



CCDA-V

Africa, sustainable development and climate change
Prospects of Paris and beyond

ClimDev-Africa



THE INFLUENCE OF THE MADDEN- JULIAN OSCILLATION ON LARGE DAILY PRECIPITATION EVENTS IN WEST AFRICA

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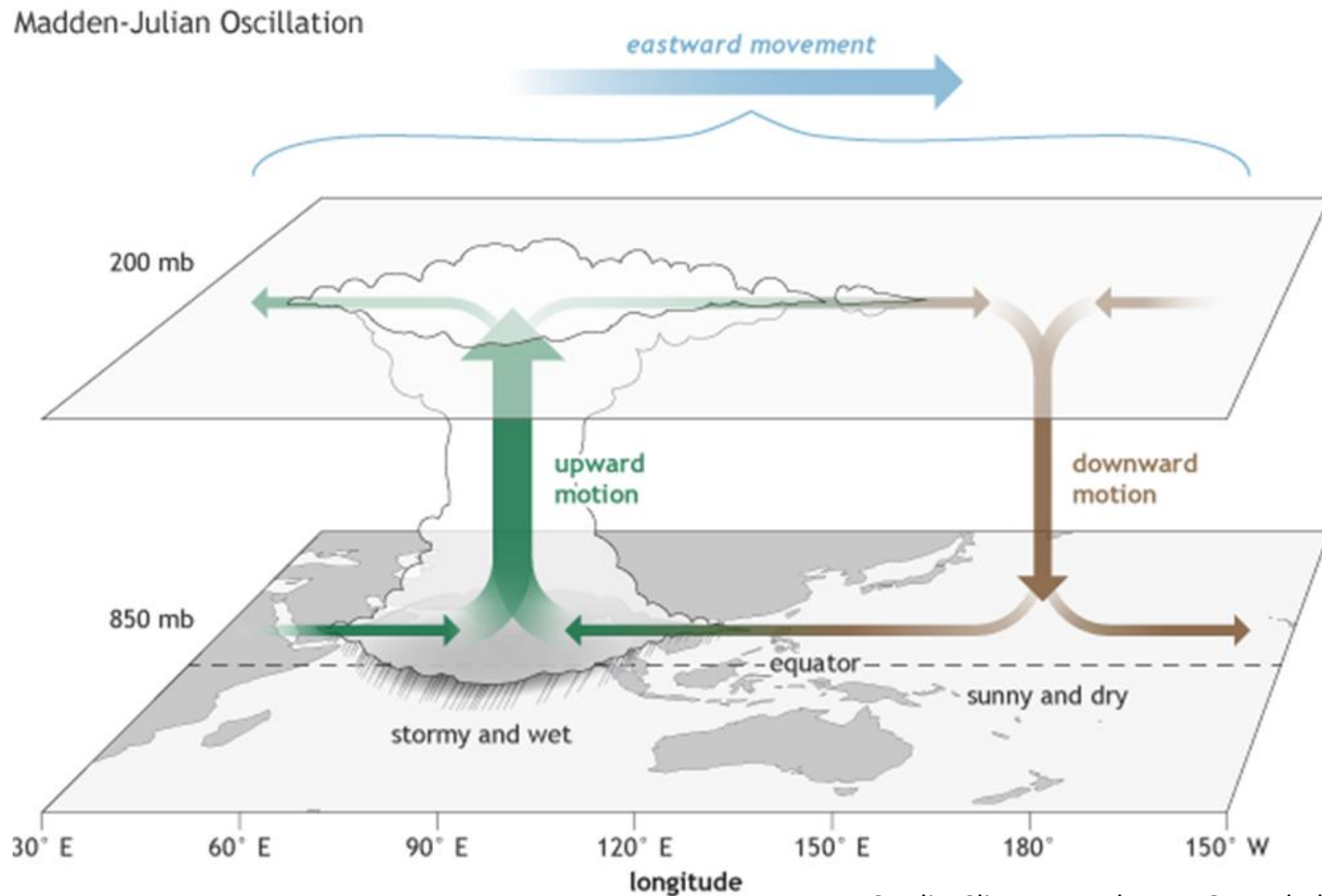
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Problem statement 1/2

- Floods in West Africa results from drought, short duration (few days) top winds;
- Droughts are more damaging in the North (no absorption);
- In the south there is rarely a deficit of rainfall;
- Infrastructure is inadequate to accommodate excess water.

