

Causas climáticas e impactos socioeconômicos do fenômeno da seca

Paulo Nobre

Instituto Nacional de Pesquisas Espaciais – INPE

CEX – Seca no Semiárido Nordeste

55ª Legislatura - 1ª Sessão Legislativa Ordinária

Brasília, 21 de maio de 2015



O Paradigma da Seca e da Fome



A dura vida do sertanejo

“Dentre os muitos aspectos apresentados pela Região Nordeste, o que mais se destaca é a seca, causada pela escassez de chuva, proporcionando pobreza e fome”

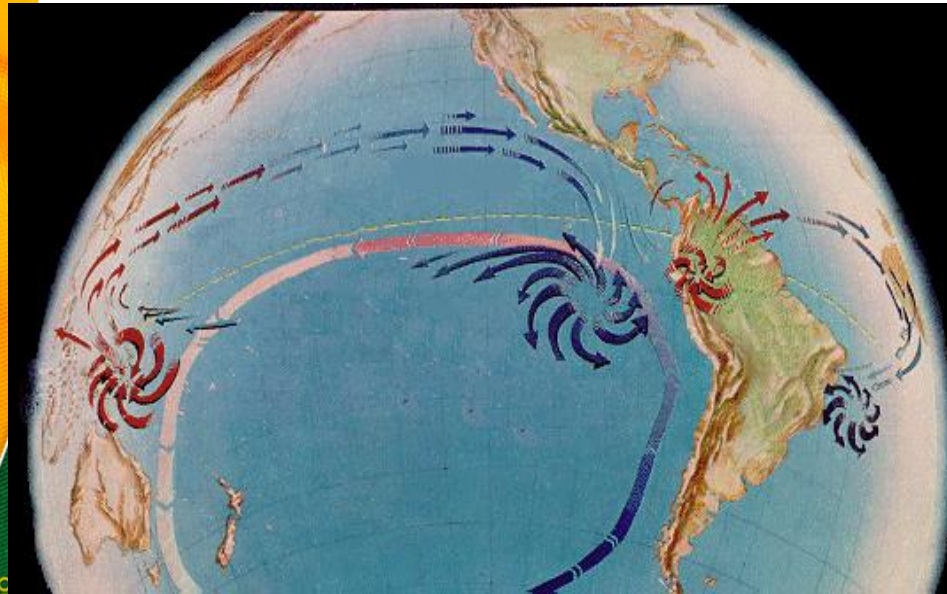
O CLIMA DO NORDESTE

- SECAS FAZEM PARTE DO CLIMA NORDESTINO

Efeito do El Niño

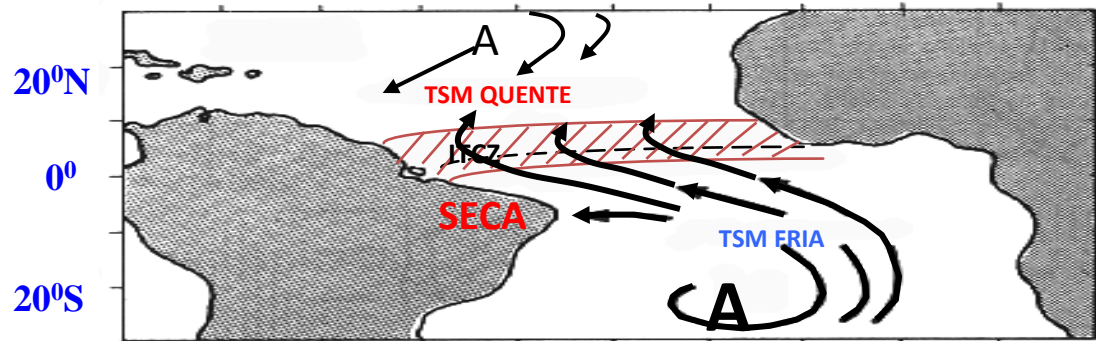
ENSO Frio

ENSO Quente

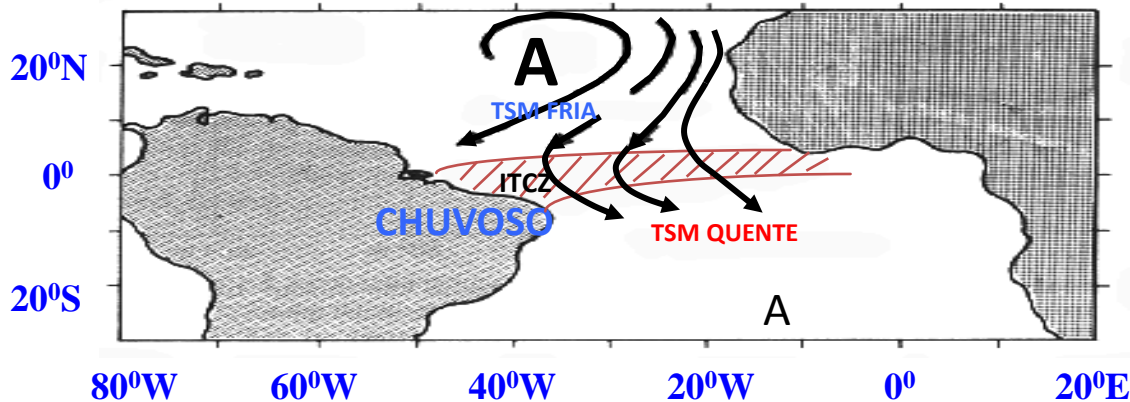


Efeito do Atlântico Tropical

(A)

