very High	62.5	9	3	0
Marshall Islands									
Kwajalein Bucholz Aaf	38%	38%	24%	2.9	Low	-20	3	8	4
Majuro	25%	32%	43%	16.9	High	50	10	1	4

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	27%	35%	38%	17.6	High	40		9	3	3
Pohnpei	31%	49%	20%	20.5	High	10		6	7	2
Yap Island WSO Airport	46%	35%	19%	9.8	Moderate	60		10	3	2
Nauru										
Nauru	61%	36%	3%	37.3	Excellent	-7.1		2	5	0
Niue										
Hanan Airport	26%	33%	41%	7.7	Moderate	25		7	7	1
Palau										
Koror	24%	36%	40%	25.4	Very High	40		9	5	1
Papua New Guinea										
Madang	3%	21%	76%	28.3	Very High	25		7	6	1
Port Moresby	11%	28%	61%	9.5	Moderate	5		4	9	2
Momote	24%	36%	40%	21.3	High	60		11	1	3
Nadzab	13%	34%	53%	16.9	High	30		8	4	3
Kavieng	14%	29%	57%	18.1	High	55		9	2	4
Misima	13%	34%	53%	5.6	Moderate	10		6	6	3
Samoa										
Afiamalu	29%	31%	40%	-7.1	Very Low	0		5	5	5
Laulii	31%	34%	35%	13.1	Good	55		9	5	1
Faleolo	24%	30%	46%	2.5	Low	10		6	6	3
Apia	30%	38%	32%	32.4	Very High	60		11	4	0
Solomon Islands										
Taro Island	35%	35%	30%	9.6	Moderate	55		9	4	2
Munda	9%	90%		11.5	Good	10		6	7	2
Auki	31%	31%	38%	3.8	Low	55		9	4	2
Honiara	31%	31%	38%	-0.1	Very Low	-40		1	11	3
Honiara Henderson	30%	31%	39%	1.5	Low	-17.9		3	6	5
Kira Kira	13%	33%	54%	-3.7	Very Low	0		5	6	4
Santa Cruz	33%	31%	36%	0.7	Low	0		5	7	3
Tonga										
Niuafoou	48%	32%	20%	-5	Very Low	-10		4	6	5
KeppelMata'aho Airport	40%	34%	26%	5.6	Moderate	35		5	8	2
Lupepau'u	3%	15%	82%	10.2	Good	0		5	6	4
Haapai	29%	36%	35%	8.6	Moderate	0		5	8	2
Nuku'alofa	8%	26%	66%	-1.9	Very Low	0		5	6	4
Tuvalu										
Nanumea	73%	24%	3%	32.5	Very High	40		9	6	0
Nui	71%	24%	5%	14.9	Good	30		8	6	1
Funafuti	60%	30%	10%	-12	Very Low	-30		2	9	4
Niulakita	70%	24%	6%	18.1	High	20		7	6	2
Vanuatu										
Sola (Vanua Lava)	22%	31%	47%	15.5	High	56.2		7	5	0
Pekoa Airport (Santo)	5%	94%		24.6	High	55		9	2	4
Lamap (Malekula)	6%	42%	52%	20.9	High	25		7	6	1
Bauerfield (Efate)	11%	38%	51%	5.5	Moderate	0		5	9	1
Port Vila	5%	35%	60%	5.7	Moderate	30		7	6	2
White Grass Airport	9%	34%	57%	-2.9	Very Low	0		5	8	2
Aneityum	9%	44%	47%	2.9	Low	30		8	5	2

