



CAMI Final Conference

Breaking New Ground in the
Caribbean:

Weather and Climate serving Agriculture

Knustford Hotel, Kingston, Jamaica

November 5th-6th, 2012



Seasonal Forecasting Rainfall and Temperature

Caribbean Climate Outlook Forum

CariCOF

- A forum of Caribbean Meteorologists and Climatologists, led by CIMH and supported by international scientists from USA and Europe
- Regional scientists run a number of experiments on the Climate Predictability Tool
- Compare with the outputs from the Global models

- File
- Options
- View
 - Canonical Correlation Analysis (CCA)
 - Principal Components Regression (PCR)
 - Multiple Linear Regression (MLR)
 - Raw GCM Model Output (GCM)
- Help

CLIMATE PREDICTABILITY TOOL

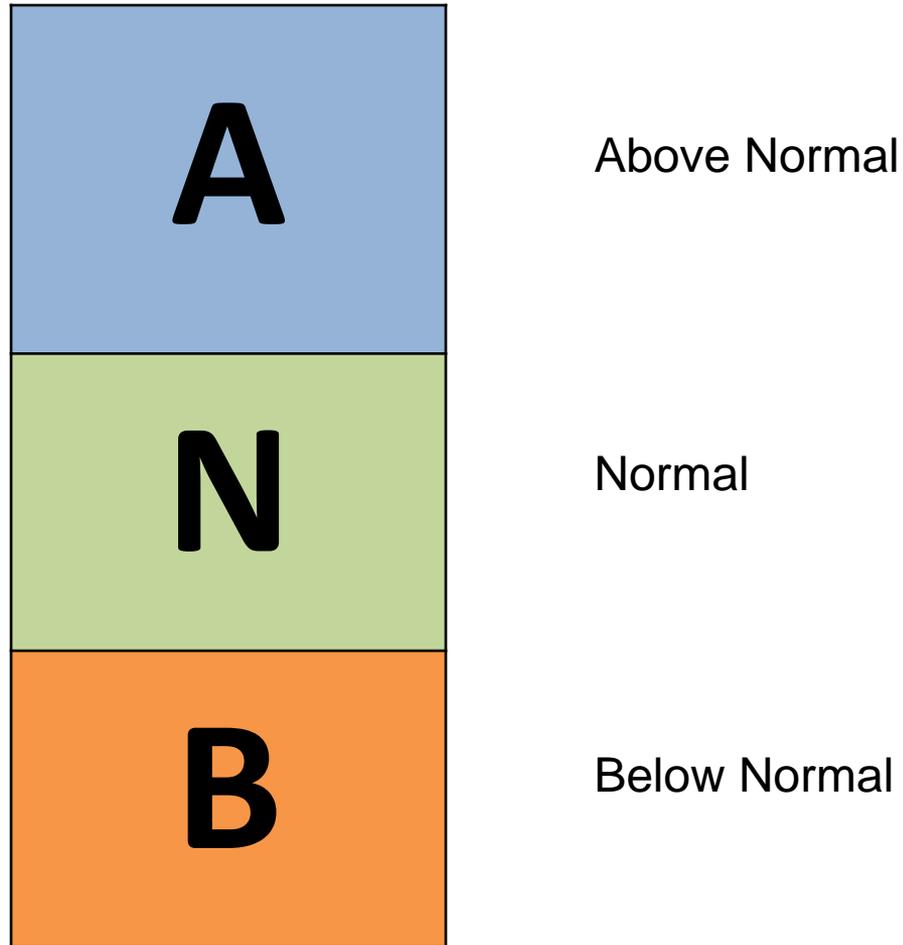
Evaluating seasonal climate predictability
Designed for MOS applications

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The International Research Institute
for Climate and Society

The Tercile



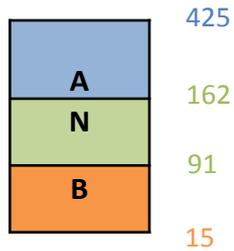
Rainfall Percentiles

| Month | CIMH | | | | |
|-----------|------|-------|-------|-------|-------|
| | Min | 33% | Mean | 66% | Max |
| January | 7.9 | 41.6 | 61.2 | 69.4 | 140.5 |
| February | 3.8 | 24.7 | 38.5 | 45.3 | 146.2 |
| March | 3.5 | 24.8 | 40.7 | 47.5 | 138.0 |
| April | 2.0 | 24.9 | 51.6 | 56.3 | 152.3 |
| May | 1.1 | 23.2 | 54.8 | 60.1 | 352.4 |
| June | 17.7 | 60.4 | 97.6 | 108.4 | 241.8 |
| July | 23.7 | 88.3 | 125.9 | 138.9 | 284.9 |
| August | 62.4 | 141.6 | 179.5 | 201.4 | 348.0 |
| September | 46.3 | 120.3 | 154.1 | 173.0 | 335.7 |
| October | 51.5 | 150.2 | 210.4 | 232.0 | 657.9 |
| November | 24.6 | 108.4 | 166.9 | 190.6 | 470.9 |
| December | 16.1 | 62.1 | 94.9 | 109.4 | 281.8 |

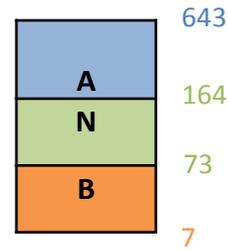
| Month | Edgecumbe | | | | |
|-----------|-----------|-----|-------|-----|-------|
| | Min | 33% | Mean | 66% | Max |
| January | 10.2 | 0.9 | 75.6 | 0.5 | 211.6 |
| February | 3.0 | 0.7 | 52.7 | 0.3 | 129.1 |
| March | 4.3 | 0.6 | 47.0 | 0.2 | 181.7 |
| April | 2.3 | 0.7 | 67.4 | 0.4 | 240.6 |
| May | 3.8 | 0.7 | 78.5 | 0.5 | 331.5 |
| June | 11.2 | 0.9 | 114.4 | 0.7 | 285.8 |
| July | 35.8 | 1.0 | 146.8 | 0.9 | 348.2 |
| August | 45.7 | 1.0 | 168.1 | 1.0 | 370.1 |
| September | 0.0 | 1.0 | 178.2 | 1.0 | 392.2 |
| October | 37.9 | 1.0 | 206.2 | 1.0 | 439.6 |
| November | 55.4 | 1.0 | 183.8 | 0.9 | 544.4 |
| December | 17.3 | 0.9 | 124.5 | 0.8 | 367.5 |

Tercile rainfall Values for CIMH

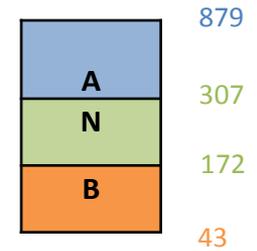
Jan - Mar



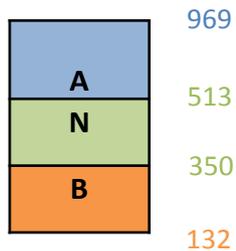
Mar - May



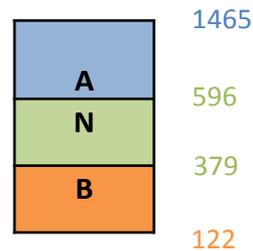
May - July



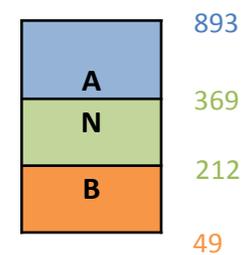
July - Sep



Sep - Nov



Nov - Jan



Irrigation Requirements

Tomato, CIMH

For Different Planting Dates

| Jan | | | Apr | | | Jul | | | Oct | | |
|-------|-------|-------|-------|-------|-------|-----|------|------|-----|------|-------|
| 66 | 33 | Min | 66 | 33 | Min | 66 | 33 | Min | 66 | 33 | Min |
| 7 | 11.1 | 78.1 | 55.9 | 75.3 | 90 | 0 | 0 | 67.9 | 0 | 0 | 0 |
| 104.3 | 115.1 | 133.5 | 107.5 | 135.5 | 154.9 | 0 | 11.7 | 84.1 | 0 | 0 | 86.4 |
| 141.6 | 154.7 | 177 | 63.1 | 102.1 | 144.8 | 0 | 30.3 | 99.8 | 5.3 | 65.7 | 134.5 |
| 68.6 | 85.2 | 99.7 | 15.5 | 38 | 77 | 0 | 0 | 40.1 | 0 | 81.5 | 80.8 |

