

Investigating and verifying the skill of ECMWF deterministic weather forecasts in the summer 2006 over Ethiopia

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ECMWF, Reading

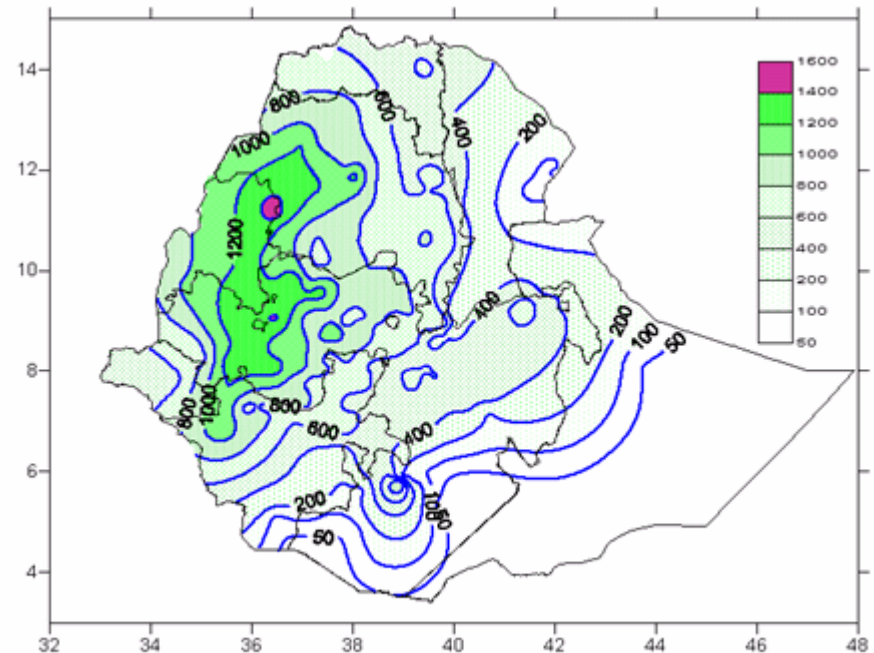
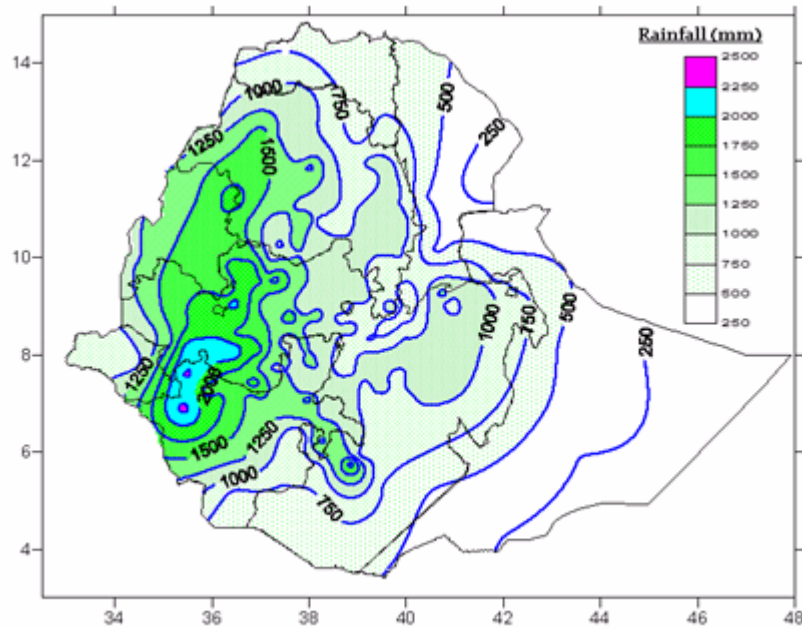
Location of Ethiopia

- East Africa within 3-15°N latitude and 32-48°E longitude

Seasonal classifications over Ethiopia

- Summer (Kiremt): June to September
- Winter (Bega) : October to January
- Spring (Belg) : February to May