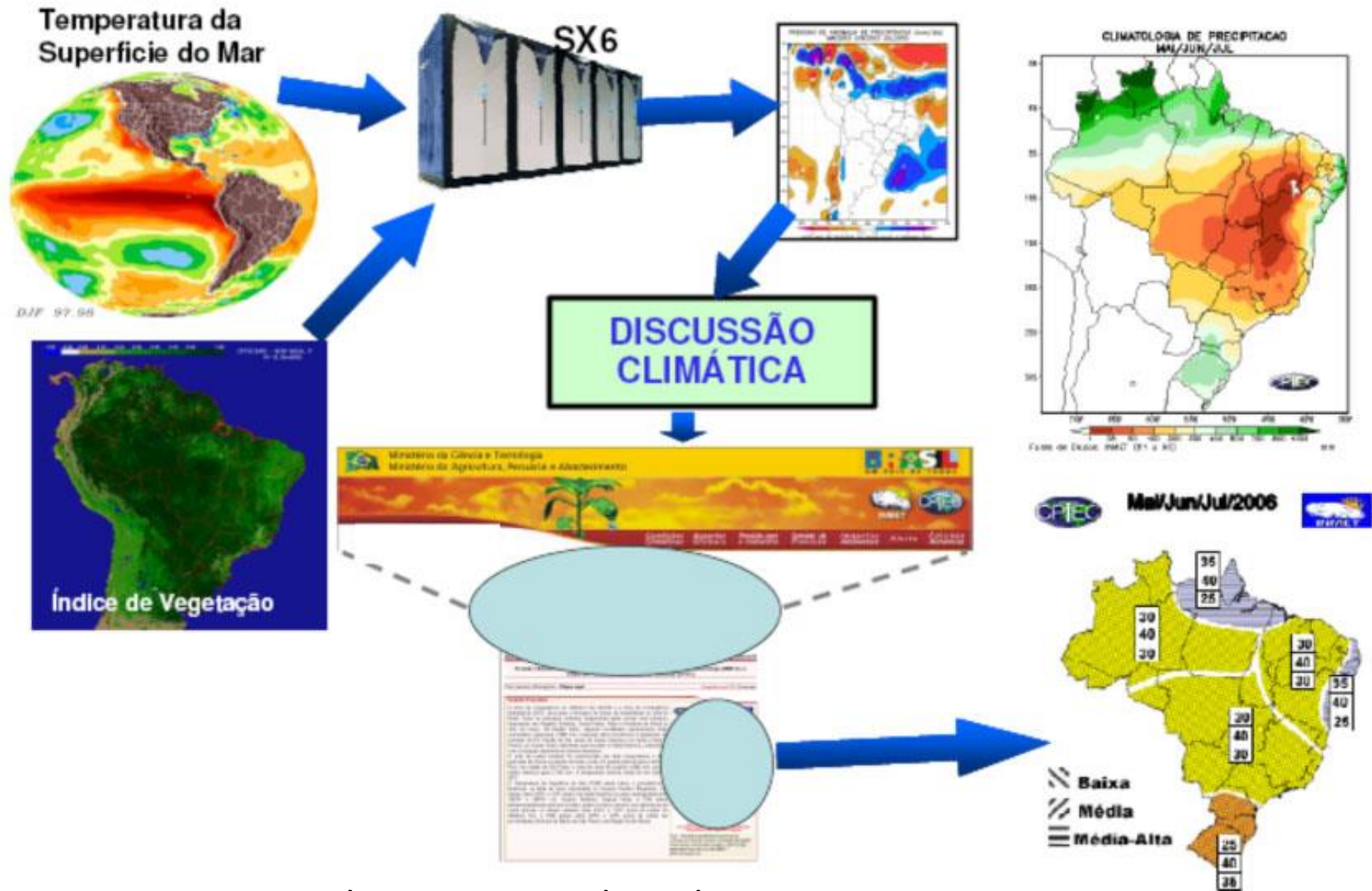


(B)



↑
Gradiente Meridional Anomalias TSM
↓

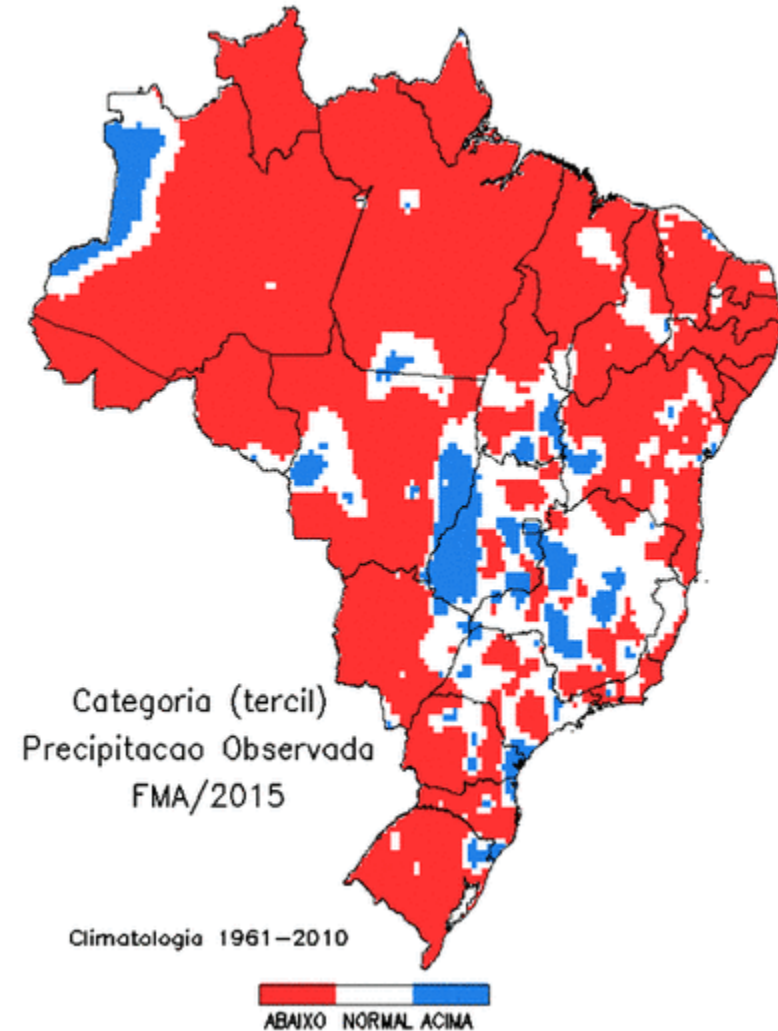
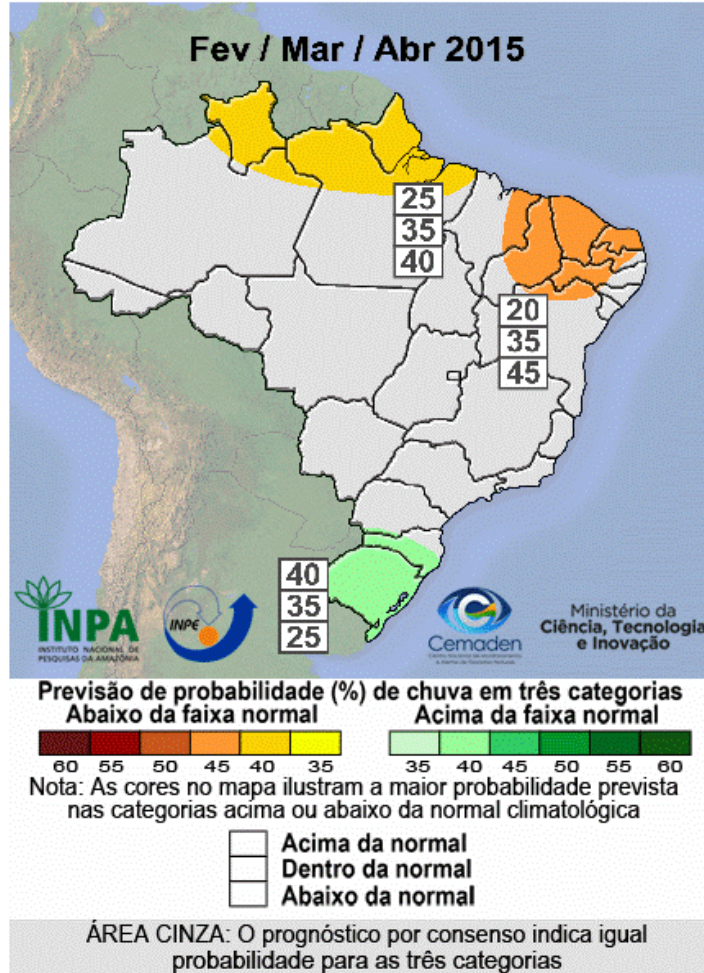
Sistema de Previsão Climática Sazonal do CPTEC/INPE