Irrigation Requirements

Maize, CIMH

For Different Planting Dates

| Jan | | | Apr | | | Jul | | | Oct | | |
|-------|-------|-------|------|------|-------|-----|----|------|-----|------|------|
| 66 | 33 | Min | 66 | 33 | Min | 66 | 33 | Min | 66 | 33 | Min |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 70.7 | 87.2 | 64.8 | 89 | 103.3 | 0 | 0 | 44.1 | 0 | 0 | 46.6 |
| 101.2 | 114.3 | 135.9 | 22.9 | 62.2 | 105 | 0 | 0 | 59.7 | 0 | 0 | 95.3 |
| 35 | 52.1 | 66.7 | 1.3 | 8.2 | 45.8 | 0 | 0 | 11.1 | 0 | 32.3 | 50.5 |

Irrigation Requirements

Tomatoes, Central Farms

| Planting | Jan | | Apr | | Jul | | Oct | |
|----------|-------|-------|-------|------|------|------|------|------|
| | From | To | From | To | From | To | From | To |
| | 0 | 0 | 76.1 | 2.5 | 0 | 0 | 0 | 0 |
| | 47.1 | 85.2 | 102.3 | 125 | 0 | 98 | 0 | 56.5 |
| | 135.6 | 158.1 | 17.8 | 99.2 | 0 | 112 | 0 | 97 |
| | 88.1 | 96.4 | 0 | 40.2 | 0 | 18.1 | 3.2 | 52.5 |

Irrigation Requirements

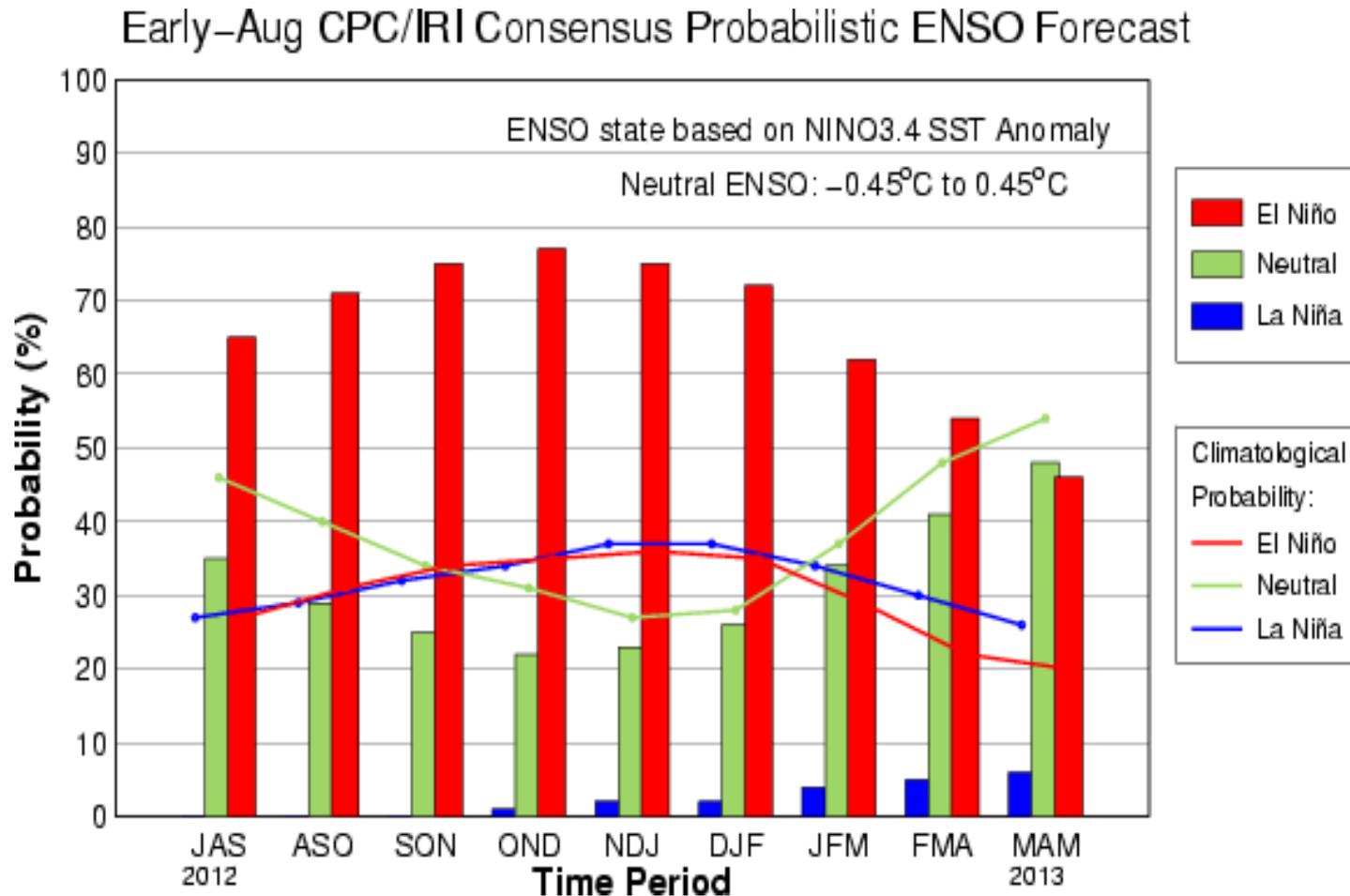
Maize, Central Farms

| Planting | Jan | | Apr | | Jul | | Oct | |
|----------|------|-------|------|------|------|------|------|------|
| | From | To | From | To | From | To | From | To |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8.2 | 44.5 | 56.1 | 82.6 | 0 | 57.8 | 0 | 21.1 |
| | 96.4 | 119.1 | 1.3 | 60.8 | 0 | 73.1 | 0 | 58.4 |
| | 56.1 | 63.9 | 0 | 11 | 0 | 0.2 | 0 | 26.9 |

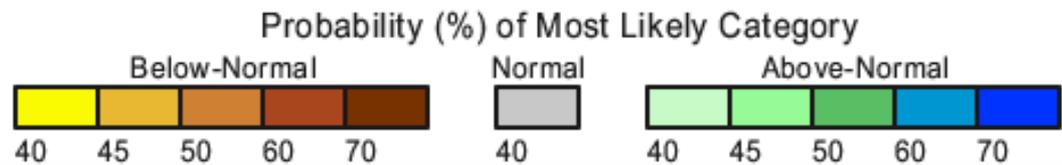
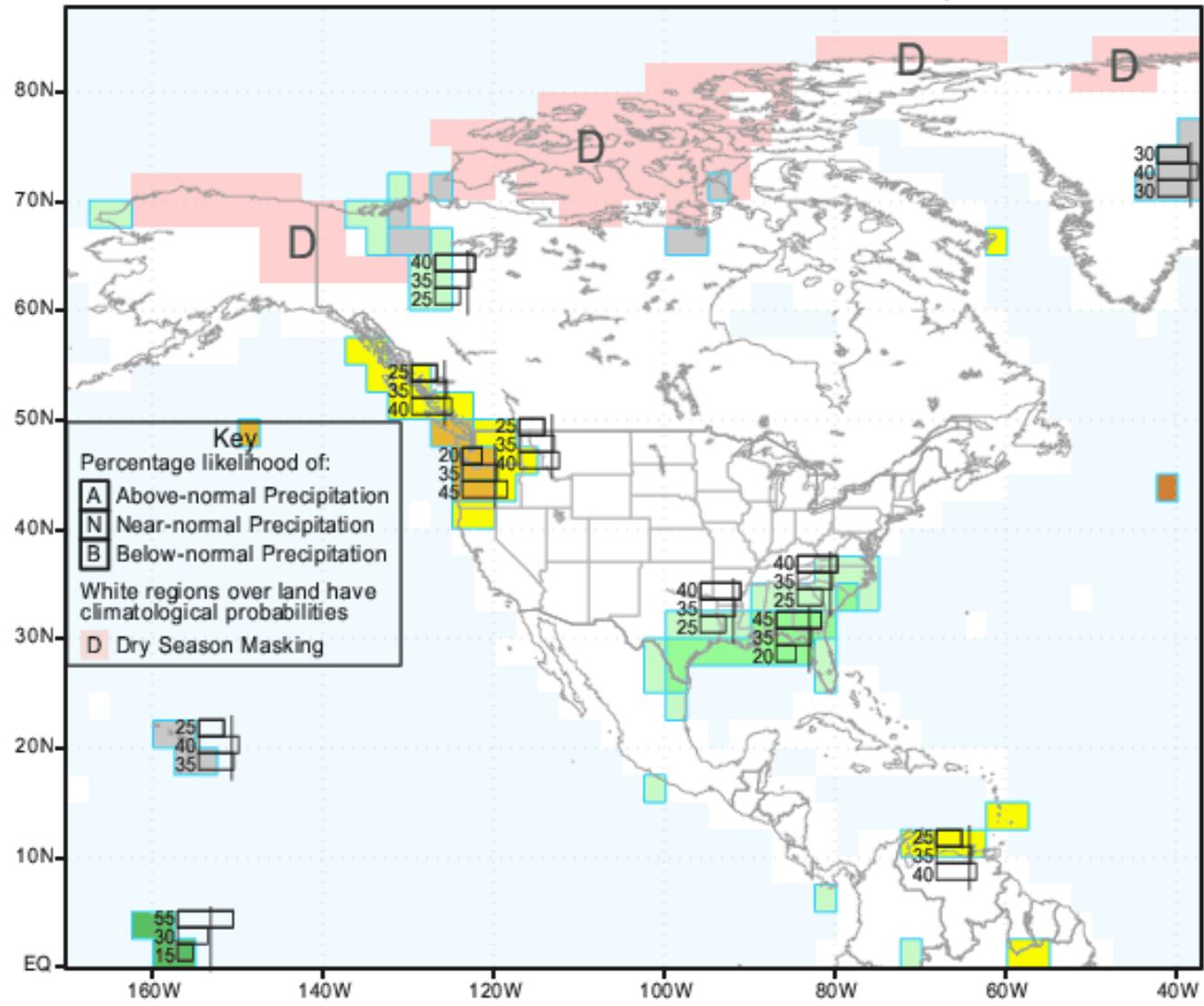
CPC/IRI Probabilistic ENSO Outlook

