

EUPORIAS

A climate service prototype: enhancing Ethiopia's drought early warning tools with input from seasonal forecasting systems.

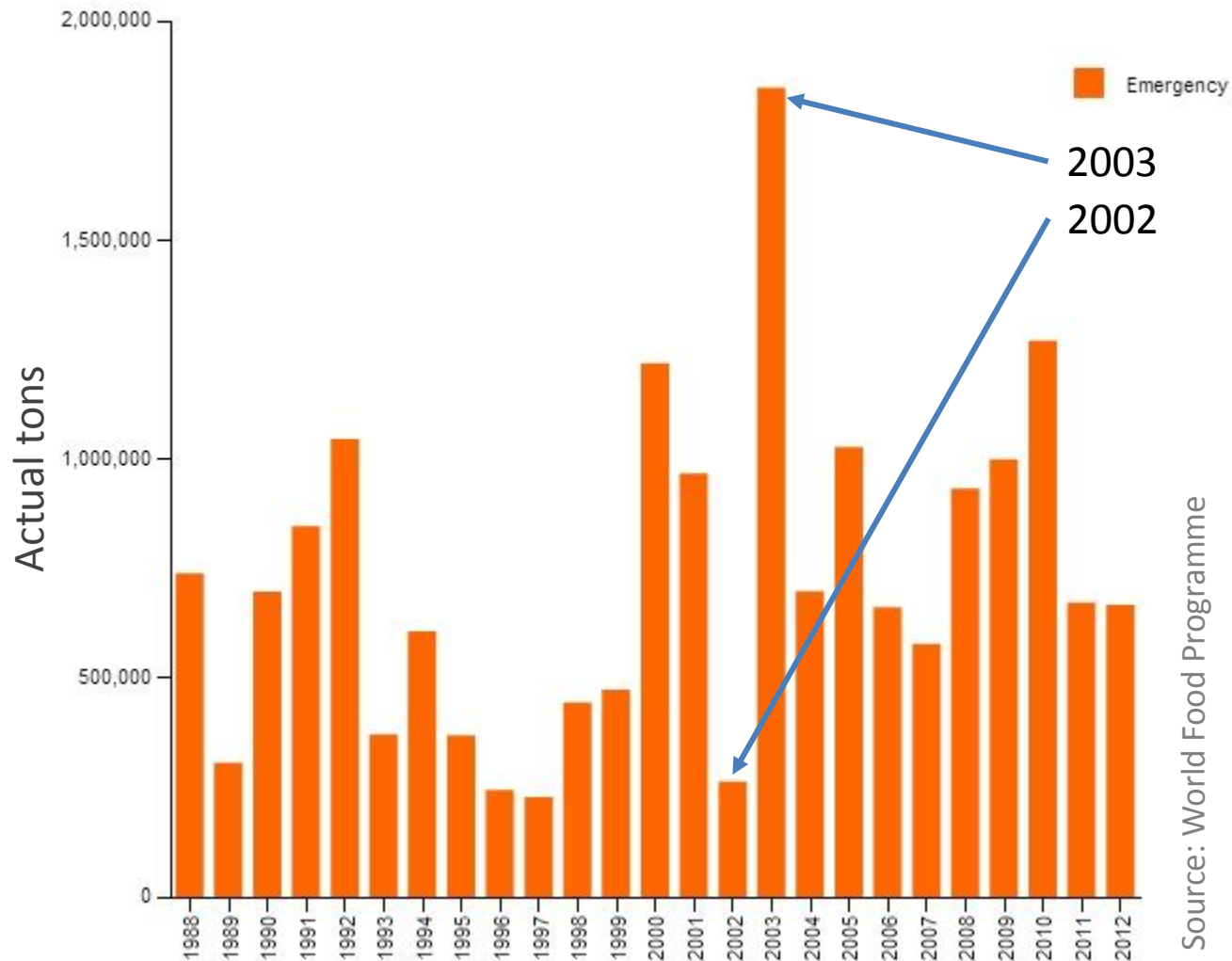


Sandro Calmanti
ENEA

EMS
Annual Meeting 2014
Prague | 6 -10 October



Food Aid to Ethiopia



EUPORIAS

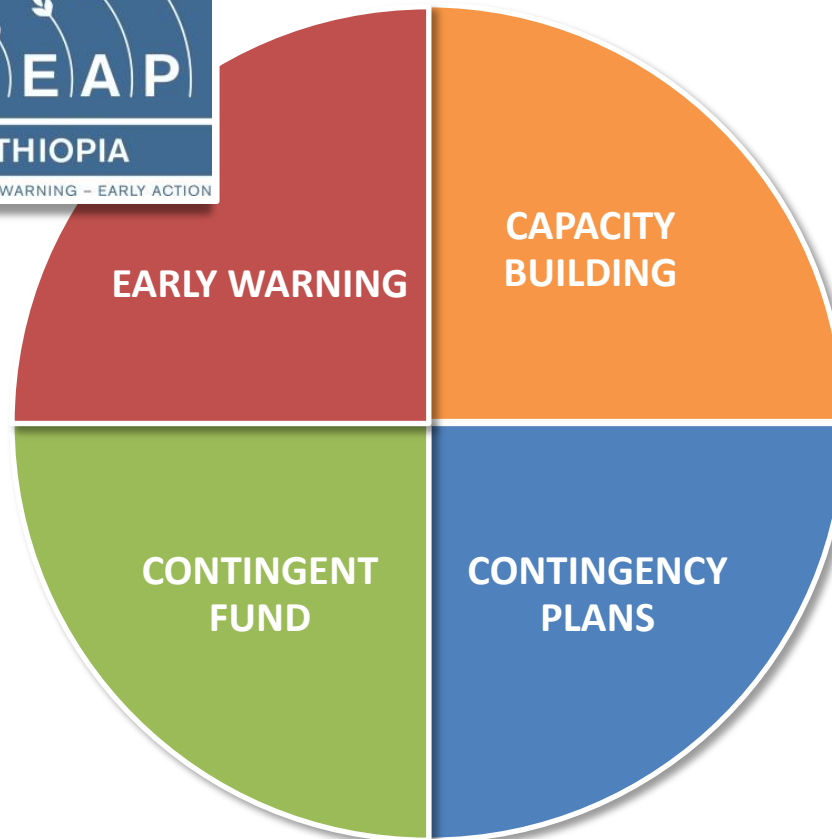
EMS Annual Meeting 2014, Prague, 6-10 October



Enhancing the early warning system

1. For **WFP**, earlier estimates of needs can be used to raise awareness and **advocate** for initiating an early response
2. The **Government of Ethiopia** (Ministry of Agriculture) can use early estimates to:
 - a. Identify and **prioritize** areas require closer monitoring;
 - b. Update regional and district-level **contingency plans**;
 - c. Implement sector-specific **low-regrets** interventions, including
 - advance purchase and prepositioning of food;
 - advance purchase of seeds and livestock supplementary feeding/medicine

