

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 141

Country: Papua New Guinea

TABLE 1: Monthly Rainfall

| Station (include data period) | Mar-2019 | Apr-2019 | May-2019 | | | | Rank |
|----------------------------------|------------|------------|---------------|---------|---------|--------|--------|
| | | | Total (mm) | 33%tile | 67%tile | Median | |
| | Total (mm) | Total (mm) | Rainfall (mm) | | | | |
| Momase Region | | | | | | | |
| Madang (1944-2019) | | | | 301.5 | 417.7 | 337.2 | |
| Nadzab (1973-2019) | 169.0 | 103.0 | | 66.2 | 105.2 | 78.6 | |
| Wewak (1894-2019) | 98.0 | 127.8 | 275.4 | 178.9 | 271.6 | 220.2 | 47/64 |
| Vanimo (1918-2019) | 407.4 | 261.6 | 102.0 | 167.1 | 249.3 | 205.2 | 8/66 |
| Highlands Region | | | | | | | |
| Goroka (1948-2019) | 328.2 | 103.0 | | 91.0 | 141.0 | 109.0 | |
| New Guinea Islands Region | | | | | | | |
| Momote (1949-2019) | 324.6 | 238.4 | 393.8 | 198.0 | 256.3 | 235.7 | 58/65 |
| Kavieng (1916-2019) | 270.0 | | 311.6 | 200.0 | 287.2 | 244.5 | 65/89 |
| Southern Region | | | | | | | |
| Misima (1917-2019) | 280.2 | | | 187.6 | 315.7 | 249.0 | |
| Port Moresby (1875-2019) | 371.4 | 118.4 | 101.6 | 31.8 | 72.4 | 50.7 | 99/127 |

TABLE 2: Three-month Rainfall for March to May 2019

| Station | Three-month Total | | 33%tile | 67%tile | Median | Rank | SCOPIC forecast probabilities based on NINO3.4 December 18-January 19 | | | | Verification: Consistent, Near-consistent, Inconsistent? |
|----------------------------------|-------------------|--------------|---------|---------|--------|---------|---|----|-----|------|---|
| | Rainfall (mm) | | | | | | B-N | N | A-N | LEPS | |
| <i>Momase Region</i> | | | | | | | | | | | |
| Madang (1944-2019) | | | 999.3 | 1203.0 | 1131.8 | | 33 | 34 | 33 | -2 | |
| Nadzab (1973-2019) | | | 362.1 | 428.7 | 389.0 | | 30 | 32 | 38 | 0 | |
| Wewak (1894-2019) | 501.2 | Below normal | 511.8 | 645.9 | 604.1 | 16/62 | 42 | 25 | 33 | 1 | Consistent |
| Vanimu (1918-2019) | 771.0 | Normal | 615.9 | 839.9 | 705.6 | 38/63 | 35 | 29 | 36 | -2 | Near-consistent |
| <i>Highlands Region</i> | | | | | | | | | | | |
| Goroka (1948-2019) | | | 492.0 | 610.0 | 558.9 | | 26 | 29 | 45 | -2 | |
| <i>New Guinea Islands Region</i> | | | | | | | | | | | |
| Momote (1949-2019) | 956.8 | Above normal | 744.0 | 928.0 | 830.3 | 45/62 | 34 | 31 | 35 | -2 | Consistent |
| Kavieng (1917-2019) | | | 772.8 | 943.8 | 842.2 | | 21 | 42 | 37 | 3 | |
| <i>Southern Region</i> | | | | | | | | | | | |
| Misima (1917-2019) | | | 698.1 | 995.3 | 801.8 | | 51 | 33 | 16 | 19 | |
| Port Moresby (1875-2019) | 591.4 | Above normal | 308.1 | 450.4 | 382.0 | 112/122 | 41 | 35 | 24 | 4 | Inconsistent |

TABLE 3: Seasonal Climate Outlooks using SCOPIC for July to September 2019

Predictor and Period used: NINO3.4 for April to May 2019

| Station | Below Median (prob) | Median Rainfall (mm) | Above Median (prob) | | LEPS (%) [whole numbers] | Hit-rate (%) [whole numbers] |
|----------------------------------|---------------------|----------------------|---------------------|--|--------------------------|------------------------------|
| Momase Region | | | | | | |
| Madang (1944-2019) | 75 | 401.2 | 25 | | 10 | 62 |
| Nadzab(1973-2019) | 53 | 396.0 | 47 | | -2 | 56 |
| Wewak (1894-2019) | 93 | 543.4 | 7 | | 36 | 77 |
| Vanimo (1918-2019) | 40 | 516.0 | 60 | | 0 | 59 |
| Highlands Region | | | | | | |
| Goroka (1948-2019) | 43 | 252.0 | 57 | | -1 | 51 |
| New Guinea Islands Region | | | | | | |
| Momote (1949-2019) | 34 | 914.0 | 66 | | 3 | 59 |
| Kavieng (1916-2019) | 46 | 607.0 | 54 | | -2 | 48 |
| Southern Region | | | | | | |
| Misima (1917-2019) | 85 | 422.0 | 15 | | 22 | 73 |
| Port Moresby (1875-2019) | 59 | 67.0 | 41 | | 1 | 54 |