(updated 9 Aug 2012)

El Niño is favored beginning in July-September 2012 and continuing through Northern Hemisphere winter 2012-13.



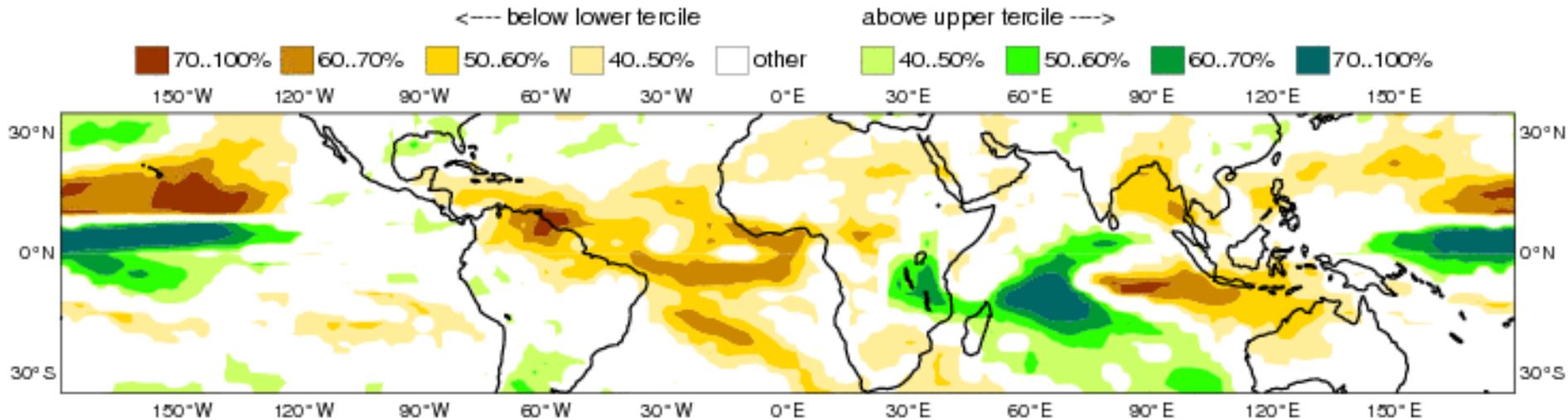
IRI Multi-Model Probability Forecast for Precipitation for October-November-December 2012, Issued September 2012



EUROSIP – multi-model rainfall forecast

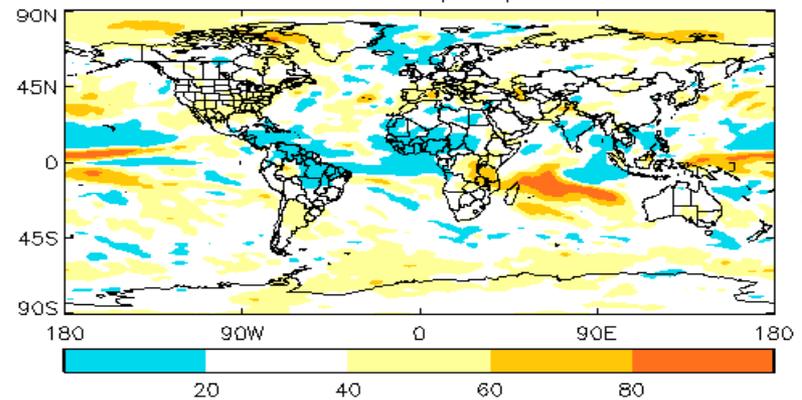
EUROSIP multi-model seasonal forecast
Prob(most likely category of precipitation)
Forecast start reference is 01/09/12
Unweighted mean

ECMWF/Met Office/Meteo-France/NCEP
OND 2012

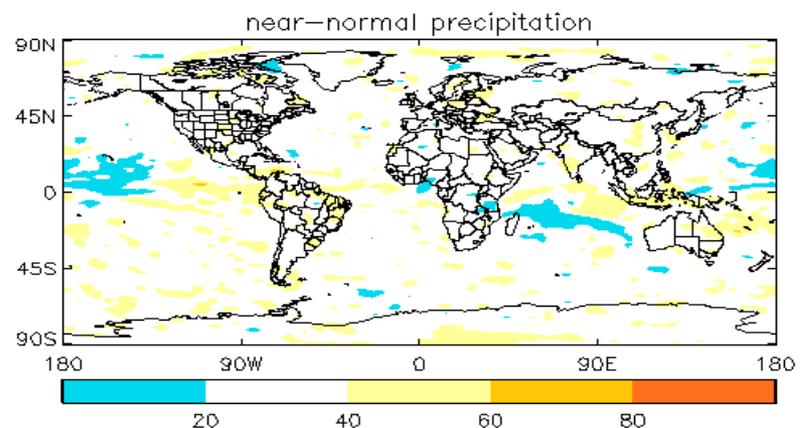
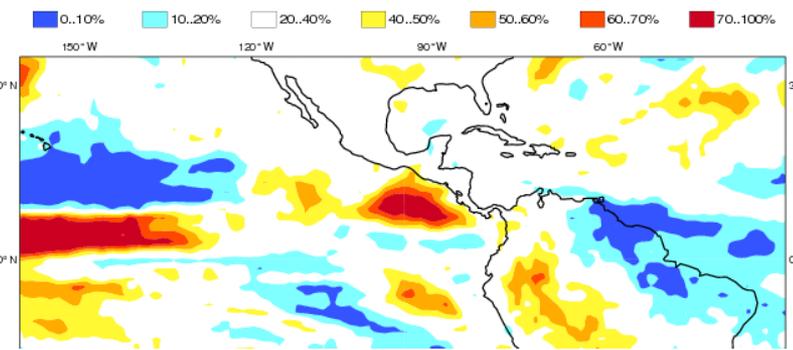


CM probabilistic rainfall forecasts – UKMO (left), ECMWF (right)

