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Kiribati Climate Outlook

June-August

Kiribati Meteorological Service Division
Ministry of Communication Transport and Tourism Development

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Issue outline:

| | |
|--|---|
| April 2009 climate summary | 1 |
| ENSO status update | 1 |
| Rainfall forecast validations | 2 |
| Previous 3 monthly rainfall readings | 2 |
| Three months rainfall predictions | 2 |
| Overall summary predictions for Kiribati | 4 |

Major contributors

- Australian Bureau of Meteorology
- Pacific Island Climate Prediction Project (PICCP)
- South Pacific Seasonal Outlook Reference Material
- MetService of New Zealand
- Island Climate Update (ICU)
- Island Climate update guidance

April 2009 climate summary

April rainfall recorded below normal in all Met stations in Kiribati. However, Kanton island in the Phoenix group records the least rainfall last month of only 3.4 mm. Obtaining below normal rainfall in Kiribati may associate with the Lingering of La Nina conditions which reduced cloudiness around the dateline.

Additionally, the Outgoing Longwave Radiation (OLR) and rainfall anomalies suggest that while the South Pacific Convergence Zone (SPCZ) has moved closer to its normal position in the last month, it has remained slightly to the south of the long-term average position over most regions. It also observed that the northwestern part of the SPCZ spur moving northeast of its normal position. However it's southeastern portion remained displaced southwest of a normal position.

The Tahiti minus Darwin pressure difference was slightly above average for the month of April, but was within one standard deviation for this time of the year. The equatorial SOI was +1.0 for April.

ENSO status update

Climate indicators across the equatorial Pacific are currently neutral. Near average ocean temperatures across most of the tropical Pacific and trade winds have weakened and anomalous westerly flow currently covers much of the equatorial Pacific.

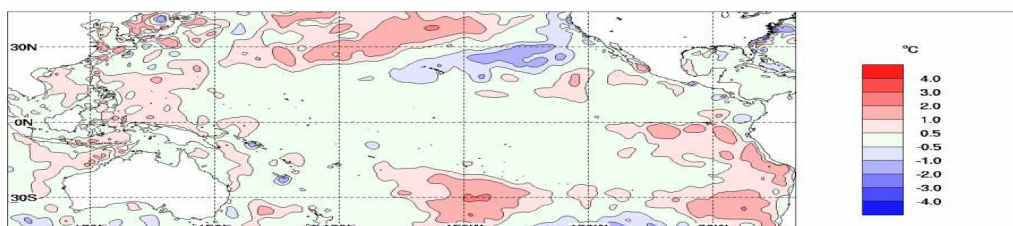
Most international coupled climate models predict further warming of Pacific Ocean sea surface temperature, but remains in the ENSO-neutral range until least mid-winter (July). About half of the models surveyed are predicting that this warming will be sufficient to see the development of El Niño condition later this year, but this state all models predictions at their minimum skill levels.

agreement between the models than one month ago, and most forecasts have from the period close to the end of the "predictability barrier" in ENSO conditions that the climate system displays. With this higher predictability and better agreement between the forecasts, the probability of the development of an El Niño event in 2009 is now much higher than one month ago and its significantly higher than the climatological probability.

Indeed, majority of dynamic computer models still predict neutral conditions to continue until at least July this year in which predicted as El Niño thresholds

However, late this month there is more

SSTA 1.0x1.0 NMOC OCEAN ANOMALIES (C) 20090401 20090430



Recent SST's anomalies from the BoM

Rainfall forecast validation (February-April) 2009

The table below generally describe the rainfall conditions in April 2009, It's also gives a comparison between the actual rainfall condition for the last three months (February-April) with the prediction issued for that period.

| Station | April 2009 Rainfall | Prediction Issued for (Feb-April) [level of skill] | Actual Rainfall for (Feb-April) |
|------------|---------------------|---|---------------------------------|
| Butaritari | Below Normal | Normal [good] | Below Normal |
| Tarawa | Below Normal | Normal [good] | Below Normal |
| Kanton | Below Normal | Climatology [moderate] | Below Normal |
| Kiritimati | - | - | - |

More chance of getting Normal rainfall in Kiribati in June – August 2009

Please note that SCOPIC outlooks for Beru, Arorae and Banaba are base on the available data we have. No validations could be done to those forecasts since those stations been closed at the moment

Rainfall records for the last 3 months

| STATION | FEB | MAR | APRIL | Total |
|----------------|-------|-------|-------|-------|
| Butaritari | 245.5 | 146.6 | 186.2 | 578mm |
| Tarawa (Betio) | 102.7 | 134.2 | 29.2 | 266mm |
| Kanton | 26.6 | 27 | 3.4 | 57mm |
| Kiritimati | 55.5 | 289 | - | - |

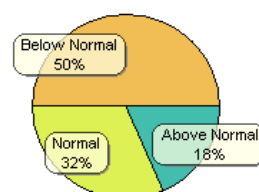
June– August rainfall prediction as from SCOPIC (statistical model)

These outlooks are based upon the average January-March values of "Sea Surface Temperature's (SSTa's 1 and 9"(Central Eastern and South Western Pacific Ocean sea-surface temperature anomalies) using a one month lead time. The prediction is for the coming three months June , July and August 2009.

