

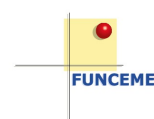
GOVERNO DO
ESTADO DO CEARÁ
Secretaria dos Recursos Hídricos

52ª Reunião Ordinária do Comitê da Bacia Hidrográfica do Rio Banabuiú
Senador Pompeu – 30/11/2016

Histórico das Chuvas e Tendências para Estação Chuvosa de 2017

Meiry Sakamoto

FUNCEME



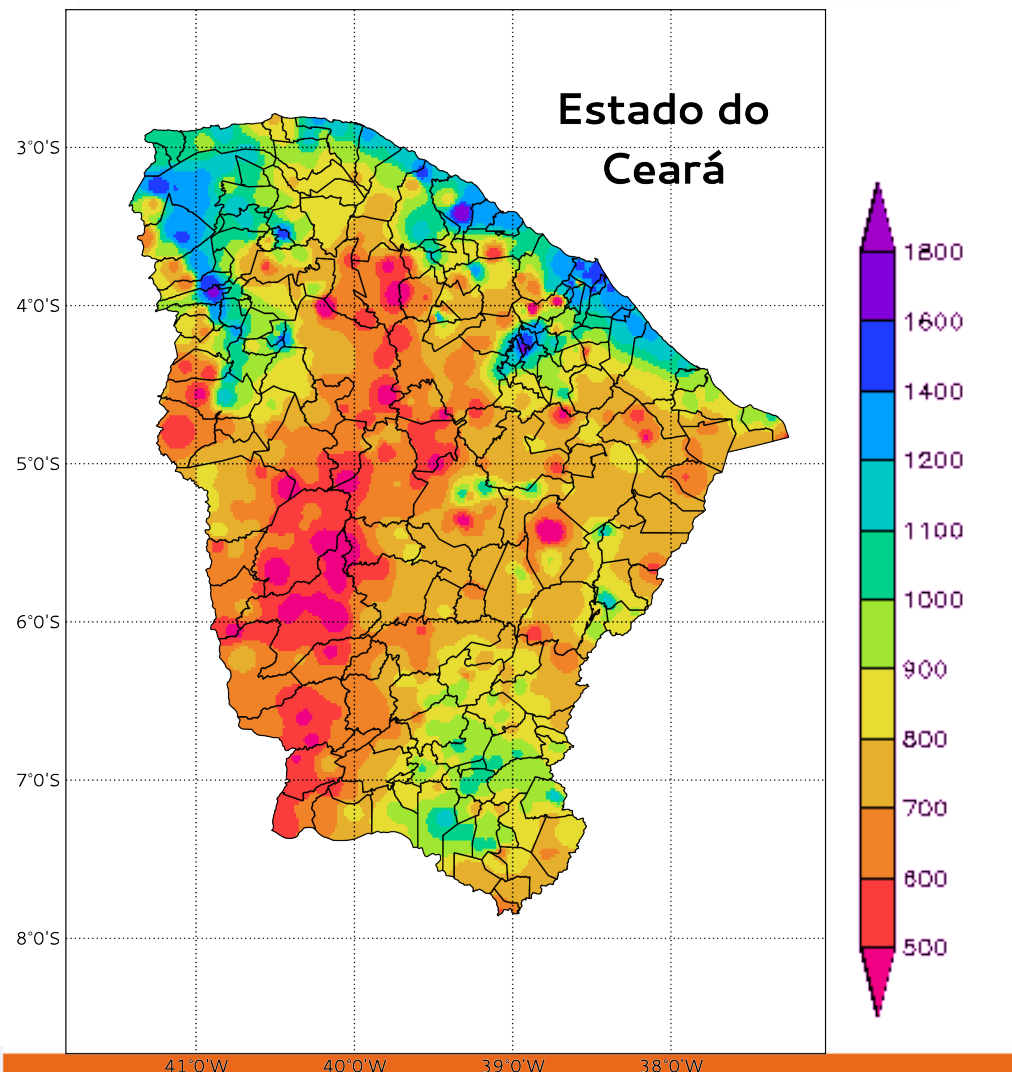
Aspectos Climáticos

Ceará

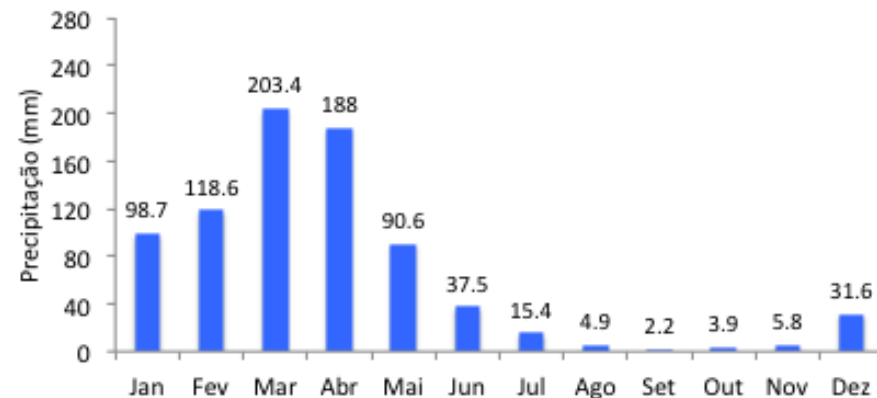
Bacia do Banabuiú



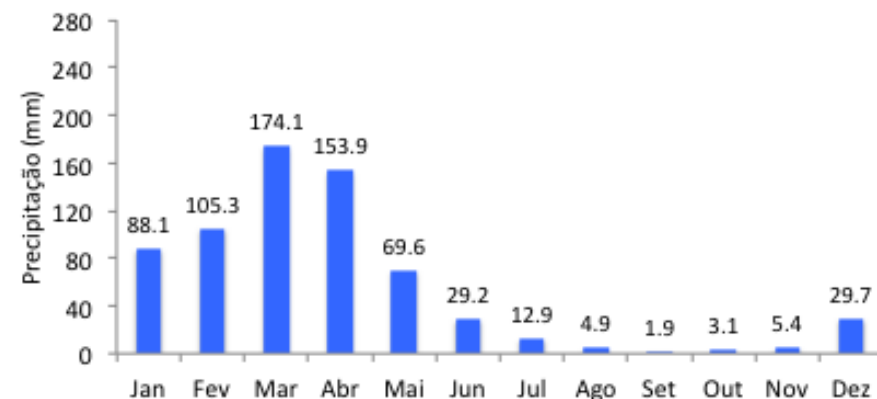
Aspectos do Clima no Ceará



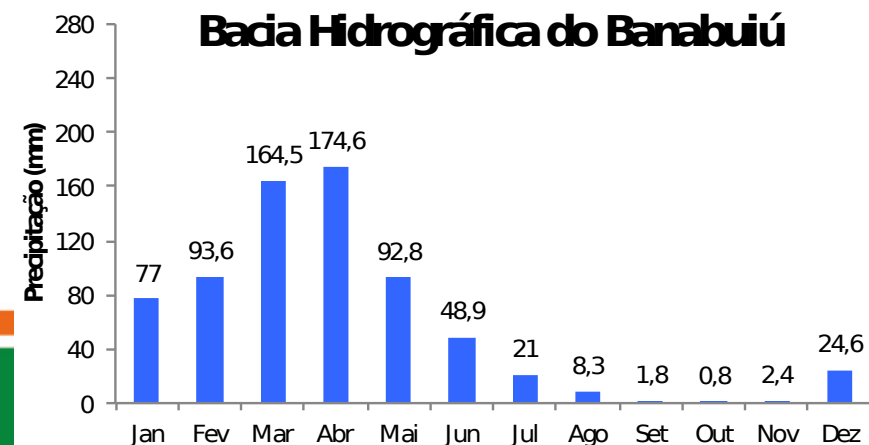
Ceará

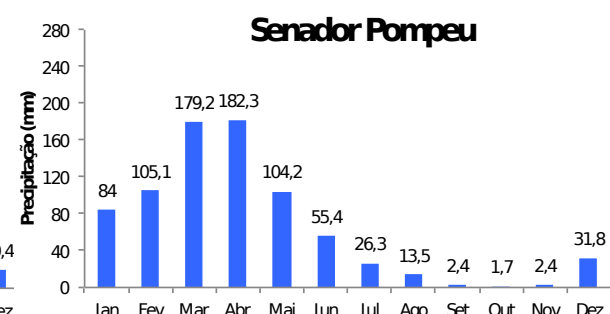
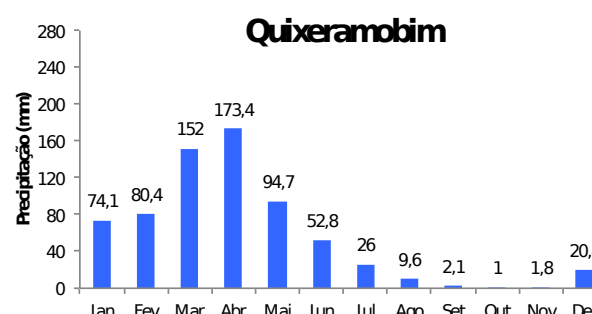
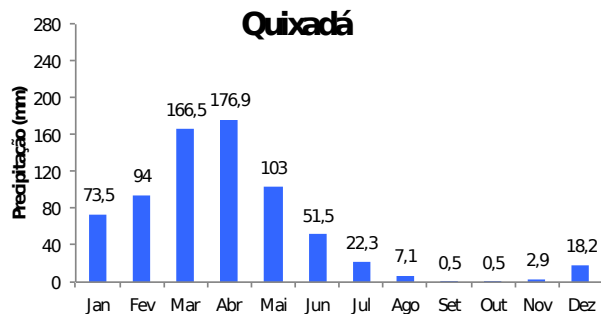
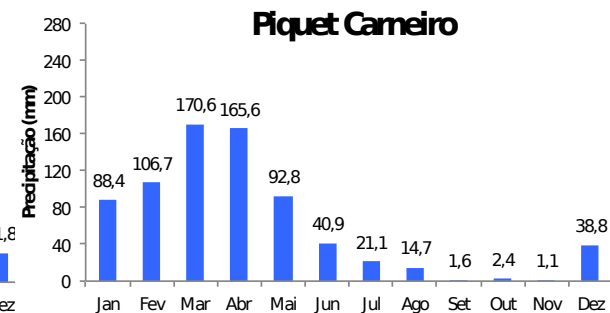
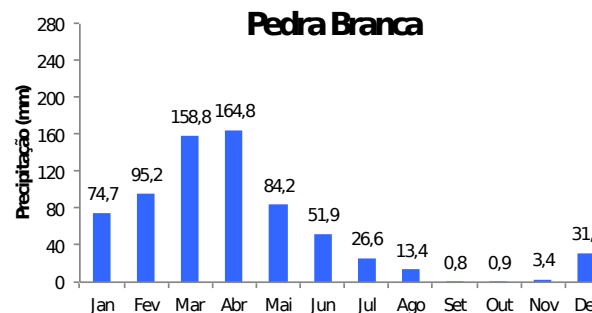
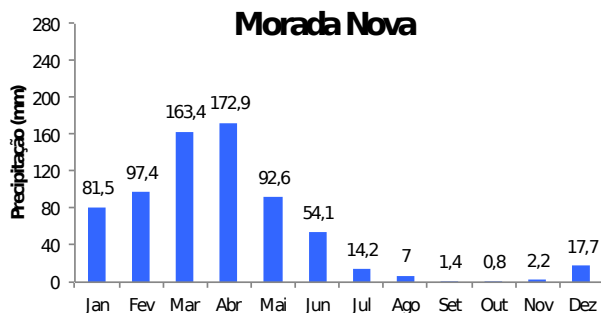
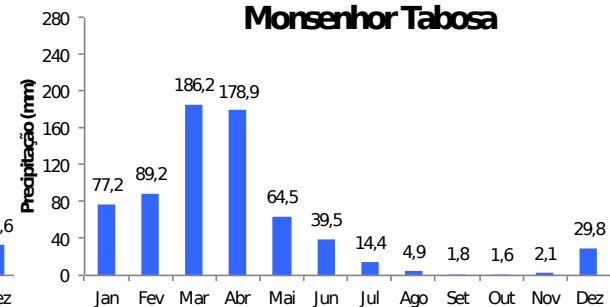
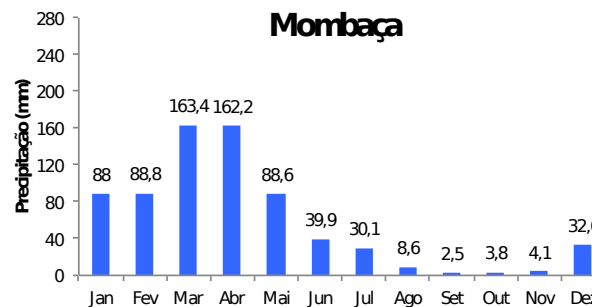
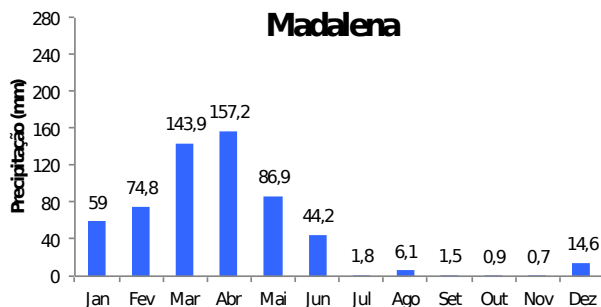
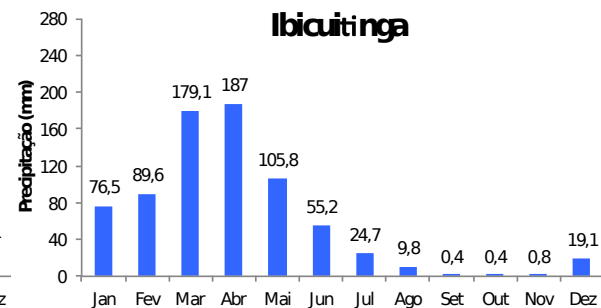
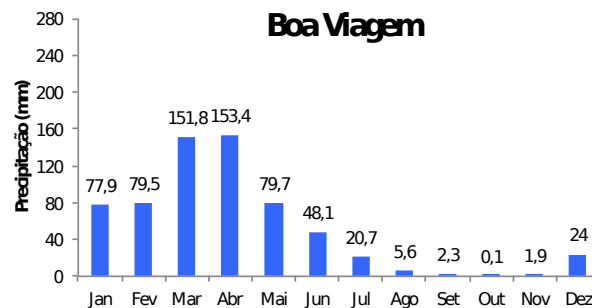
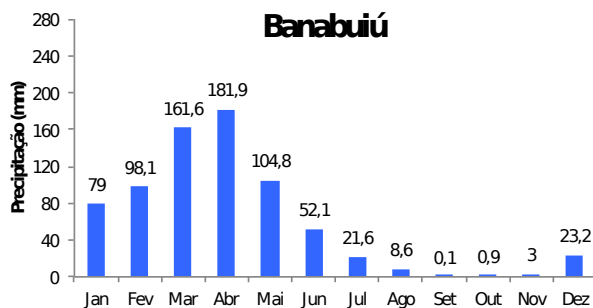