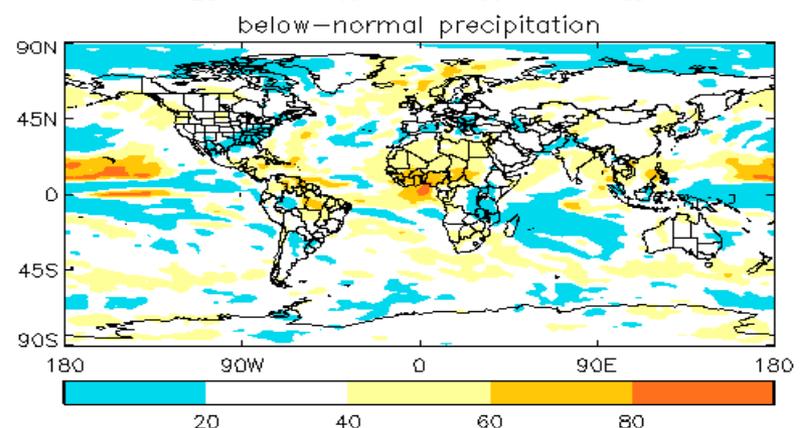
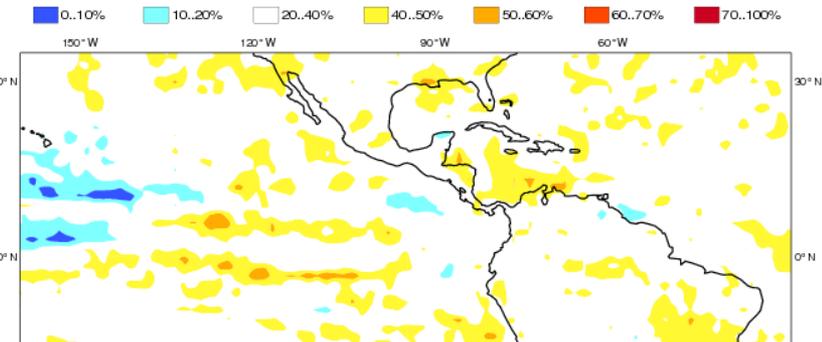
Probability of tercile categories Oct/Nov/Dec Issued Sep 2012
above-normal precipitation



