



**HANNAH KIMANI**

**ASSISTANT DIRECTOR FORECASTING SERVICES  
KENYA METEOROLOGICAL DEPARTMENT**

**STRENGTHENING EARLY WARNING SYSTEMS FOR ANTICIPATORY  
ACTION (SEWAA): USE OF MACHINE LEARNING TO IMPROVE HIGH  
IMPACT WEATHER FORECASTS**

# Effects of pests on food security



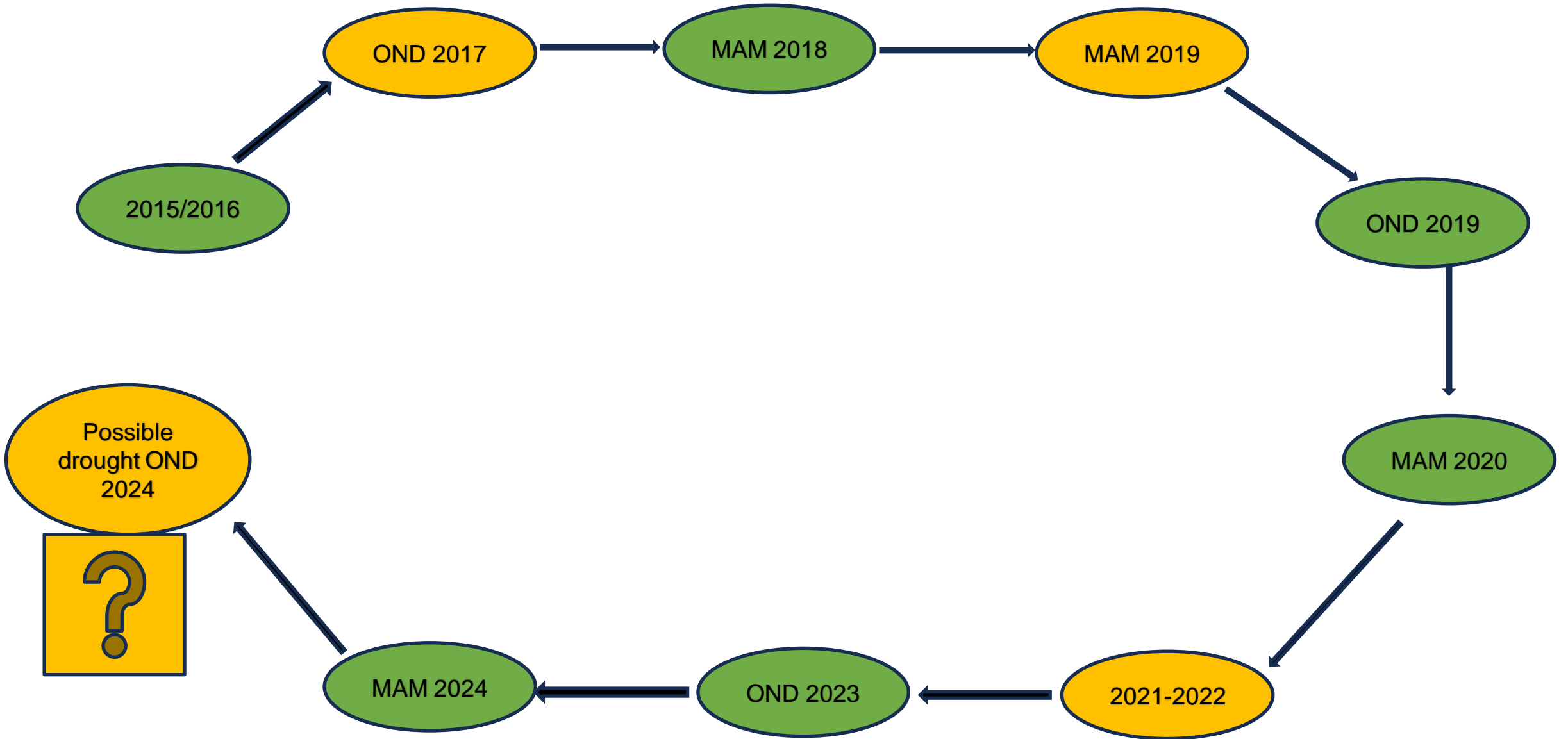
# Effects of floods



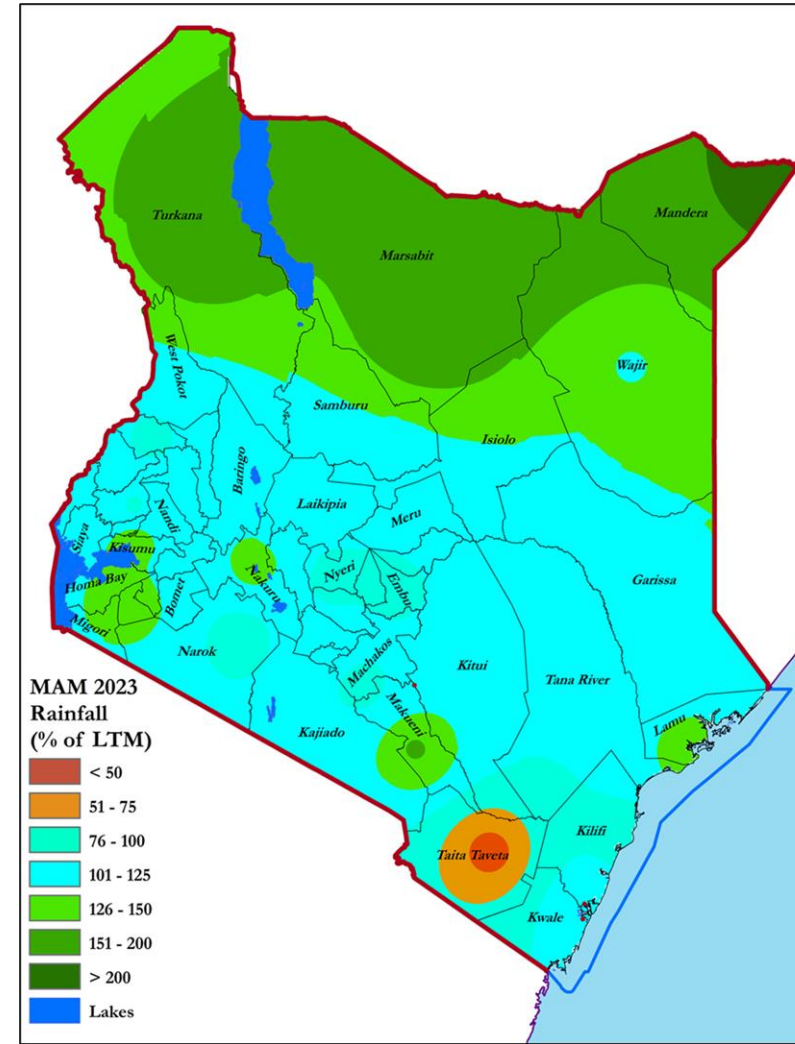
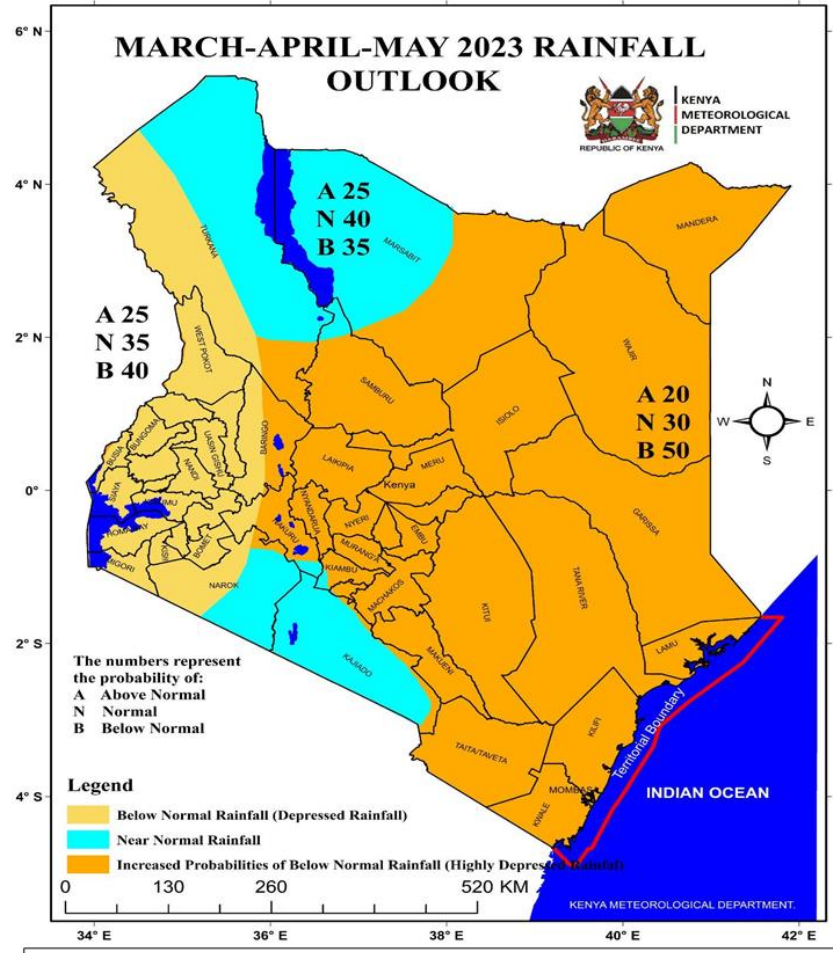
# Effects of drought



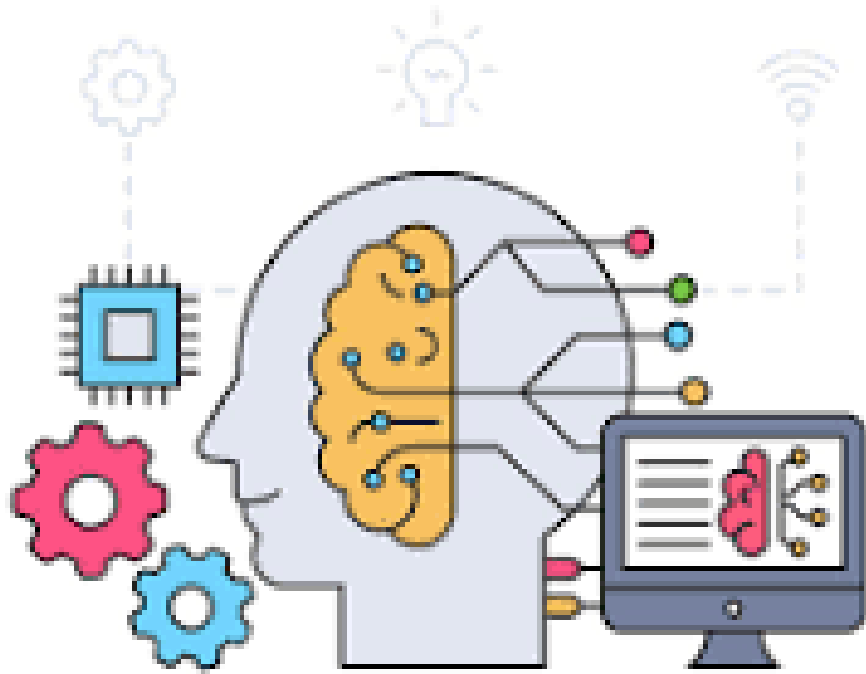
# WHAT IS THE PROBLEM?