Sertão Central e Inhamuns



Bacia Hidrográfica do Banabuiú

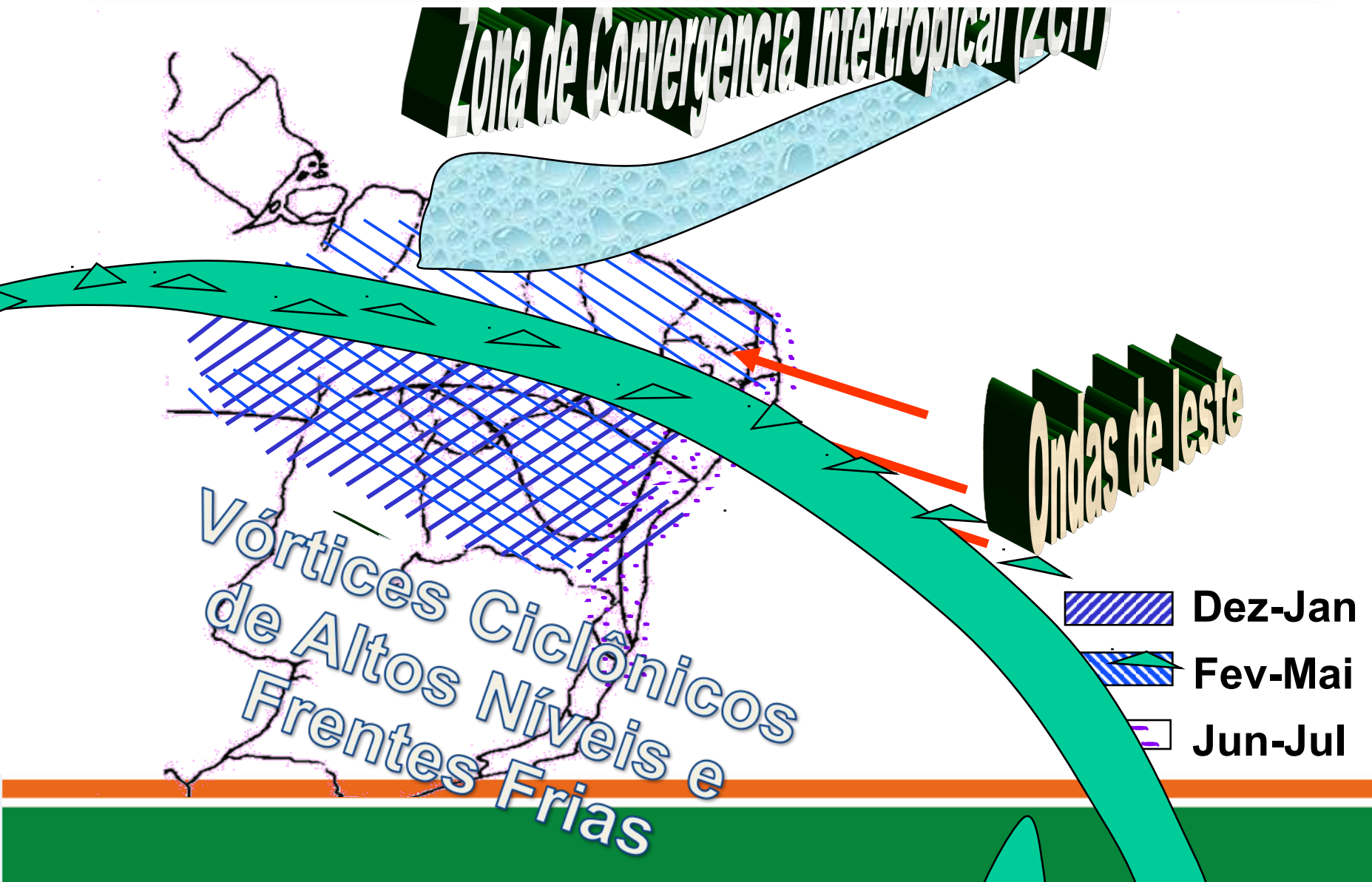




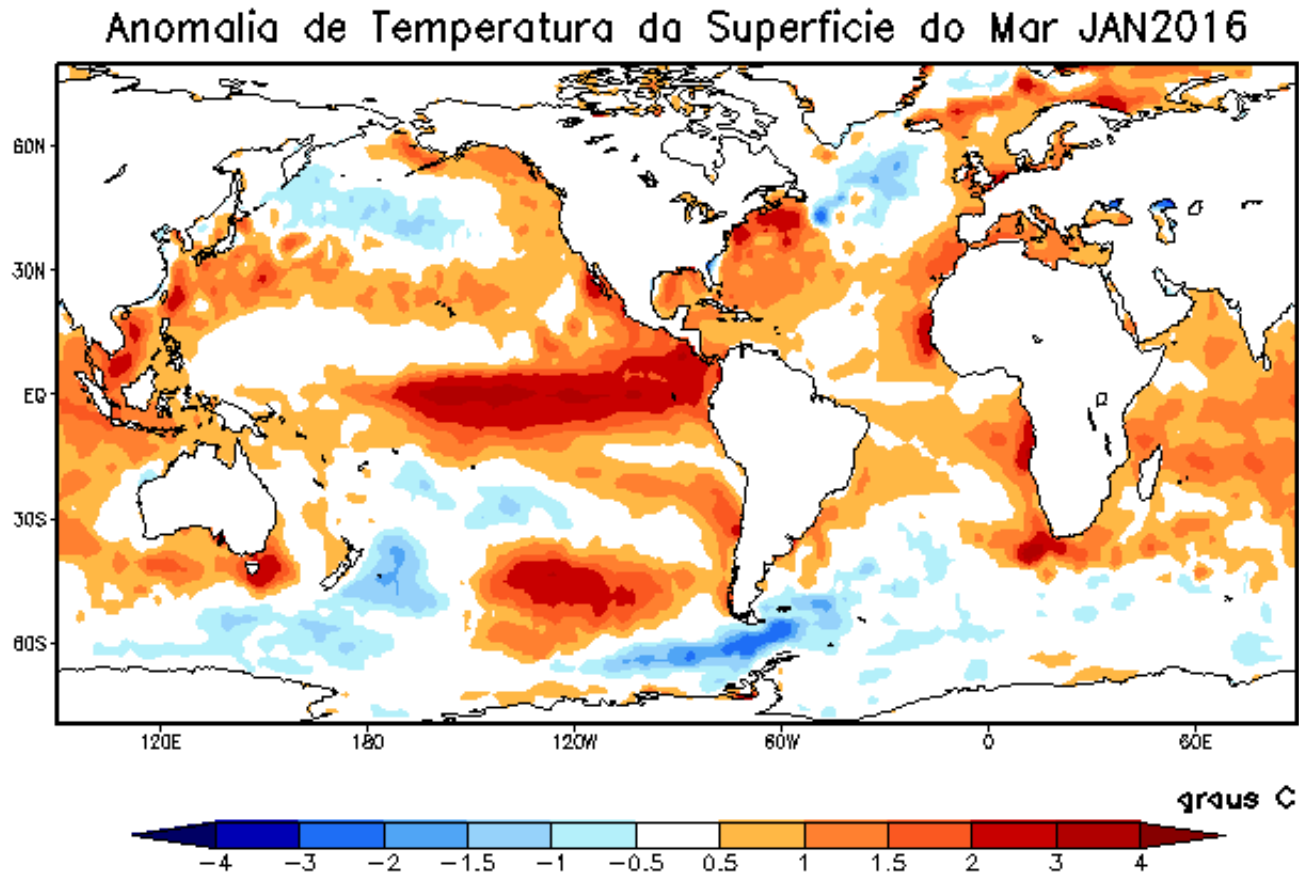
Atmosfera e Oceano

Sistemas Meteorológicos Influência dos Oceanos

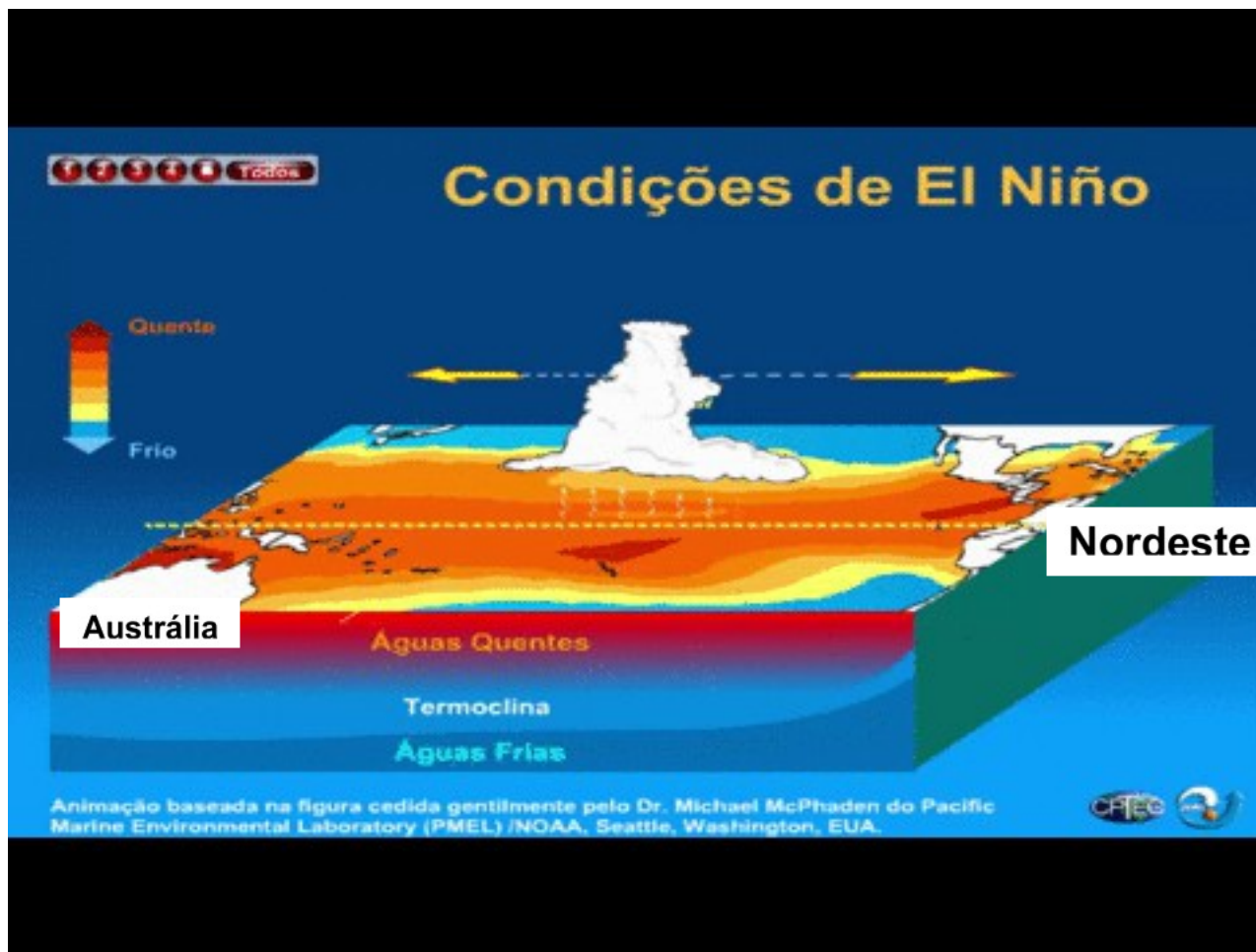
Principais Sistemas Meteorológicos



Influência do Oceano Pacífico – El Niño



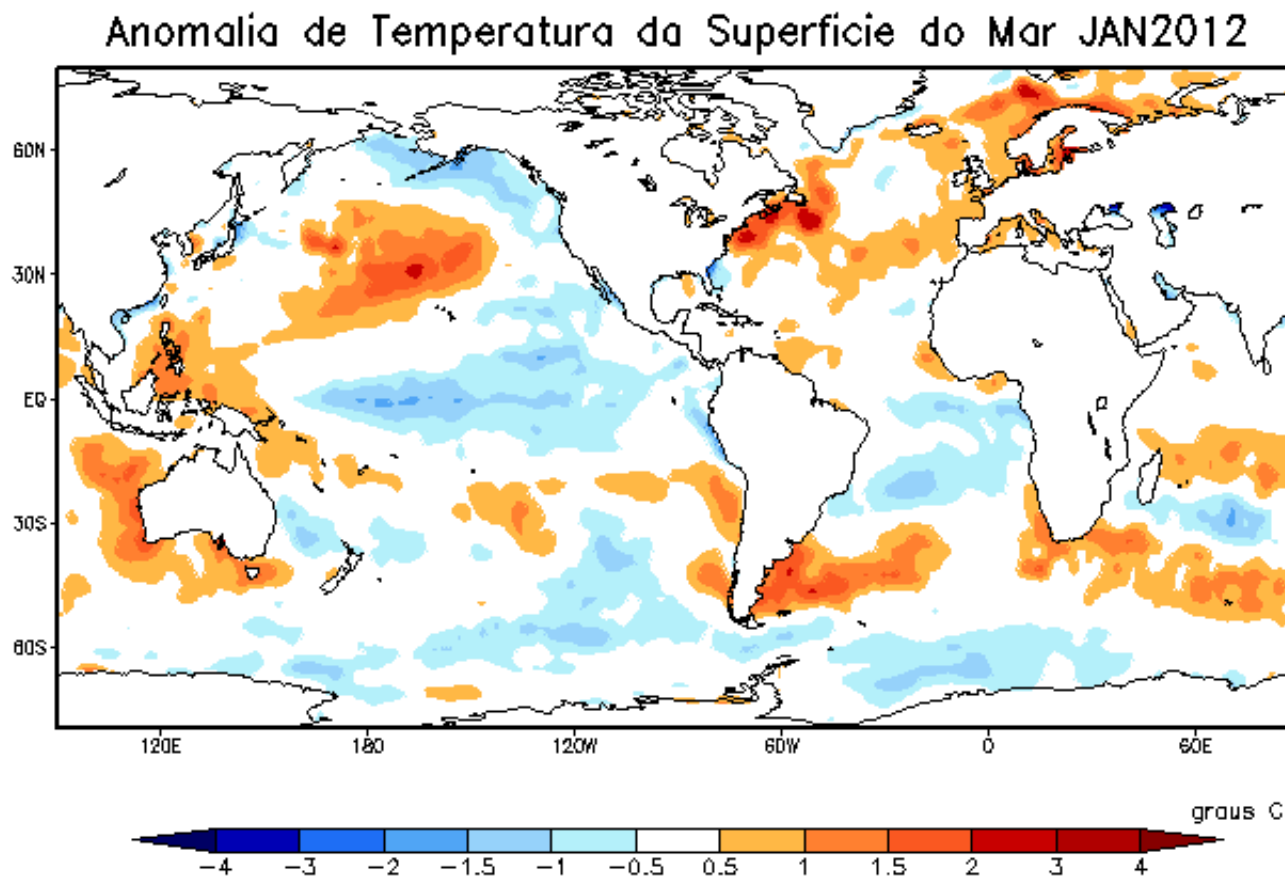
Influência do Oceano Pacífico – El Niño



Fonte: CPTEC/INPE

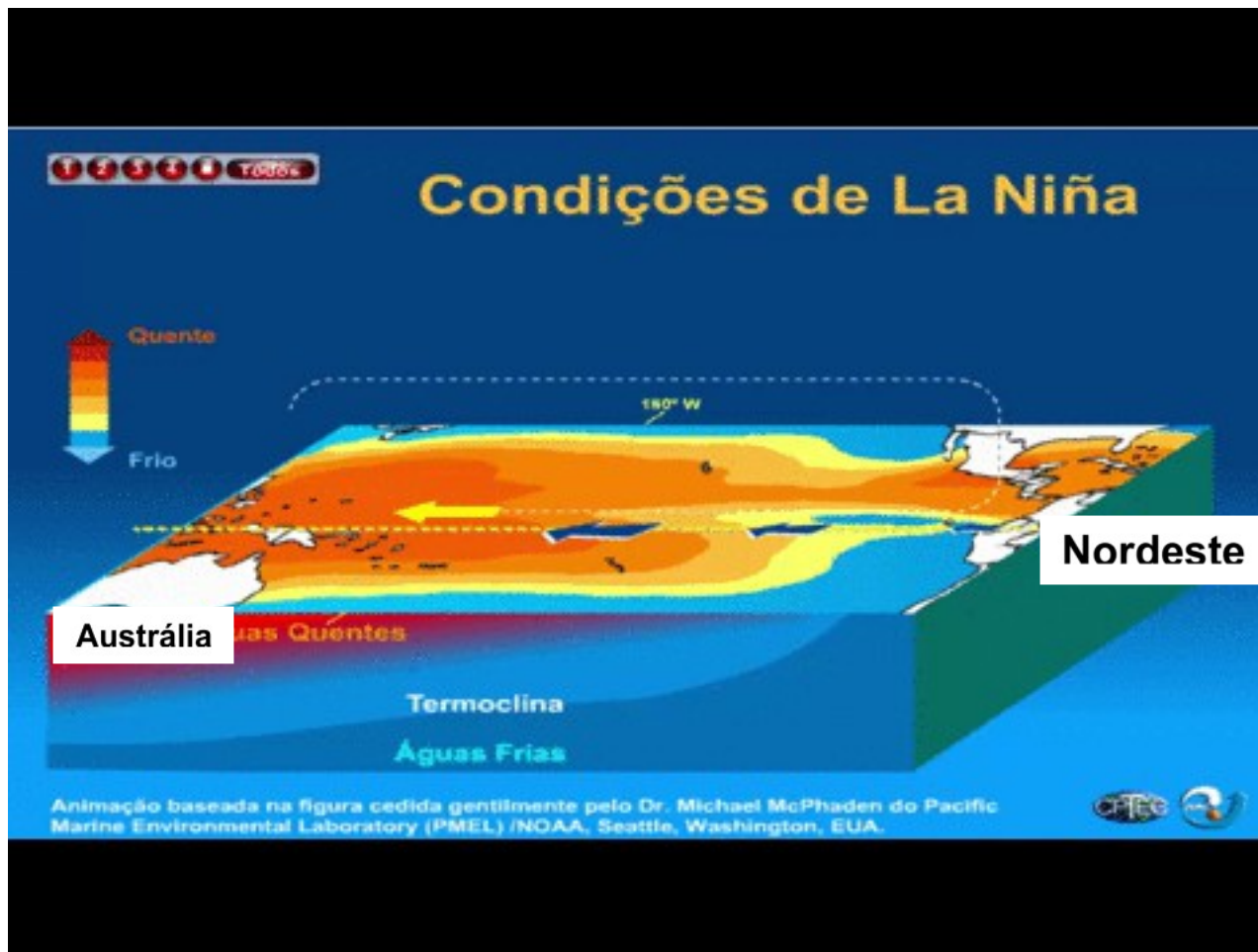


Influência do Oceano Pacífico – La Niña



Fonte: CPTEC/INPE

Influência do Oceano Pacífico – La Niña