Coordinator: Dr. Paulo Nobre



Avaliação da Previsão Climática Sazonal Emitida em Janeiro/2015 para o Trimestre FMA/2015

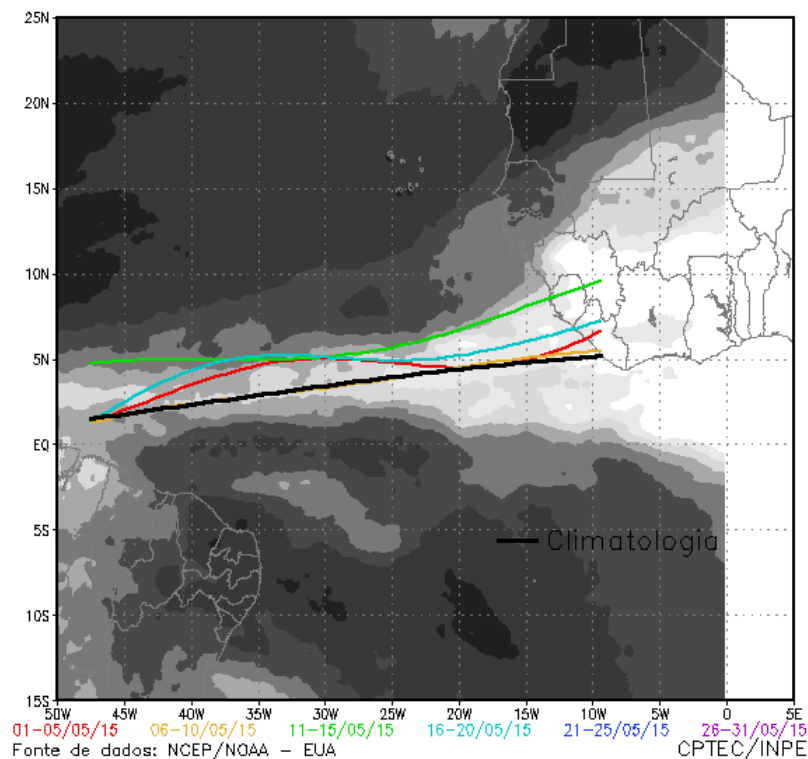
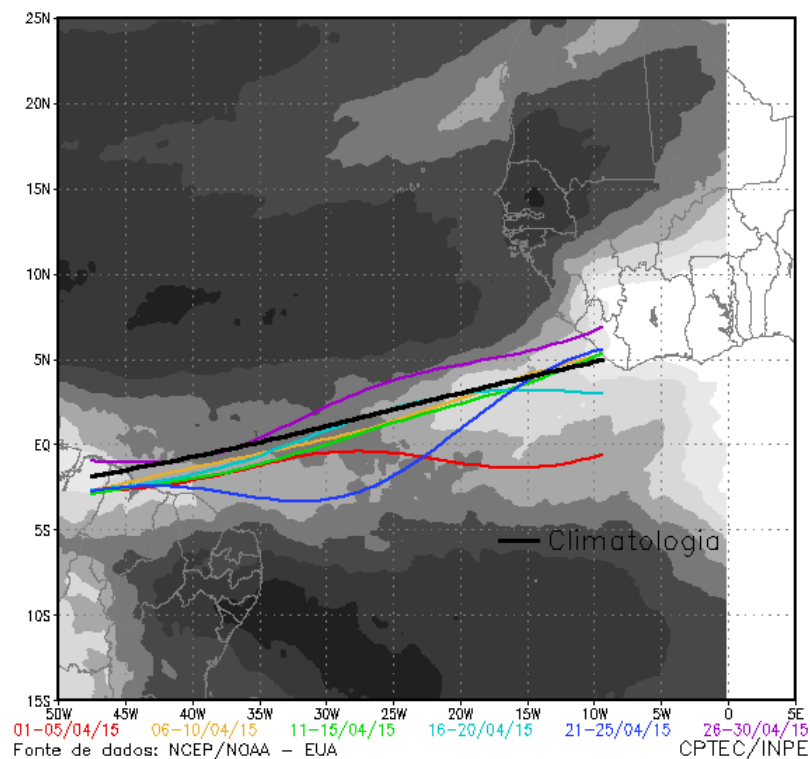