Integrated early warning – early action system

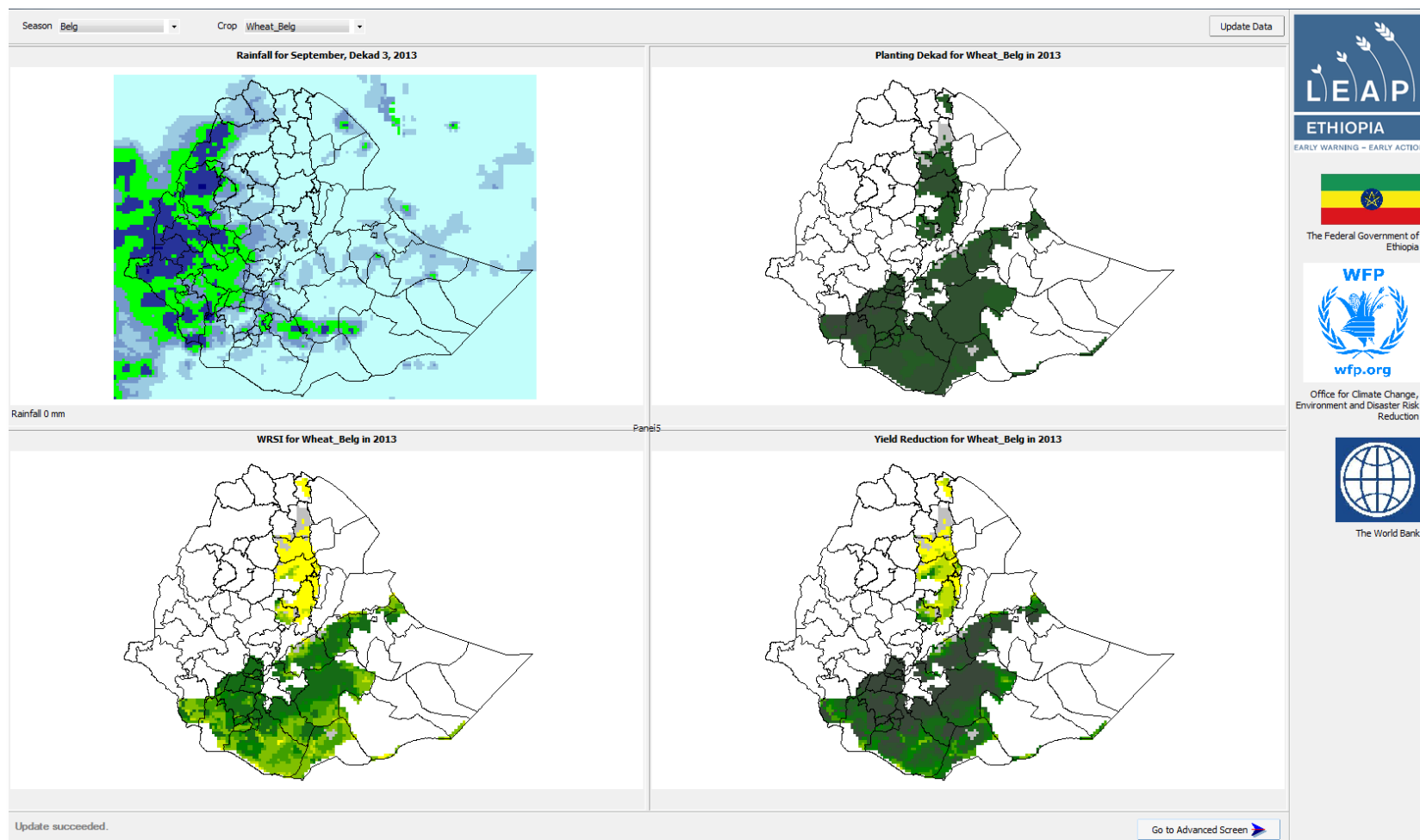


EUPORIAS

EMS Annual Meeting 2014, Prague, 6-10 October



Crop and weather monitoring information

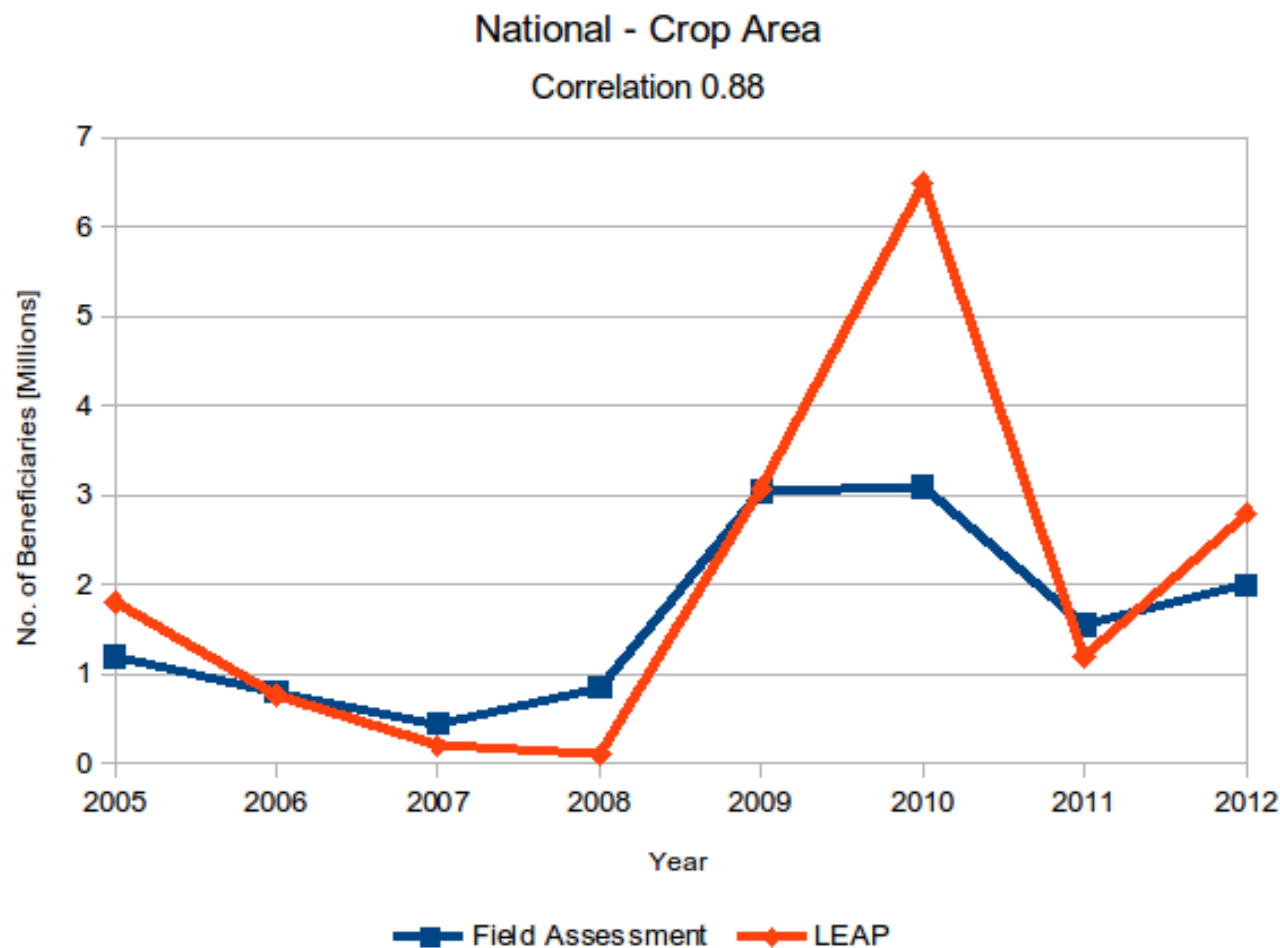


EUPORIAS

EMS Annual Meeting 2014, Prague, 6-10 October

ENEA

LEAP Needs estimates