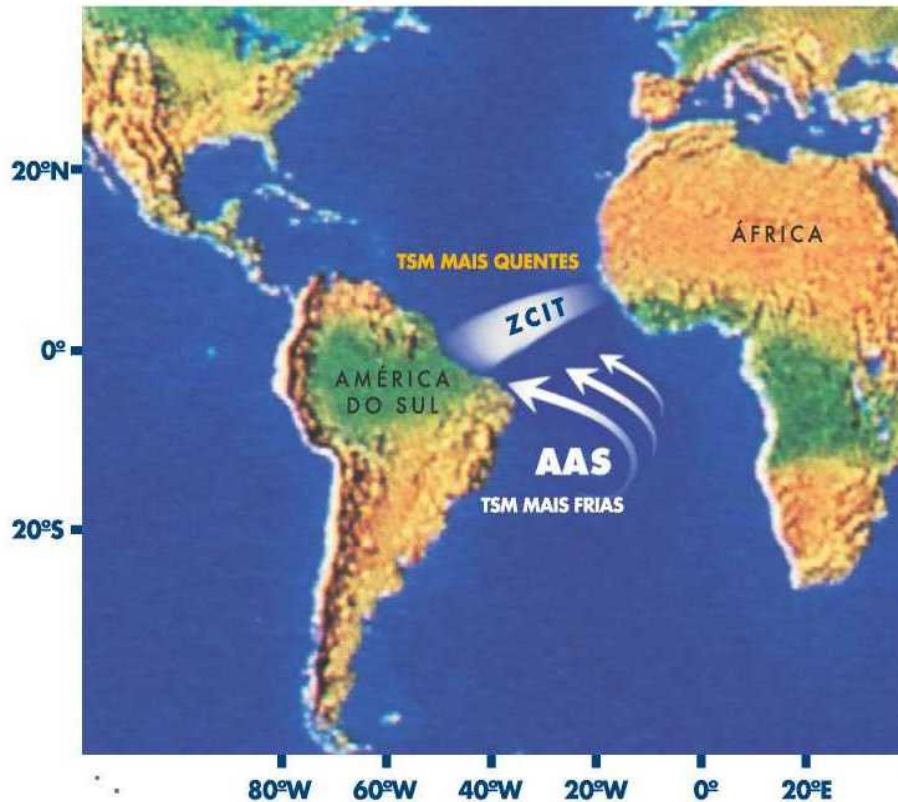


Fonte: CPTEC/INPE

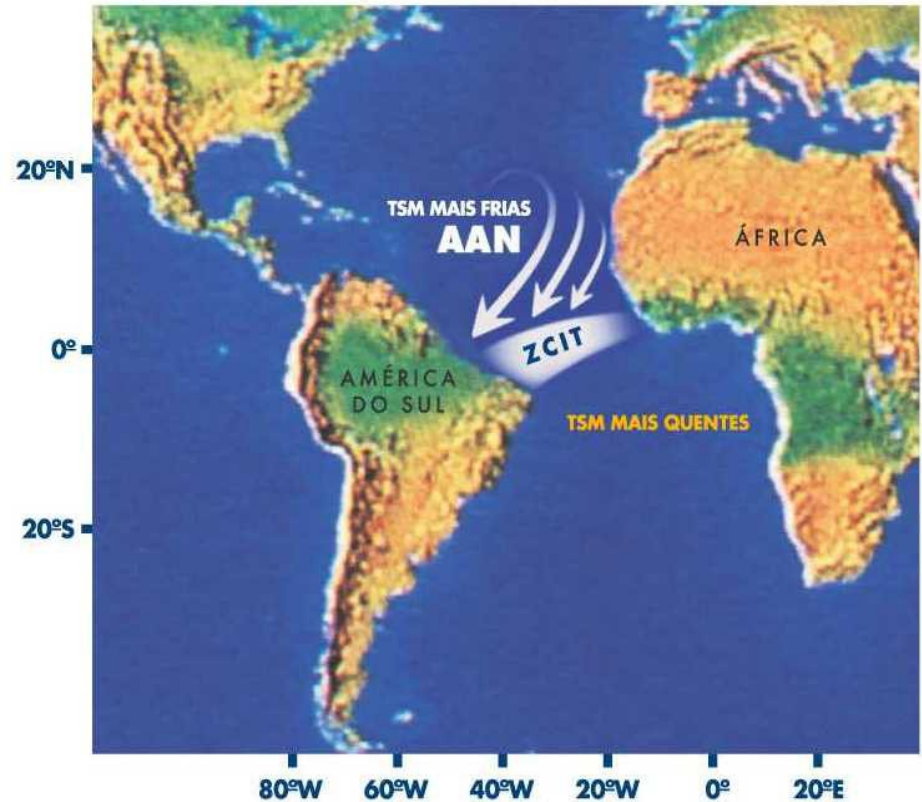


Influência do Oceano Atlântico

ANO SECO OU MUITO SECO

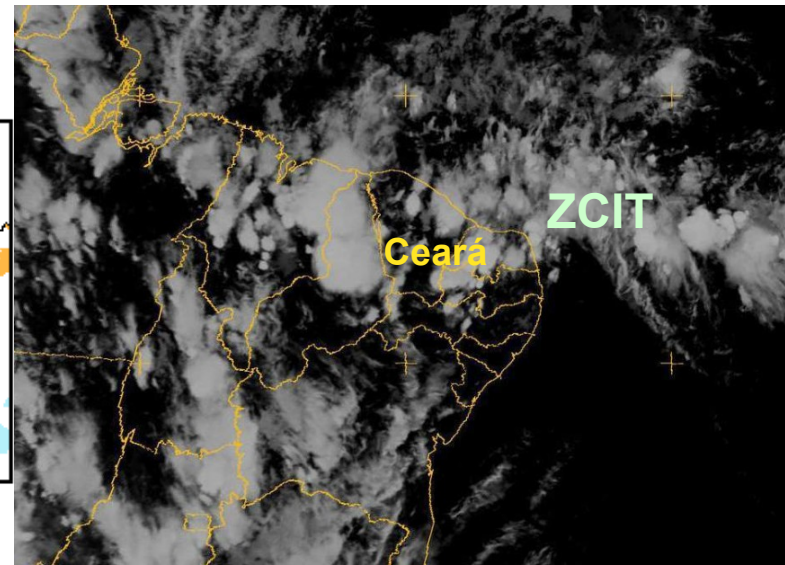
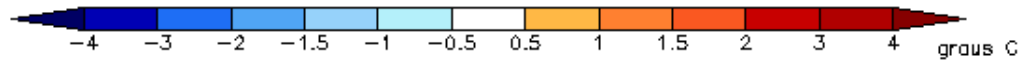
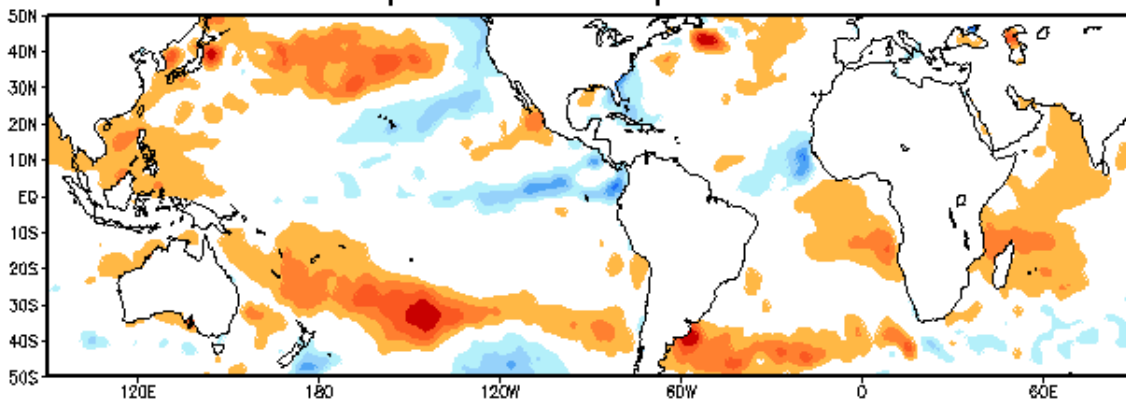


ANO NORMAL, CHUVOSO OU MUITO CHUVOSO



Influência do Oceano Atlântico

Anomalia de Temperatura da Superfície do Mar MAR2009



Chuva Observada

Janeiro

Quadra Chuvosa

Histórico do Ceará

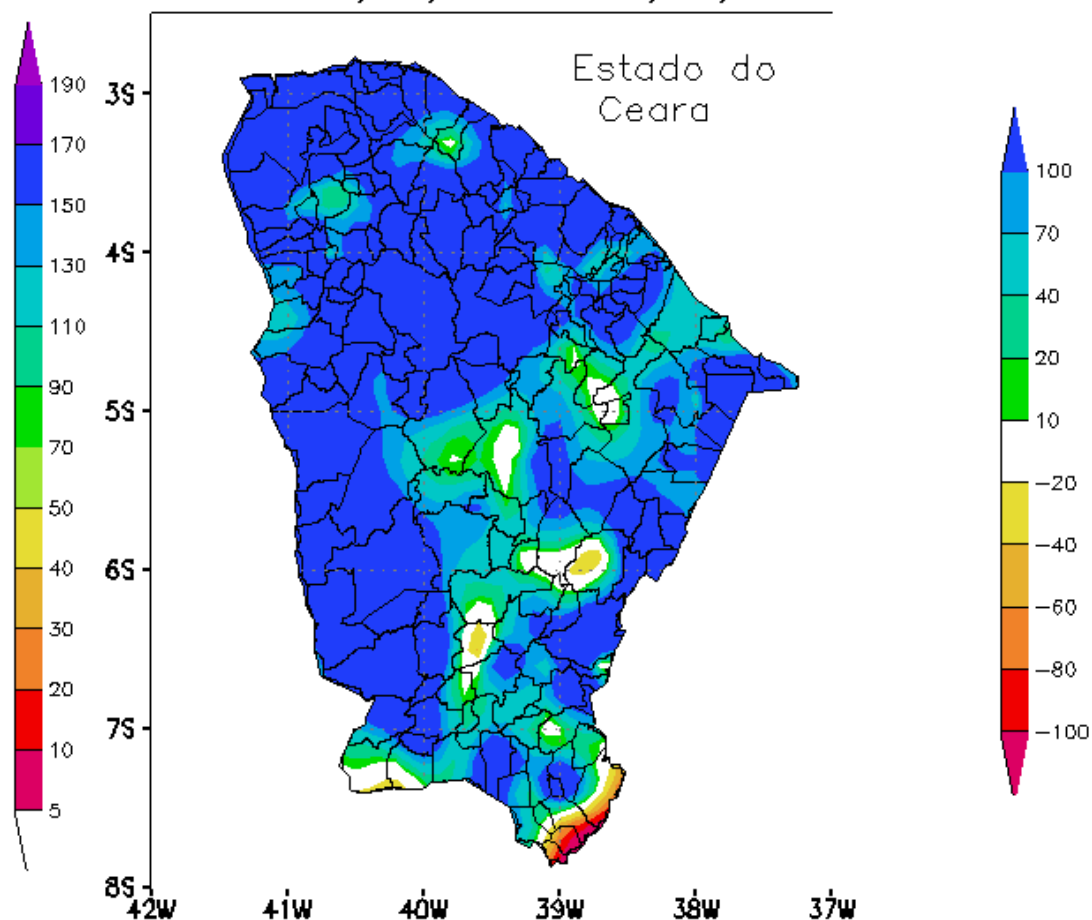
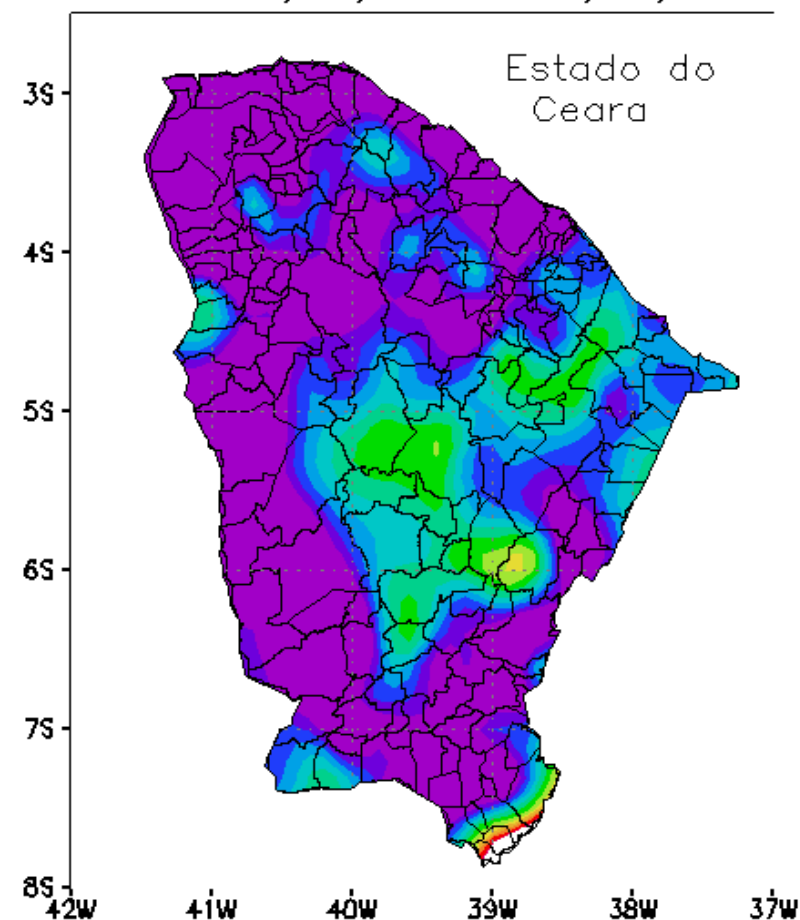
Histórico da Bacia do Banabuiú



