The Use of GIS Technology Within the NOAA Climate Prediction Center FEWS-NET Program

by

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Discussion Points

- Inform the disaster management community of our project's use of GIS toward humanitarian relief efforts
- Our contribution to the common pool of GIS knowledge

Background

Who We Are

- A division of the National Oceanic and Atmospheric Association (NOAA) Climate Prediction Center, partnered with the USAID's Famine Early Warning System Network
- Tasked with providing international weather and climate related information to international humanitarian organizations
- Users range from field personnel, to support staff, to the management community

Our First GIS Venture

- ESRI ArcView 3.2
- Attempted to convert Agro-meteorological products to GIS format
- Struggled with automation using Avenue

Why We Failed

- Lack of understanding of GIS function
- No support from experienced users within our scientific field

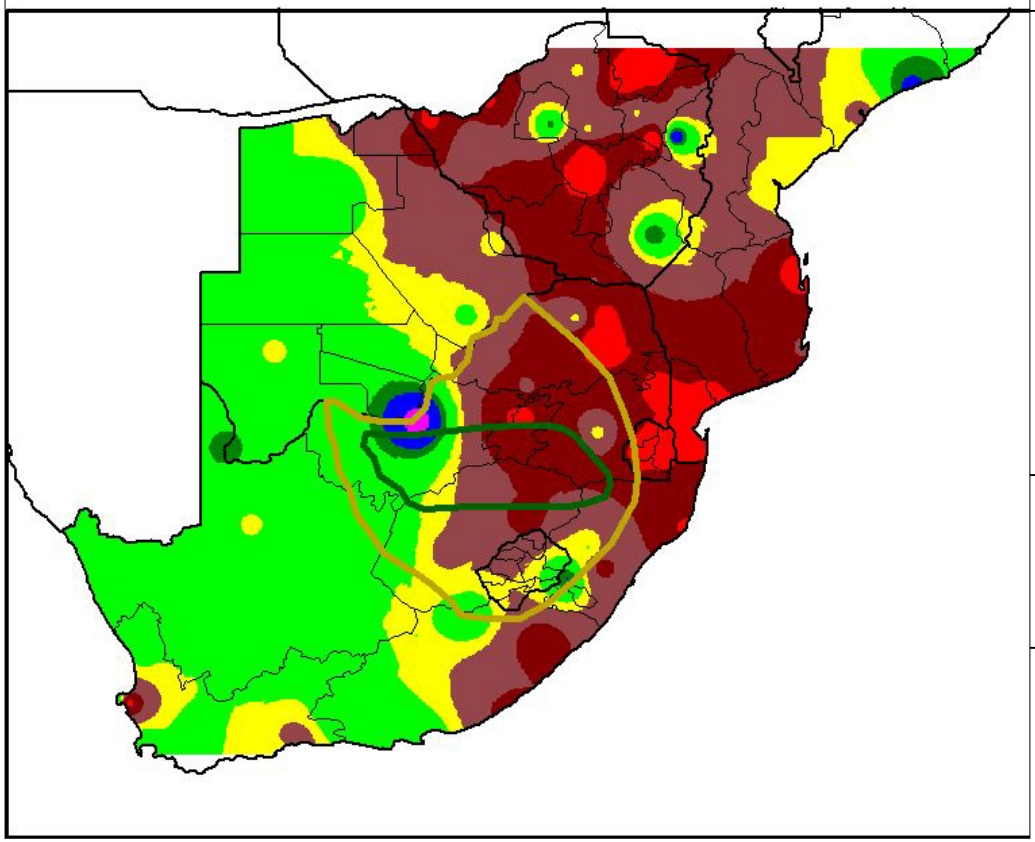
The Enlightened Years

Early Applications

- Southern Africa agricultural monitoring
  - Precipitation, Temperature
  - Snow cover
  - Crop zones

Maize Triangle Crop Monitoring

Seasonal Rainfall
Departures From Normal (mm)



Departure from Normal:

- 150 - 250 below
- 100 - 150 below
- 50 - 100 below
- 25 - 50 below
- Within 25 mm of normal
- 50 - 100 above
- 50 - 100 above
- 100 - 150 above