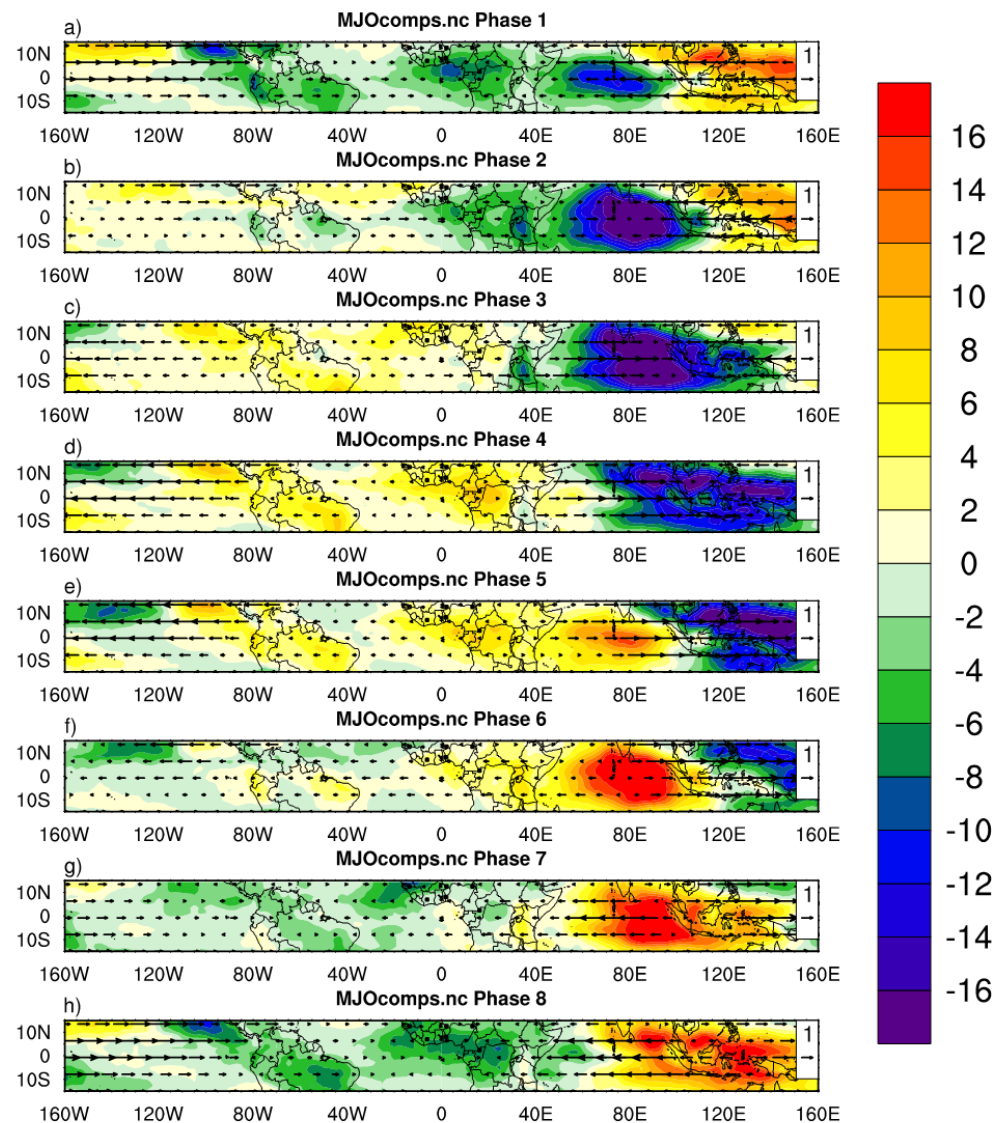
Problem statement 2/2

- Goal : improve forecast of extreme Precipitation in West Africa

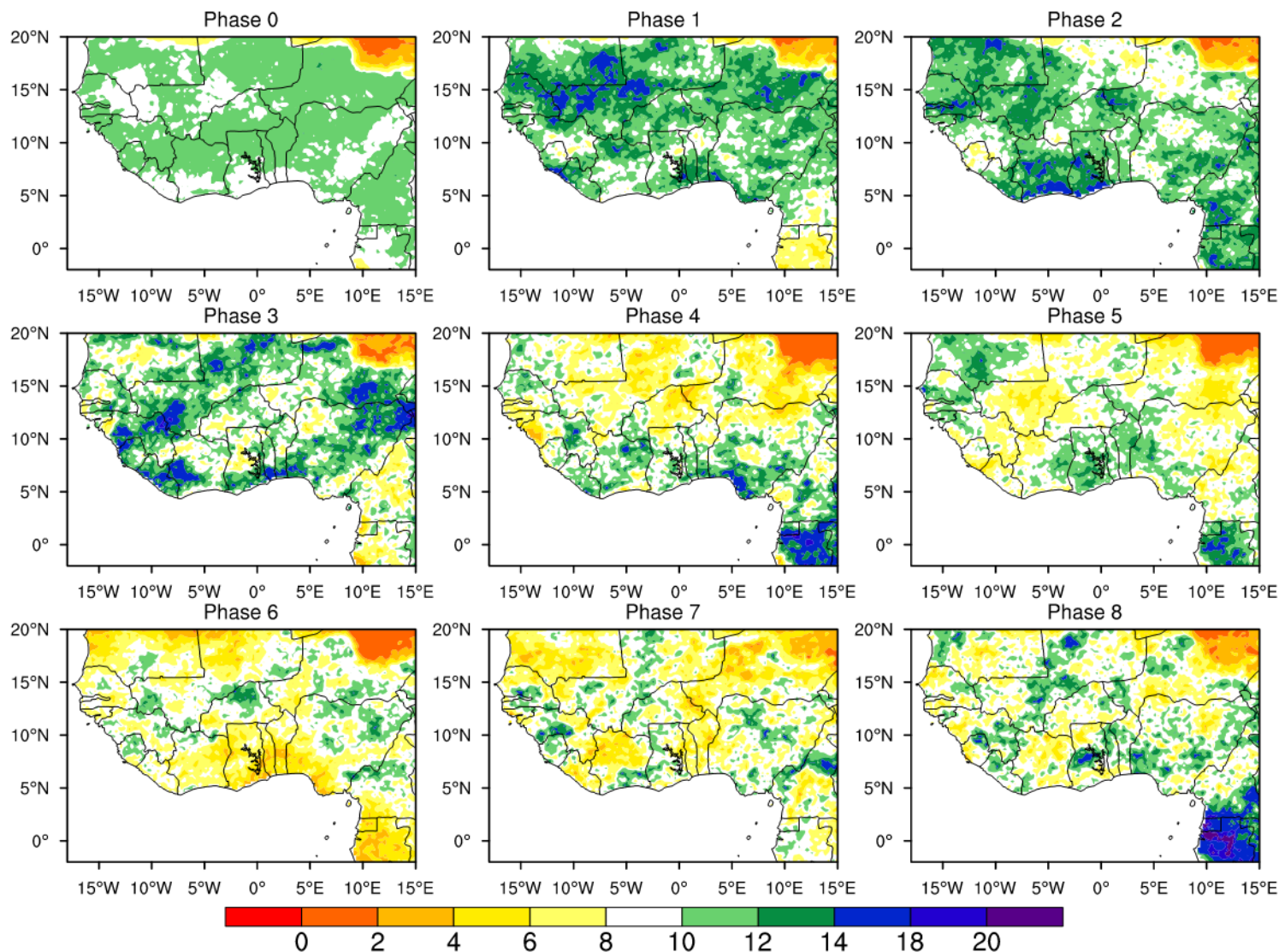


Credit: Climate.gov by Jon Gottschalck

Methods

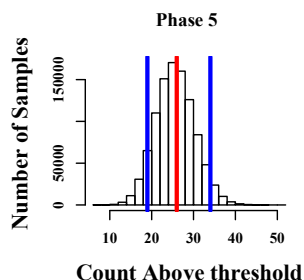
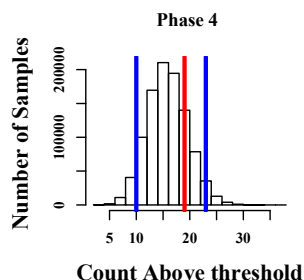
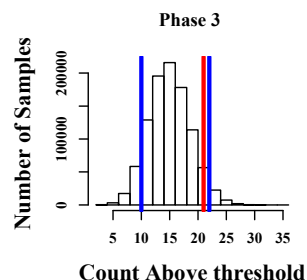