EUPORIAS

EMS Annual Meeting 2014, Prague, 6-10 October



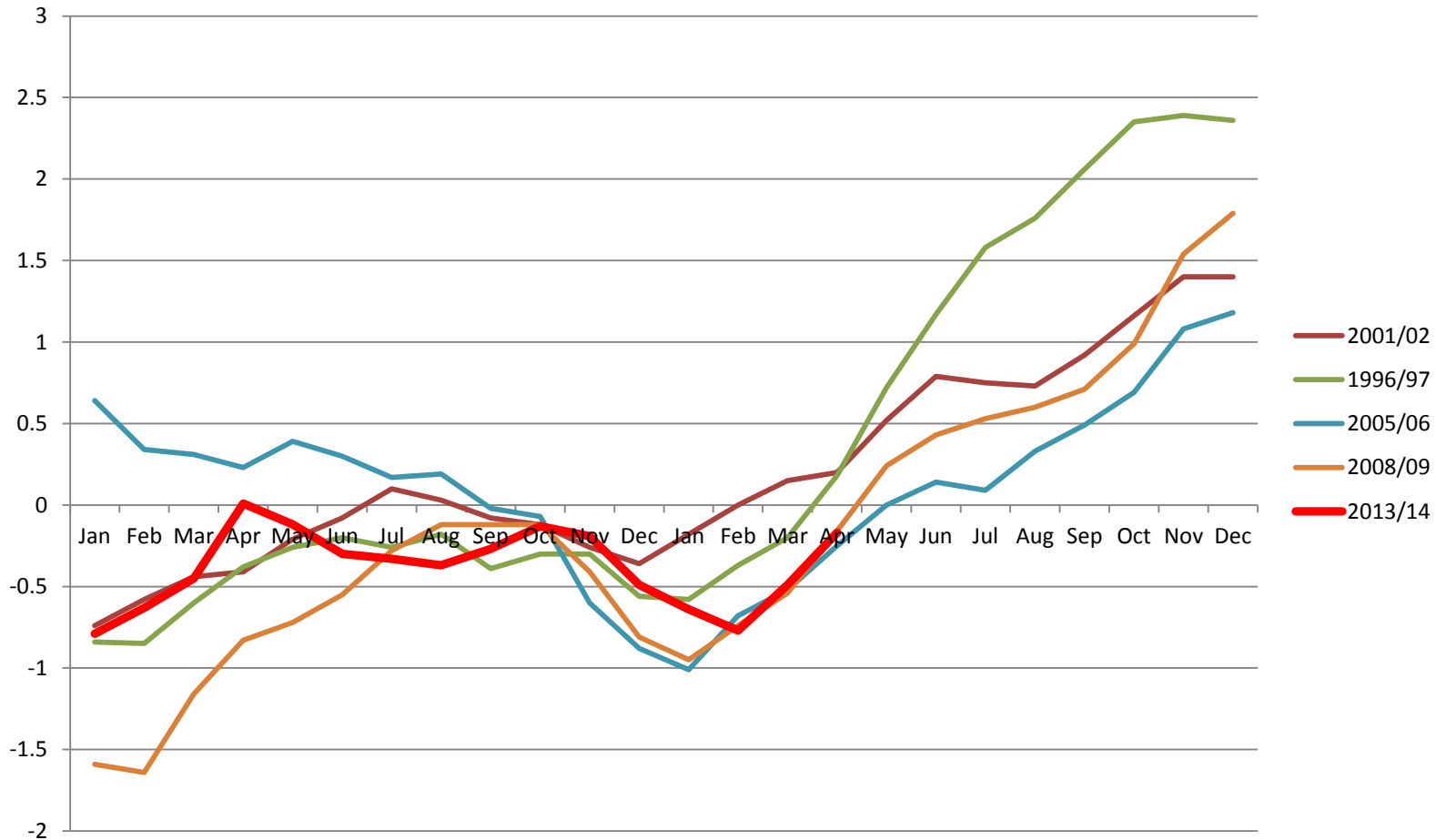
CURRENT USE OF SEASONAL FORECASTS

EUPORIAS

EMS Annual Meeting 2014, Prague, 6-10 October



Nino 3.4 SST trend

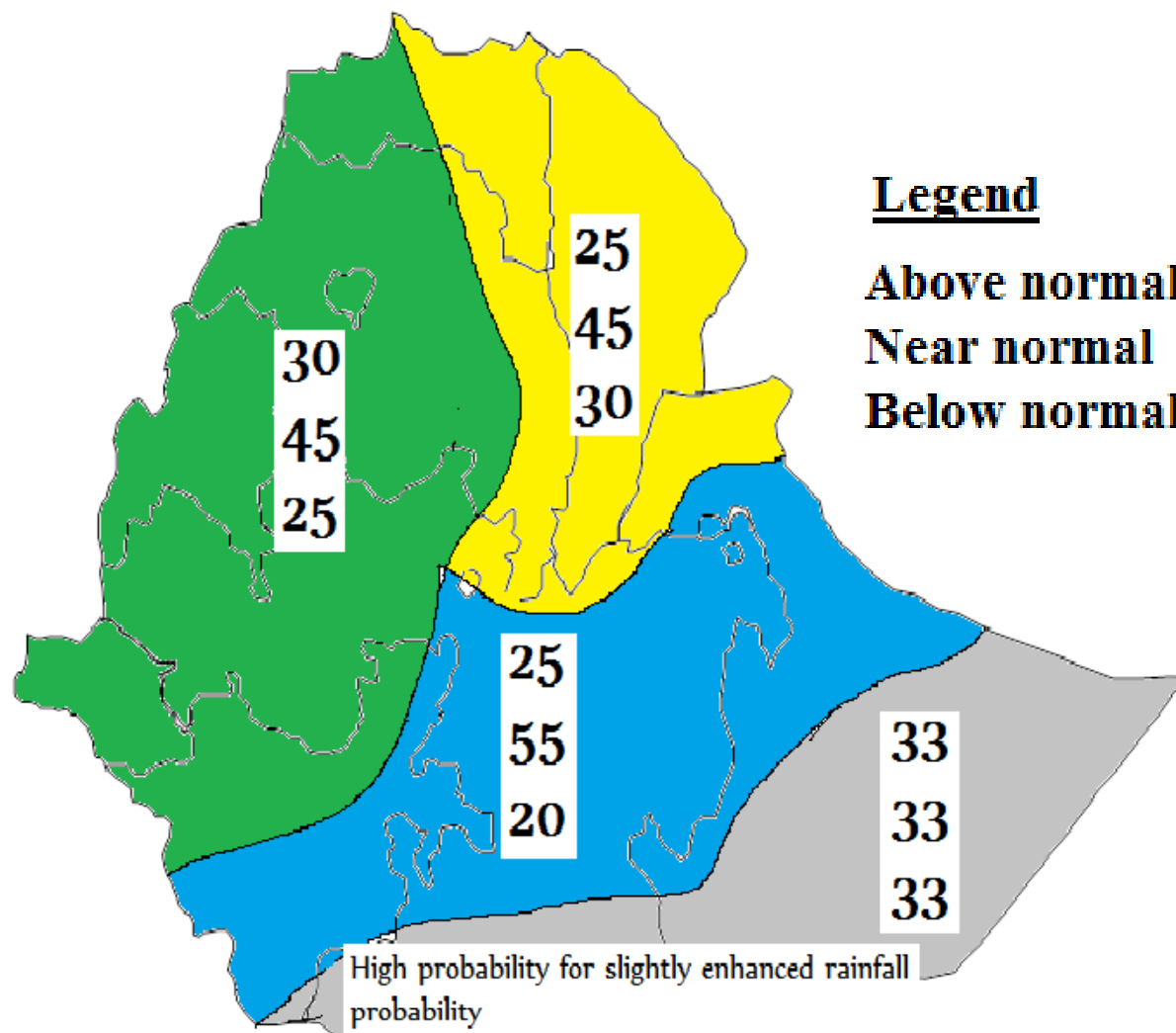


EUPORIAS

EMS Annual Meeting 2014, Prague, 6-10 October



Tercile rainfall probability for Kiremt 2014 season



EUPORIAS

EMS Annual Meeting 2014, Prague, 6-10 October

ENEA

THE LEAP PROTOTYPE

EUPORIAS

EMS Annual Meeting 2014, Prague, 6-10 October



The LEAP Prototype (Hindcast)

1. Data processing

- 1.1 Statistical downscaling of rainfall patterns from global forecasts
- 1.2 Data formatting and handling for LEAP
- 1.3 WRSI and needs computation in LEAP using downscaled forecasts

2. Evaluation of forecast skill

- 2.1 Evaluation of forecast skill for simple indices (rainfall patterns and water balance)
- 2.2 Evaluation of forecast skill for derived products (WRSI and beneficiary estimates)