| Station | Below Normal (prob) | 33%ile Rainfall (mm) | Normal (prob) | 67%ile Rainfall (mm) | Above Normal (prob) | LEPS (%) [whole numbers] | Hit-rate (%) [whole numbers] |
|----------------------------------|---------------------|----------------------|---------------|----------------------|---------------------|--------------------------|------------------------------|
| Momase Region | | | | | | | |
| Madang (1944-2019) | 57 | 322.7 | 35 | 466.8 | 8 | 16 | 49 |
| Nadzab (1973-2019) | 40 | 277.0 | 30 | 462.0 | 30 | -3 | 19 |
| Wewak (1894-2019) | 74 | 466.1 | 19 | 591.5 | 7 | 24 | 52 |
| Vanimo (1918-2019) | 24 | 468.0 | 33 | 584.0 | 43 | 0 | 40 |
| Highlands Region | | | | | | | |
| Goroka (1948-2019) | 31 | 210.0 | 33 | 292.6 | 36 | -2 | 37 |
| New Guinea Islands Region | | | | | | | |
| Momote (1949-2019) | 25 | 767.0 | 31 | 1065.0 | 44 | 1 | 19 |
| Kavieng (1916-2019) | 30 | 509.0 | 31 | 727.2 | 39 | -2 | 39 |
| Southern Region | | | | | | | |
| Misima (1917-2019) | 71 | 319.5 | 21 | 572.1 | 8 | 20 | 55 |
| Port Moresby (1875-2019) | 39 | 45.7 | 31 | 94.3 | 30 | -1 | 20 |

TABLE 4: Seasonal Climate Outlooks using POAMA2 for July to September 2019

| Station | Below Normal (prob) | 33%ile Rainfall (mm) | Normal (prob) | 67%ile Rainfall (mm) | Above Normal (prob) |
|---|---------------------|----------------------|---------------|----------------------|---------------------|
| <i>Momase Region</i> | | | | | |
| Madang | 48 | 280.0 | 19 | 426.0 | 33 |
| Nadzab | 55 | 204.0 | 12 | 384.0 | 33 |
| Wewak | 30 | 432.0 | 22 | 590.0 | 48 |
| <i>New Guinea Islands Region</i> | | | | | |
| Momote | 42 | 779.0 | 33 | 1011.0 | 25 |
| Kavieng | 58 | 489.0 | 5 | 699.0 | 37 |
| <i>Southern Region</i> | | | | | |
| Misima | 76 | 265.0 | 15 | 500.0 | 9 |
| Port Moresby | 76 | 37.0 | 5 | 70.0 | 19 |
| Daru | 48 | 81.0 | 34 | 150.0 | 18 |

Summary Statements

Rainfall for May 2019:

Above-normal rainfall was recorded at all stations except at Vanimo which recorded below normal; it was the eighth-driest May on record at this location. Monthly totals were not received from Madang, Nadzab, Goroka and Misima.

Accumulated rainfall for March to May 2019, including outlook verification:

Below-normal rainfall was received at Wewak, normal rainfall was received at Vanimo and above-normal rainfall was received at Port Moresby and Momote. Three-month totals are unavailable for the other sites.

The outlook issued in February was consistent at Wewak and Momote, near-consistent at Vanimo and inconsistent at Port Moresby.

Outlooks for July to September 2019:

1. SCOPIC:

| | |
|------------------------------|--|
| Madang/Misima /Wewak: | The outlook favours below-normal rainfall, with normal the next most likely. Above normal is the least likely |
| Momote/Vanimo : | The outlook shows above normal as the most likely outcome, with normal the next most likely. Below normal is the least likely outcome. |
| Nadzab : | The outlook shows below normal as the most likely outcome, with normal and above normal equally the next most likely. |
| Goroka/Kavieng/Port Moresby: | The outlook offers little guidance as the chances of above normal, normal and below normal are similar. |

Confidence range from very low to high

2. POAMA:

POAMA model shows below normal as the favoured or most likely outcome at all monitoring stations except at Wewak where above-normal rainfall is the most likely.

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$ Low: $0 \leq X < 5$ Moderate $5 \leq X < 10$ Good: $10 \leq X < 15$ High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$

Table: 5 Stakeholder Engagement- Evaluations of how effective NMS engage with stakeholders

| Product | Date: May 2019 | Stakeholder | Total Number of Participa nts | Num ber of male | Numbe r of female |
|--------------------------------|---------------------|--|---|--------------------------|-------------------------|
| Seasonal Climate Outlook | 1 st May | Department of Agriculture and Livestock (DAL), Climate Change Development Authority (CCDA), National Disaster Center (NDC), National Maritime Services Authority (NMSA), PNG Power, Central Provincial Disaster Center, United Nations Development Programme (UNDP), World Vision, DMPGM, NWS and the media | 28 | 17 | 11 |
| Climate bulletin | May | Agriculture, Health, Mining, Transport, Media, Education, Lands, National Planning, CCDA, PNGNDC, NMSA, DMPGM, UNDP, World Vision, NARI, UPNG, PAU, PNG Power, Eda Ranu, Red Cross, Water Aid, National Statistics Office (NSO), Water PNG, Ports Services, other climate infor users. | 140 | 95 | 45 |
| EAR Watch | May | Agriculture, Forestry, Health, Mining, Transport, Lands & Physical Planning, National Planning, CCDA, PNGNDC, NMSA, Provincial Disaster Coordinators, DMPGM, UNDP, World Vision, Oxfam, NARI, UPNG, PAU, PNG Power, Eda Ranu, Red Cross, Water Aid, NSO, Works Department, Water PNG, Port Services, other NGO's who have DRR teams. | 185 | 125 | 56 |
| Total | | | 353 | 237 | 112 |

*During the forum, PNG National Weather Service reviewed the wet season and also presented the forecast for the upcoming dry season. Stakeholders presented their experiences during the last wet season.