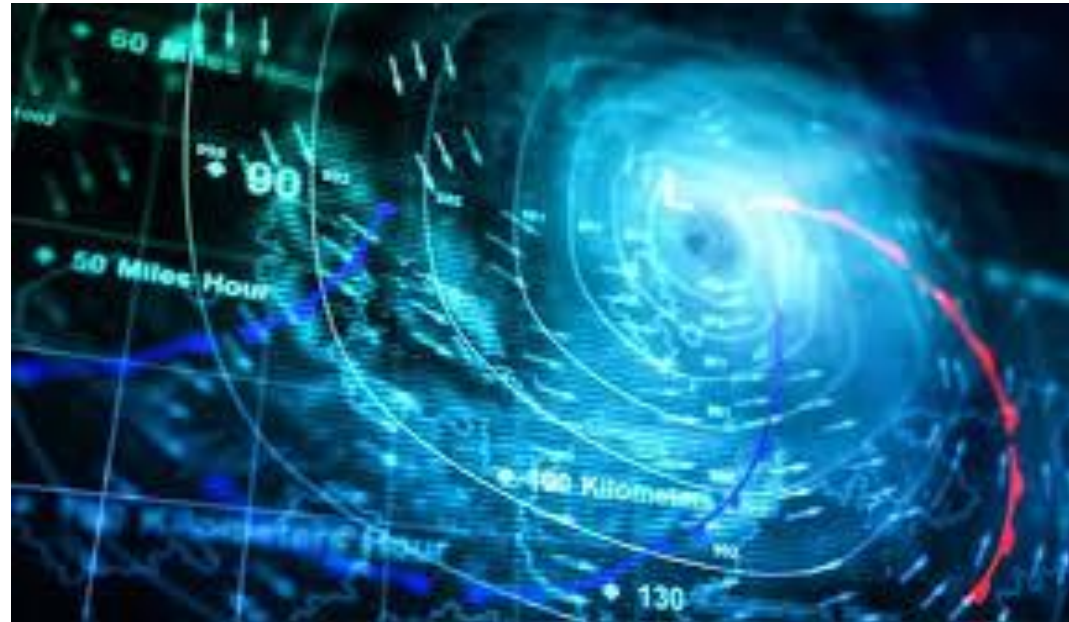
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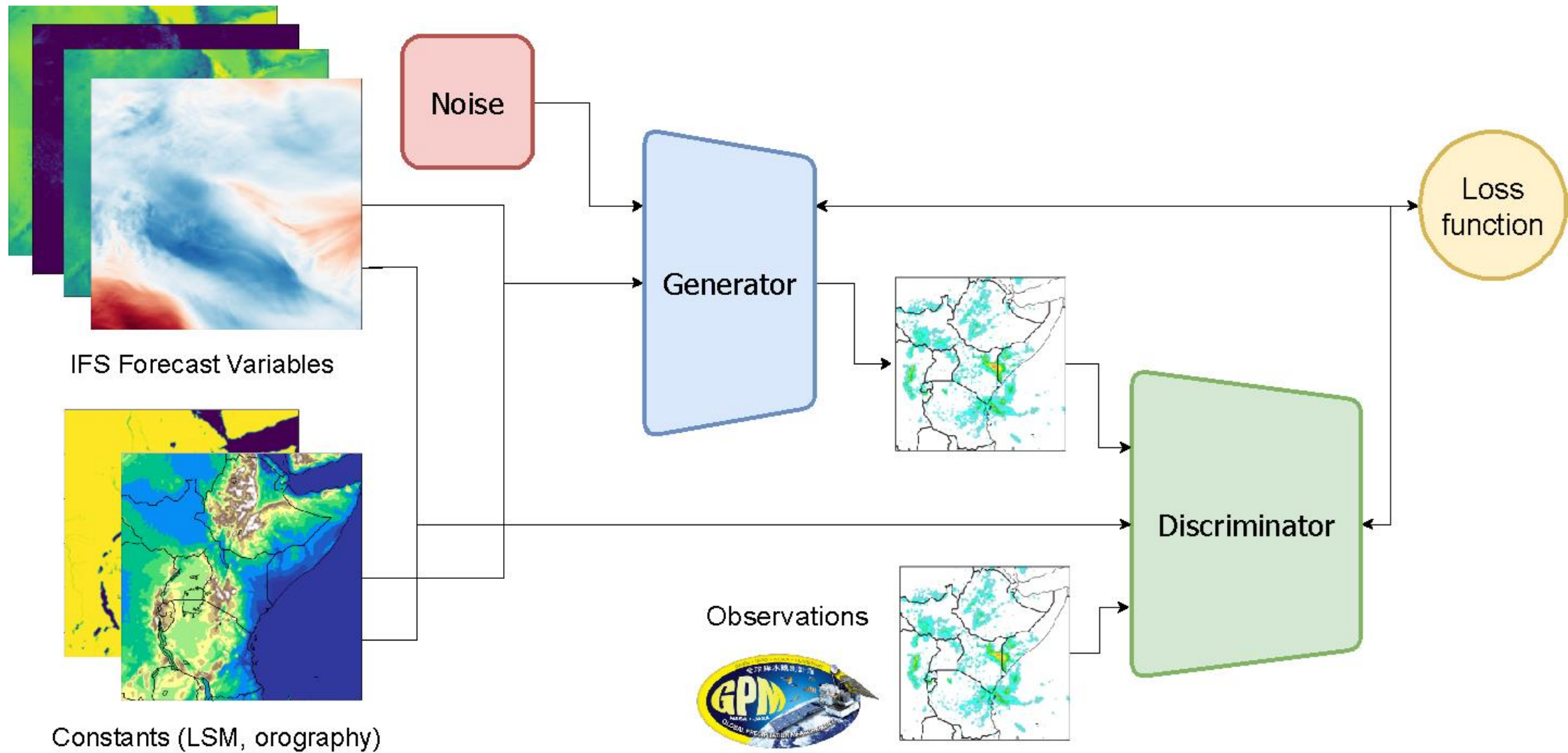
# Is Machine Learning the solution?