Previsão elaborada em 16/01/2015

Zona de Convergência Intertropical (ZCIT) Em Abril e Maio de 2015

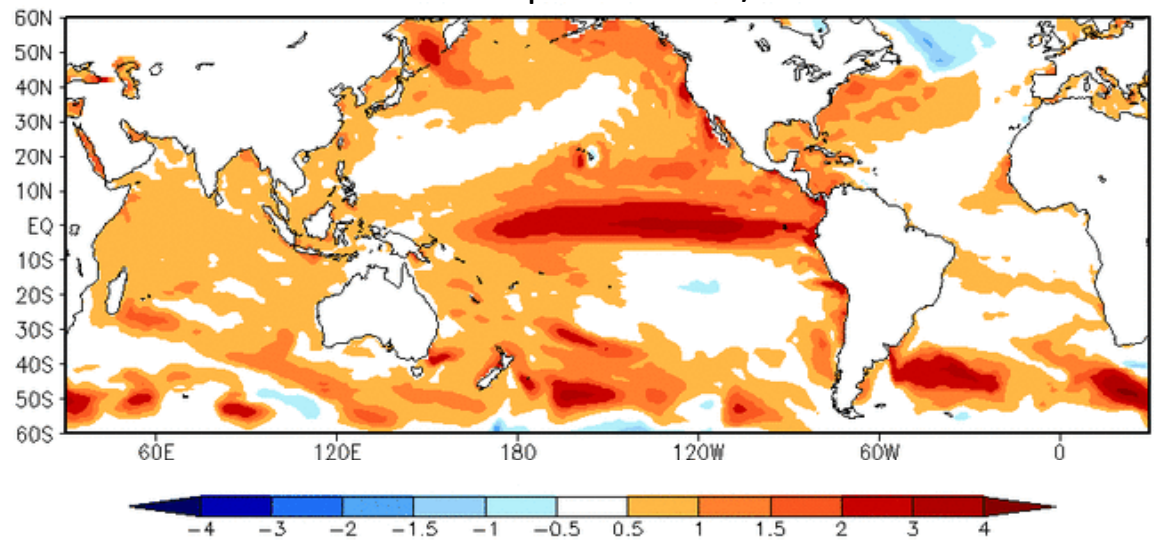
Abril/2015

01 a 20 de maio/2015

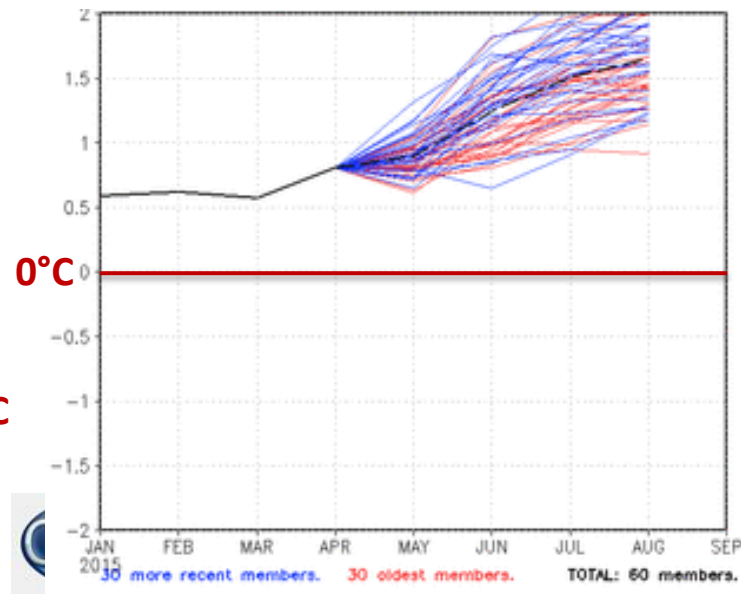


Previsão Anomalia de TSM Trimestre JJA/2015

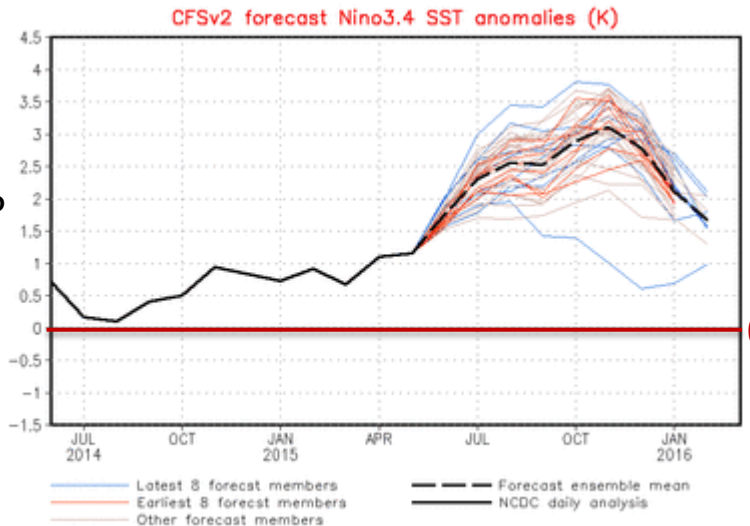
Modelo Acoplado CPTEC/INPE



Plumas BESM
CPTEC/INPE

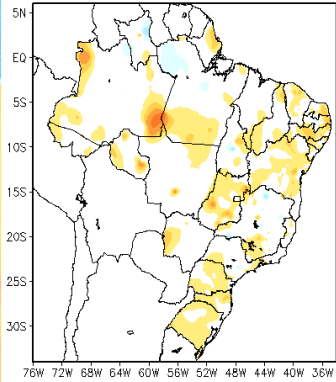


Plumas NCEP

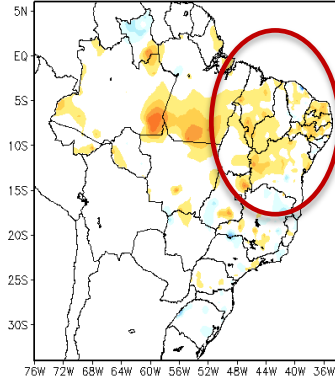


Anomalia de Precipitação (%) Ano Hidrológico

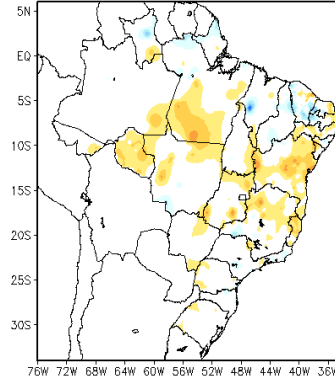
2005 - 2006



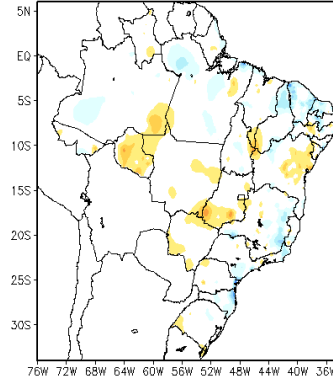
2006 - 2007



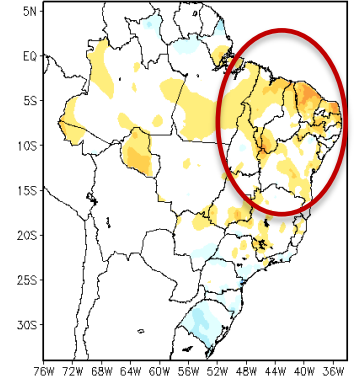
2007 - 2008



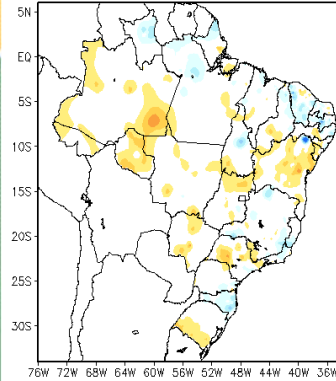
2008 - 2009



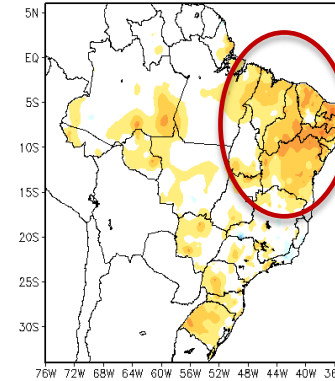
2009 - 2010



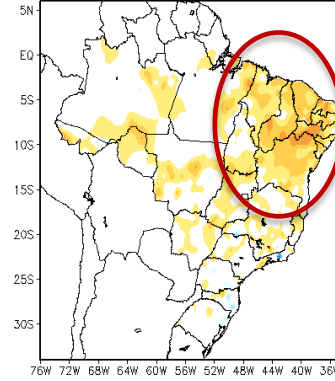
2010 - 2011



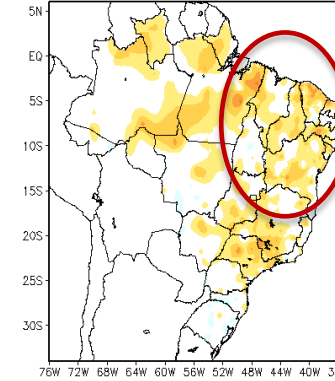
2011 - 2012



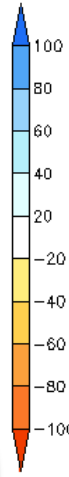
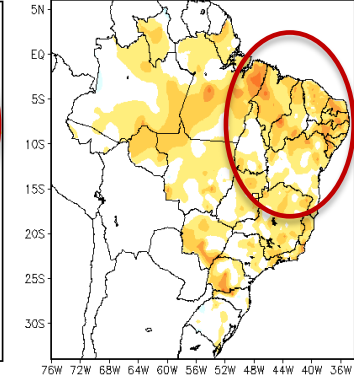
2012 - 2013



