

# Case Analysis on NWP in Burkina Faso

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- Numerical weather prediction (NWP) provides tremendous societal benefit, from the advanced warning of weather hazards to planning for economic activities such as agriculture
- The ability to better forecast short term weather variables has especially important implications for public health . Rainfall is vital to the dynamics of many infectious diseases
- In many countries, global numerical forecasting centers are well connected to national weather agencies or forecast offices

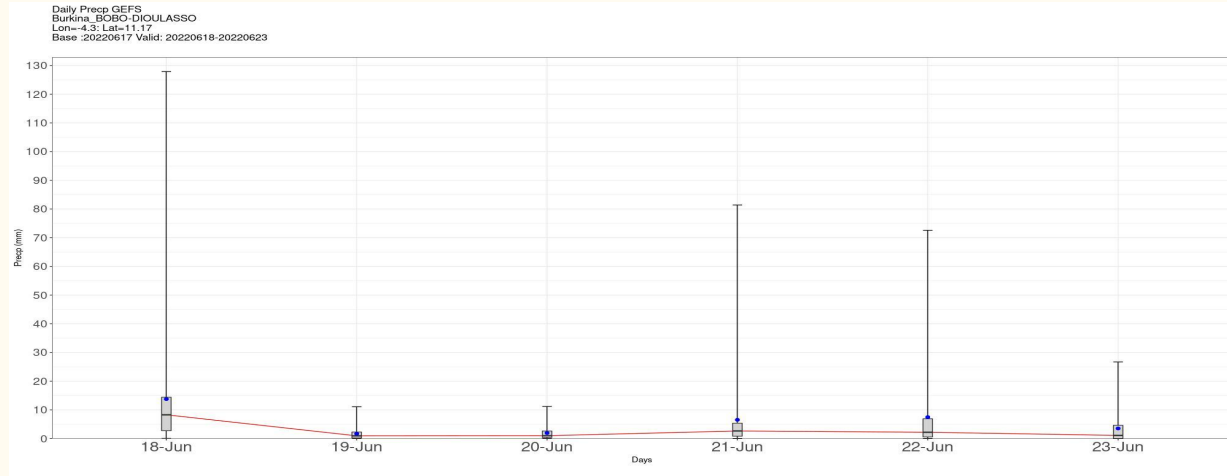
# The Global Ensemble Forecast System (GEFS)

- GEFS is a weather model created by the National Centers for Environmental Prediction (NCEP)
- GEFS model generates 21 separate forecasts (ensemble members) to address underlying uncertainties in the input data such limited coverage
- We use the average, the median, to see the prediction on 16 days on 11 different stations of Burkina Faso

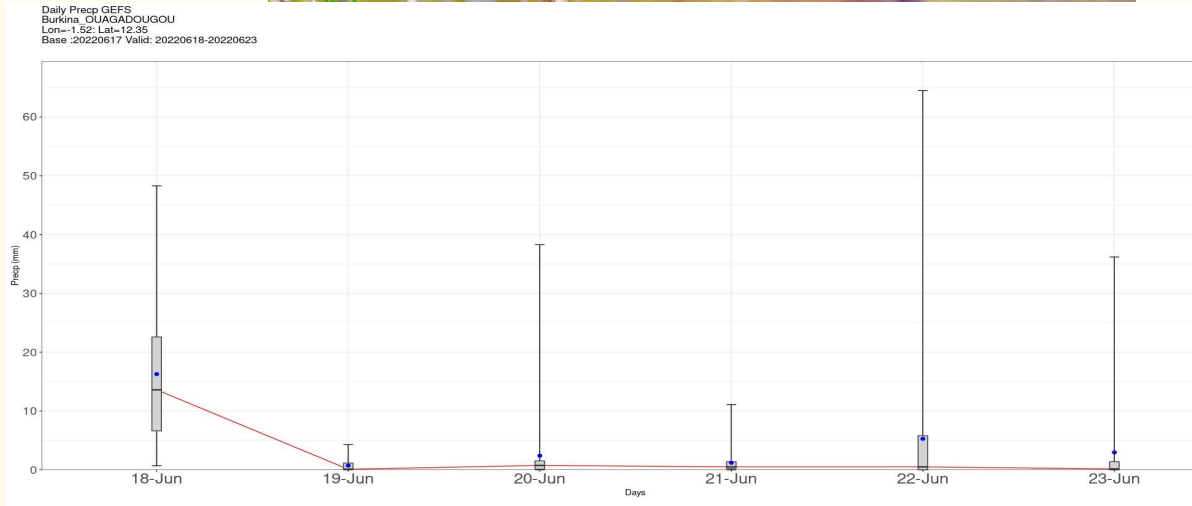
# Climate Forecast System (NCEP)

