TAMSAT-ALERT for Impact-Based Forecasting

Session 4: Interpreting TAMSAT-ALERT forecasts

Overview

1. **Work through questions 1-11 on the worksheet**
   - Please do that before continuing this presentation

2. **Listen-along presentation (10-15 minutes)**
   - Forecast figures explained

3. **Complete worksheet**
   - Review and update your understanding

Learning objectives

1. Explain TAMSAT-ALERT soil moisture and WRSI as a drought impact-relevant metric
2. Understand modelling of soil moisture and WRSI
3. Understanding TAMSAT-ALERT approach to forecasting
4. **Ability to interpret TAMSAT-ALERT soil moisture and WRSI forecasts**
5. Ability to produce TAMSAT-ALERT forecast plots and/or bulletins

Figure 1.

- Generally, forecast for above average soil moisture across Kenya
- Spatial variation
  - Near average / slightly enhanced soil moisture in West and North-East
  - Substantially above average (>20%) in South-Central region
- Forecast date
  - Still large proportion of the season to come
  - Much uncertainty
- Impact on pasture / crop
  - Soil moisture unlikely to be limited
  - Potential negative impact due to flooding

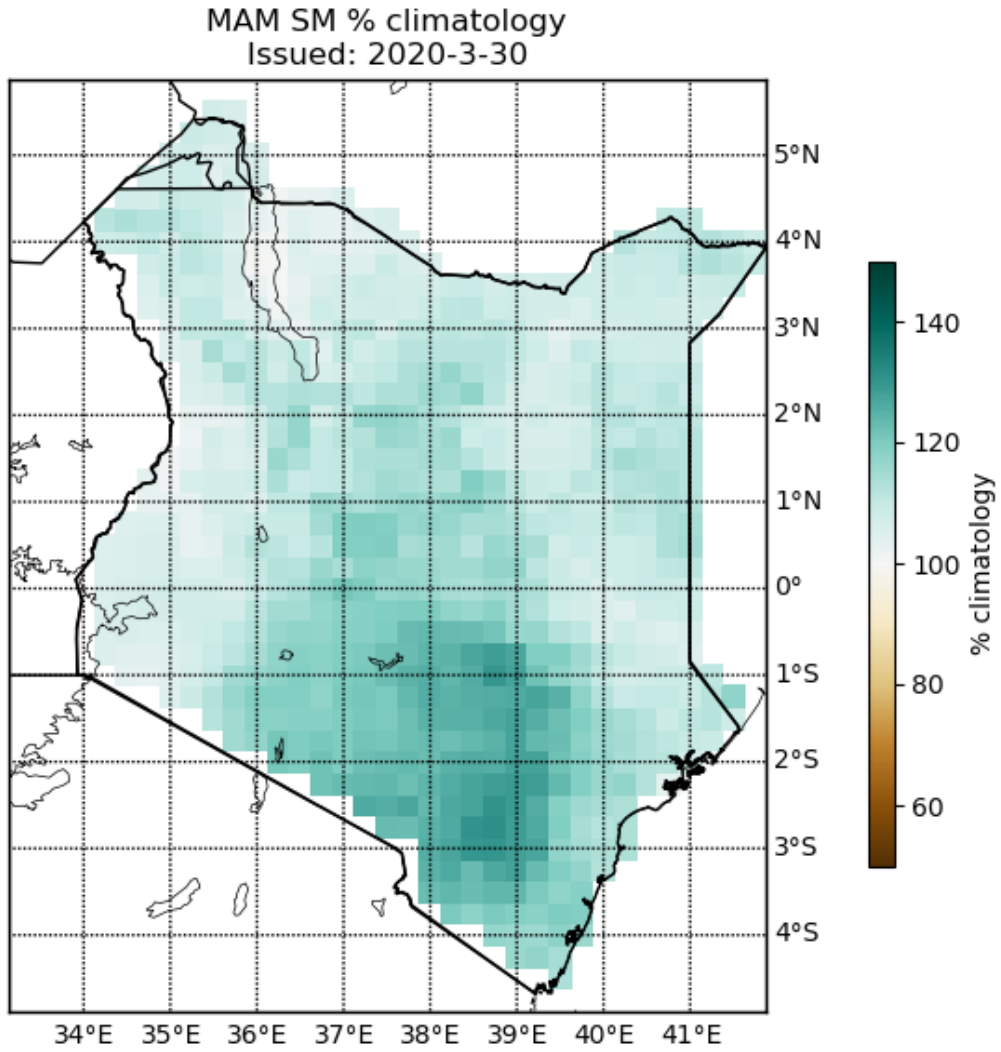


Figure 2.