North of western Kiribati (Butaritari)

There is only a 18% chance of getting "above-normal" rainfall for June through to the end of August for Butaritari Rainfall. **The most likely situation will be for "below-normal" rainfall in this period with the predicted probability being 50%.** The likelihood of "normal" conditions occurring is around 32%.

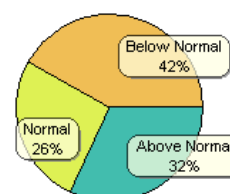
Note: "Below-normal" rainfall for the *June to August* period at Butaritari Rainfall includes rainfall less than 613.0mm. "Above-normal" rainfall is that which is greater than 857.0mm. "Normal" rainfall lies between 613.0 and 857.0mm.



Northern western Kiribati (Tarawa):

There is only a 32% chance of getting "above-normal" rainfall for June through to the end of August for Tarawa Rainfall. **The most likely situation will be for "below-normal" rainfall in this period with the predicted probability being 42%.** The likelihood of "normal" conditions occurring is around 26%.

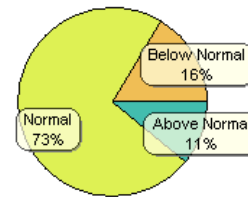
Note: "Below-normal" rainfall for the *June to August* period at Tarawa Rainfall includes rainfall less than 248.3mm. "Above-normal" rainfall is that which is greater than 459.5mm. "Normal" rainfall lies between 248.3



More confident on the development of El-Nino condition this year

South of western Kiribati (Beru):

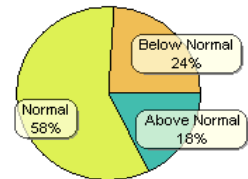
The outlook for June through to the end of August is biased towards "normal" rainfall in Beru Rainfall with a 73% probability of occurrence. The probability of receiving "below-normal" rainfall is next highest at 16%. The least likely situation is for "above-normal" rainfall in this period, with a probability of only 11%



Note: "Below-normal" rainfall for the June to August period at Beru Rainfall includes rainfall less than 51.3mm. "Above-normal" rainfall is that which is greater than 105.0mm. "Normal" rainfall lies between 51.3 and 105.0mm.

South of western Kiribati (Arorae):

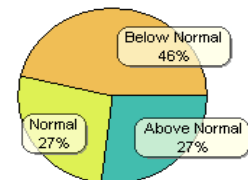
The outlook for June through to the end of August is biased towards "normal" rainfall in Arorae Rainfall with a 58% probability of occurrence. The probability of receiving "below-normal" rainfall is next highest at 24%. The least likely situation is for "above-normal" rainfall in this period, with a probability of only 18%



Note: "Below-normal" rainfall for the June to August period at Arorae Rainfall includes rainfall less than 78.7mm. "Above-normal" rainfall is that which is greater than 140.6mm. "Normal" rainfall lies between 78.7 and 140.6mm.

Central Kiribati (Kanton):

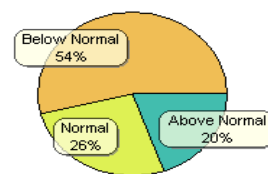
There is only a 27% chance of getting "above-normal" rainfall for June through to the end of August for Kanton Rainfall. The most likely situation will be for "below-normal" rainfall in this period with the predicted probability being 46%. The likelihood of "normal" conditions occurring is around 27%.



Note: "Below-normal" rainfall for the June to August period at Kanton Rainfall includes rainfall less than 169.0mm. "Above-normal" rainfall is that which is greater than 274.2mm. "Normal" rainfall lies between 169.0 and 274.2mm.

Eastern Kiribati (Kiritimati):

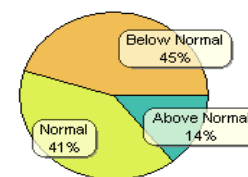
There is only a 20% chance of getting "above-normal" rainfall for June through to the end of August for Kiritimati Rainfall. The most likely situation will be for "below-normal" rainfall in this period with the predicted probability being 54%. The likelihood of "normal" conditions occurring is around 26%.



Note: "Below-normal" rainfall for the June to August period at Kiritimati Rainfall includes rainfall less than 77.1mm. "Above-normal" rainfall is that which is greater than 162.7mm. "Normal" rainfall lies between 77.1 and 162.7mm.