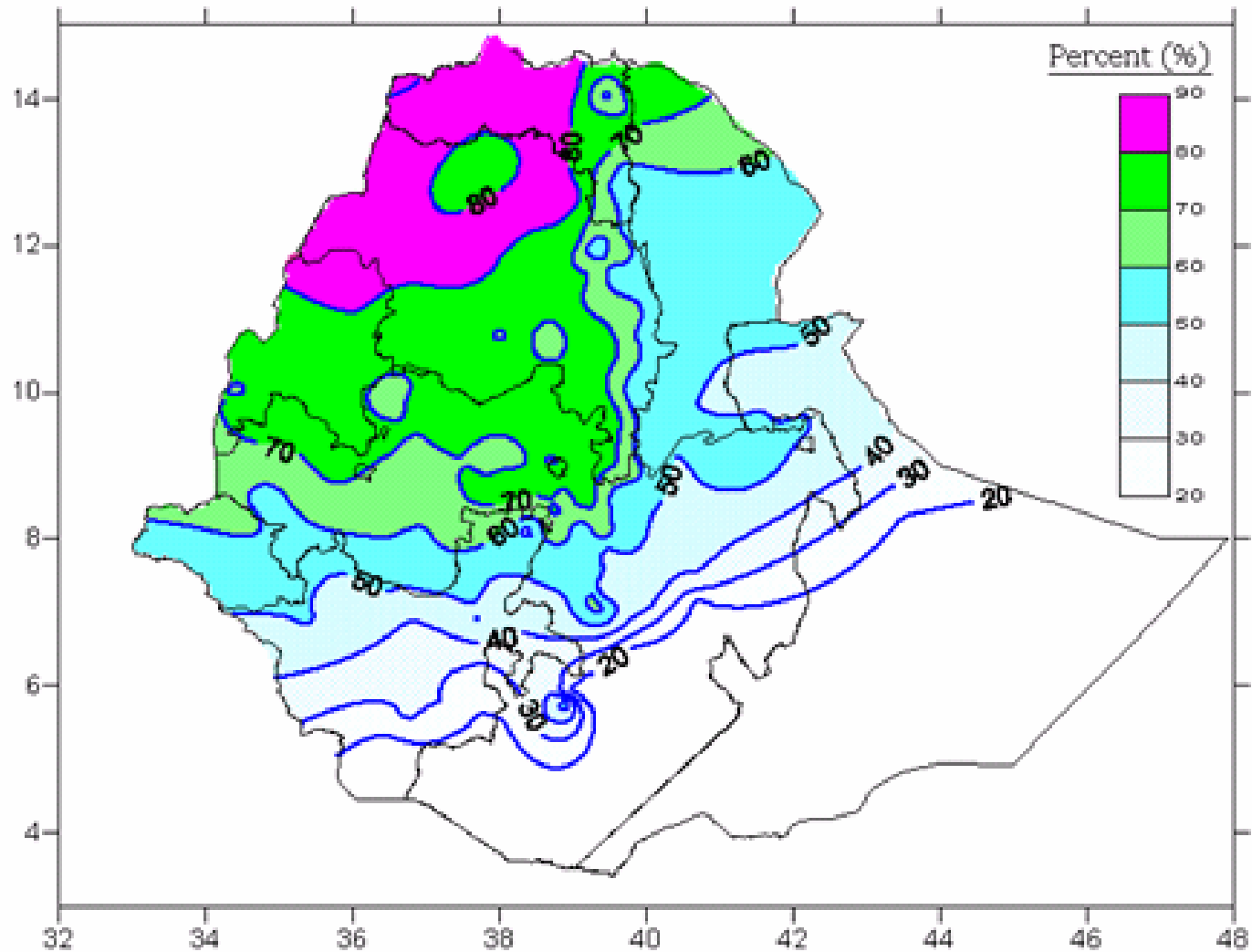
Annual and seasonal rainfall climatology : Ethiopia



Annual

Summer

Percentage of mean summer rainfall contributed to the annual



Weather forecasting

- Short-range: up to 3 days
- Medium range: up to 10 days (Dekadal)
- Long-range (monthly to seasonal)

Forecast products used

- ECMWF
- UK Met-Office (Hadley Centre)
- IRI
- NOAA (NCEP-CPC)

ECMWF products

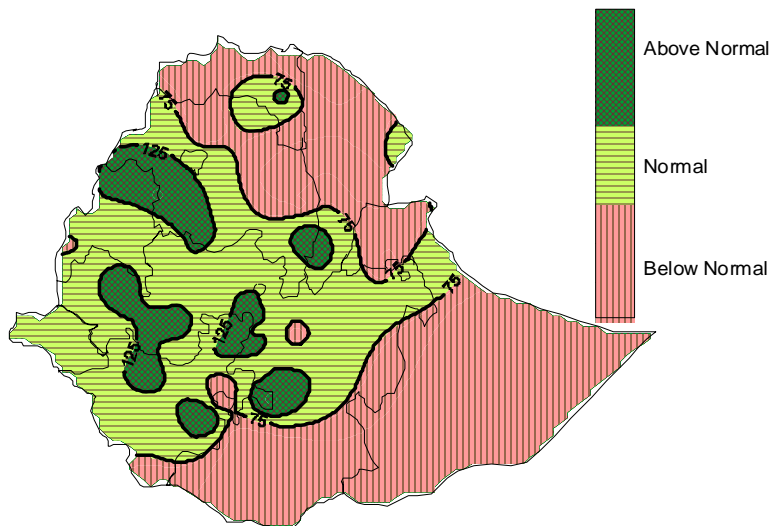
- Real-time weather charts
- Prognostic charts
 - Deterministic weather forecasts ~ seven days
- Seasonal ensemble forecasts