- Averaged across Kenya
- Generally, one of wetter years compared to climatology
- 2020 similar to 1998 – both followed heavy OND rains
- 2020 not as wet through January and February as 1998, but early start to MAM rainfall has elevated 2020 above 1998 soil moisture

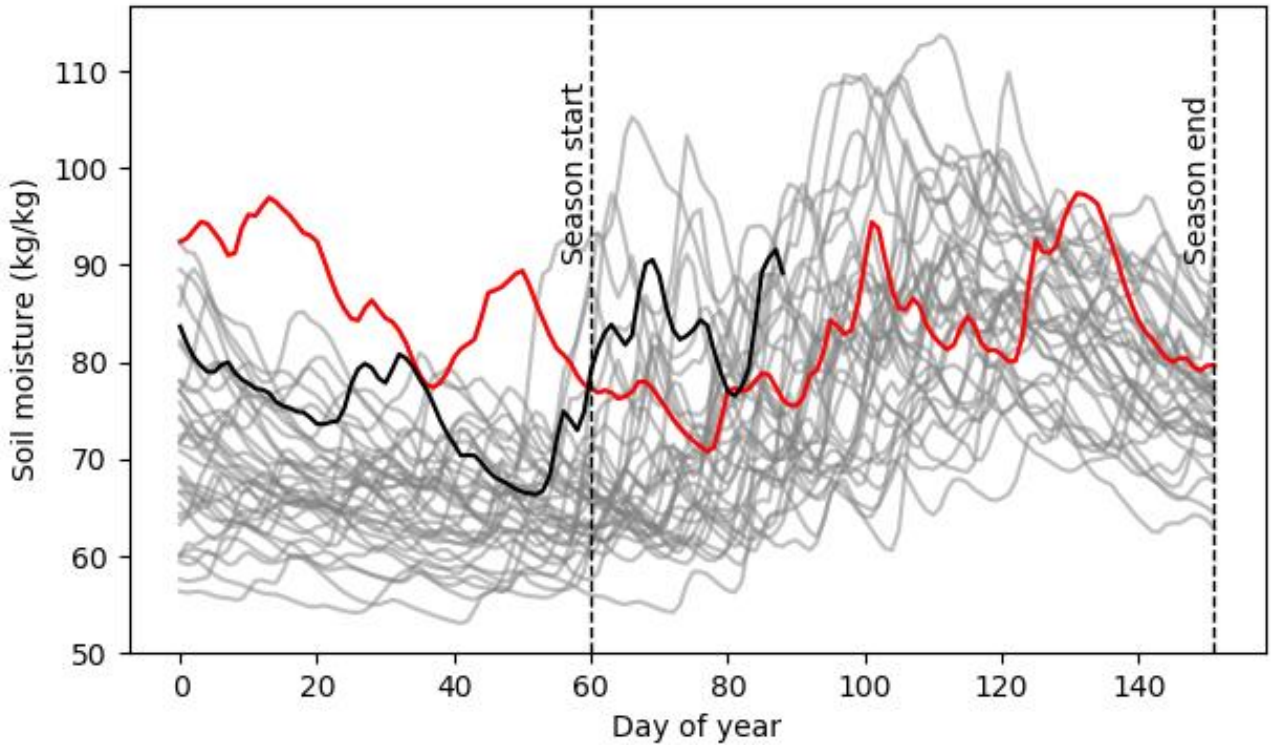


Figure 3.

- Low probability of lower-tercile soil moisture
- Low probability of mid-tercile soil moisture
- Enhanced probability of upper tercile soil moisture
- Spatial variation
  - South Central Kenya – zero probability of lower or mid tercile
  - More uncertain in North-East and West

