

Climate Science as Policy Making Tool:
Predicting ENSO-Related Agricultural Impacts in
Indonesia and Vietnam

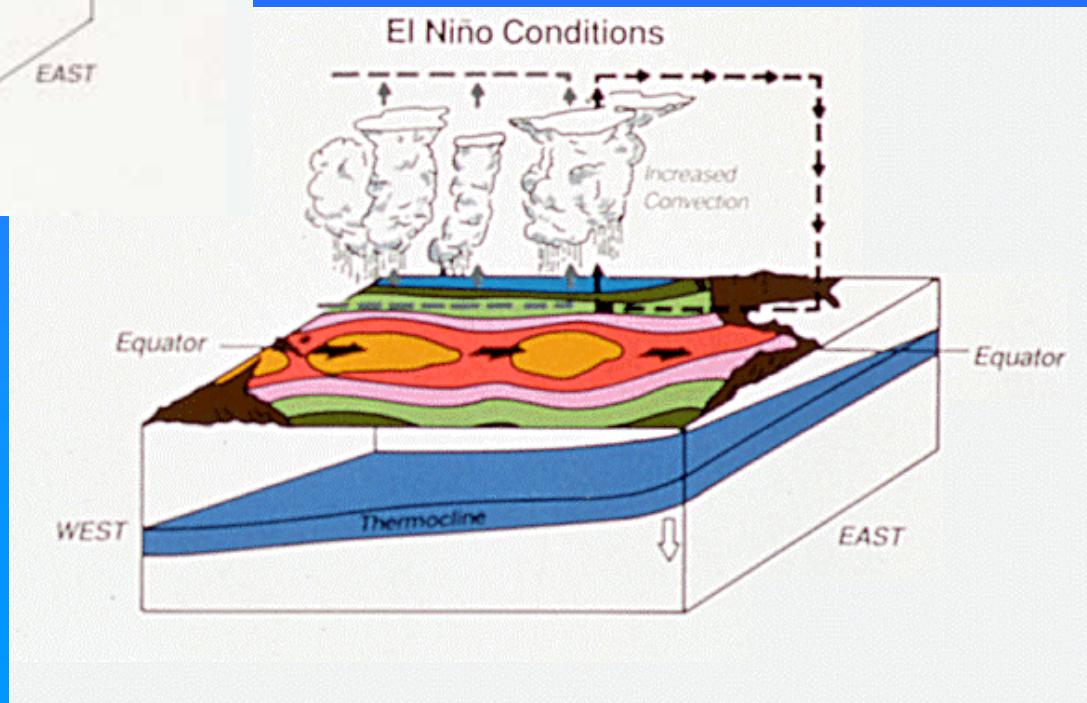
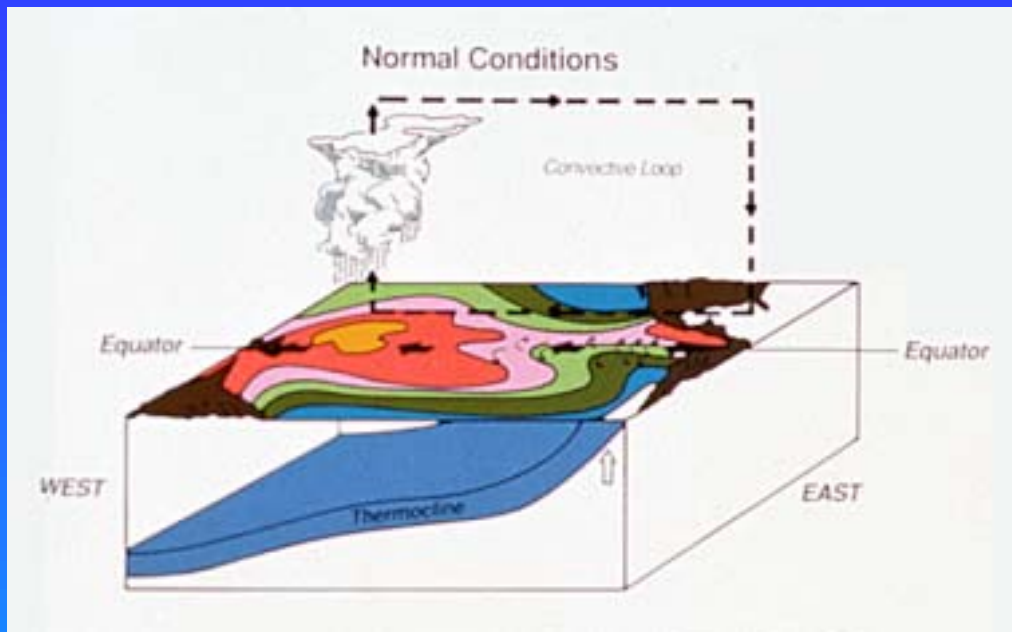
Michael Mastrandrea