Janeiro de 2016

Precipitacao Observada (mm)
Período: 01/01/2016 a 31/01/2016

Desvio Percentual (%)
Período: 01/01/2016 a 31/01/2016

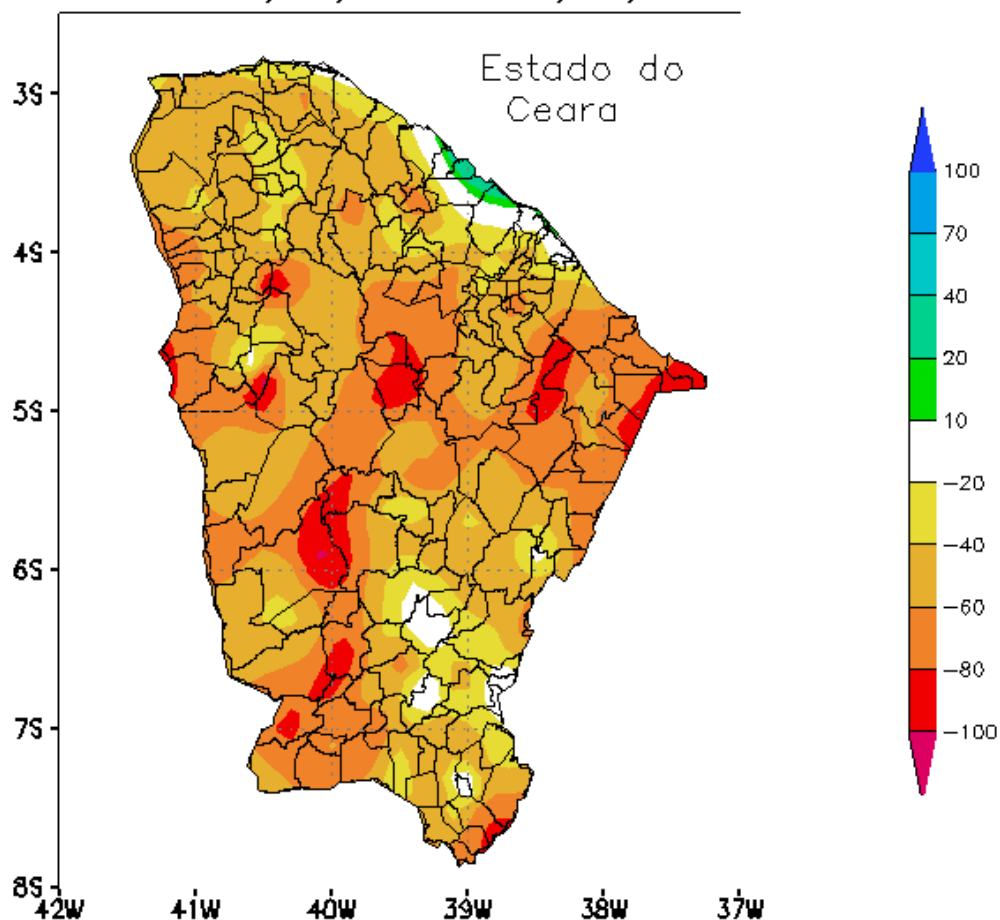
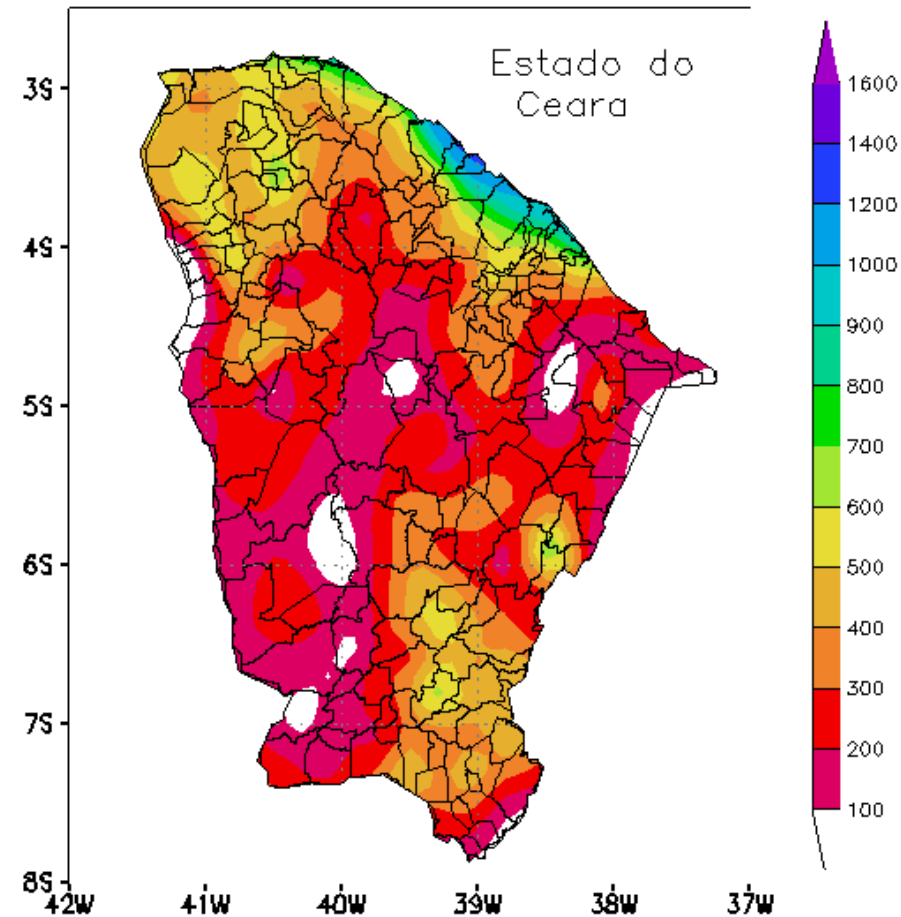


Estado do Ceará	Normal (mm)	Observado (mm)	Desvio (%)
Estado do Ceará	98.7	191.8	94.3

Quadra Chuvosa de 2016

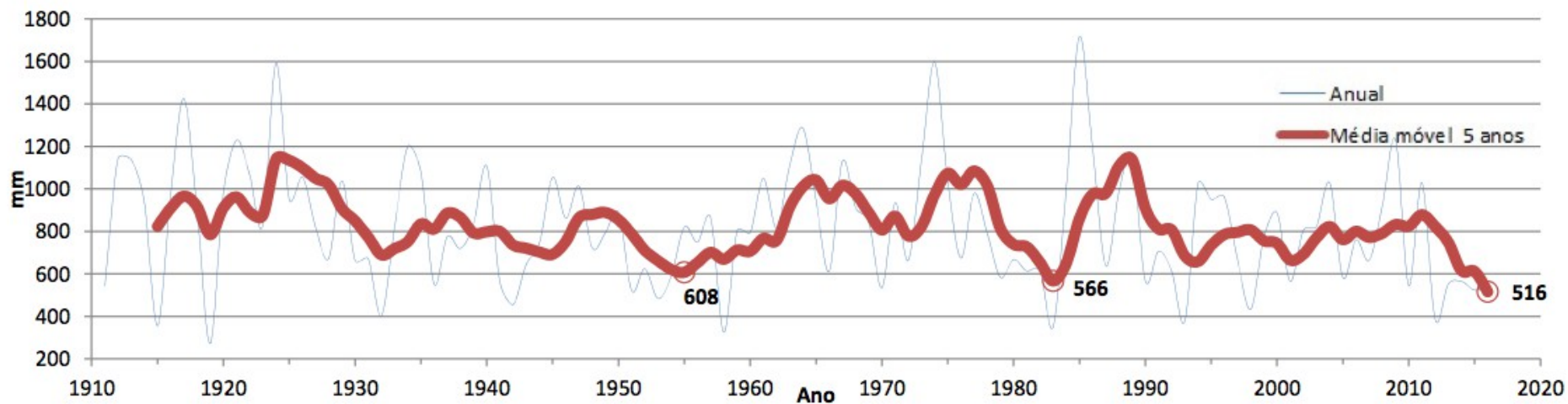
Precipitacao Observada (mm)
Período: 01/02/2016 a 31/05/2016

Desvio Percentual (%)
Período: 01/02/2016 a 31/05/2016



Estado do Ceará	Normal (mm)	Observado (mm)	Desvio (%)
Estado do Ceará	600.7	327.5	-45.5

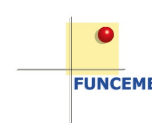
Chuva no Ceará (1910-2016)



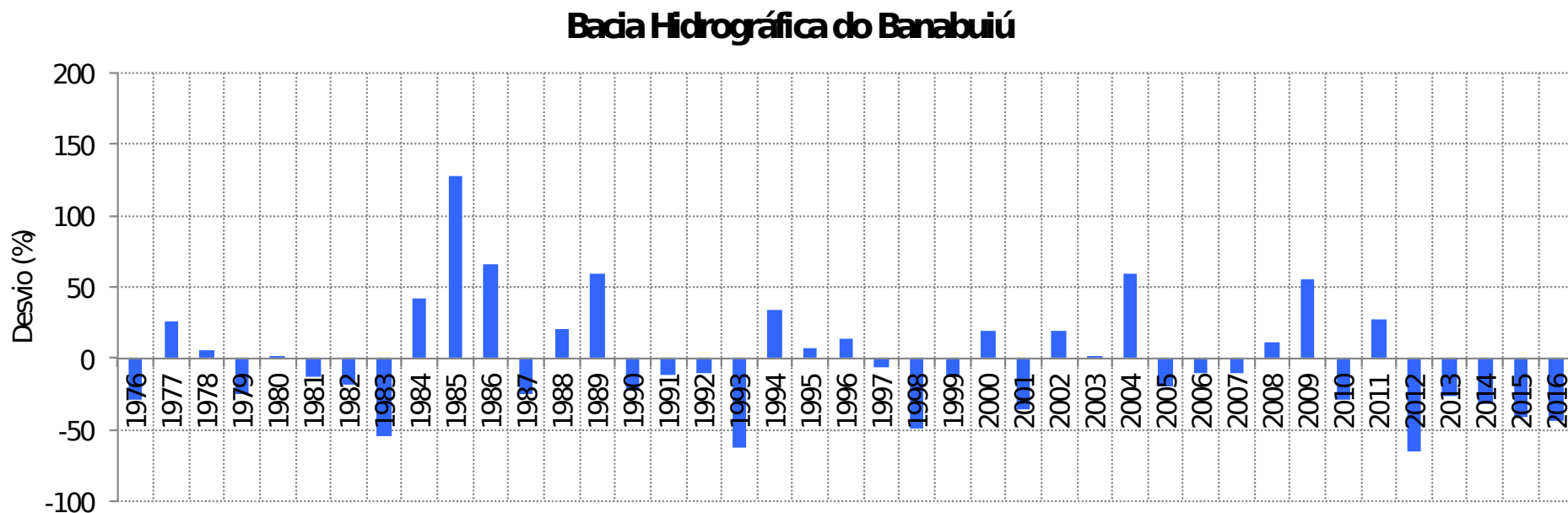
Ano	chuva
1951	522
1952	624
1953	484
1954	587
1955	820
Média	608

Ano	chuva
1979	584
1980	667
1981	613
1982	618
1983	350
Média	566

Ano	chuva
2012	388
2013	552
2014	565
2015	524
2016	550
Média	516

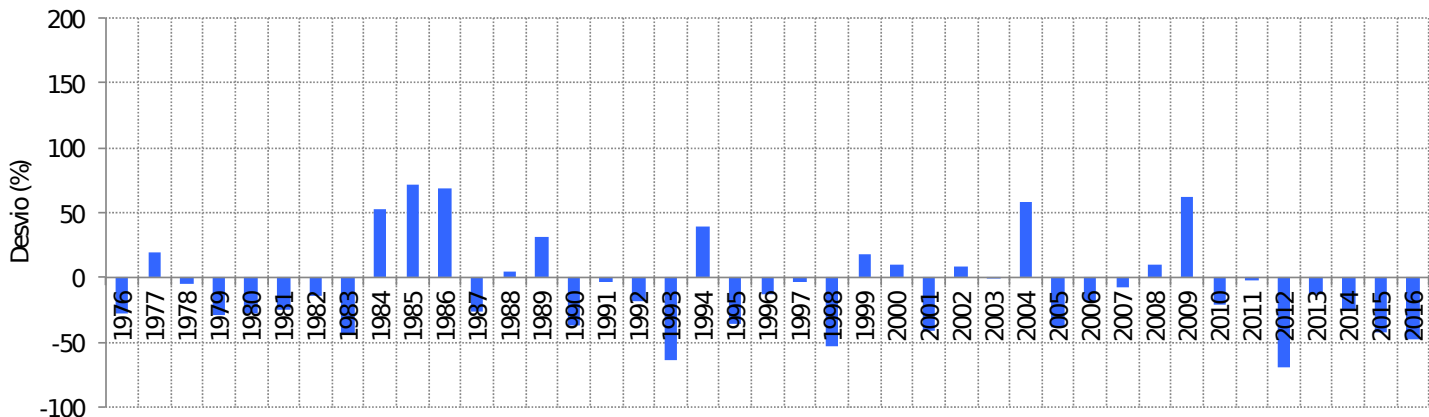


Desvio (Precipitação Anual) na Bacia do Banabuiú (1976-2016)

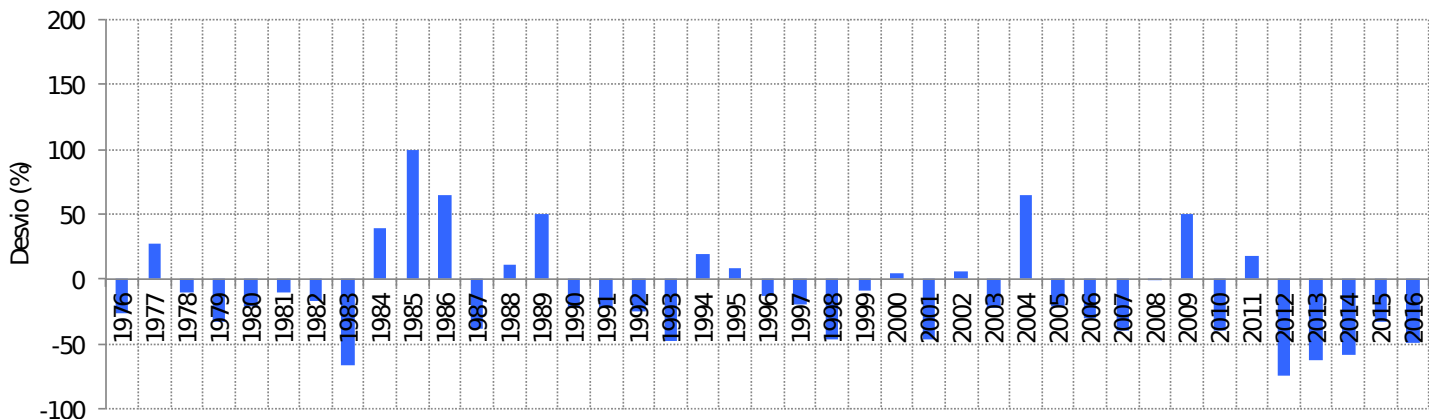


Desvio (Precipitação Anual) na Bacia do Banabuiú (1976-2016)