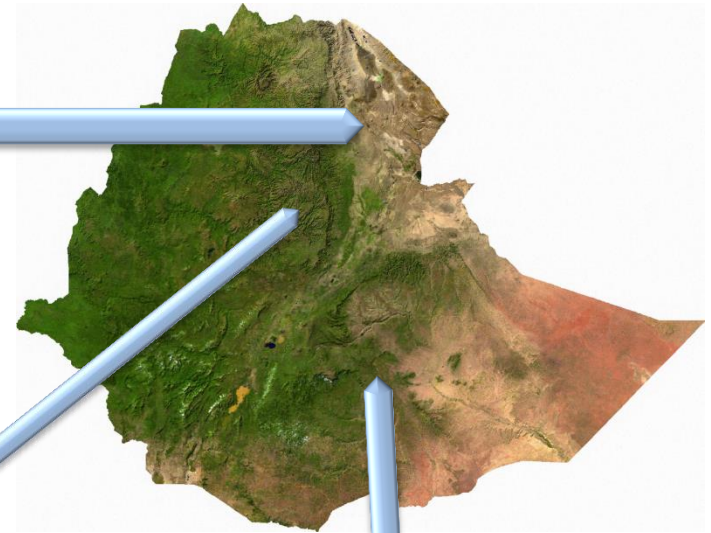
3. Data visualization

- 3.1 Tertile probabilistic maps of rainfall and/ or WRSI
- 3.2 Visualization of uncertainty in needs estimates

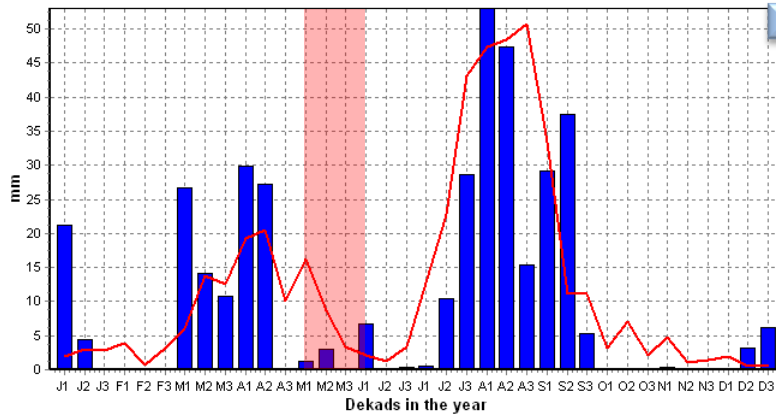
4. Assessment of value of the prototype for decision-making

- 4.1 Assessment of impacts of past El Nino events on food security in Ethiopia
- 4.2 LEAP cost benefit analysis (CBA) using hindcasts.