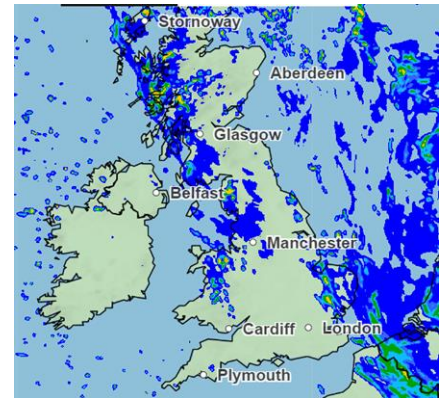
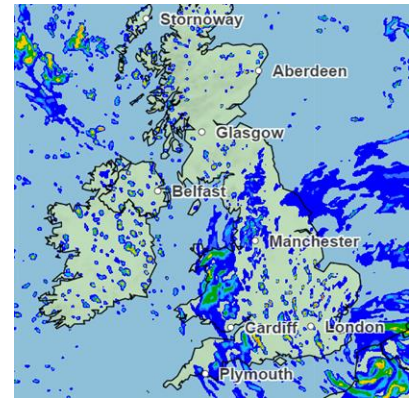
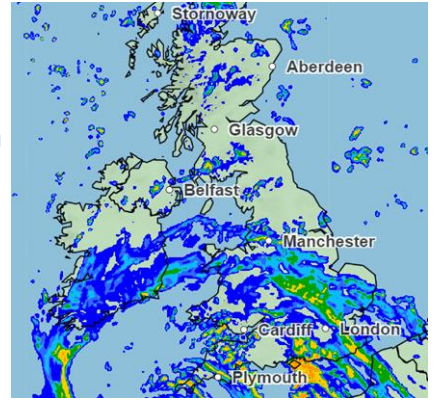
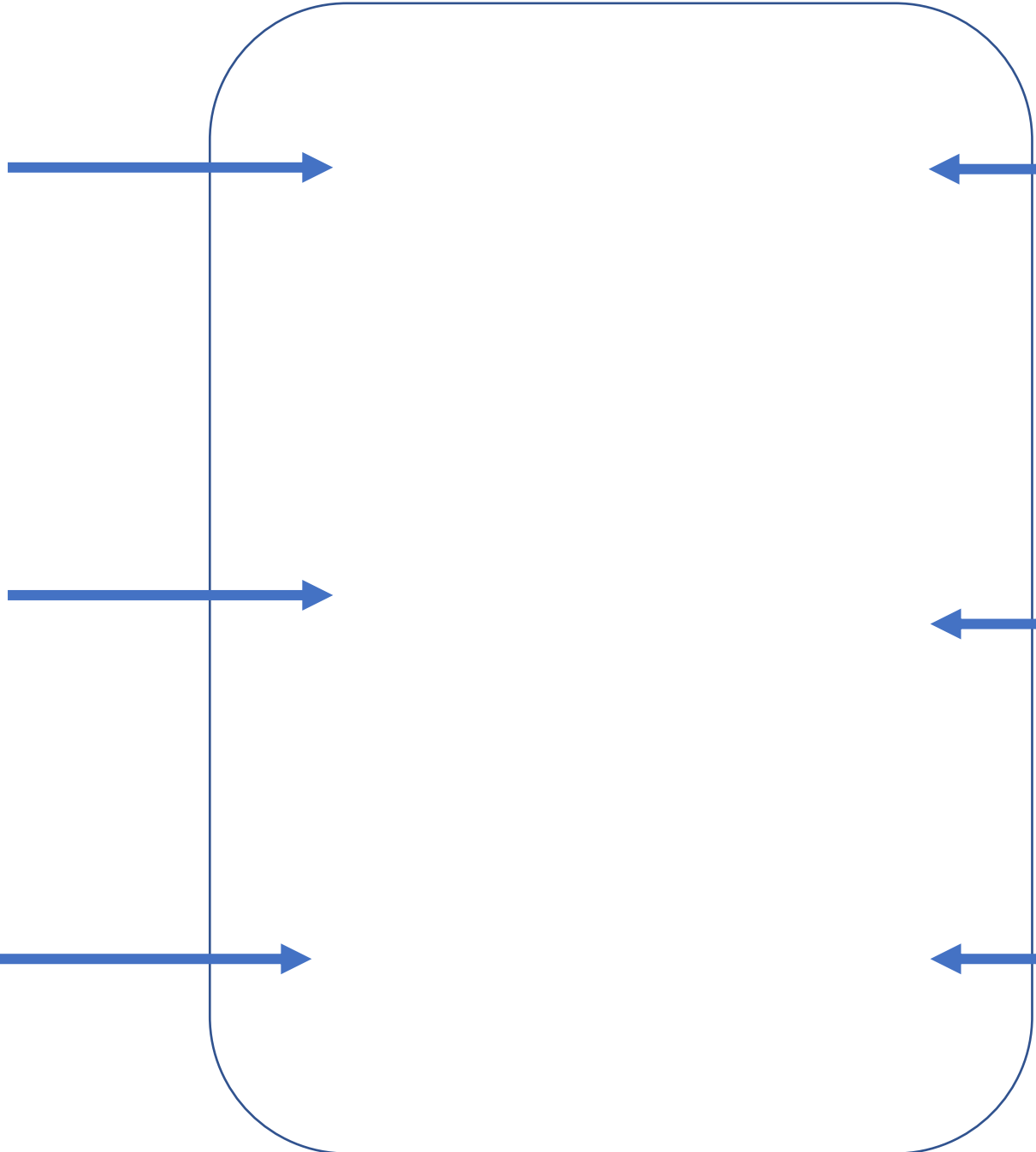
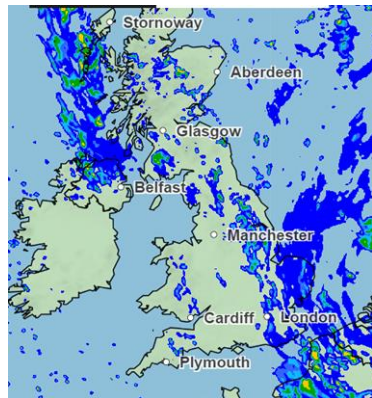
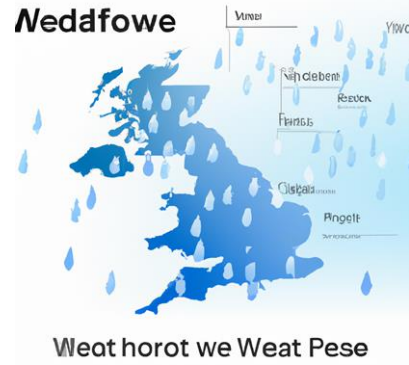
Machine Learning