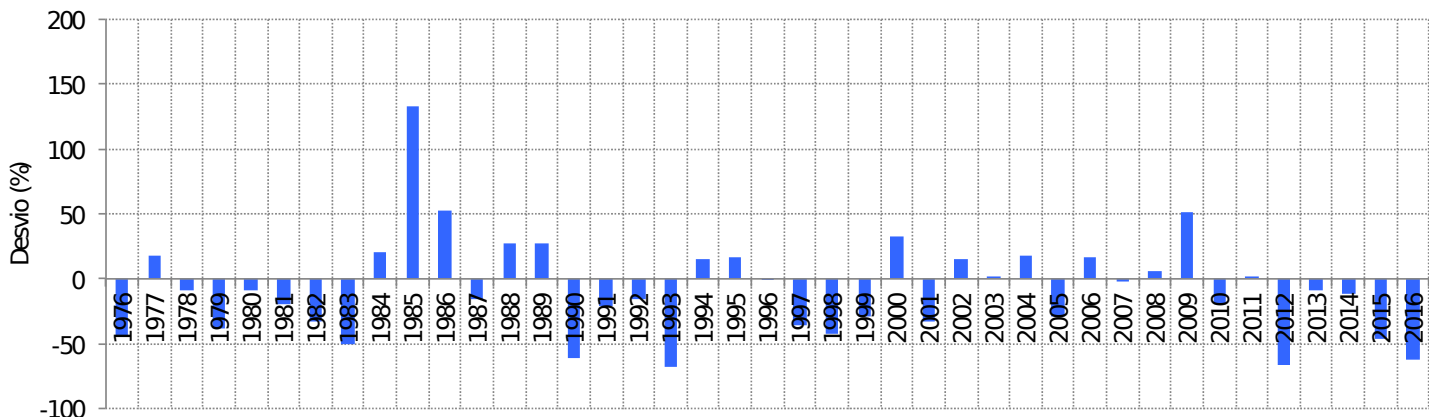
Banabuiú



Boa Viagem

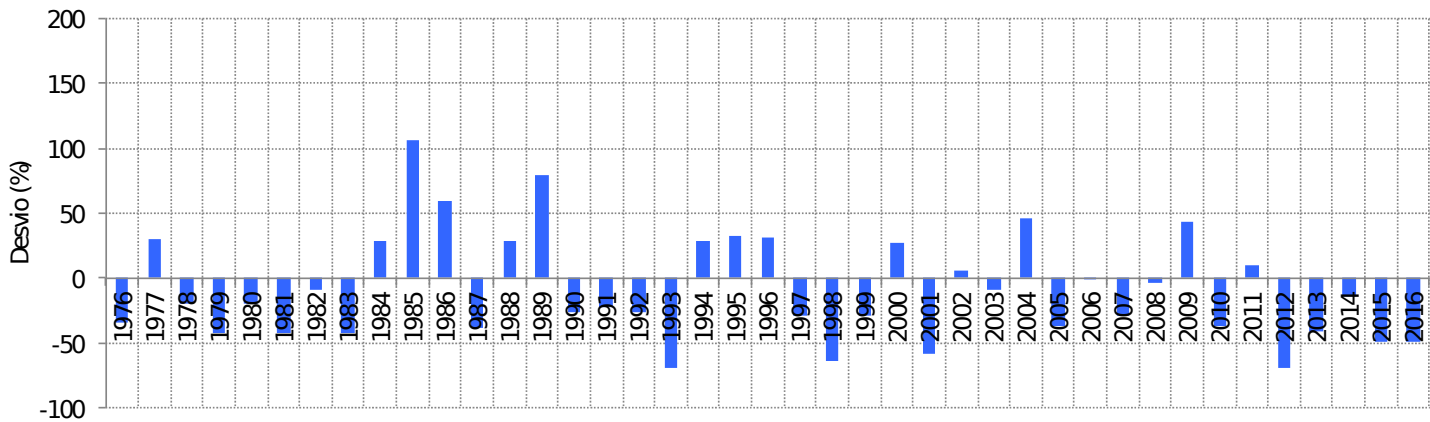


Ibicuitinga

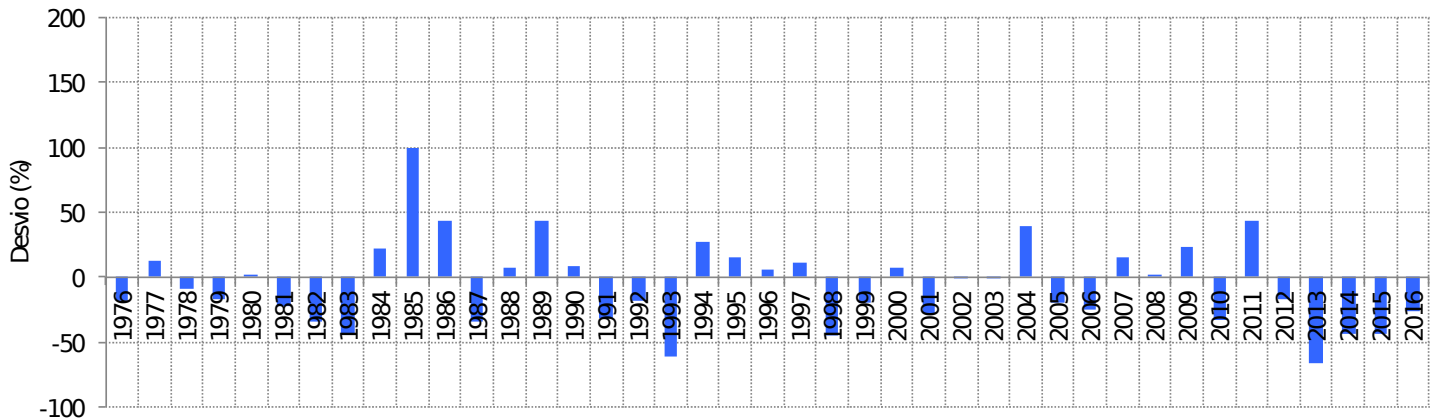


Desvio da Precipitação Anual na Bacia do Banabuiú (1976-2016)

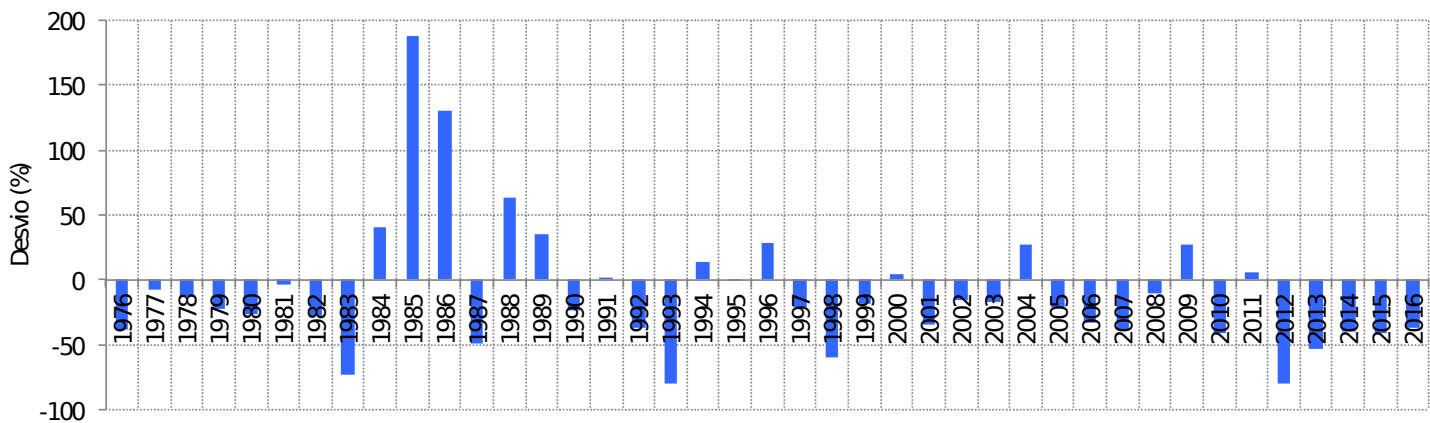
Madalena



Mombaça

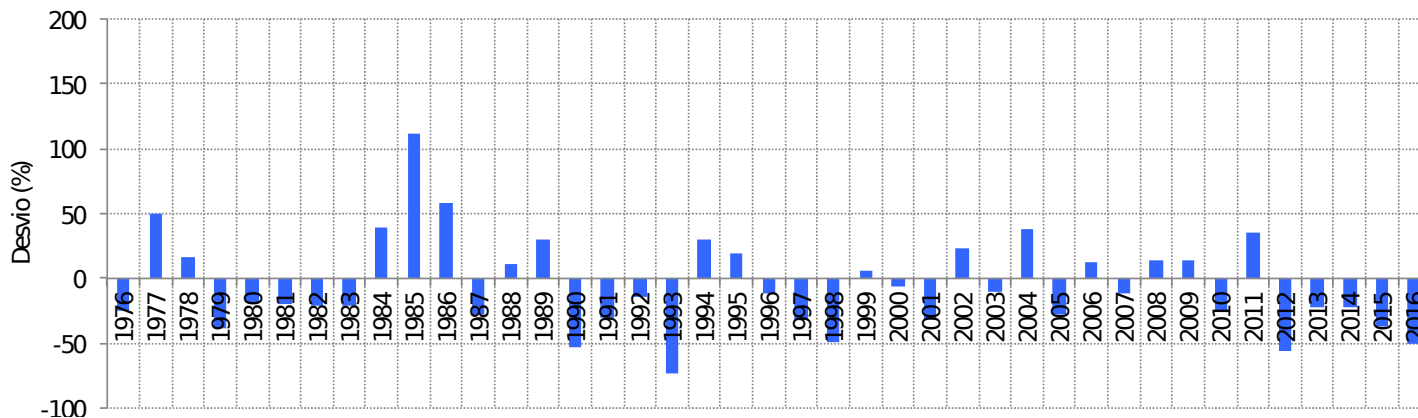


Monsenhor Tabosa

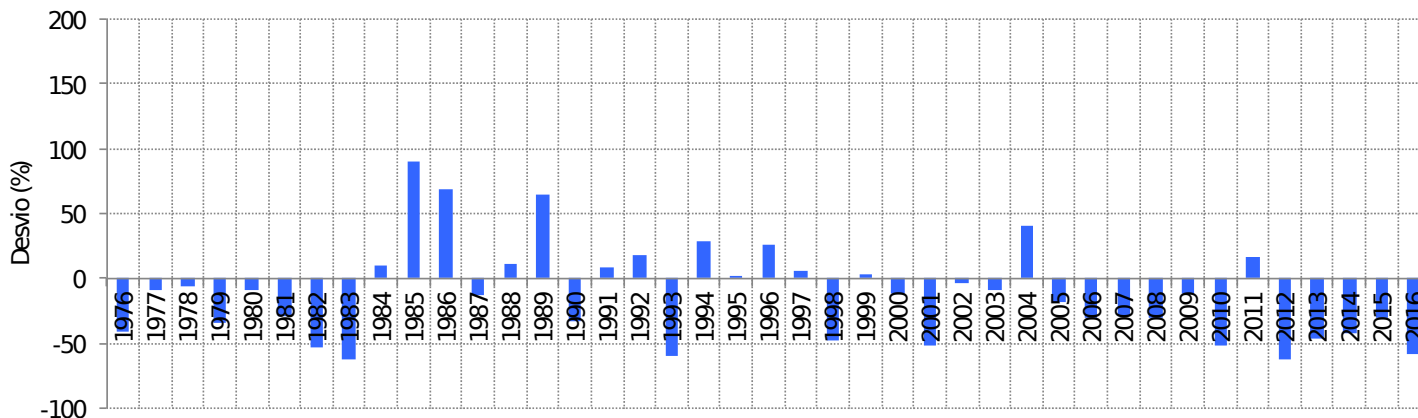


Desvio da Precipitação Anual na Bacia do Banabuiú (1976-2016)

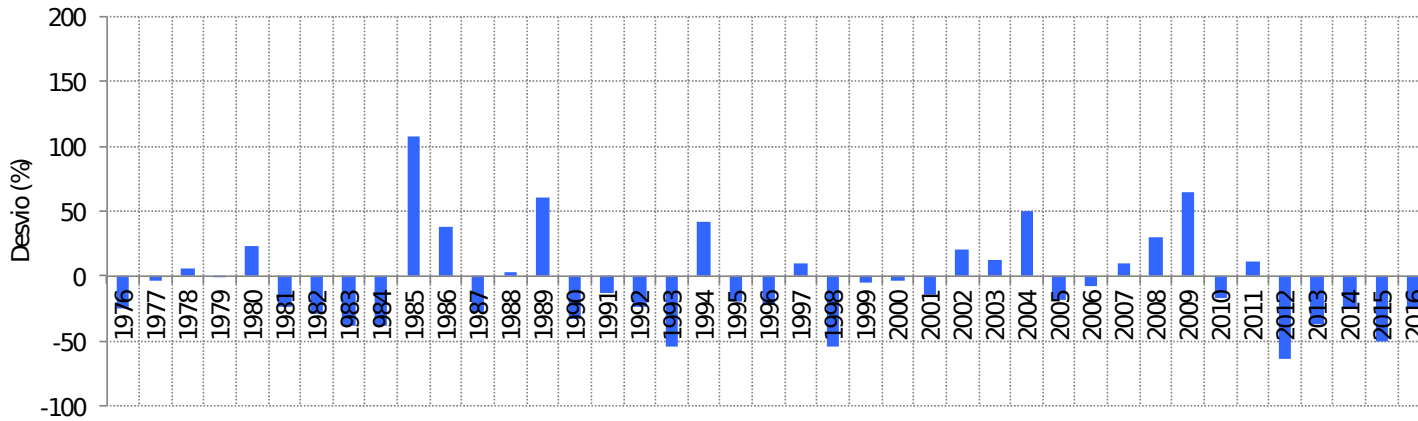
Morada Nova



Pedra Branca

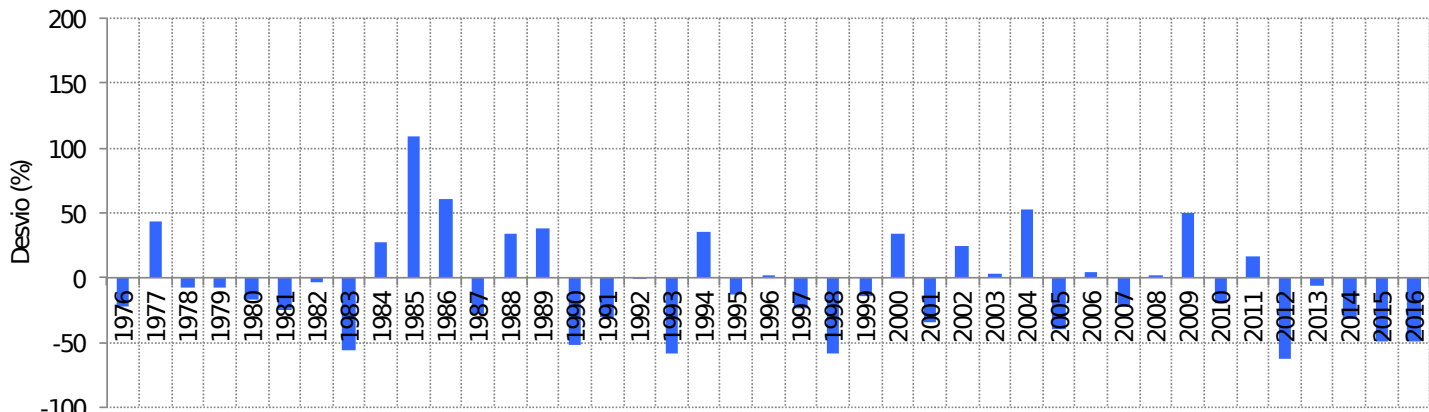


Piquet Carneiro

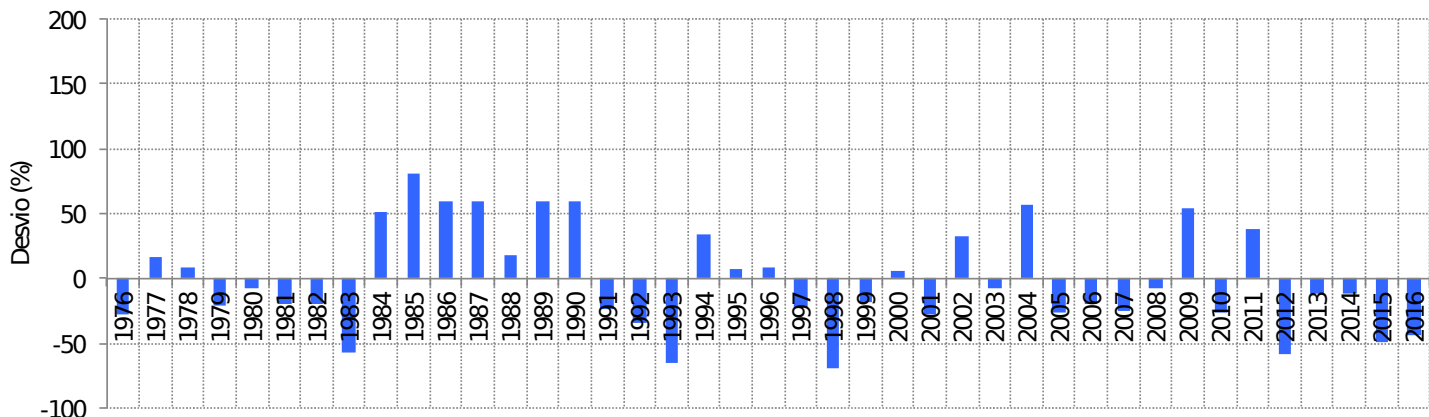


Desvio da Precipitação Anual na Bacia do Banabuiú (1976-2016)