2013 - 2014



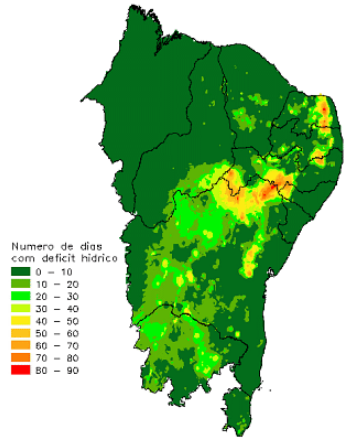
2014 - 2015



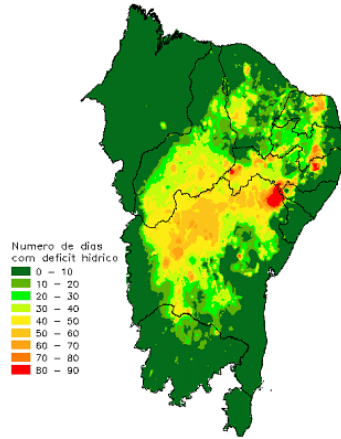
Dias com Déficit Hídrico

Ano Hidrológico

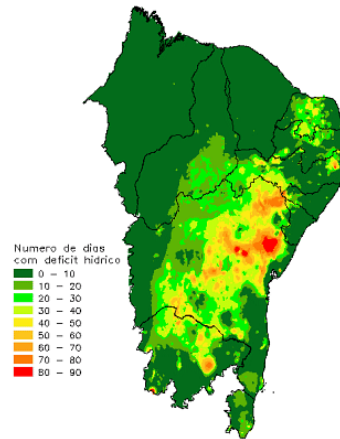
2005 - 2006



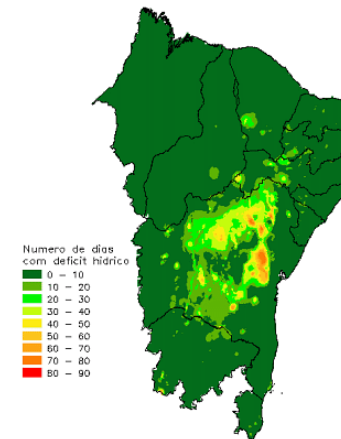
2006 - 2007



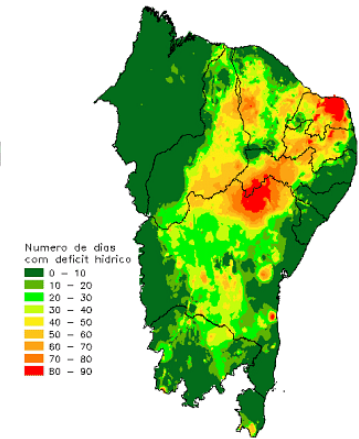
2007 - 2008



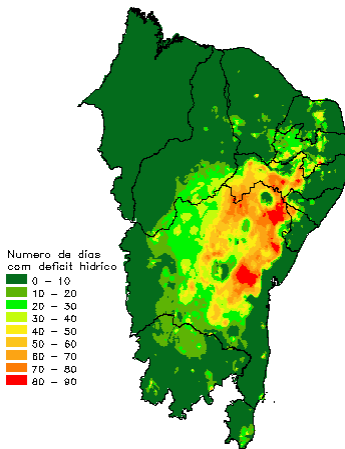
2008 - 2009



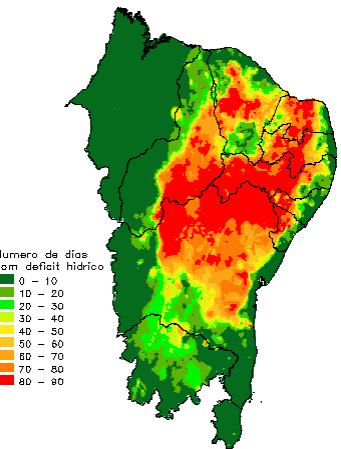
