

Best Practices for Yield Estimation

Global

- Uses (Food Aid, Market Stability, Food Security)
- Summary of Methods:
 - o RS Empirical historic national statistics
 - o Convergence of evidence
 - o Analog years
 - o Official Stats
- Systems:
 - o USDA/FAS
 - o FAO GIEWS
 - o CropWatch (China)
 - o MARS STAT/FOOD
 - o FEWS
 - o FAO STAT

National

- Uses (Food Aid, Market Stability, Food Security, Farm Programs, Risk Mitigation)
- Methods
 - assimilation of RS-derived bio-physical parameters into crop growth models
 - empirical models (based on historical national statistics or in-field sampling)
 - area based sampling
 - Market prices
- Examples:
 - US
 - China
 - India
 - Brazil
 - Canada
 - Uganda
 - FEWS national programs

Sub-national

- uses (crop insurance, farm management, farm programs, risk mitigation)
- methods
 - ground observations
 - assimilation of RS-derived bio-physical parameters into crop growth models
- examples
 - RMA
 - CropWatch (China)
 - private sector (i.e. crop insurance)

Issues to address

- Accuracy
- yield indicators vs. forecasts vs. post harvest stats
- Models driven by historic official stats vs. driven by ground observations
- multiple reporting sources
- biophysical inputs into models vs. vegetation indices (biophysical parameters derived from EO may be better indicator of crop potential – may depend on crop phenology and crop type)
- Categorize methods & model inputs according to cropping system, crop stage, crop type, timing of forecast
- biofuels