GCEP End of Summer Workshop, 2003

Outline

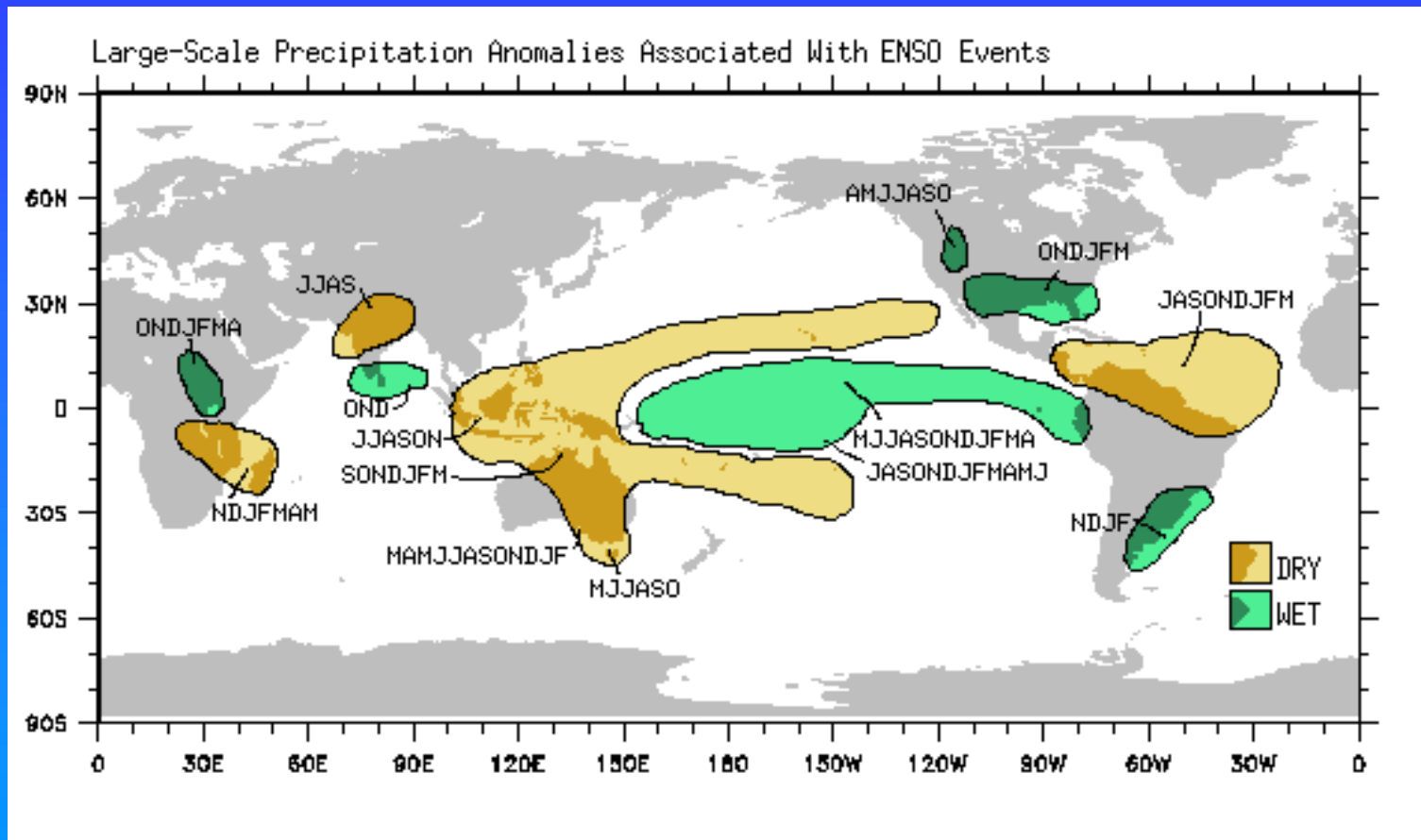
- ENSO Basics
- ENSO Impacts
- Indonesia
- Vietnam