Weather forecasts

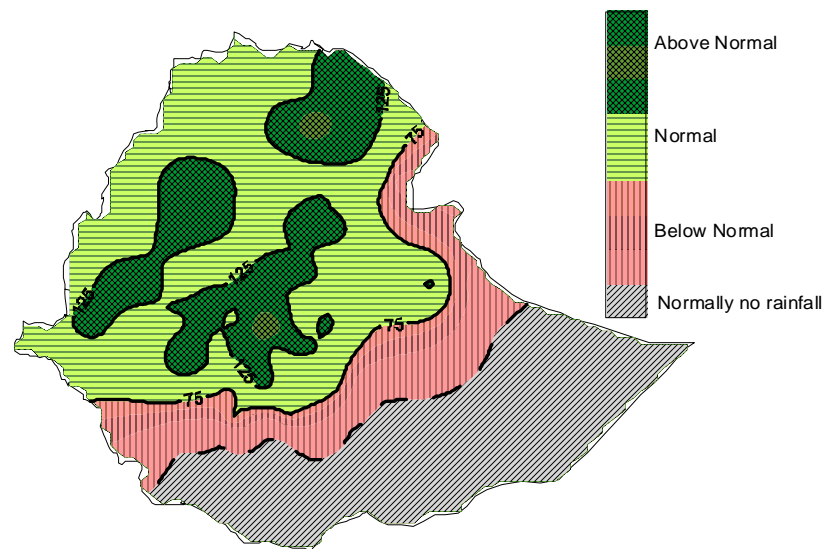
- Onset and cessation of each season
- Seasonal anomalies
- Extreme events (anomalous drought, floods)
- Prolonged dry or wet seasons
- Early warnings to mitigate weather related hazards

Summer 2006

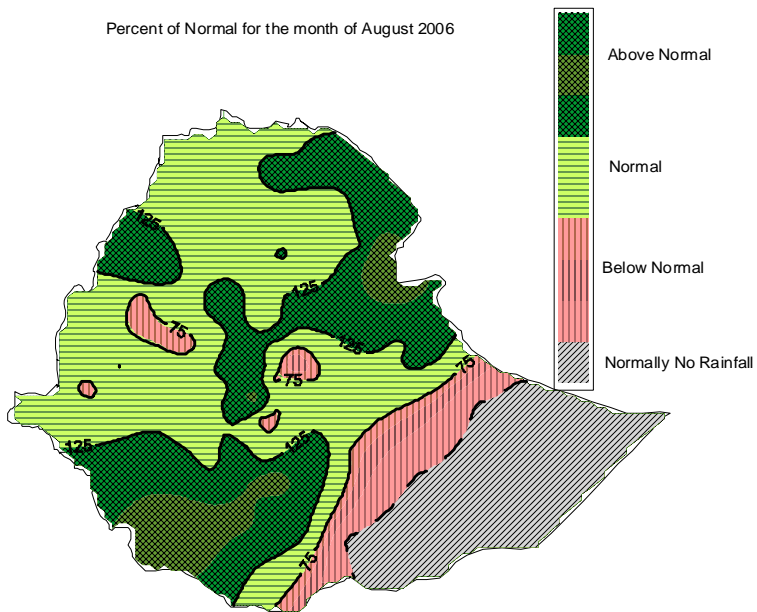
Percent of normal rainfall for the month of June 2006



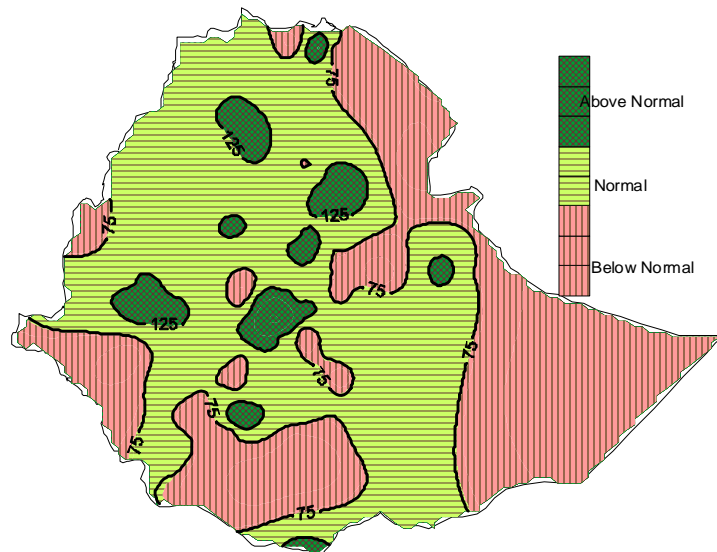
Percent of normal the month of July 2006