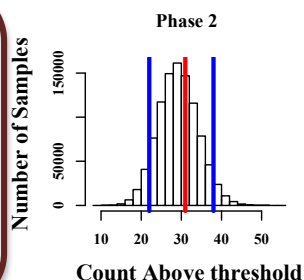
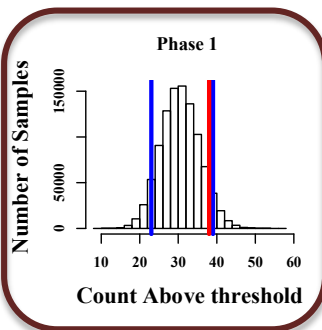
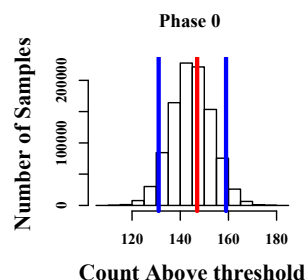


Key Findings

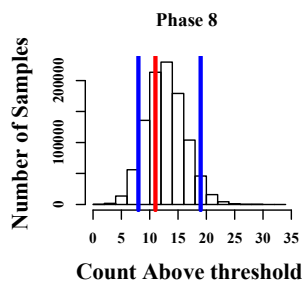
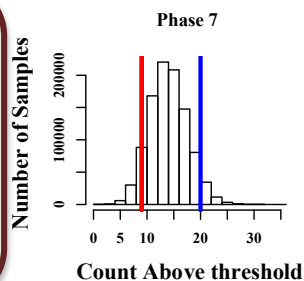
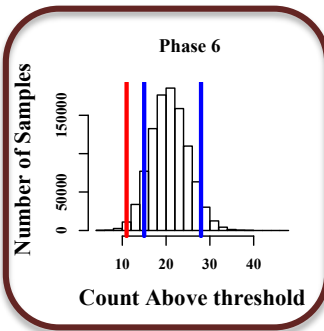
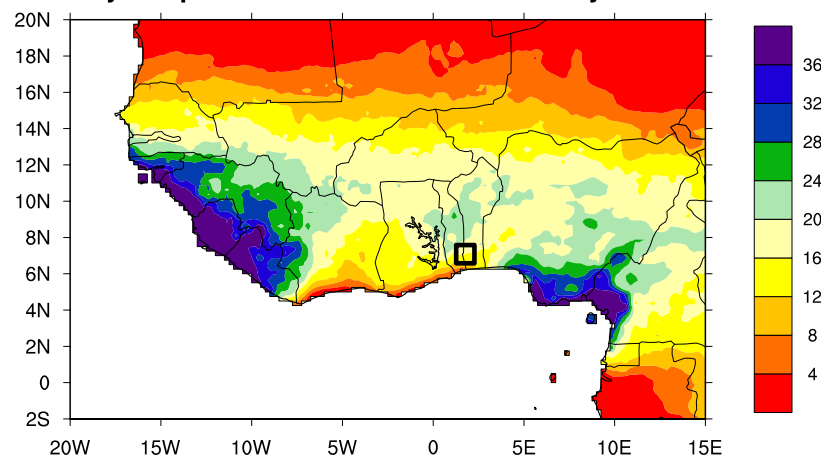


Key Findings

Statistical analysis of the extreme events



July - September 90th Percentile of Daily Rainfall



Conclusions/Recommendations

- MJO modulates extreme precipitation in West Africa;
- The number of extreme rainfall events changes significantly for different phases of the MJO;
- With improvement in forecasting MJO phases, forecasts of extreme rainfall will also improve.