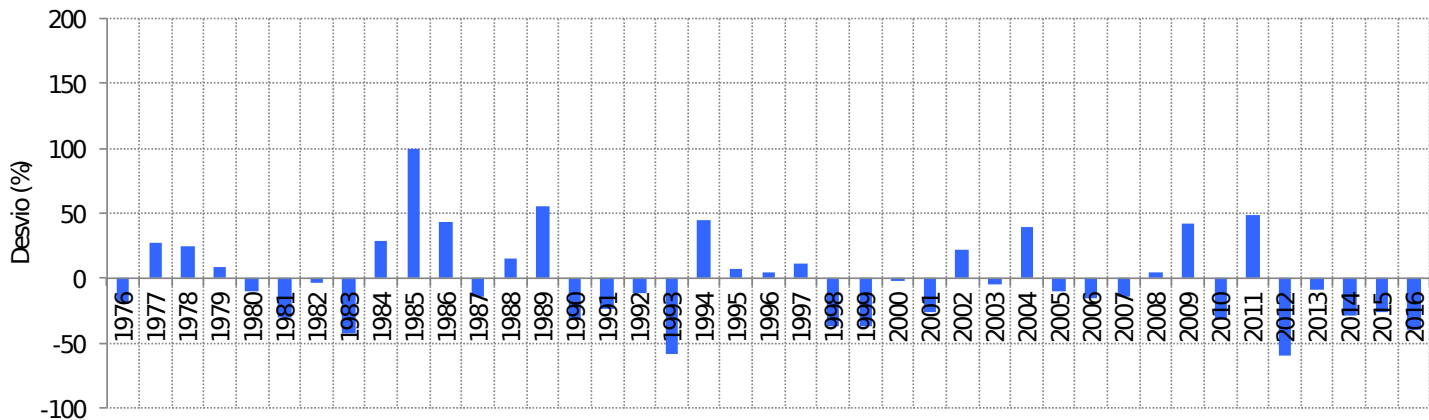
Quixadá



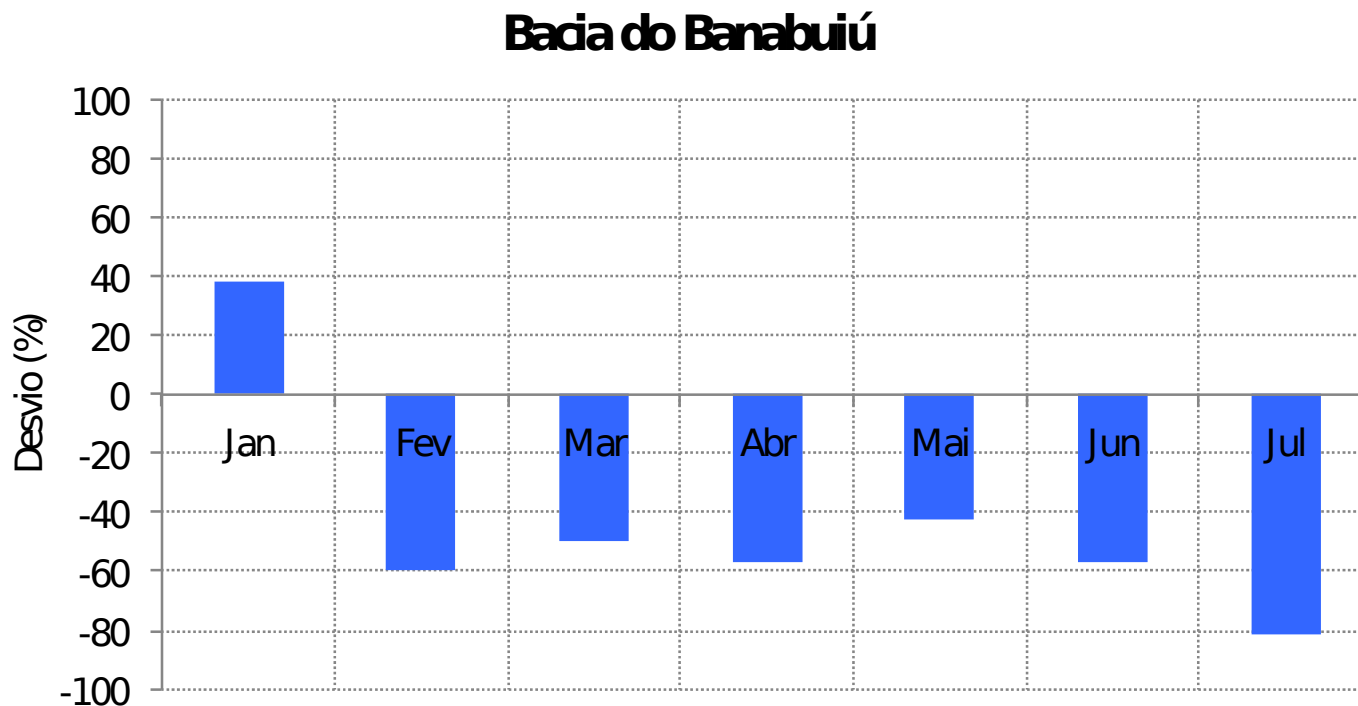
Quixeramobim



Senador Pompeu

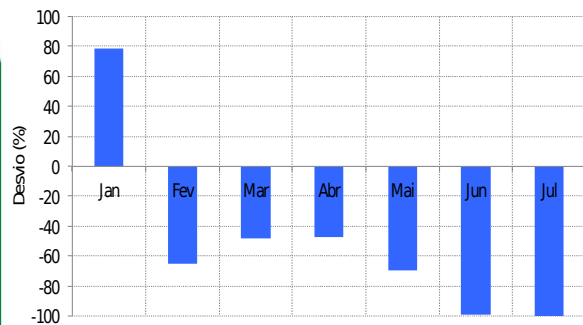


Chuva Mensal na Bacia do Banabuiú em 2016

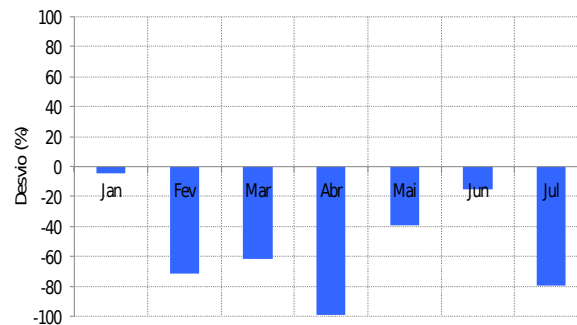


Chuva Mensal na Bacia do Banabuiú em 2016

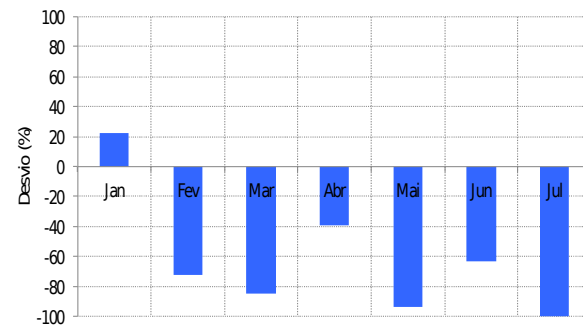
Banabuiú



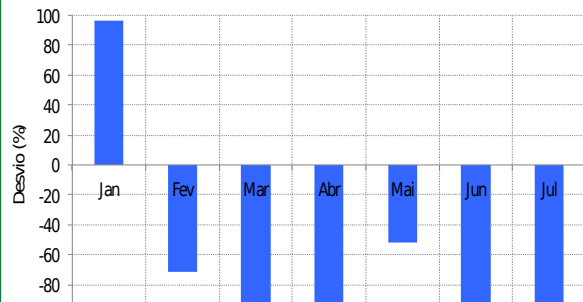
Boa Viagem



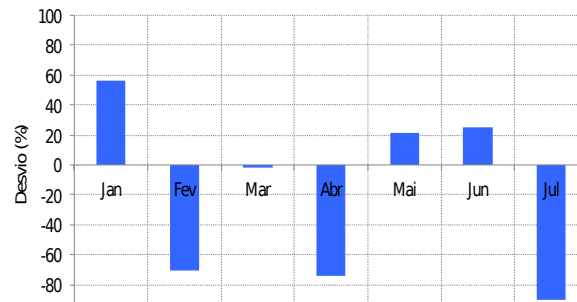
Ibicuitinga



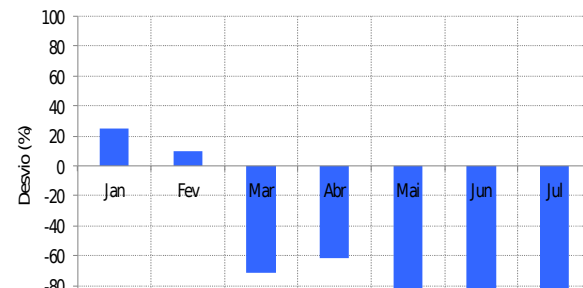
Madalena



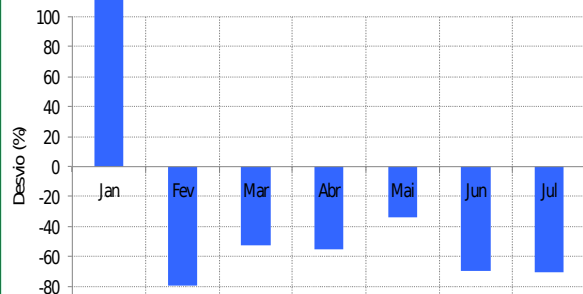
Mombaça



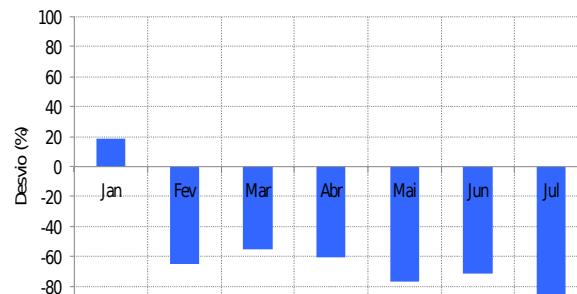
Morada Nova



Monsenhor Tabosa



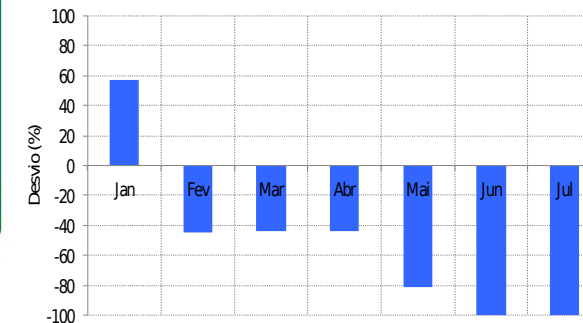
Pedra Branca



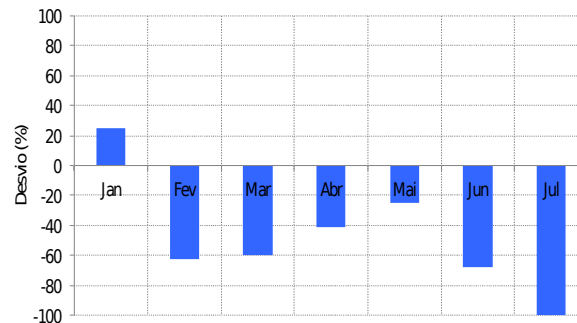
Piquet Carneiro



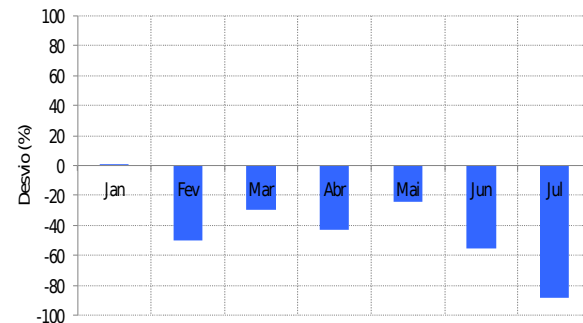
Quixadá



Quixeramobim



Senador Pompeu



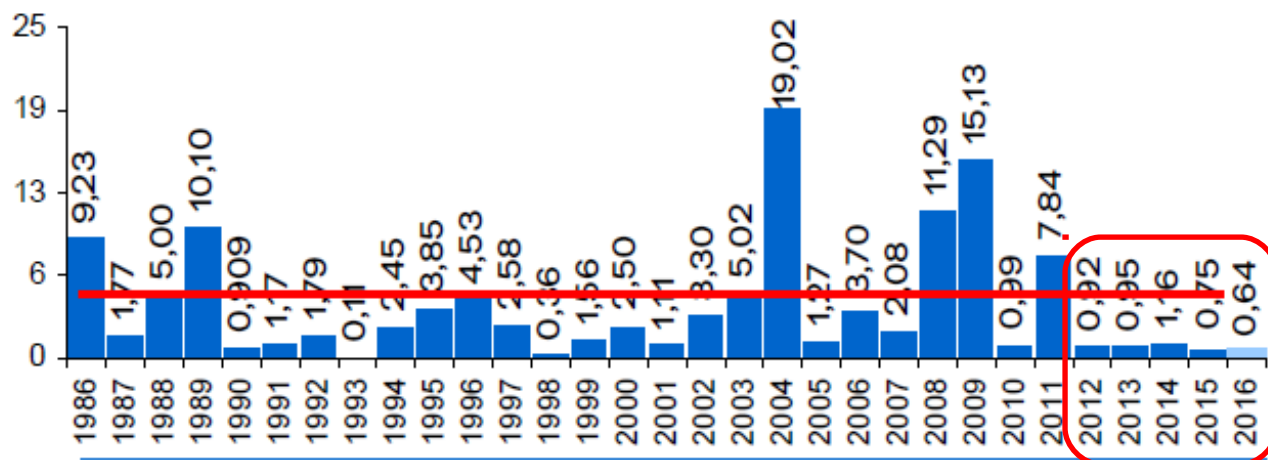
Impacto

Aporte de Água
Situação dos Açudes

Aporte Hídrico (1986-2016)