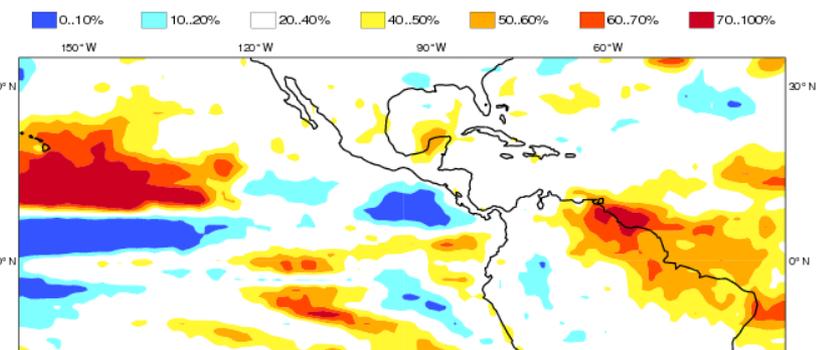
ABOVE



NORMA

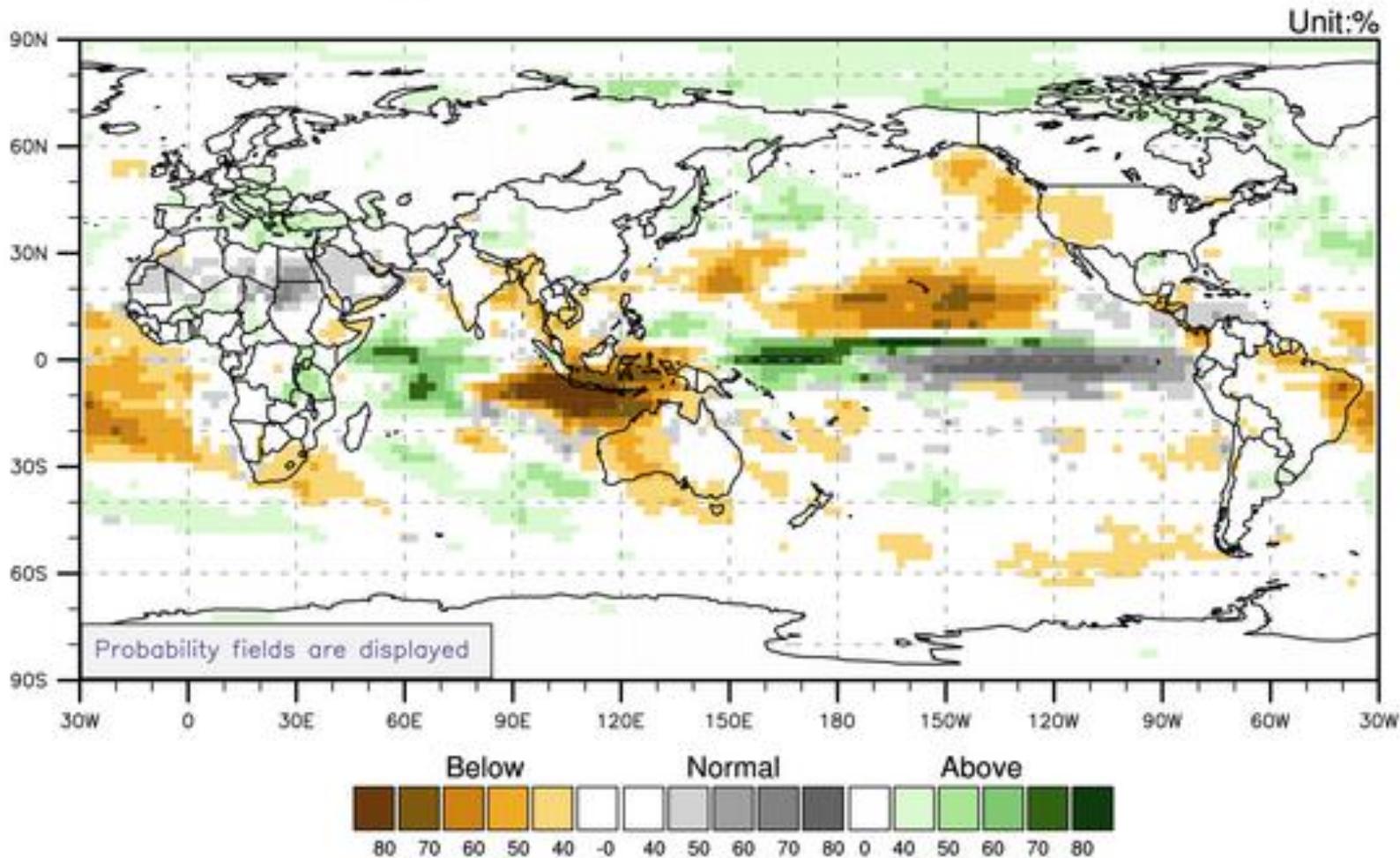


BELOW



APCC – ensemble rainfall forecast

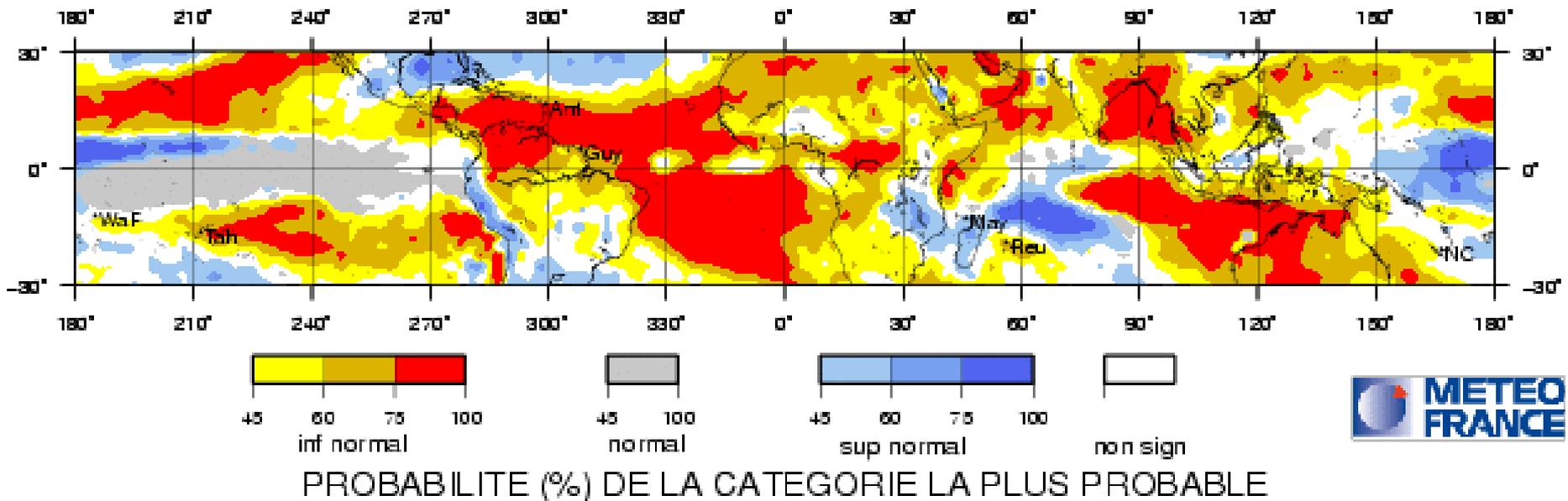
Precipitation for October-December 2012

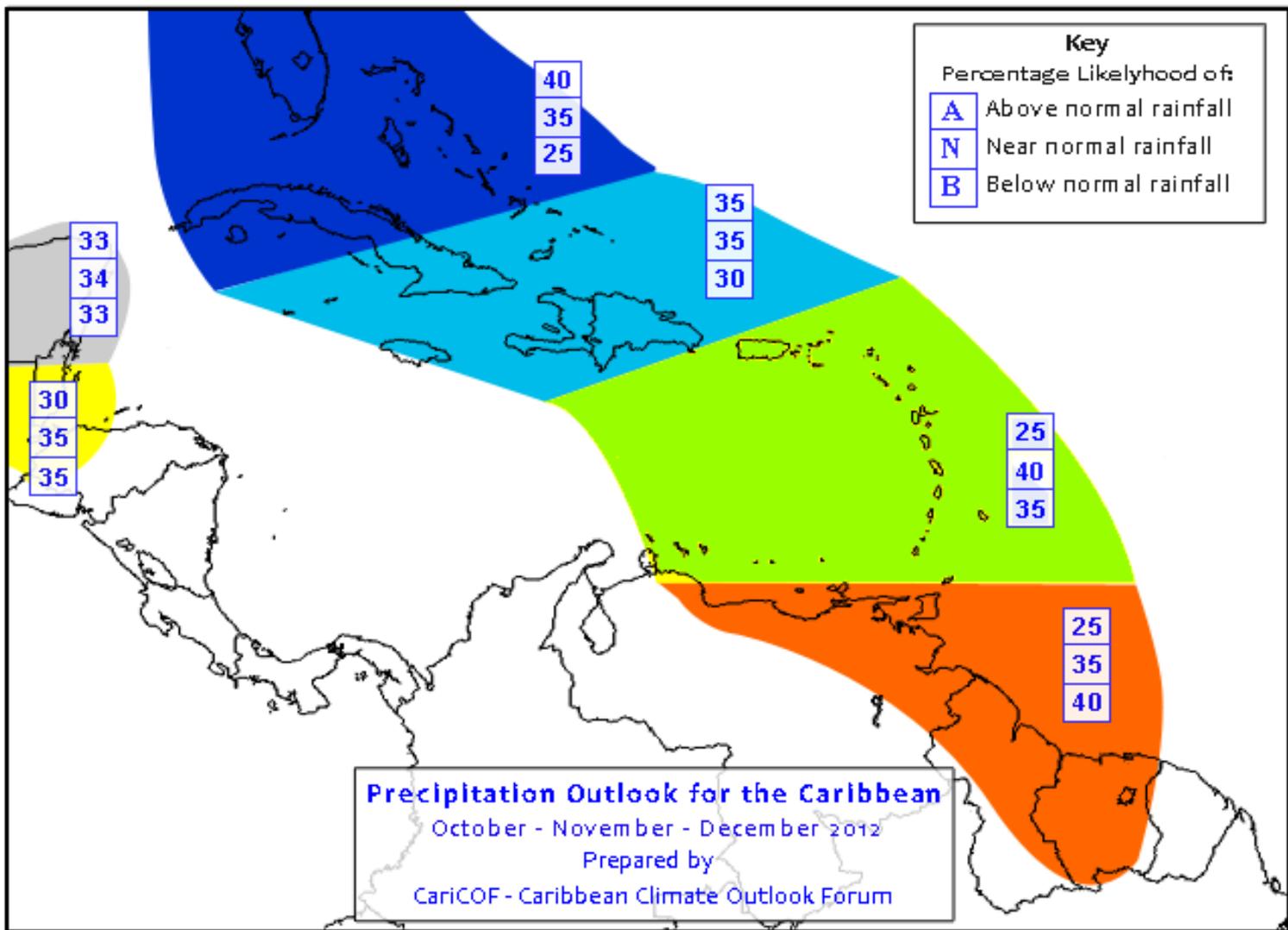


OND rainfall forecast METEOFRANCE

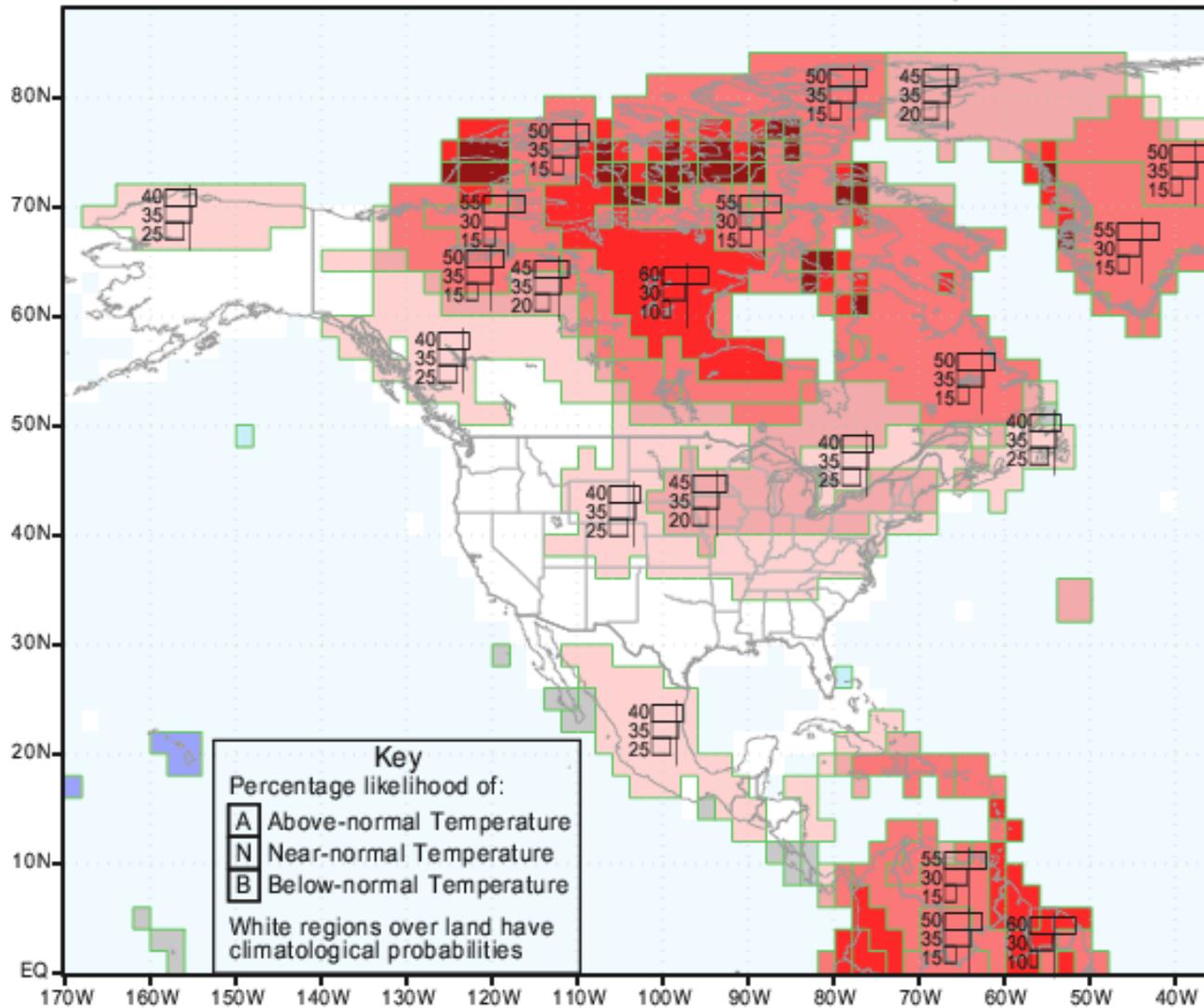
courtesy of Jean-Louis Maridet

PRECIPITATIONS PREVISION OCTOBRE-NOVEMBRE-DECEMBRE RUN DE SEPTEMBRE 2012

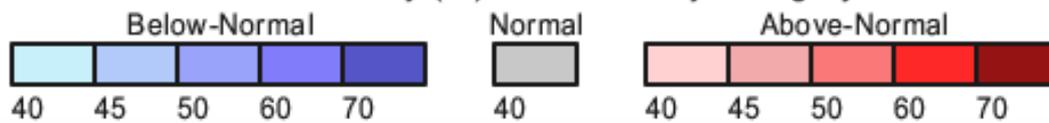




IRI Multi-Model Probability Forecast for Temperature for October-November-December 2012, Issued September 2012



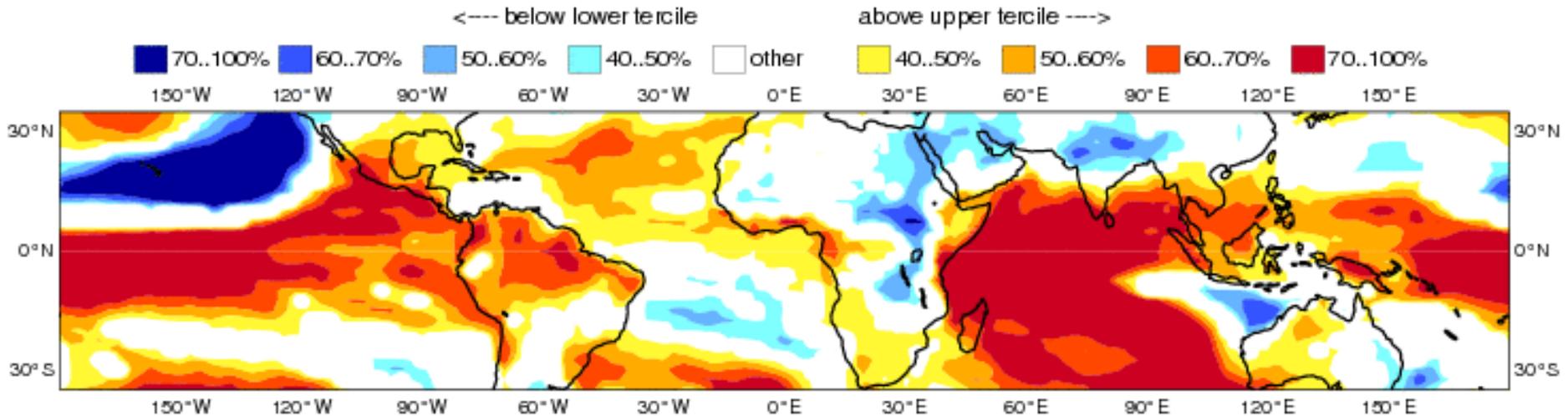