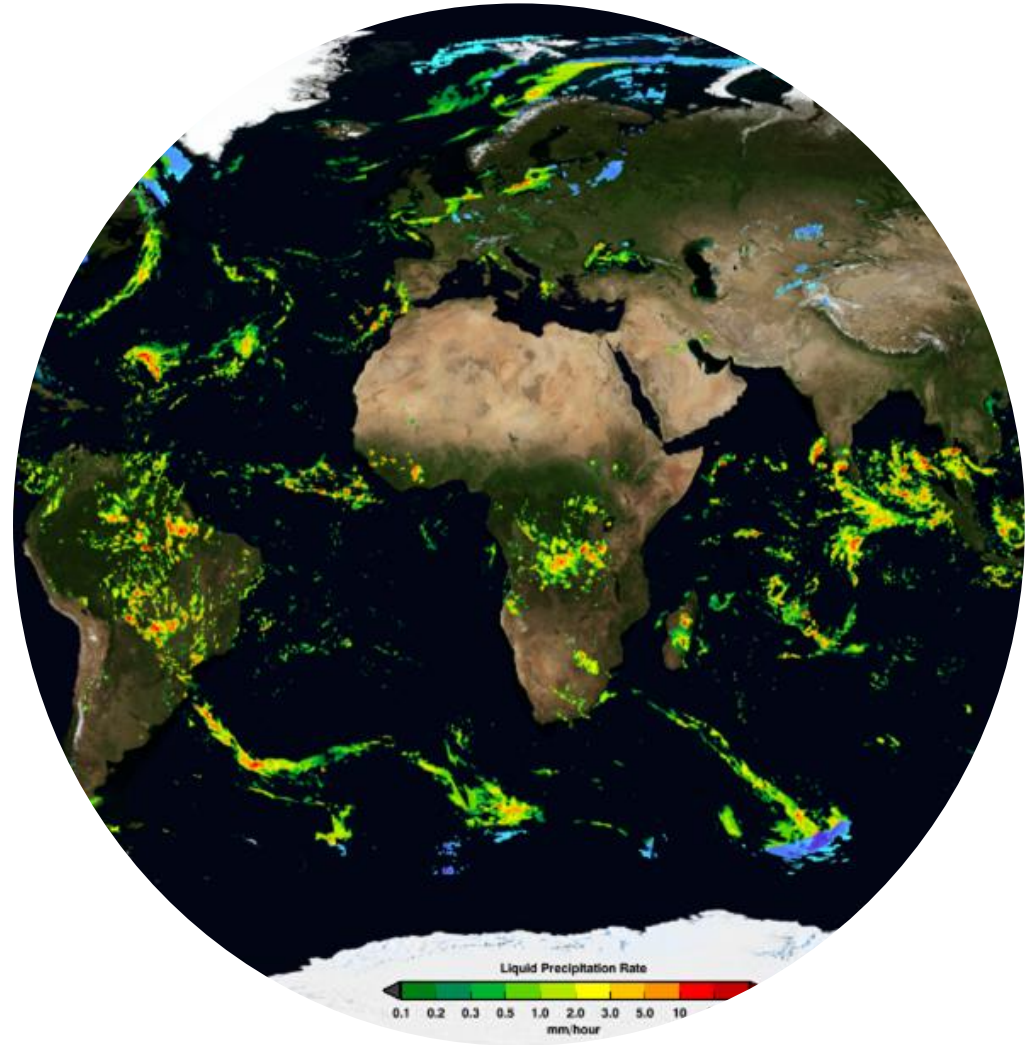
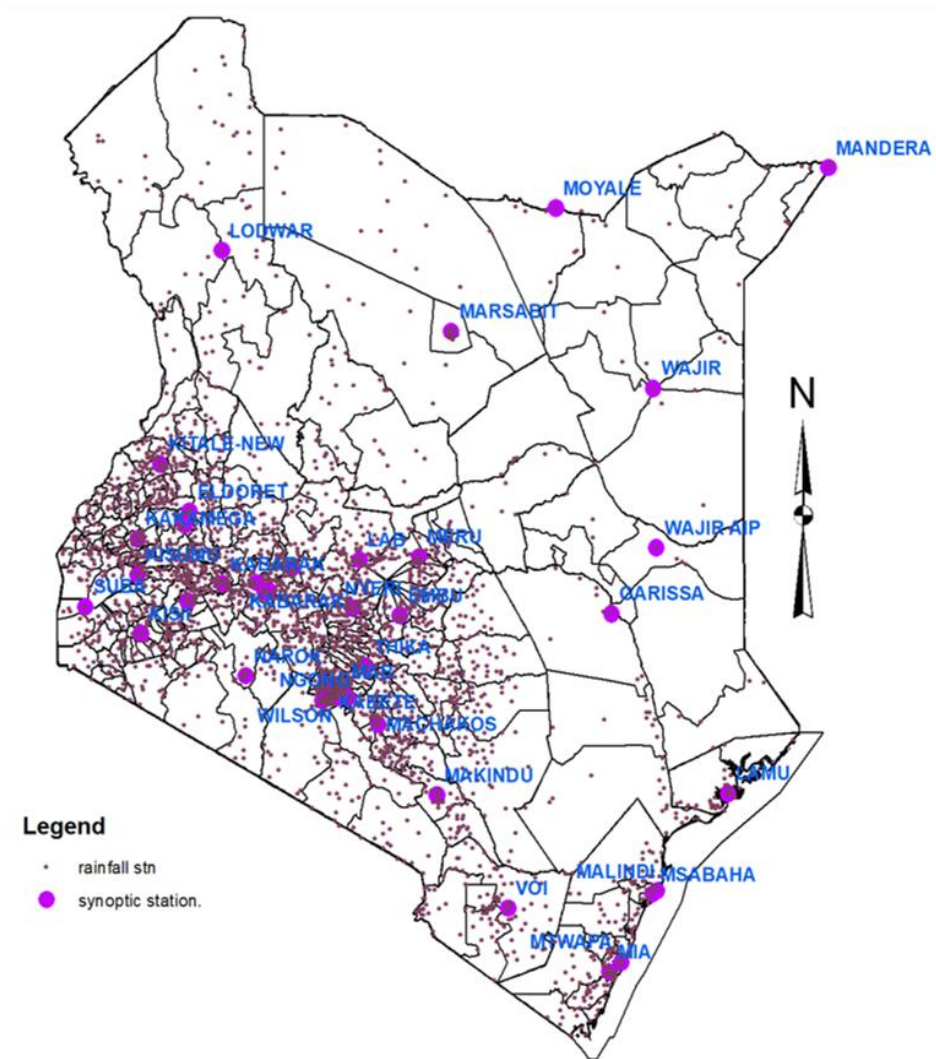
# Conditional Generative Adversarial Network