- Major South Africa Corn Area
- Minor South Africa Corn Area

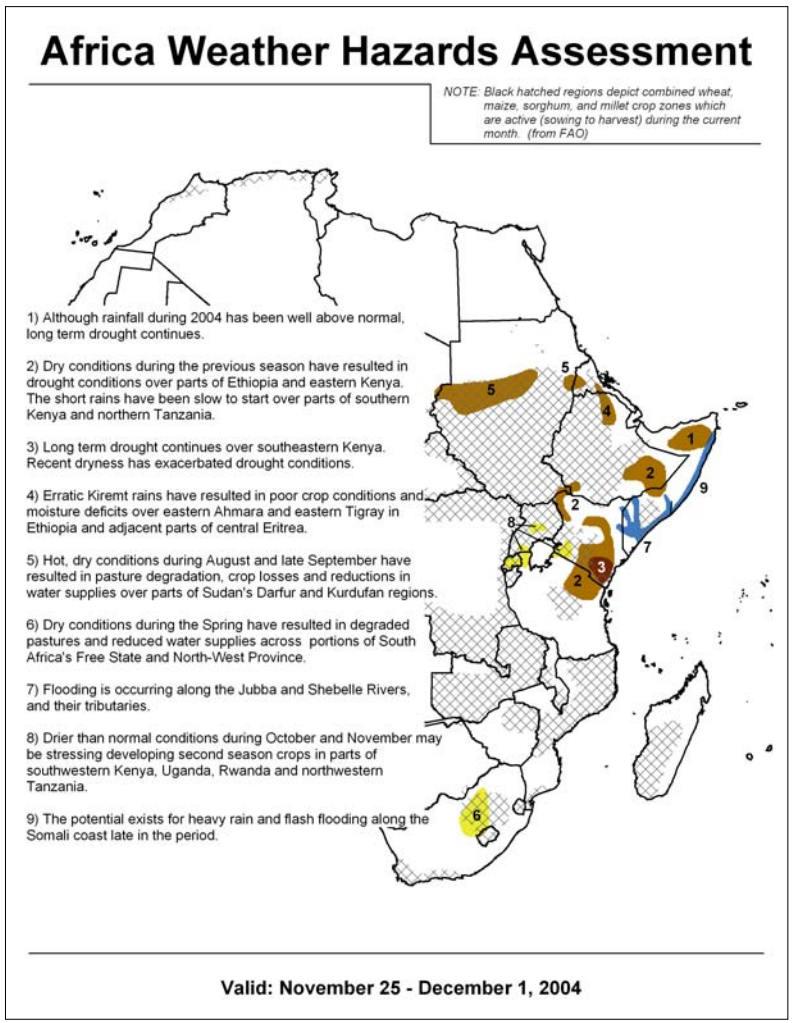
Based on Station Data Only

The Renaissance

Knowledge Sharing

- Collaboration and training with partner organizations achieved a synergy which resulted in the fulfillment of our customer's needs
- The KEY to our advance
- ***Success breeds success***

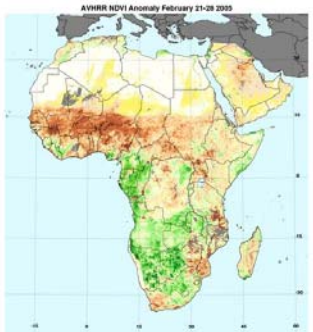
A Weather / Climate Hazards Analysis



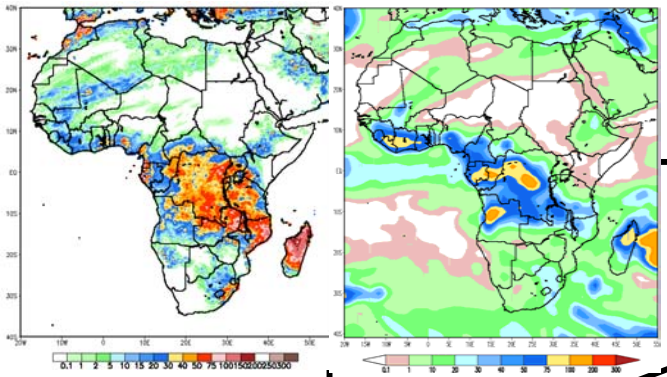
- The result of collaborative verbal input and GIS-based data layers
- Created with ArcMap
- Produced weekly