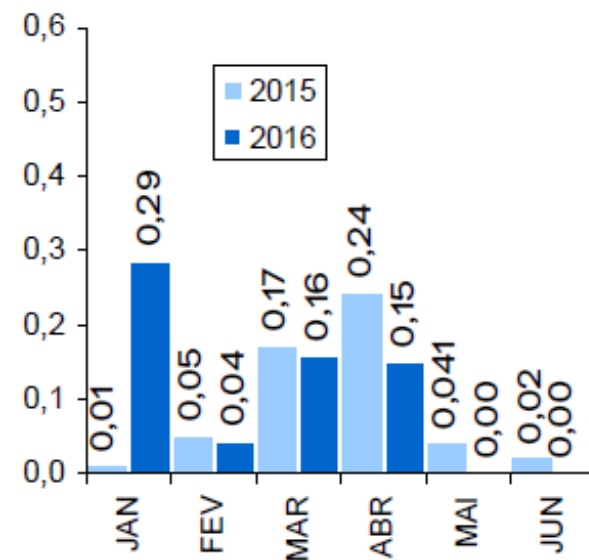
HISTÓRICO DO APORTE HÍDRICOS DOS AÇUDES GERENCIADOS PELA COGERH 1986 a 13-abr-2016

EVOLUÇÃO APORTE, bilhões de m³



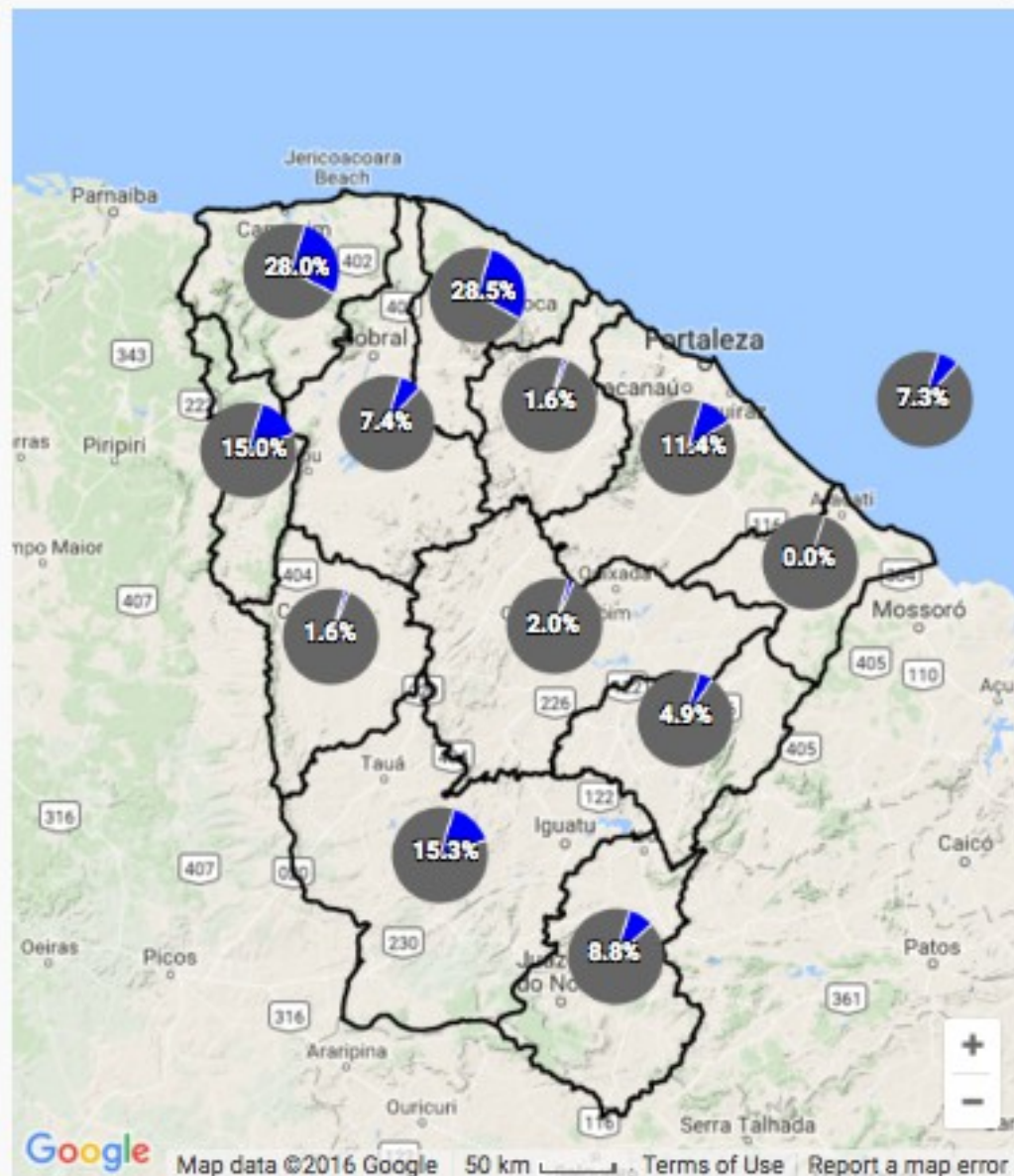
média: 4,08 bi; mediana: 2,27 bi m³

a: não inclui os açudes das transferências hídricas para a RMF (Curral Velho, Pacajus, Pacoti, Riachão e Gavião)



Volume Observado

■ Água
 ■ Vazio



Volume Atual (29/11/2016)