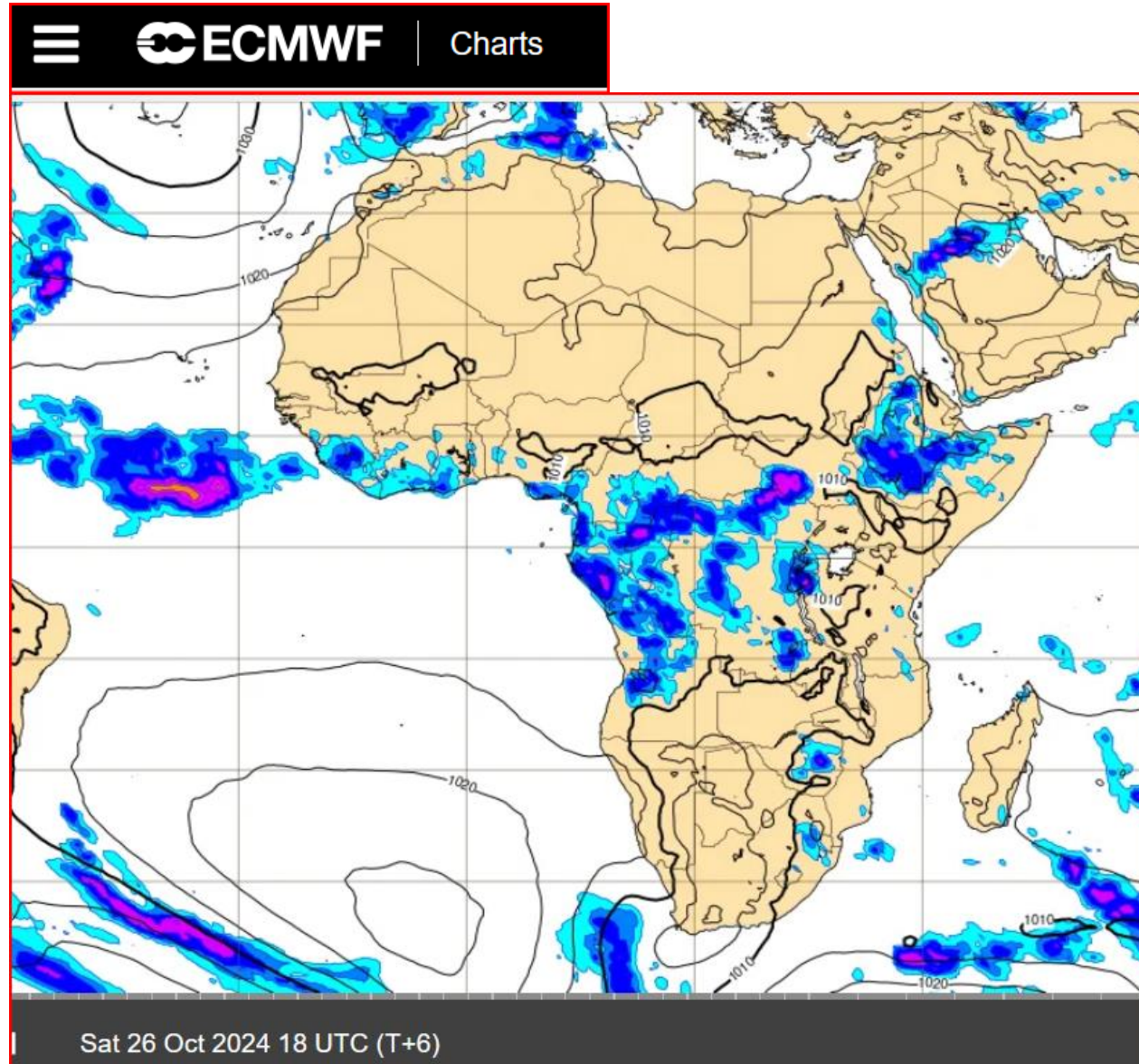




# Challenges Encountered: Sparse network of Stations



# Lack of access to forecast data.



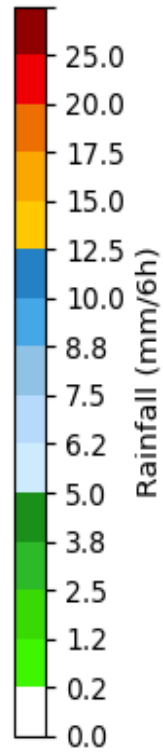