2009 - 2010



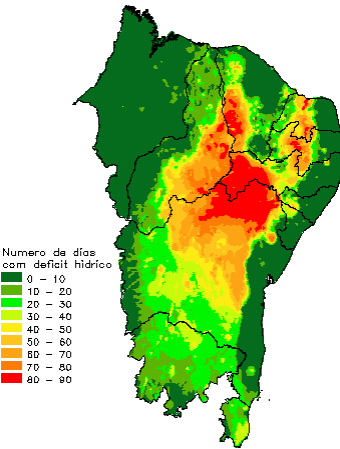
2010 - 2011



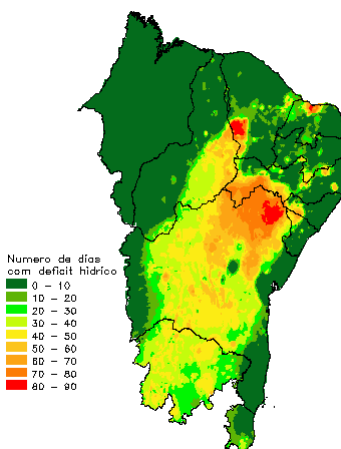
2011 - 2012



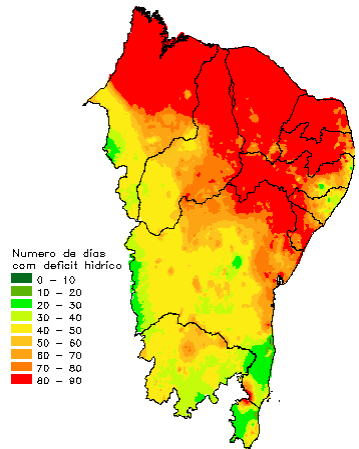
2012 - 2013



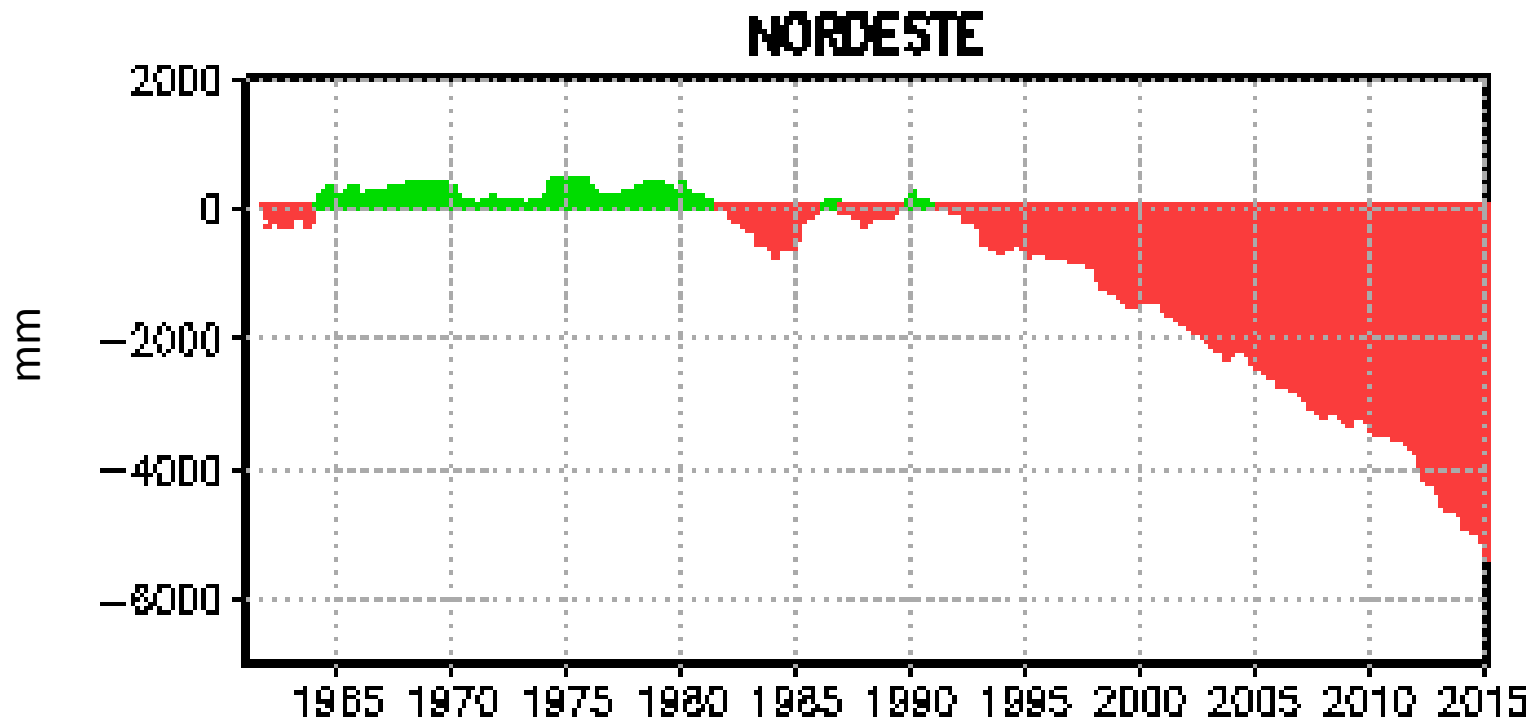
2013 - 2014



2014 - 2015



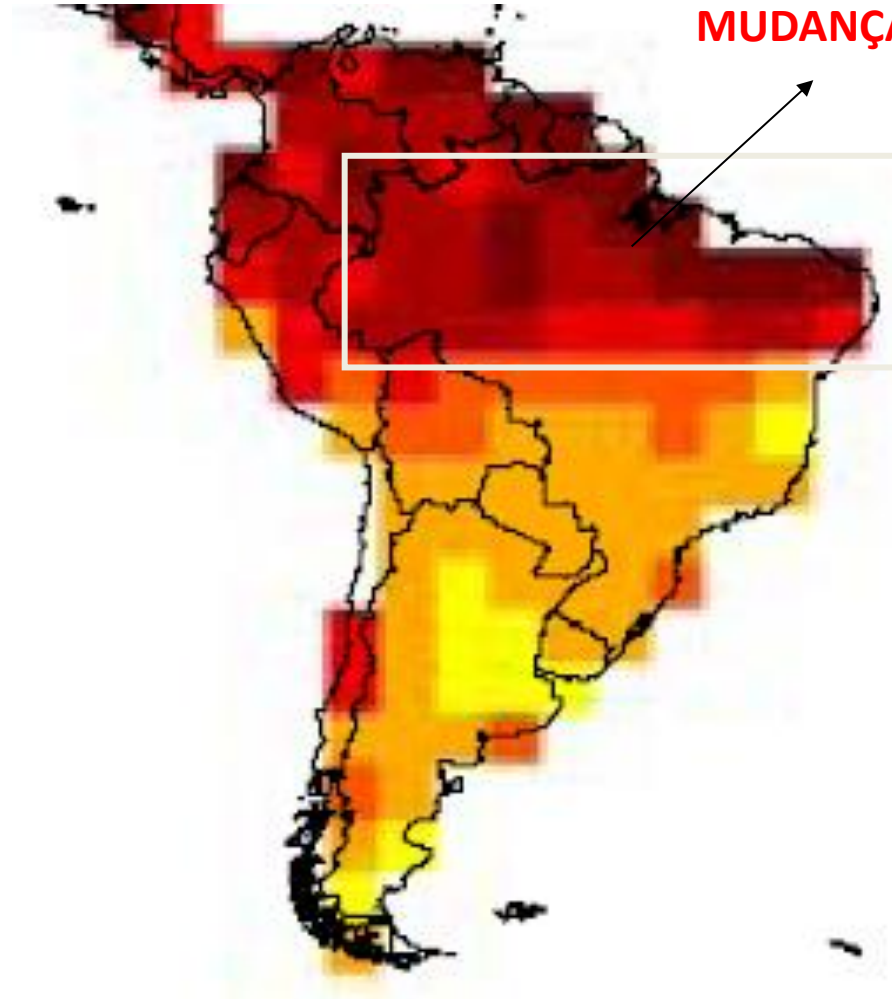
Balanço Pluviométrico Região Nordeste



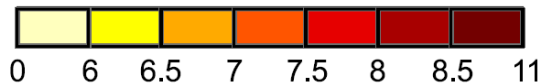
E QUANTO AOS CENÁRIOS DE MUDANÇAS CLIMÁTICAS FUTURAS?