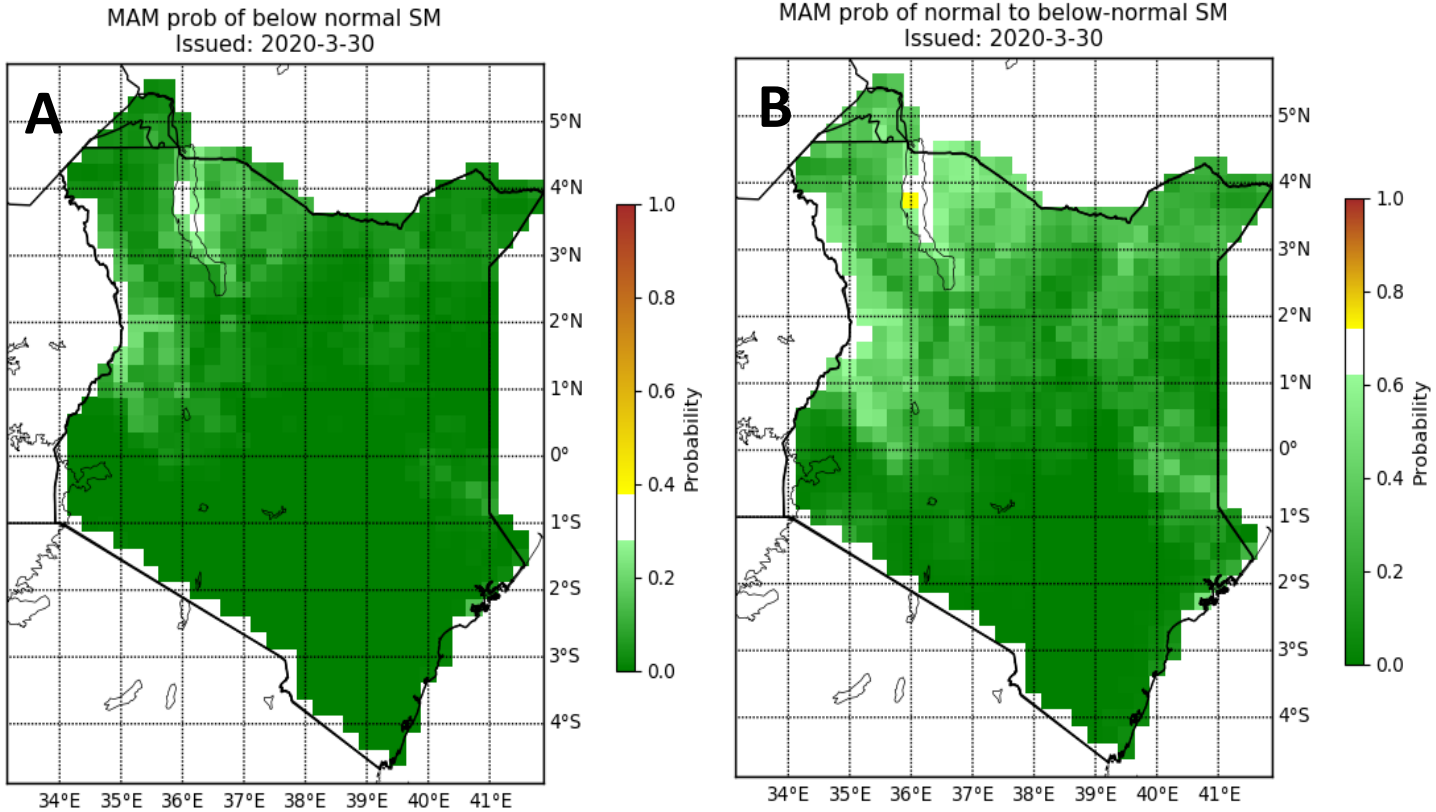
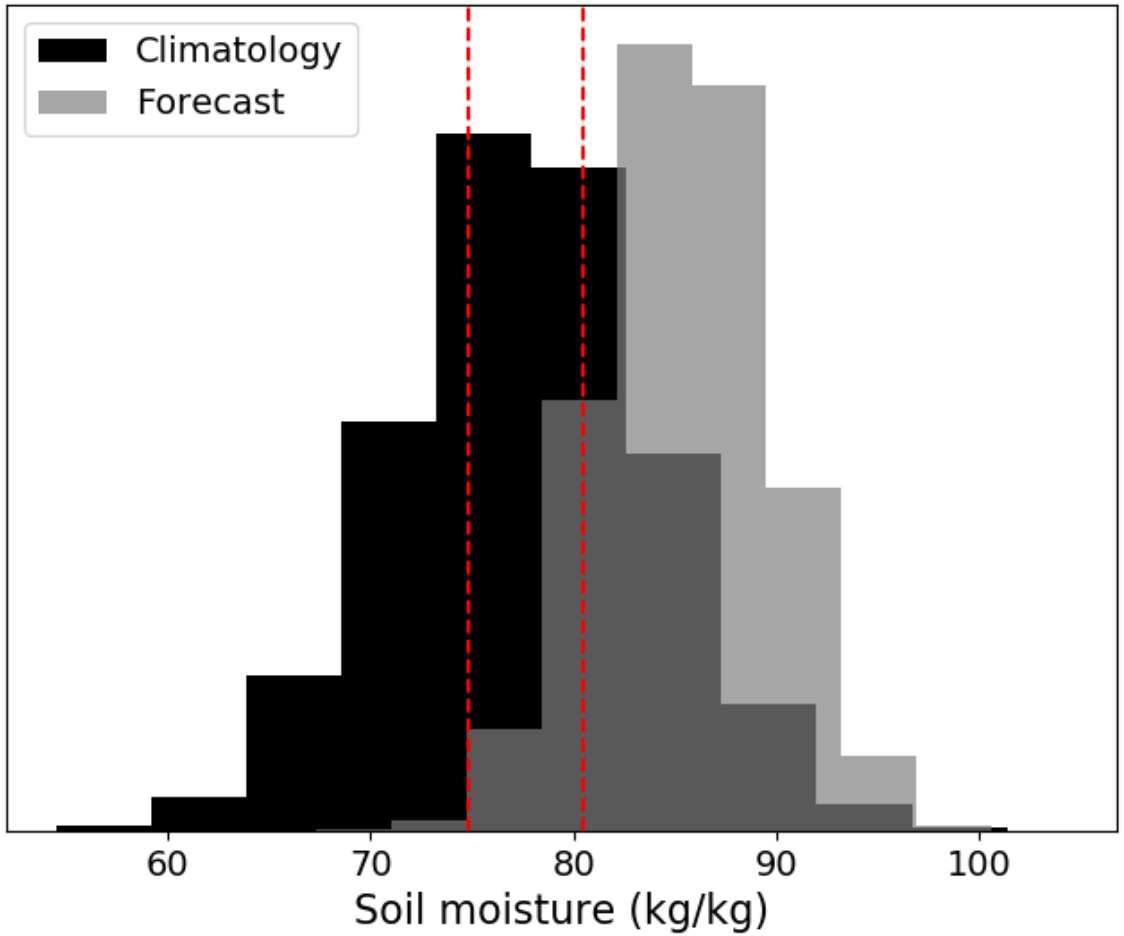