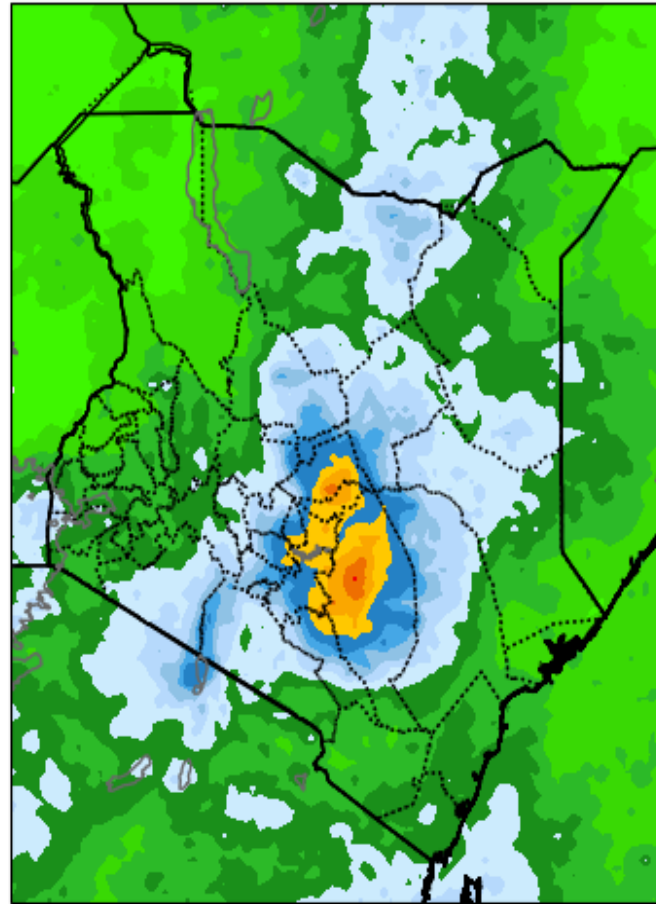
# How Challenges were addressed



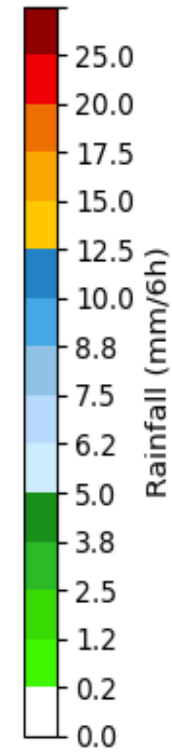
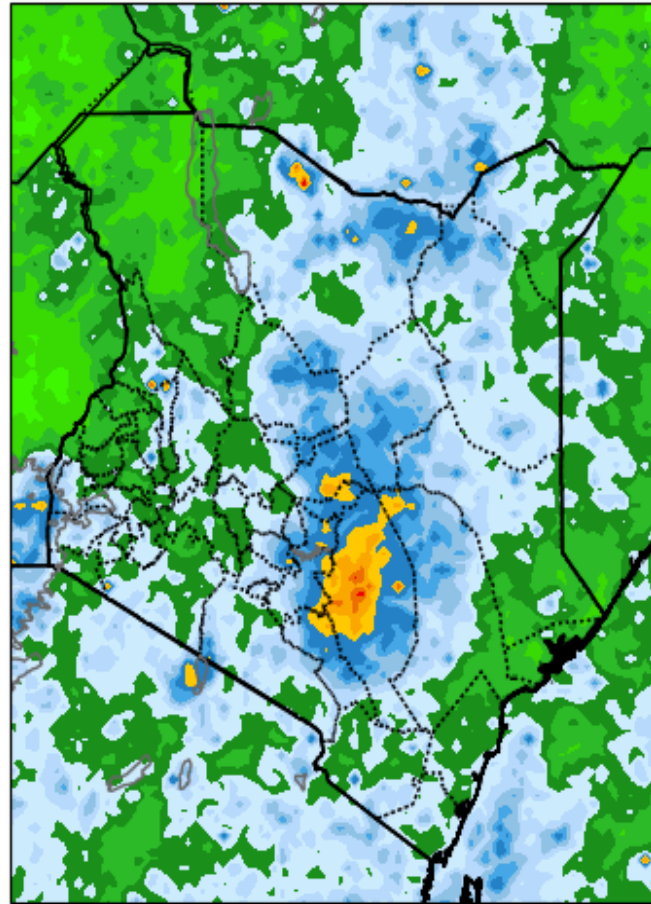
# OUTCOME: ENSEMBLE MEAN WITH STANDARD DEVIATION