ENSO Basics



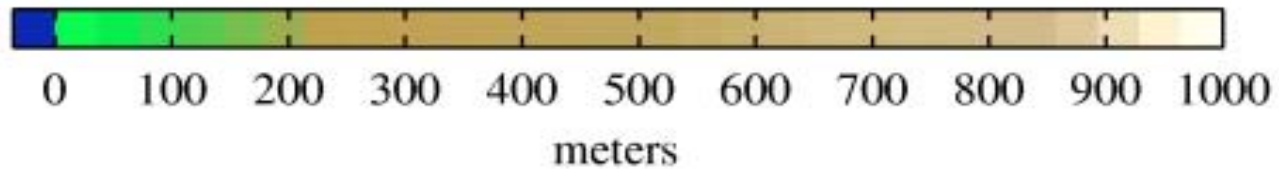
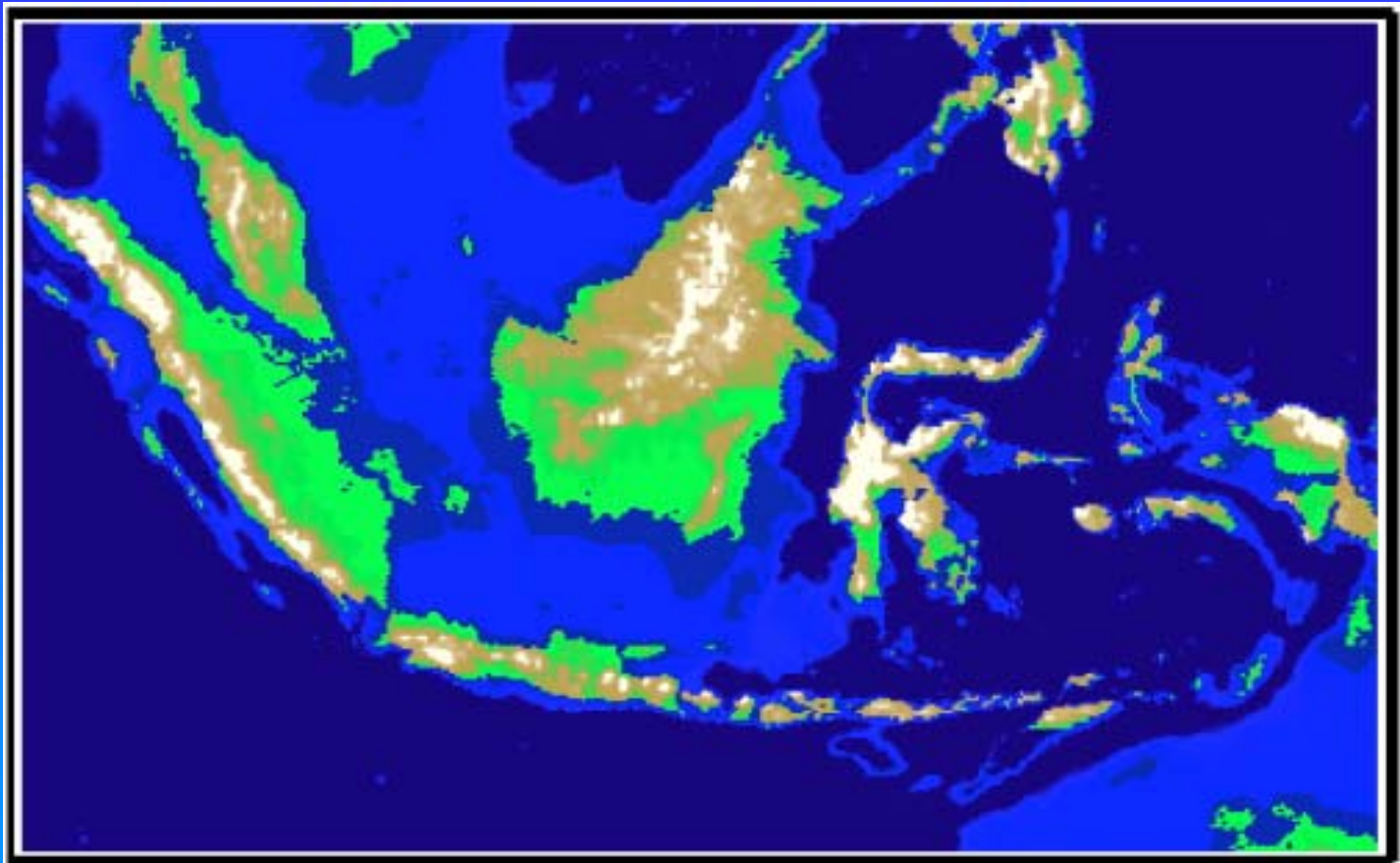
From Henson and Trenberth, 2001