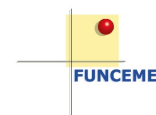
Região: Banabuiú

Capacidade: 2767,5 hm³

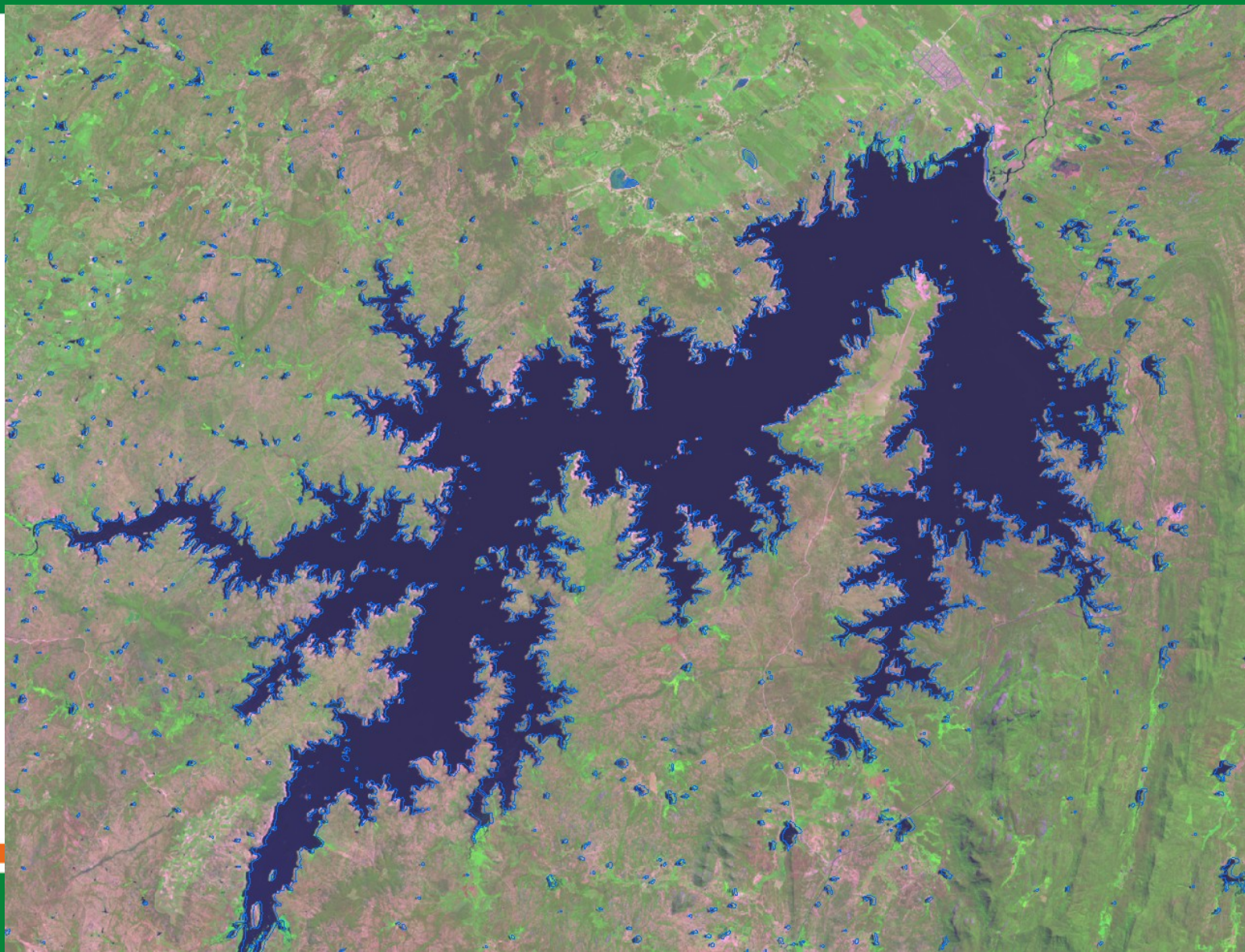
Volume: 53,9 hm³

■ **Água: 2.0 %**

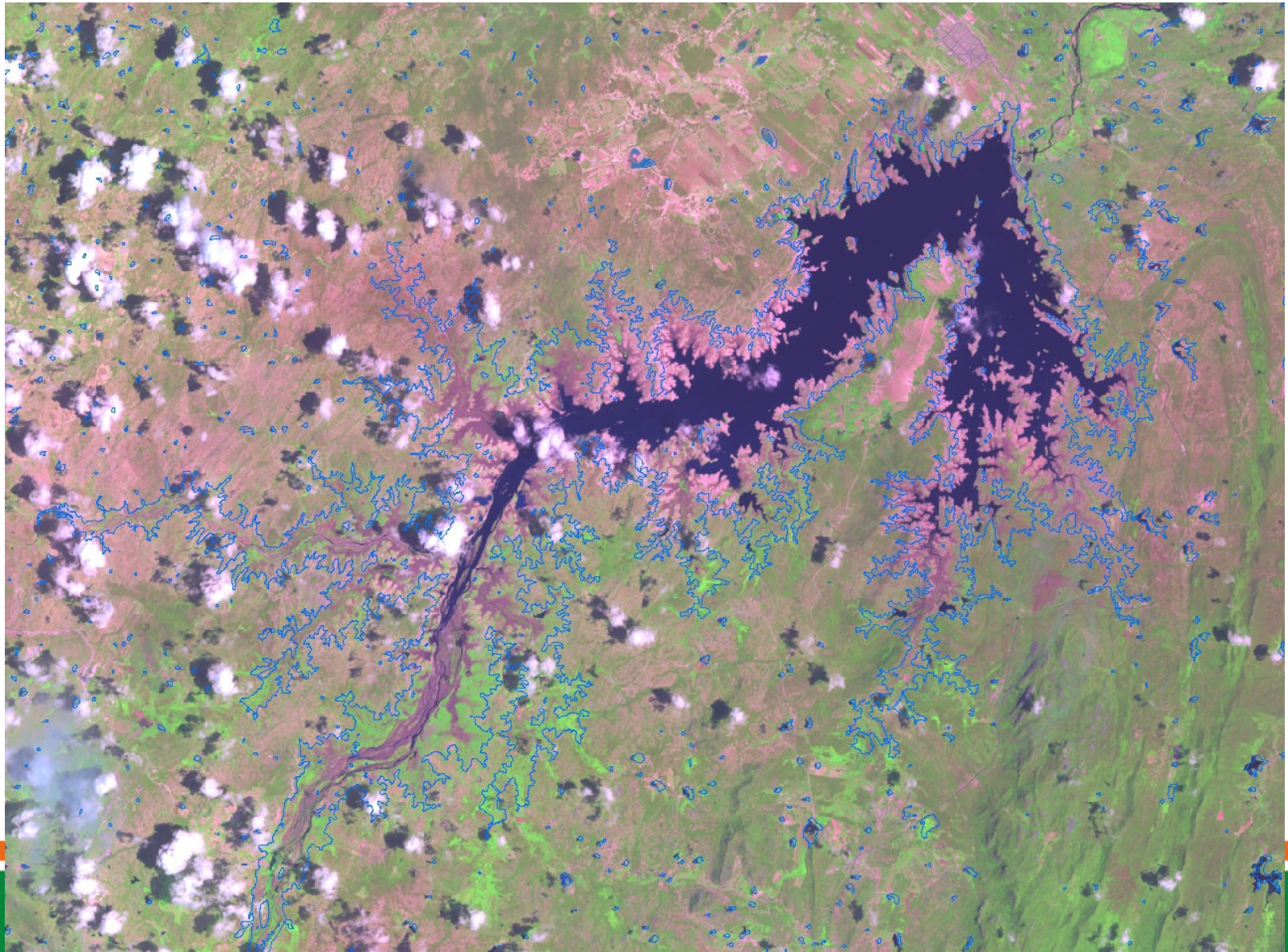
■ **Vazio: 98 %**



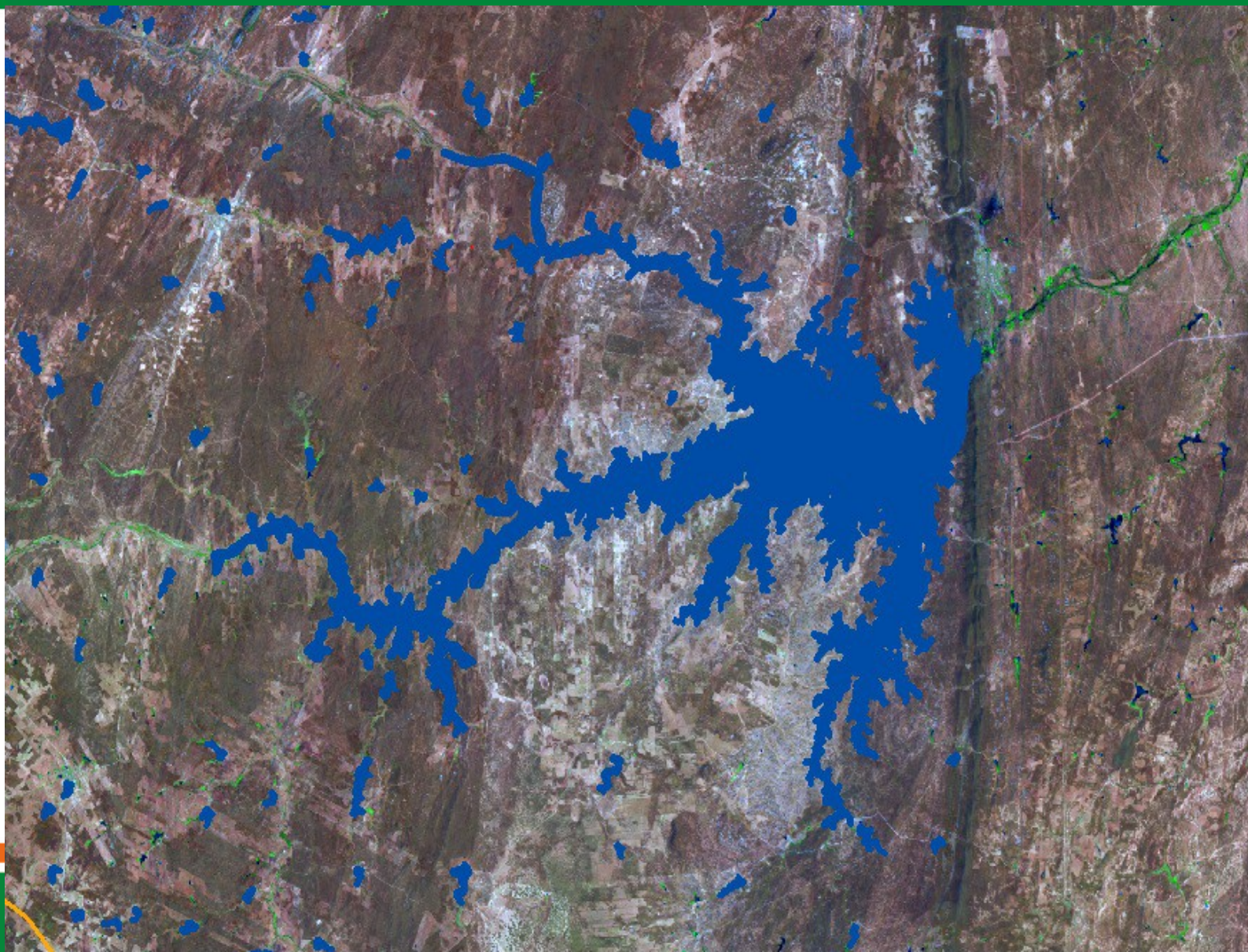
Açude Castanhão - 2013



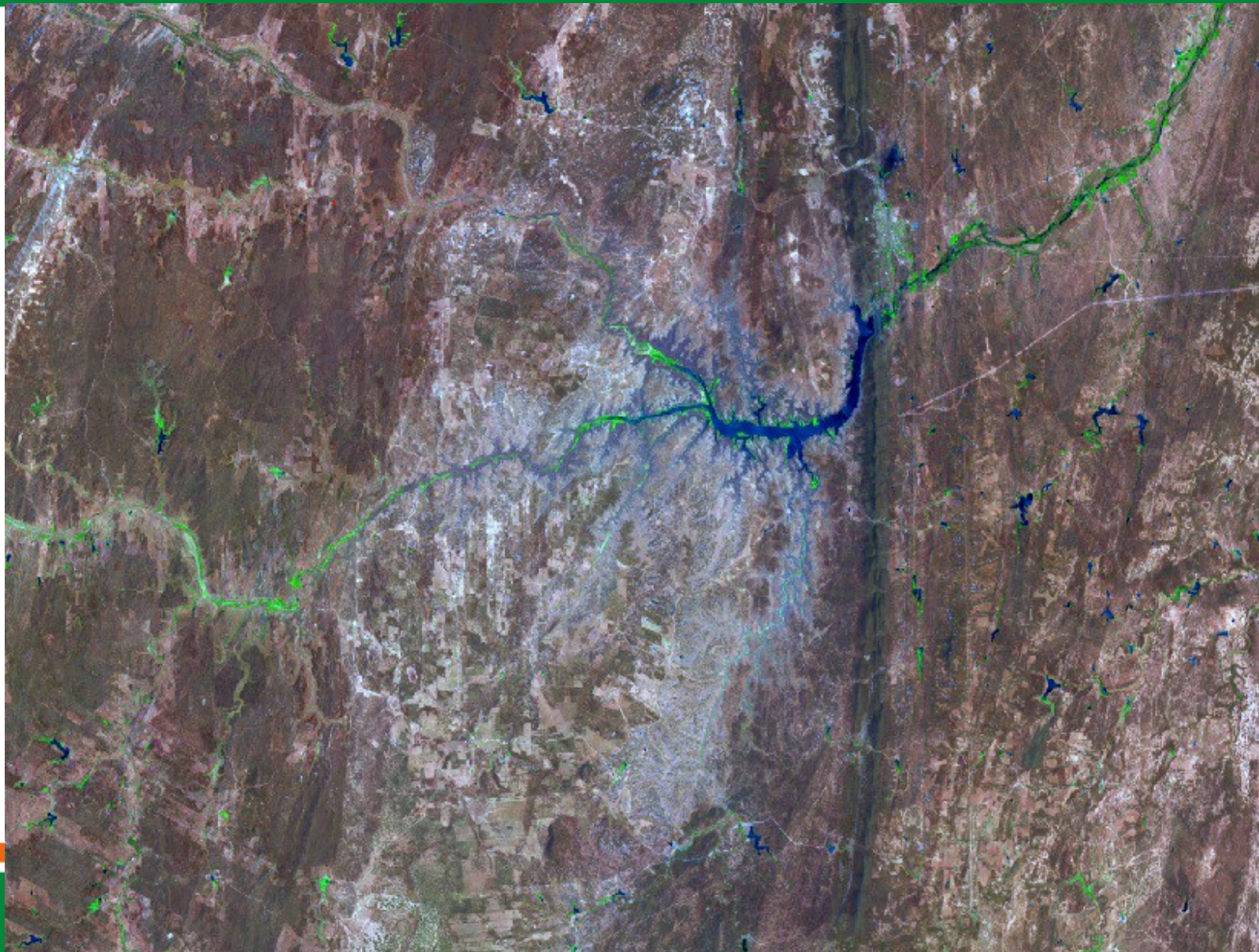
Açude Castanhão - 2016



Açude Banabuiú - 2008



Açude Banabuiú - 2015



Açude Banabuiú e Quixeramobim

BANABUIÚ

Capacidade: 1.601,00 hm³

Cota: 103,05 m

Volume: 12,67 hm³

Volume: 0,79 %

Vazão: 104,00 L/s



Açude Banabuiú – 2016
Fonte: FUNCEME

QUIXERAMOBIM

Capacidade: 7,88 hm³

Cota: 92,05 m

Volume: 0,00 hm³

Volume: 0,00 %

Vazão: 0,00 L/s



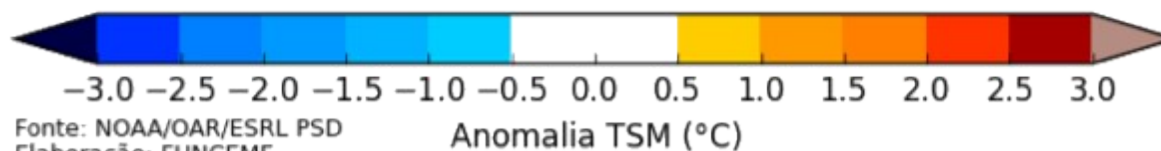
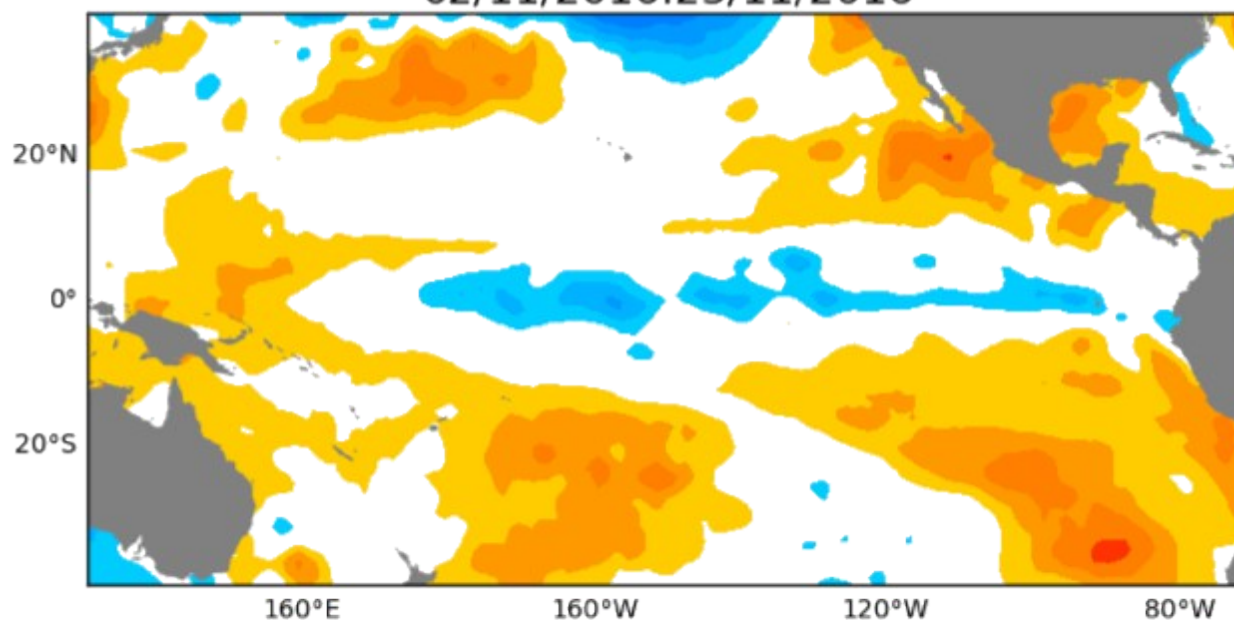
Açude Quixeramobim – 2016
Fonte: FUNCEME

2017

Tendências

Anomalia de Temperatura da Superfície do Mar no Oceano Pacífico (Nov/2016)

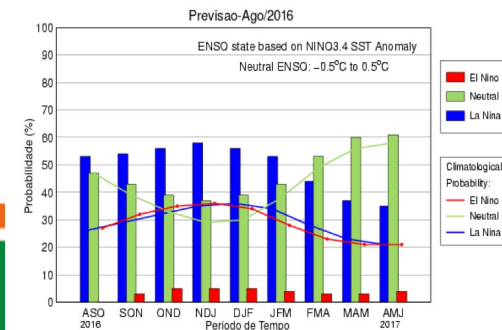
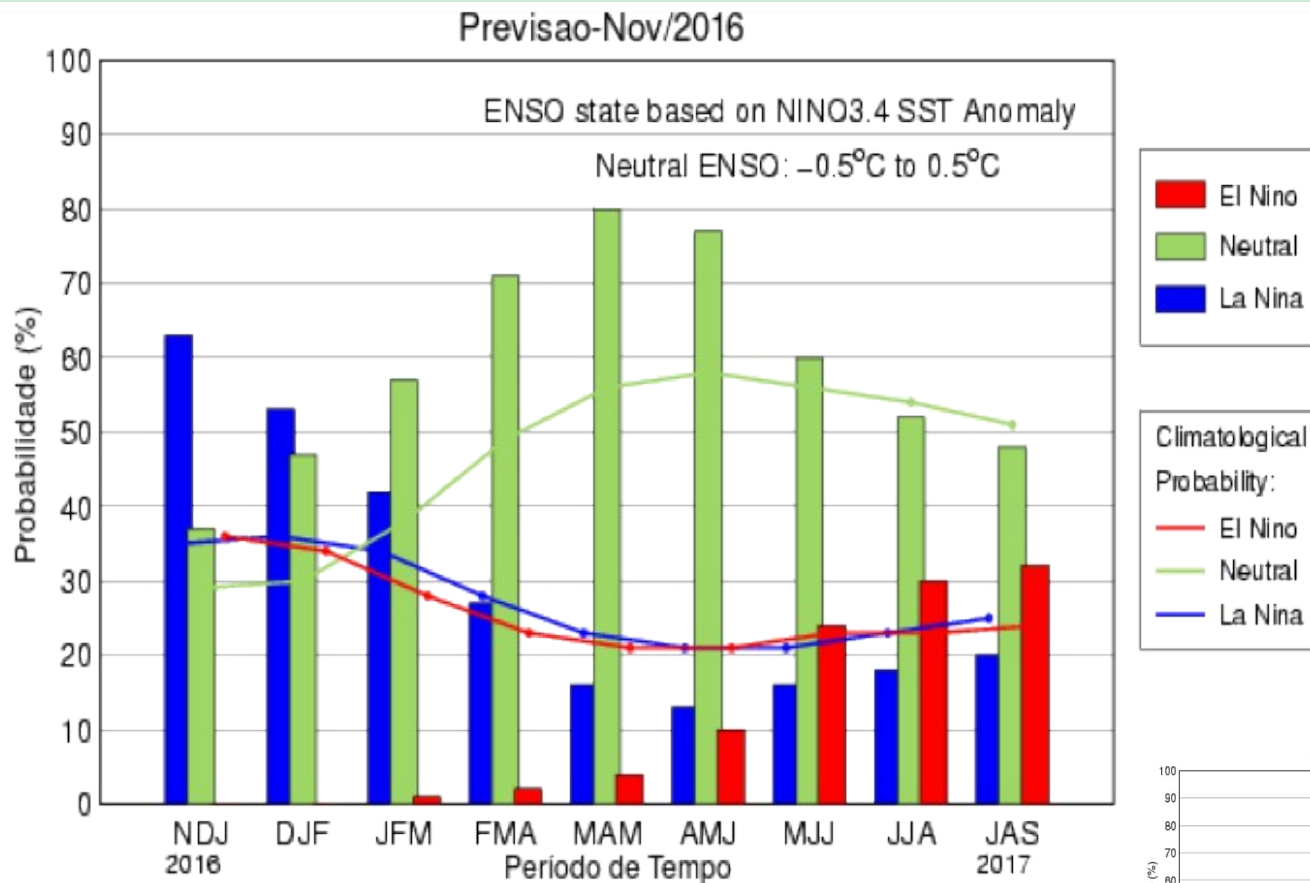
Média da Anomalia de TSM das últimas quatro semanas
02/11/2016:23/11/2016



Fonte: NOAA/OAR/ESRL PSD
Elaboração: FUNCEME

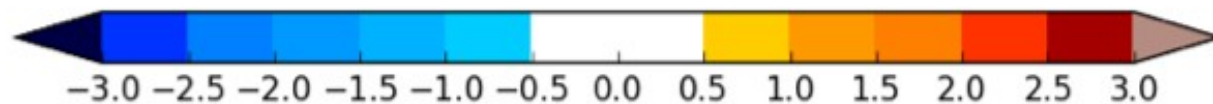
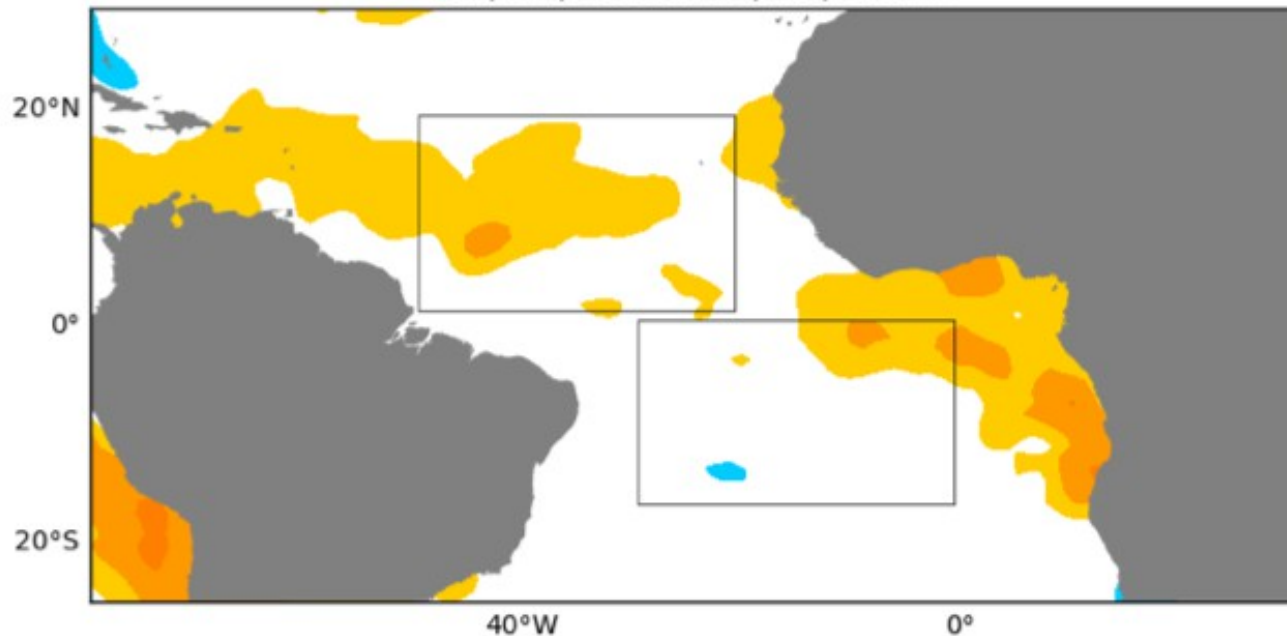


Previsão para Temperatura do Oceano Pacífico



Anomalia de Temperatura da Superfície do Mar no Oceano Atlântico (Nov/2016)

Média da Anomalia de TSM das últimas quatro semanas
02/11/2016:23/11/2016



Fonte: NOAA/OAR/ESRL PSD
Elaboração: FUNCEME

Anomalia TSM (°C)



Açude Castanhão, Set/2015.
Fonte: FUNCEME