Jurre Brishti cGAN forecast: Valid 2024-04-03 18:00 to 2024-04-04 00:00 UTC

Ensemble mean

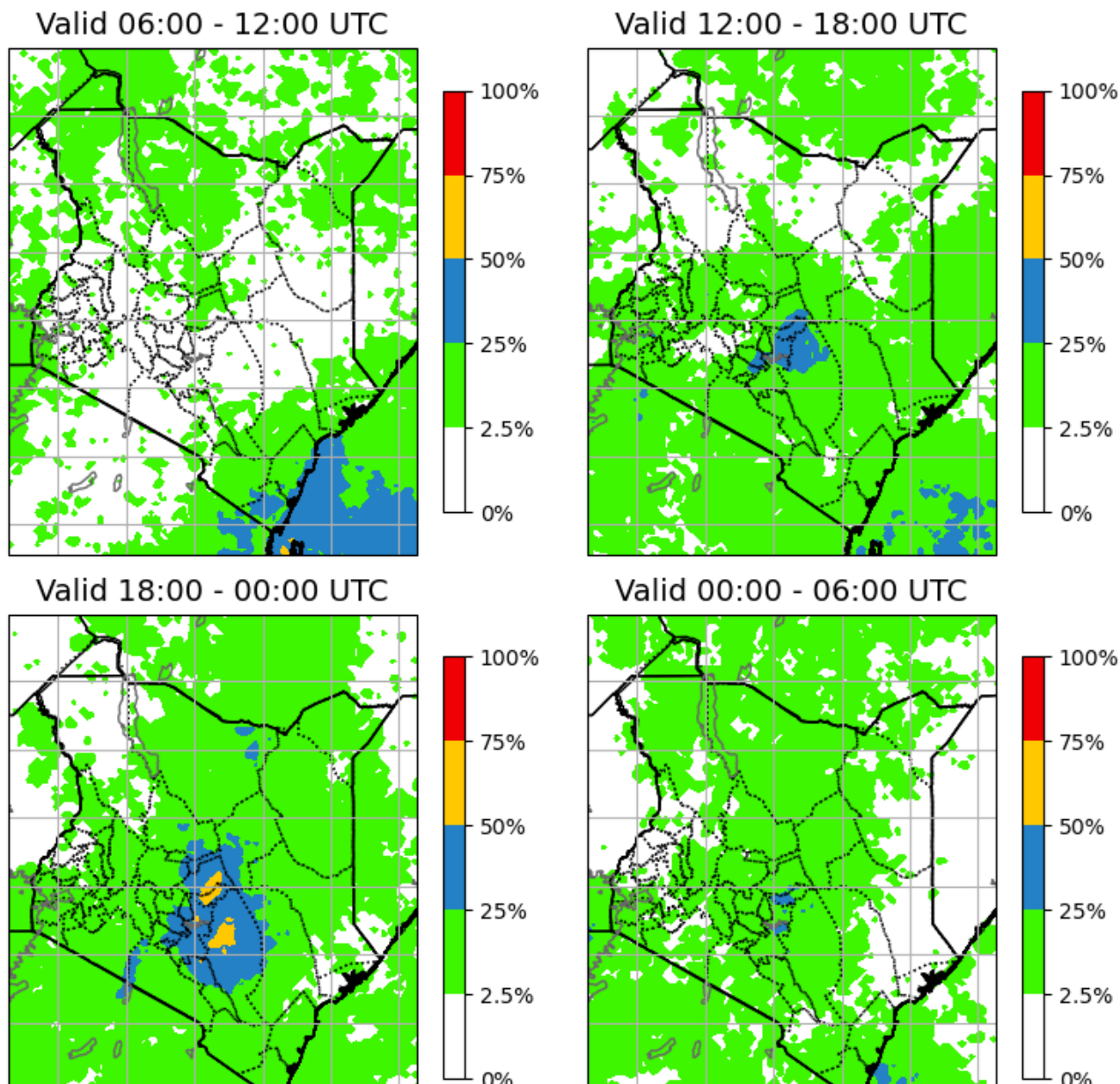


Ensemble standard deviation



# Probability of exceeding a certain threshold

Jurre Brishti cGAN ensemble: Valid 2024-04-03 to 2024-04-04  
Chance of rainfall above 50.0 mm/day.



# Accurate forecasts: Improving livelihoods



The Govt has released Ksh35...

 Ministry of Agriculture an... ⋮

# Accurate forecasts in Social Protection Systems: Anticipating, planning and responding