Probability (%) of Most Likely Category



EUROSIP – multi-model T_{2m} forecast

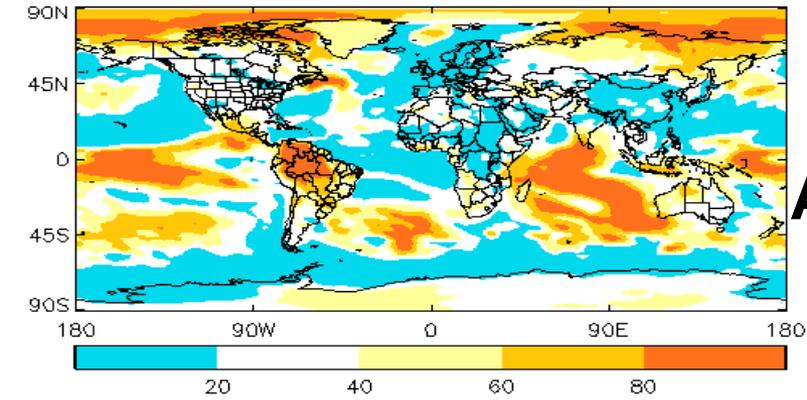
EUROSIP multi-model seasonal forecast
Prob(most likely category of 2m temperature)
Forecast start reference is 01/09/12
Unweighted mean

ECMWF/Met Office/Meteo-France/NCEP
OND 2012

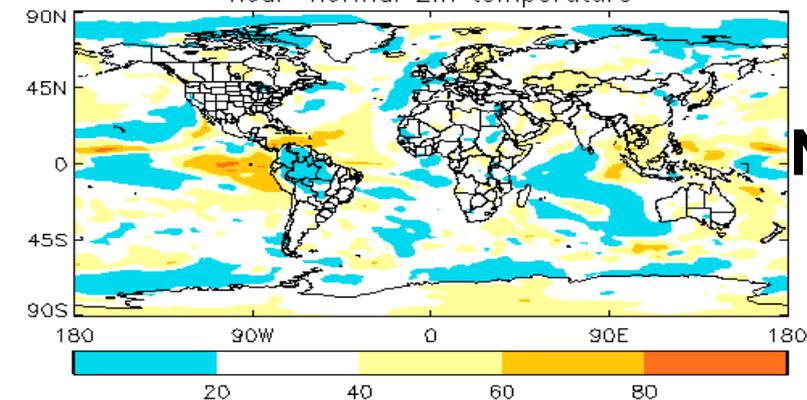
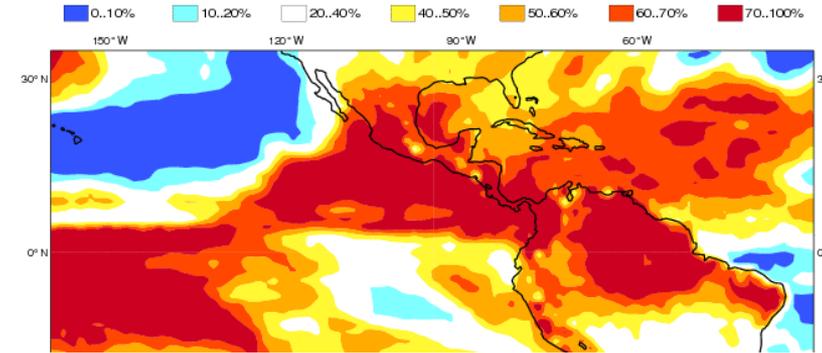


GCM probabilistic T_{2m} forecasts – UKMO (left), ECMWF (right)

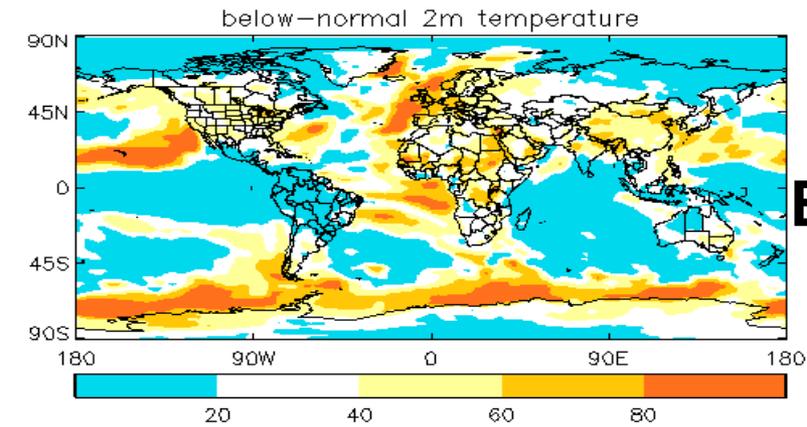
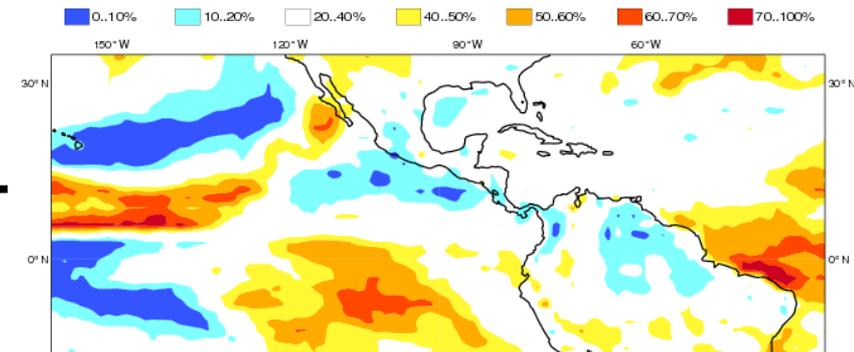
Probability of tercile categories Oct/Nov/Dec Issued Sep 2012
above-normal 2m temperature