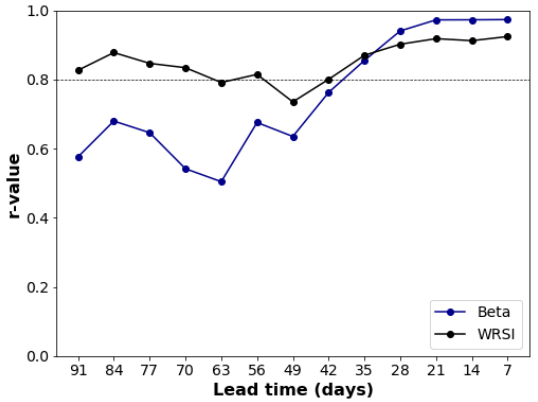
Figure 4.

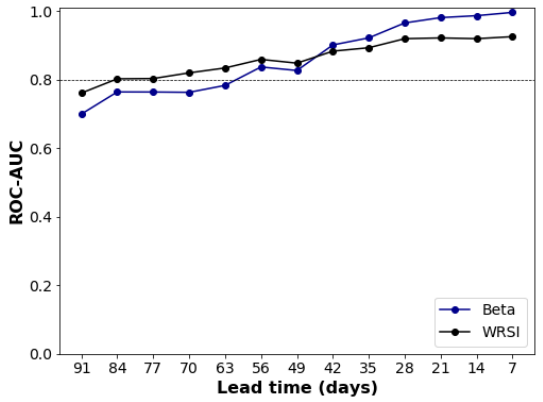
- Averaged across Kenya
- Probability of enhanced soil moisture greater in forecast than climatology
- Only small portion of forecast probability distribution below 33rd percentile – only small chance of lower tercile soil moisture
- Large proportion of probability distribution above 67th percentile – enhanced likelihood of above average soil moisture



Summary

- Enhanced likelihood of upper tercile soil moisture across Kenya in general
- Some spatial variation, with South-Central region expected to show greatest positive soil moisture anomaly
- Important to remember this forecast made on 30th March
  - Still 2 months of the season to come and some there is much uncertainty
  - Keep skill of TAMSAT-ALERT forecasts in mind
- Drought impacts unlikely, but chance of water logging and flooding increased
  - What might this mean for pasture and crops?





What's next?

1. **Return to the worksheet and complete it**

2. **Get in touch**

   - End-of-week clinics (Friday 22nd May @ 10:00 - 11:30am)
   - Email me (v.l.boult@reading.ac.uk)

3. **Next session:** Producing TAMSAT-ALERT forecasts