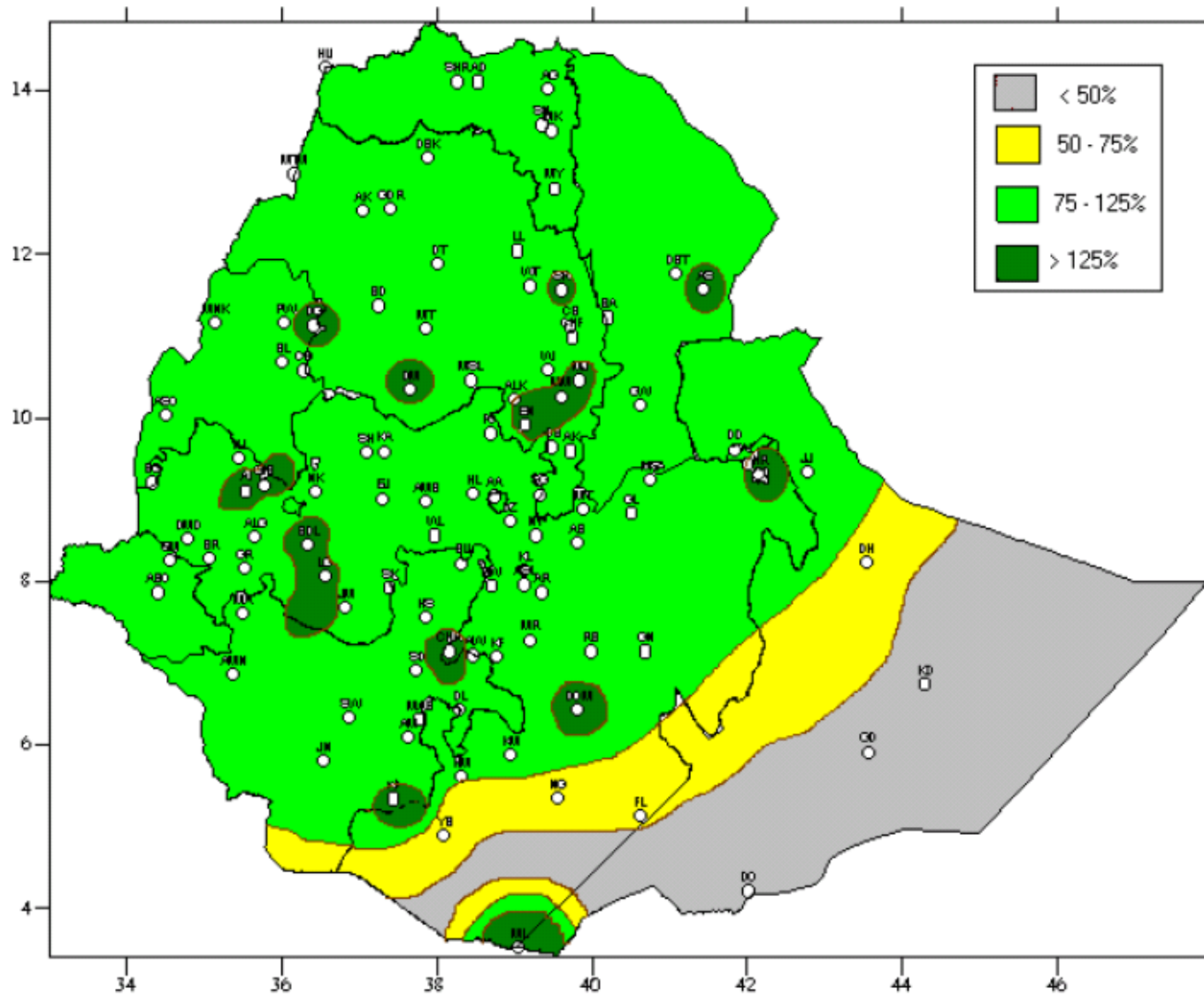


Percent of Normal for the month of August 2006



Percent of Normal rainfall for the month of September (1-20) 2006





Percent of normal rainfall amounts for June to September 2006

Conclusion

- The skill of global and regional weather forecasting models
- ECMWF' deterministic weather forecasts attain the modest skill in forecasting the possible occurrence of heavy fall that generate flash floods and river floods
- Poor performance for longer time scales (monthly to seasonal scales)