REGIÕES MAIS VULNERÁVEIS ÀS MUDANÇAS CLIMÁTICAS



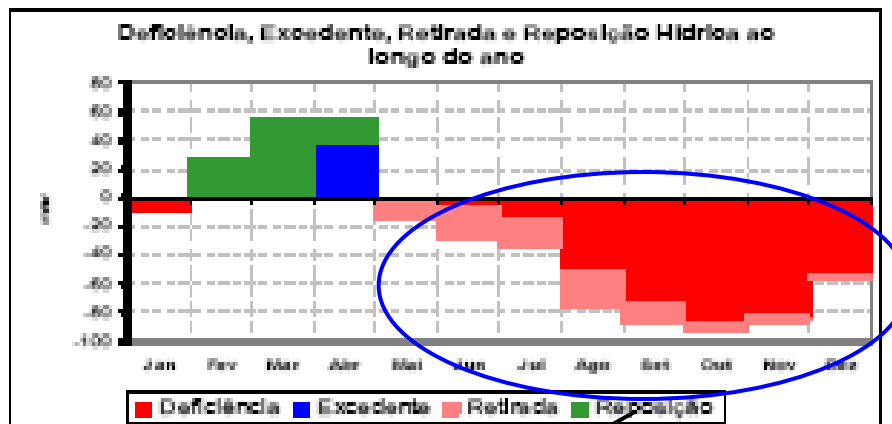
The aggregated CCI (Climate Change index) on a grid basis for South America, for the 2071-2100 period in relation to 1961-90. (Baettig et al. 2007).



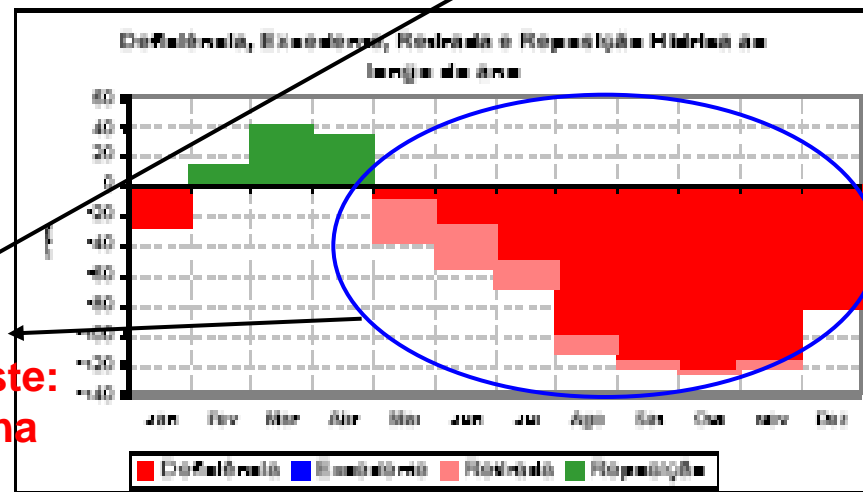
Impactos Severos nos Recursos Hídricos do Nordeste. Tendência a “aridização” da região semi-árida do Nordeste até final do Século XXI

Balanço Hídrico-Nordeste

1961-1990



2071-2100



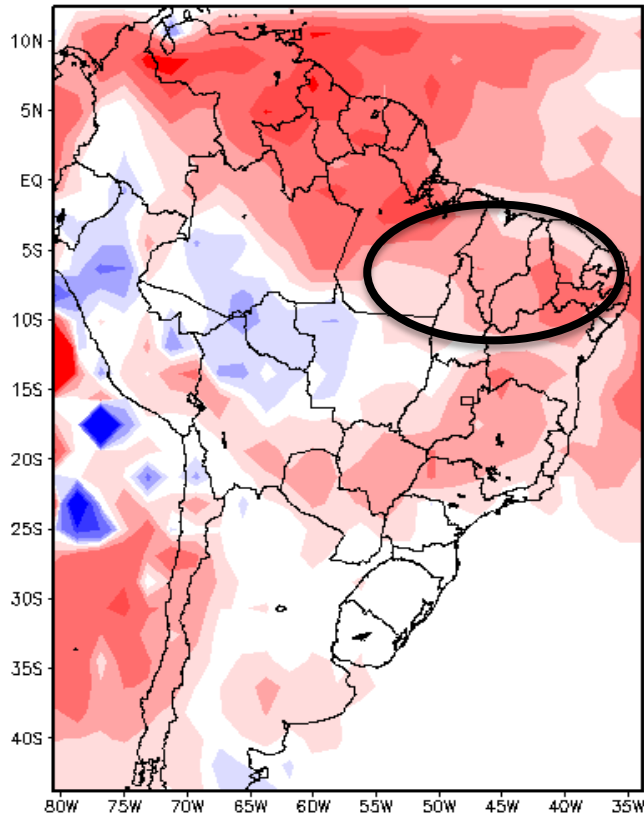
Maior Déficit Hídrico no Nordeste: Vulnerabilidade na agricultura!