ENSO Impacts

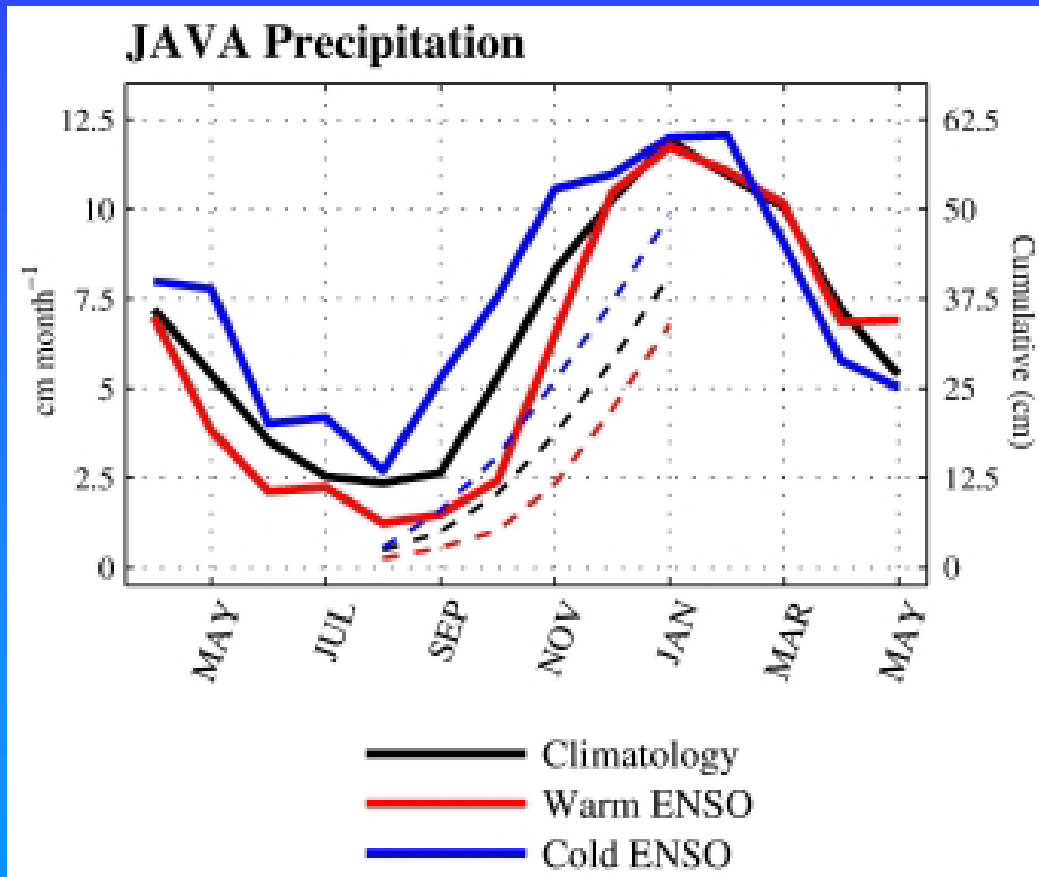


From Henson and Trenberth, 2001

Indonesia



Java Precipitation

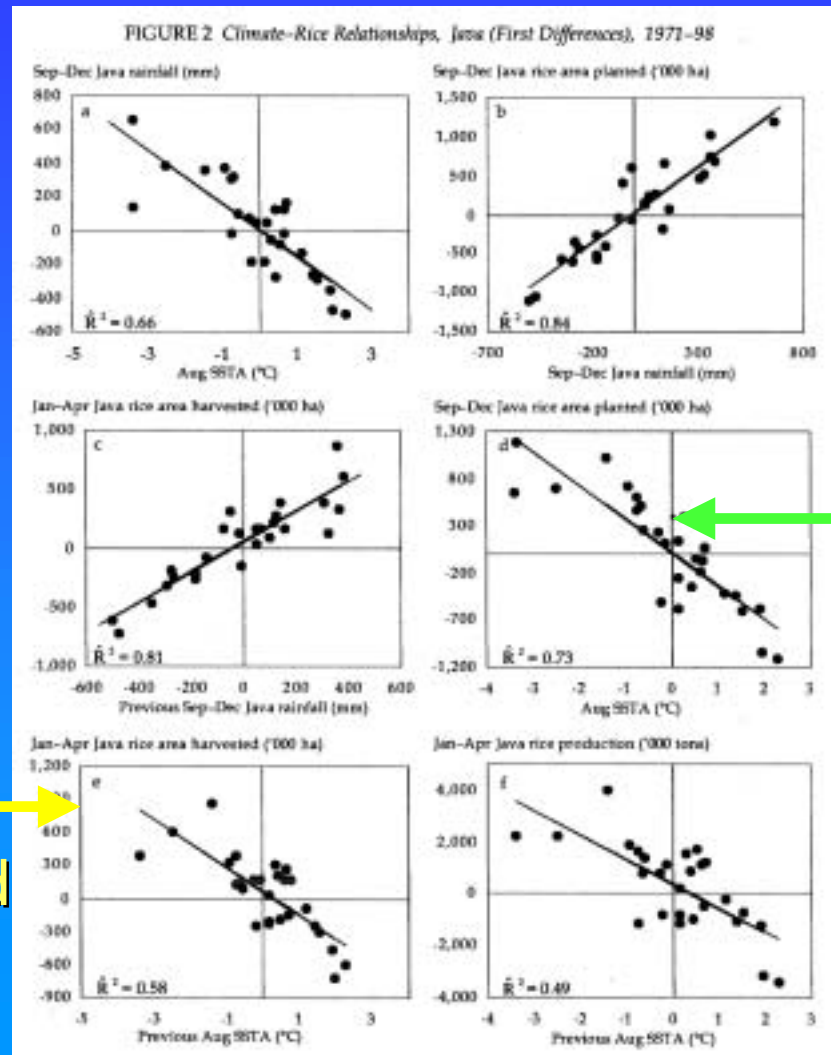


Monsoon onset is delayed during ENSO warm events.

After monsoon onset, ENSO has little effect on precipitation.

The delayed monsoon onset results in reduced cumulative rainfall through wet season.

ENSO and Rice Production in Indonesia



Area Planted (Sep-Dec) is inversely correlated with NINO3.4:



Area Harvested (Jan-Apr) is inversely correlated with NINO3.4:



Vietnam



Vietnam Results

- Summer Paddy:

$$\Delta\text{Production (K tons)} = 995.9 - 151.5 * \Delta\text{July SSTA} + 33.8 * t + 10.4 * t^2$$

Conclusions

- Statistical linkages such as these can be useful tools for impacts planning.
- Choice of region and impact to explore is important.
- In regions where ENSO impacts occur reliably, these models can produce results that will be noted and utilized.

Credits