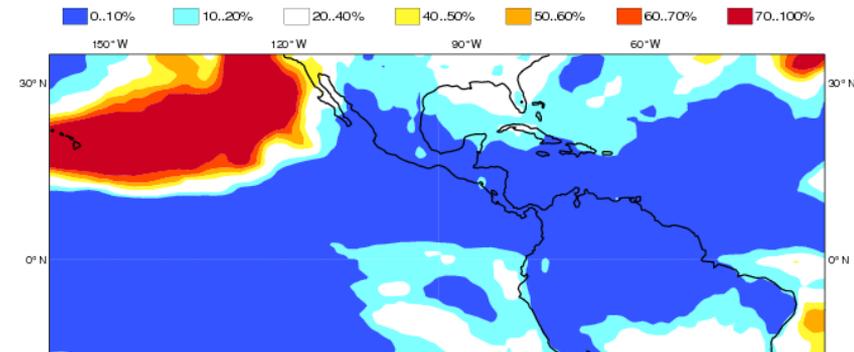
ABOVE



NORMAL

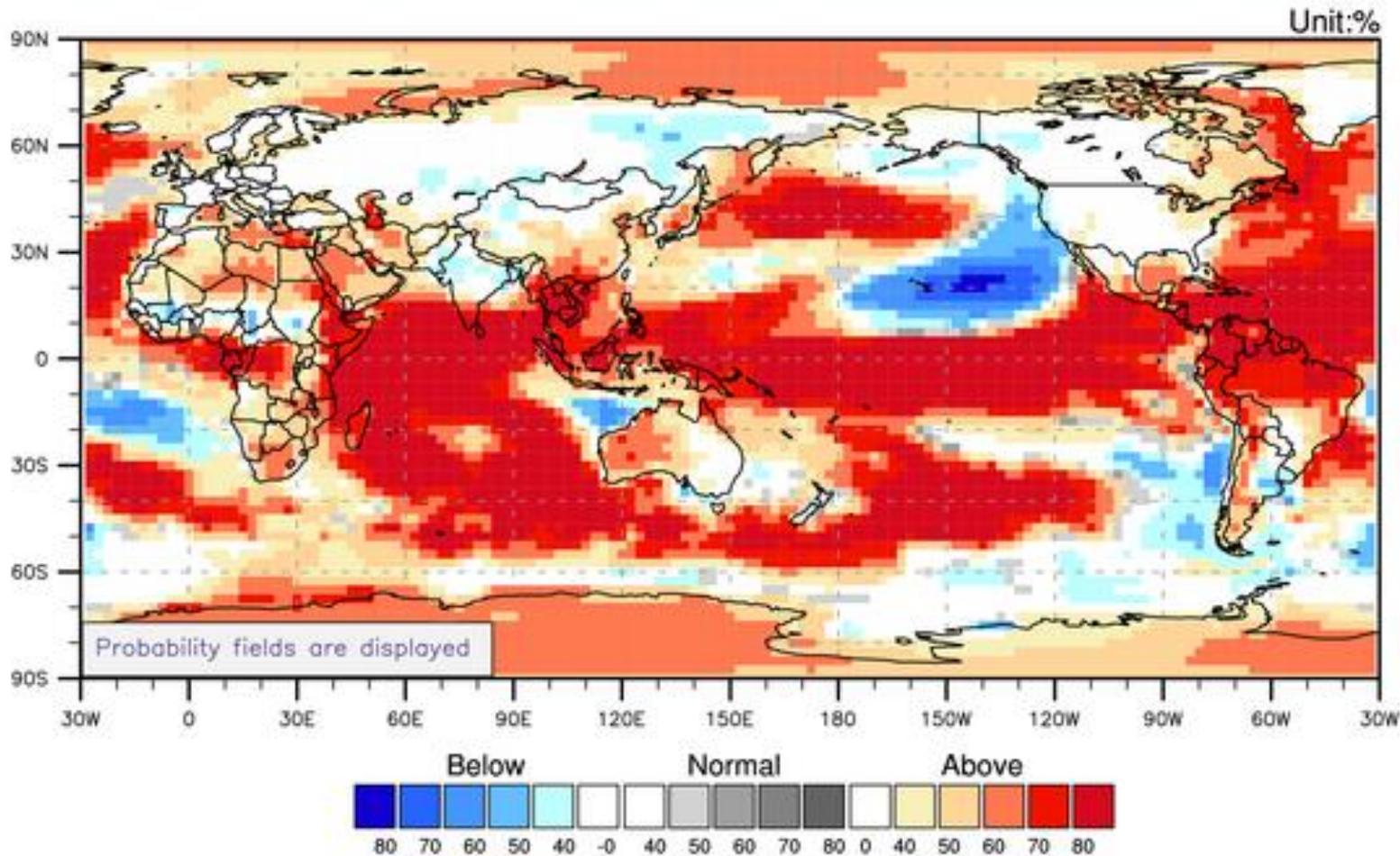


BELOW

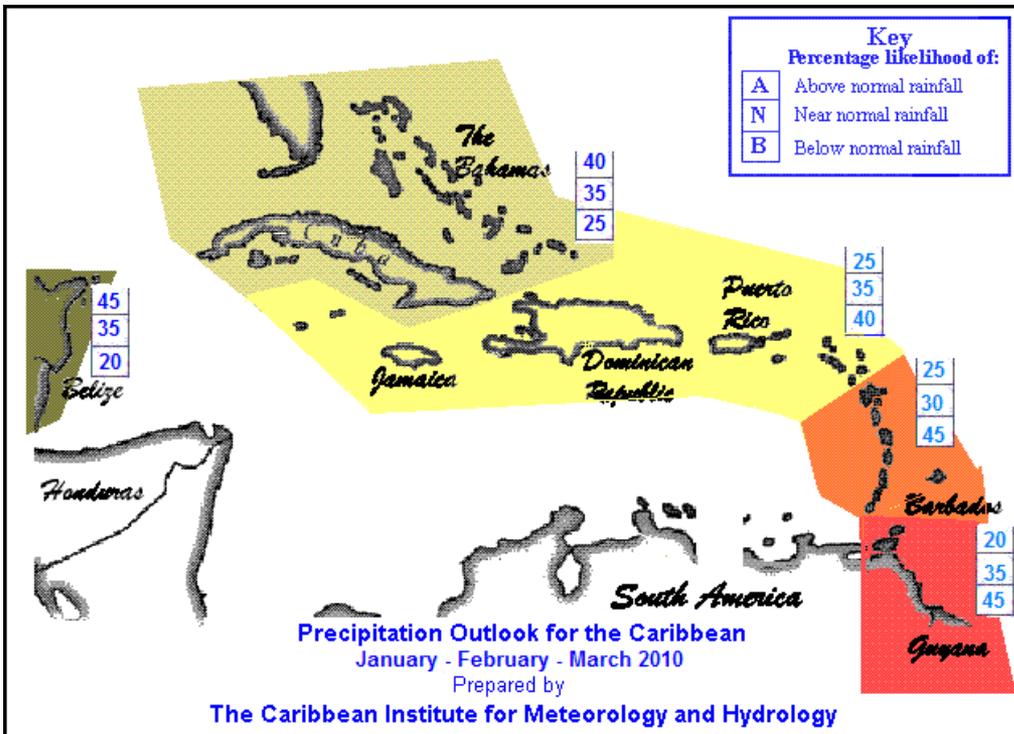


APCC – ensemble temperature forecast

Temperature at 2m for October-December 2012



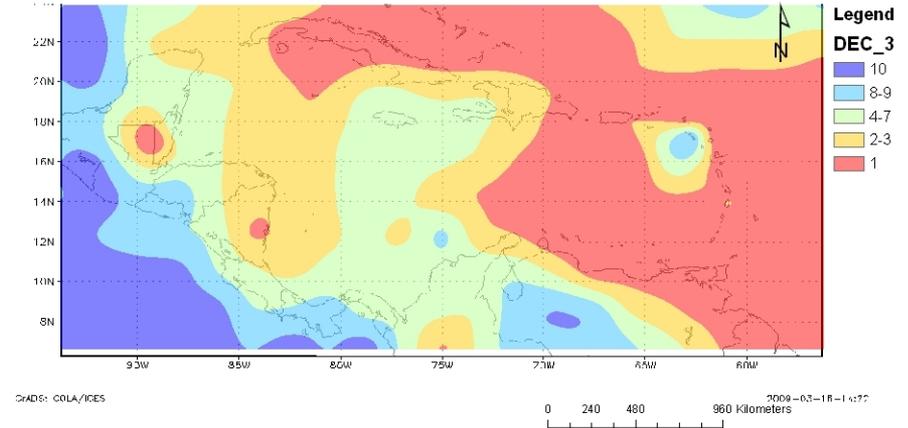
Caribbean probabilistic rainfall forecasts



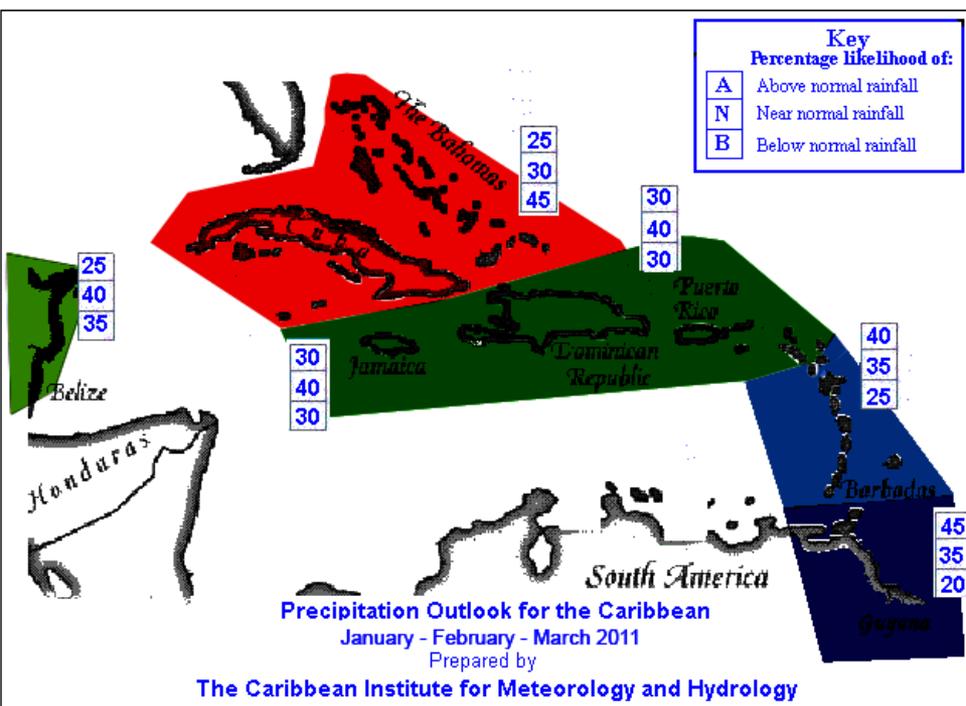