- It is a model that couples atmospheric modeling to oceanic modeling
- Its forecasts are derived from a 16-member ensemble, with each member initialized on a lead of several days of conditions.
- We use the average, the median, to see the prediction on 16 days for the different stations of Burkina Faso

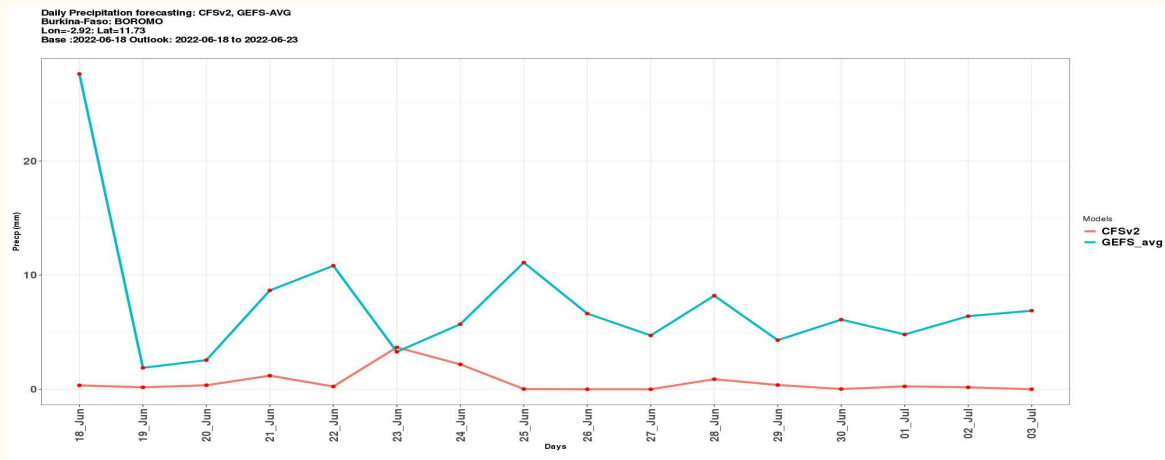
1. Using the GEFS Model we produce the daily numerical forecast for 6 days from today on the 11 stations



2. The histogram shows the distribution of forecasts for each member for two station of Burkina Faso



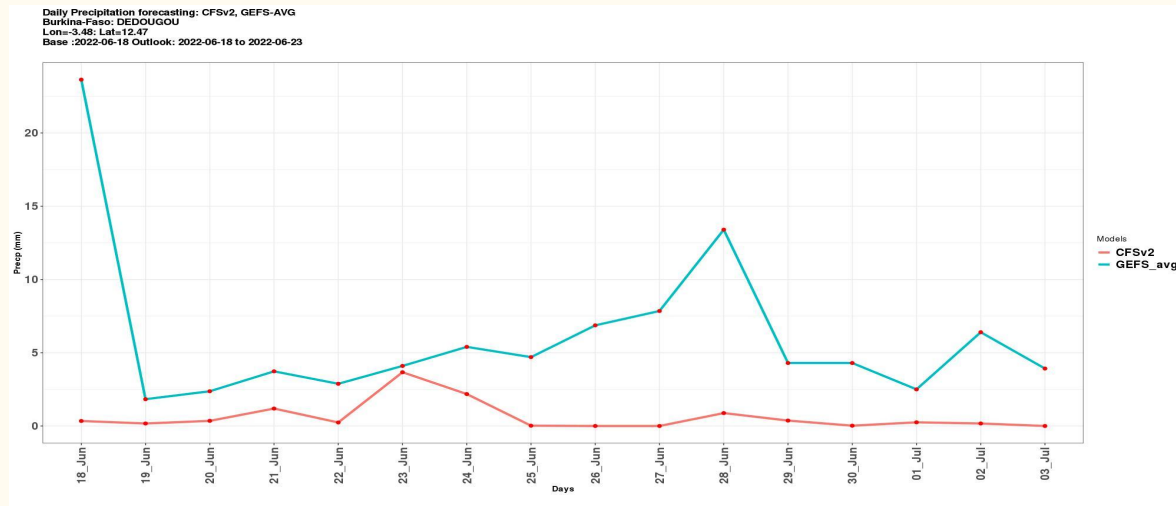
- Using the GEFS Model and CFS models, we produce the daily numerical forecast for 16 days from today.



- The prediction of June 18 was around 30mm, and we observed 36mm of rainfall for the station of Boromo



1. Using the GEFS Model and CFS models, we produce the daily numerical forecast for 16 days from today.



2. The prediction of June 18 was around 20mm, and we observed 15mm of rainfall for the station of Dédougou



# Conclusion

- We use ensemble models to estimate local rainfall for agricultural monitoring, meningitis forecasting and malaria cases
- This allows us to have an agricultural bulletin and to follow up on some diseases
- This allows us to advise farmers and to set up early warning systems in case of epidemics