Data Elements & Flow

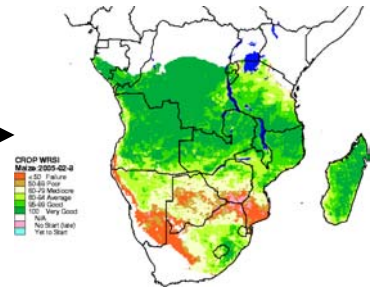
Remote Sensing



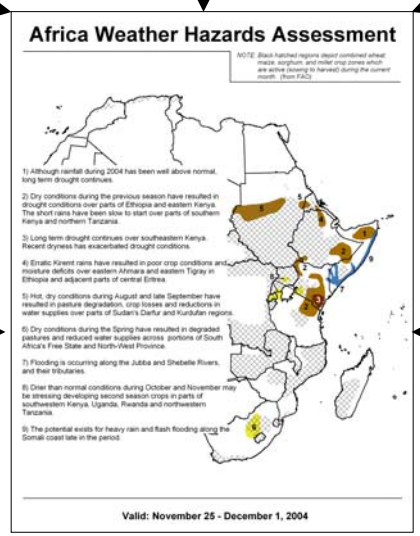
Meteo Parameters & Forecasts



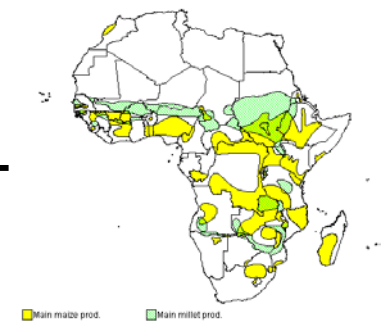
Hydro/Agro Modeling



Base Maps

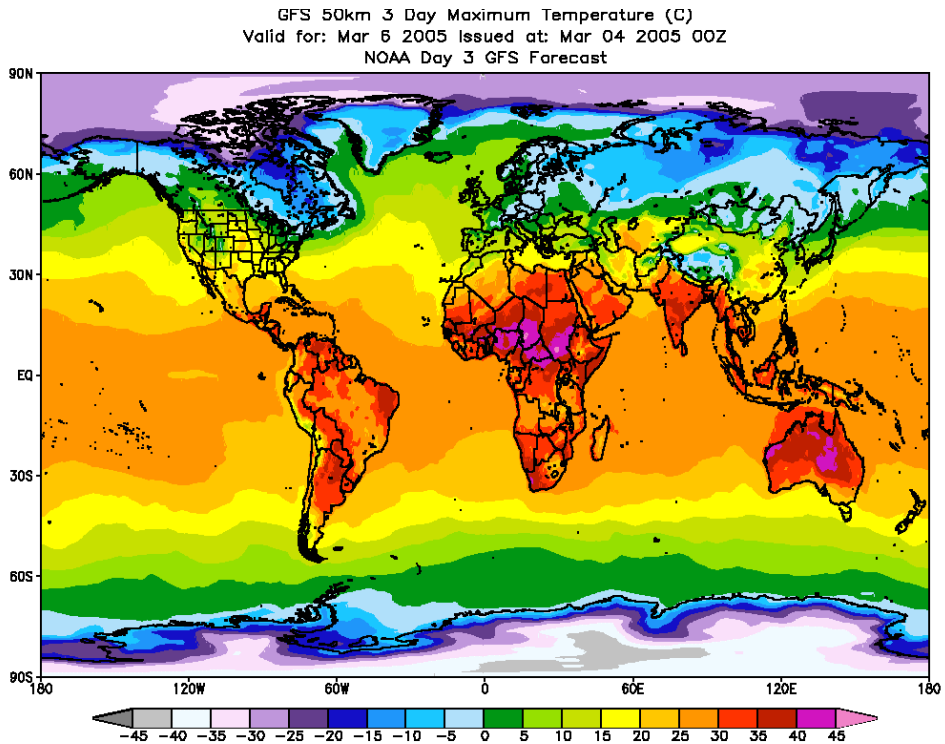


Crop Zones



Future Direction

- Global monitoring
- Pre-emptive information gathering
- International collaboration



Possibilities

- A working structure for data sharing, in place before the occurrence of a natural disaster, will lead to a better humanitarian response
- The time is now to set the wheels in motion to accomplish this goal
- Success requires unselfish global cooperation

CPC Data Availability

- Satellite based precipitation
- Surface gauge rainfall and temperature
- Meteorological model outputs
  - Current weather conditions
  - Forecast weather
- Regional weather hazards assessments

Project Information

- Products:
  - http://www.cpc.ncep.noaa.gov/products/fews
  - http://www.cpc.ncep.noaa.gov/products/fews/data.html

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