Deciles for January to March 2010

Drought and rainfall monitoring

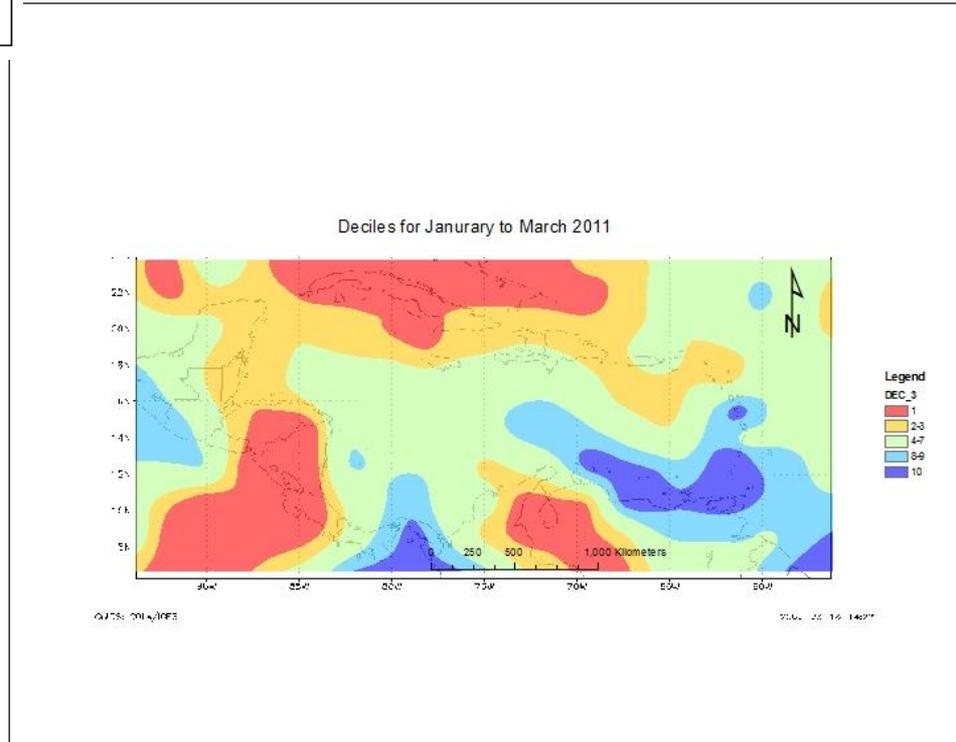
Irrigation efficiency necessary



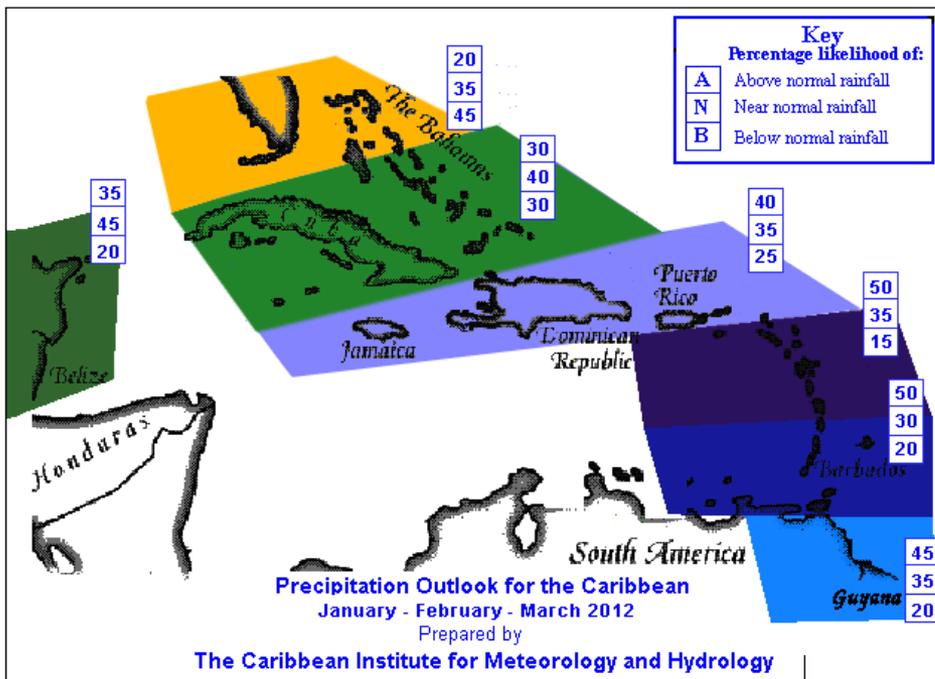
Caribbean probabilistic rainfall forecasts



Drought and rainfall monitoring



Caribbean probabilistic rainfall forecasts



Drought and rainfall monitoring