West of western Kiribati (Banaba):

There is only a 14% chance of getting "above-normal" rainfall for June through to the end of August for Banaba Rainfall. The most likely situation will be for "below-normal" rainfall in this period with the predicted probability being 45%. The likelihood of "normal" conditions occurring is around 41%.



Note: "Below-normal" rainfall for the June to August period at Banaba Rainfall includes rainfall less than 58.0mm. "Above-normal" rainfall is that which is greater than 150.7mm. "Normal" rainfall lies between 58.0 and 150.7mm.

June-August rainfall prediction adopted from Island Climate Update

| Island | Probability | | | Outlook | Confidence |
|------------------------------|-------------|--------|-------|-------------|------------|
| | Below | Normal | Above | | |
| Kiribati Western Kiribati | 30 | 40 | 30 | NEAR NORMAL | moderate |
| Kiribati Eastern Kiribati | 35 | 35 | 30 | CLIMATOLOGY | moderate |

Rainfall outcomes estimated from an average of dynamical and statistical models for the Pacific Ocean regions



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Overall summary predictions for Kiribati

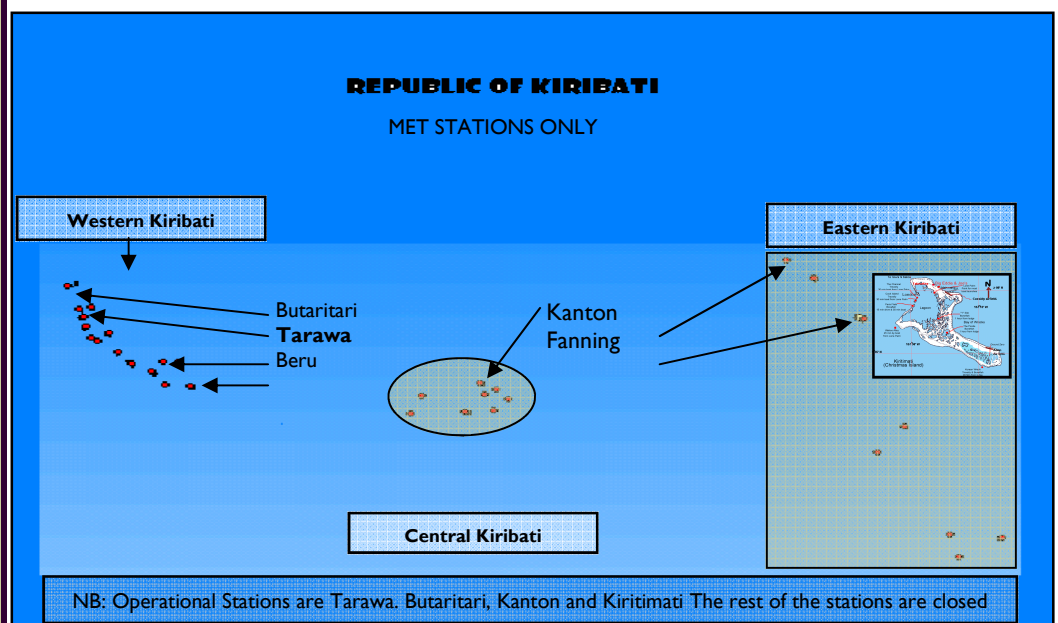
As from the SCOPIC rainfall outlooks, more chance of getting **Normal to Below Normal** across the entire Kiribati region in the upcoming three months. Although the outlooks favoured Below Normal in some stations but the warming to the SST's which also been predicted in the eastern equatorial Pacific are likely to enhance rainfall on those particular stations.

The confidence in SCOPIC prediction was moderate to very low and therefore a prediction should be treated with some cautions.

In referring to the Island Climate Update prediction for Kiribati, Western Kiribati, more chance of getting Near Normal rainfall with moderate level of skill while no clear indication of getting either above /below or normal rainfall for the eastern Kiribati.

The common base of the two outlooks for Kiribati was getting Normal Rainfall in June-August this year which gives us more confidence for this outlook.

Lastly it should be noted that we currently in a Neutral condition but in a rapid warming phase which enhance the developments of EL Niño conditions in the coming months.



This summary report is prepared as soon as possible by the end of the month, once climate data completed from the operational meteorological stations around Kiribati together with the ENSO information which is received from various Meteorological Agencies around the world. Every effort is made to verify observational data. The Kiribati Meteorological Service does not guarantee the accuracy and reliability of the analysis and rainfall predictions presented, and accepts no liability for any losses incurred through the use of this summary and its contents. The contents of the summary may be freely disseminated provided the source is acknowledged. All enquiries on this report should be directed to the Kiribati Meteorological Service HQ at Temakin Betio. For further information please contact: Chief Meteorological Officer, Kiribati Meteorological Services (686) 26511 Email met@maurinet.ki