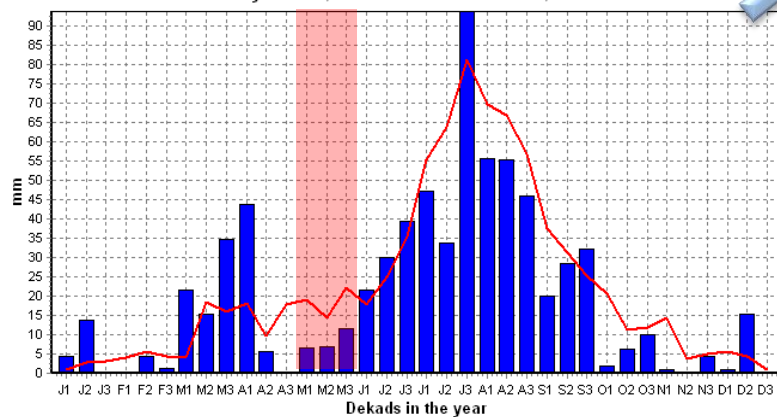
Rainfall patterns



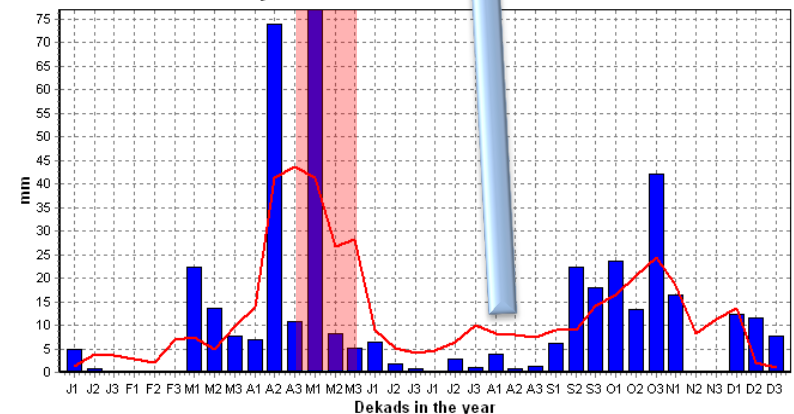
Rain (dataset RFE2) for area AFAR ~ ZONE 4
January dekad 1, 2002 To December dekad 3, 2002



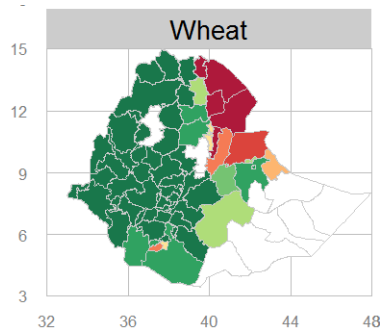
Rain (dataset RFE2) for area AMHARA ~ EAST GOJAM
January dekad 1, 2002 To December dekad 3, 2002



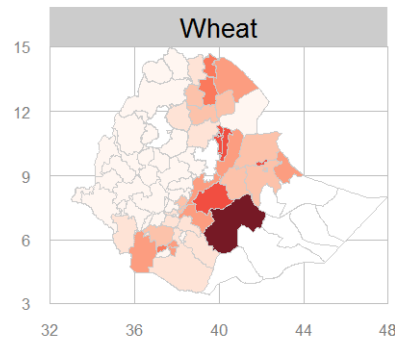
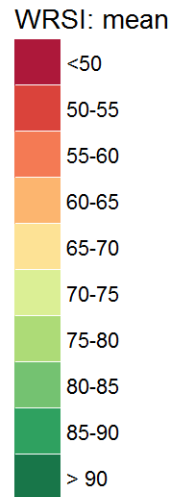
Rain (dataset RFE2) for area OROMIA ~ BALE
January dekad 1, 2002 To December dekad 3, 2002



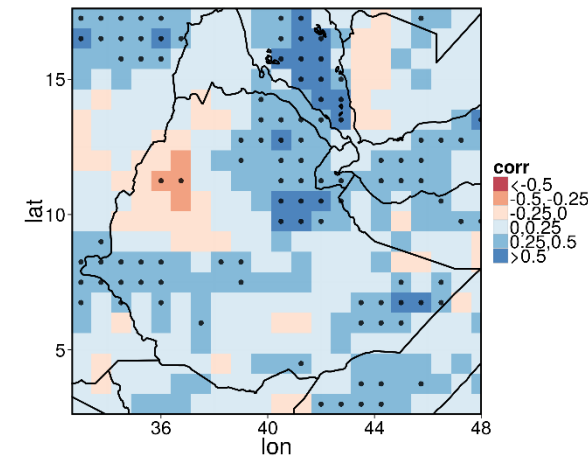
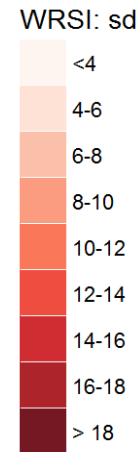
Risk vs Skill



Mean WRSI
Rainfall: RFE2.0



WRSI variability (SD)
Rainfall: RFE2.0



Pearson correlation
Data: 51-member ensemble mean.
Reference: REF2.0

Summary

- We have identified a decision making process where information derived from seasonal forecast may add value.
- System 4 has some skill in areas that are exposed to the risk of severe drought.
- Work in progress towards allowing the access to seasonal forecast data through LEAP.
- Plan is to assess the potential add value of hindcasts



THANK YOU