CENÁRIOS DE MUDANÇAS CLIMÁTICAS

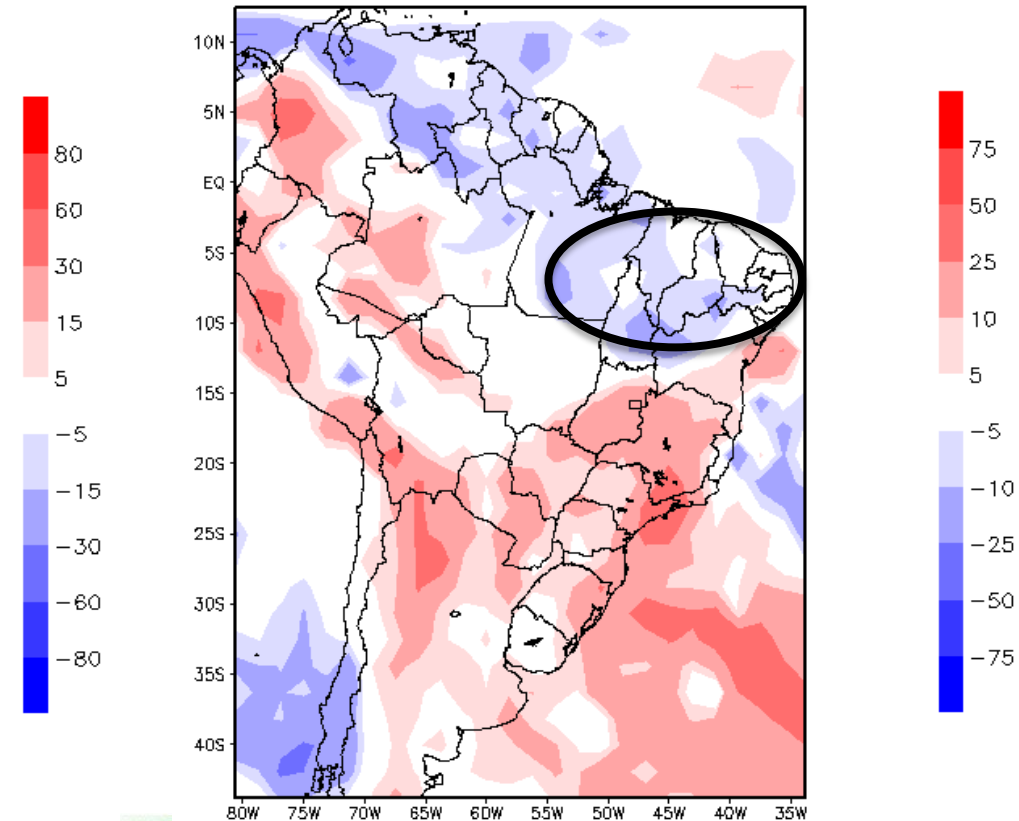
MODELO BRASILEIRO DO SISTEMA TERRESTRE

BESM

DIAS CONSECUTIVOS SECOS



DIAS PRECIPITAÇÃO EXTREMA

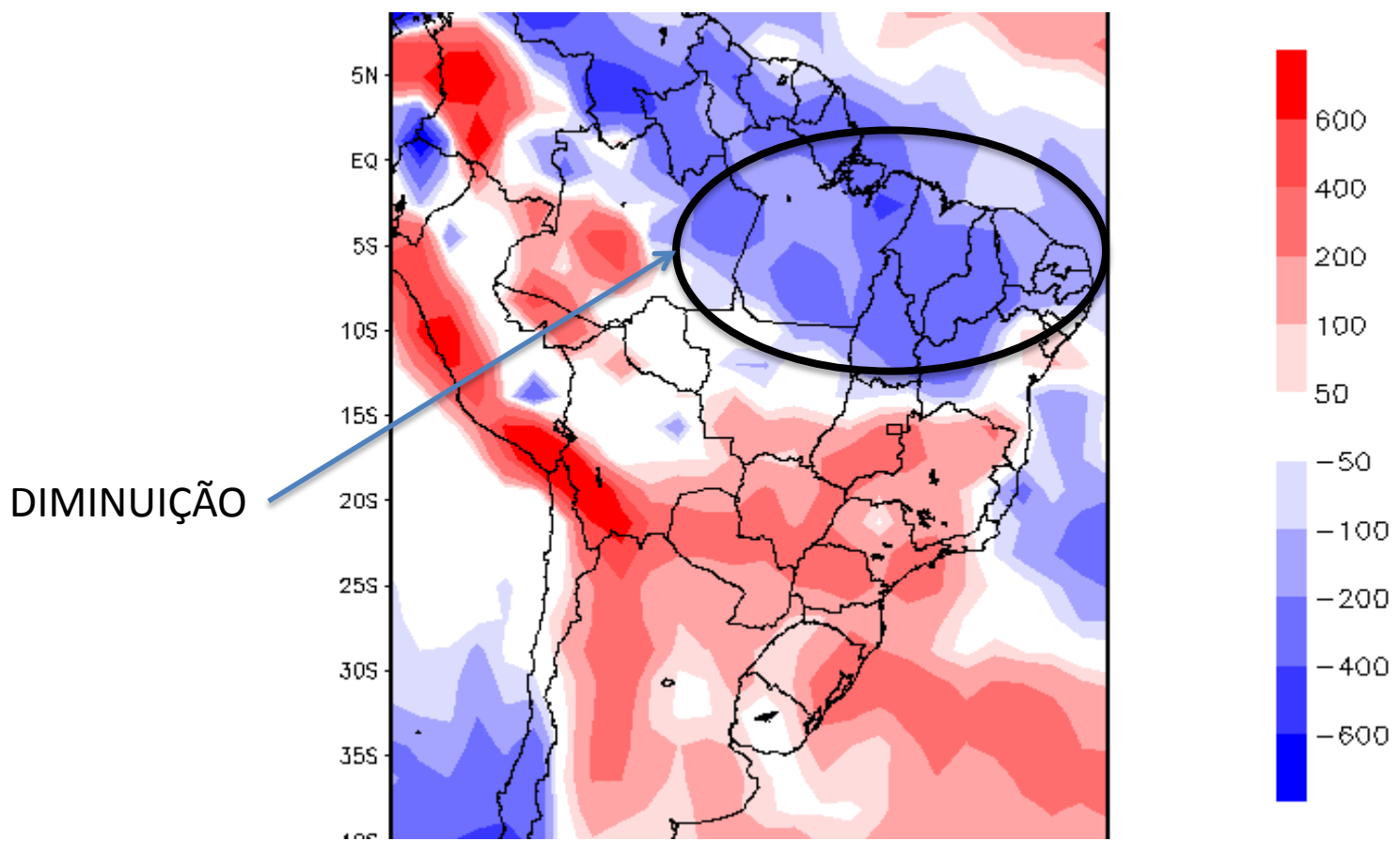


CENÁRIOS DE MUDANÇAS CLIMÁTICAS

MODELO BRASILEIRO DO SISTEMA TERRESTRE

BESM

VARIAÇÃO DA PRECIPITAÇÃO TOTAL





Ciência das Mudanças Climáticas como insumo para a Criação de Políticas Públicas



Energia solar vira fonte de renda no sertão baiano

ELIANE TRINDADE
DE SÃO PAULO

18/11/2013 03h00 - Atualizado às 16h36



O Desafio:

- Preservar os serviços ambientais da Caatinga
 - Gerando emprego e renda para replantio
 - Preservando umidade no solo
- Explorar o imenso potencial solar fotovoltaico do Nordeste Semiárido
 - Gerando energia elétrica para todo o país,
 - Gerando emprego e renda: fabricação, instalação, manutenção
- Sanar o débito educacional
 - Educação para o Século XXI
 - Semiárido do Conhecimento