Republic of Korea-Pacific Islands
Climate Prediction Services Project
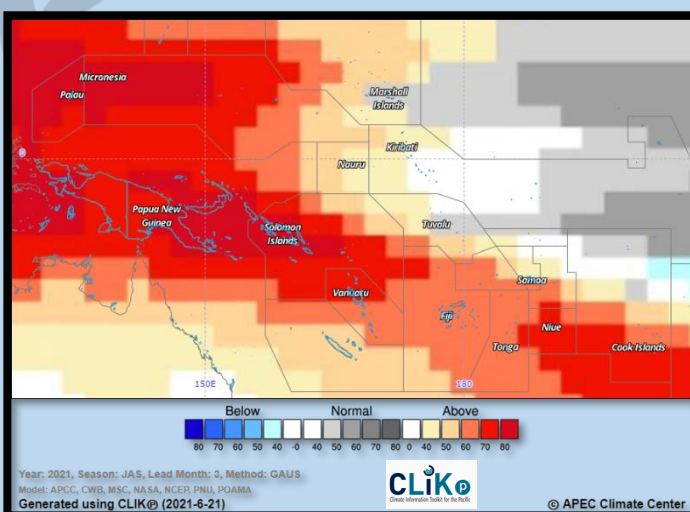## CLIK℗ Rainfall Forecast (JAS)
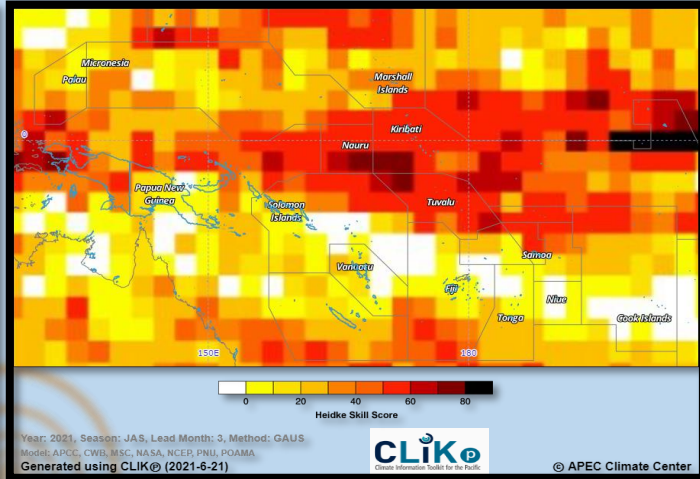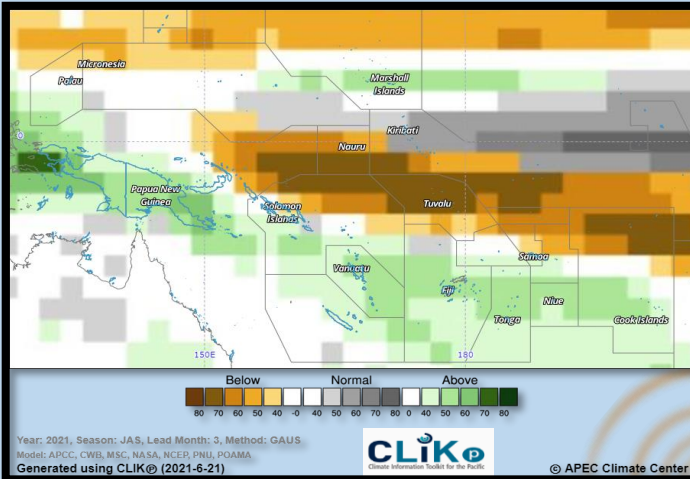
Figure 1: *MME Rainfall Forecast for the Pacific Islands – JAS 2021 period*

Figure 2: *Rainfall Forecast Skill for the Pacific Islands – JAS 2021 period*

| Country	Rainfall Outlook	Skill
Cook Islands	Below Normal - Penrhyn Above Normal - Rarotonga	Moderate Very Low
FSM	Above Normal – Pohnpei Normal – Chuuk Below Normal – Yap	Moderate Low Very Low
Fiji	Normal - Rotuma Above Normal elsewhere	Very Low – Low
Kiribati	Normal	High
Marshall Islands	Above Normal	Moderate
Nauru	Below Normal	High
Niue	Above Normal	Very Low
Palau	Normal	Very Low
PNG	Below Normal – (Kavieng) Above Normal (Elsewhere)	High – Momote & Kavieng Very Low – Low
Samoa	Above Normal	Very Low
Solomon Islands	Above Normal - (Honiara/Henderson) Normal – (Kirakira, Santa Cruz) Below Normal – (Taro Is, Munda, Auki)	Very Low – Moderate
Tonga	Above Normal	Very Low
Tokelau	Below Normal	High
Tuvalu	Below Normal	High
Vanuatu	Above Normal	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.*

Republic of Korea-Pacific Islands
Climate Prediction Services Project
CLIK℗ Temperature Forecast (JAS)

Figure 3: MME Temperature Forecast for the Pacific Islands – JAS 2021 period
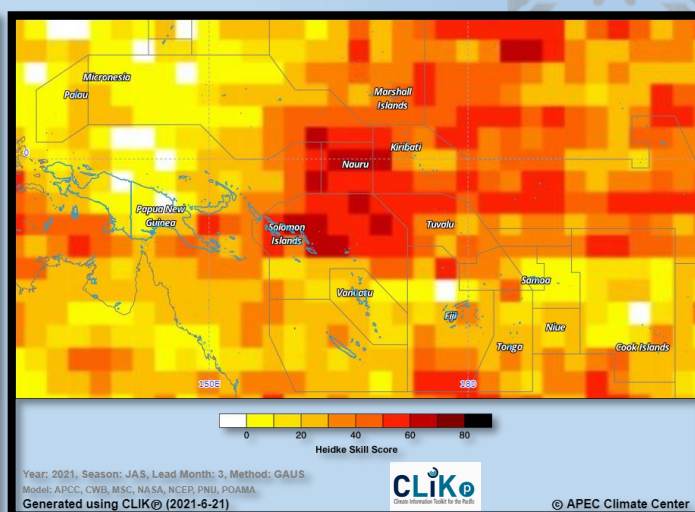
Figure 4: Air Temperature Forecast Skill for the Pacific Islands – JAS 2021 period

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

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

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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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