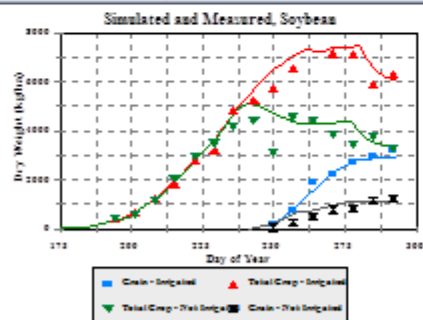
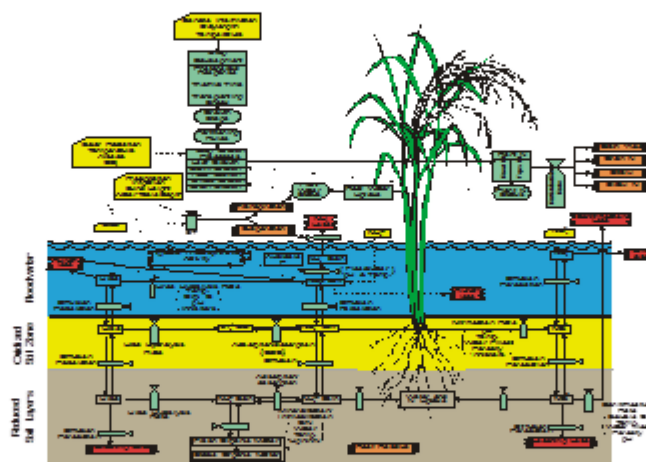
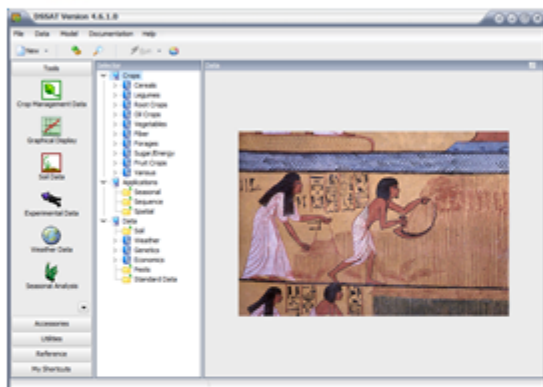


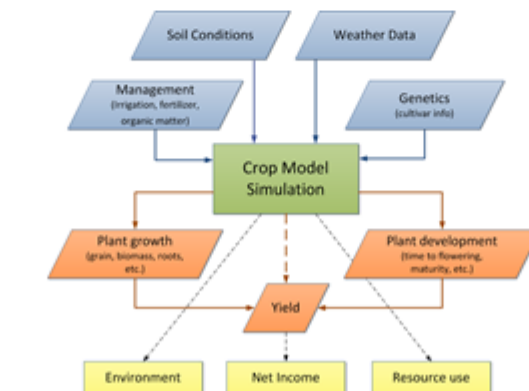
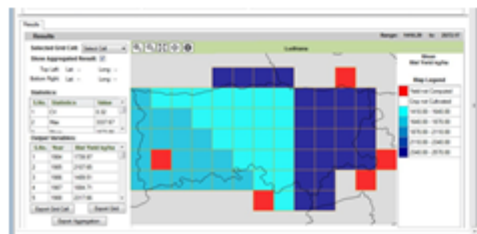
# Gerrit Hoogenboom

## Crop Modeling and Decision Support Systems

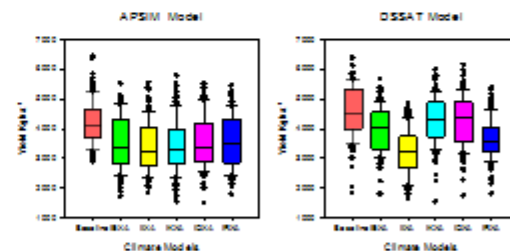
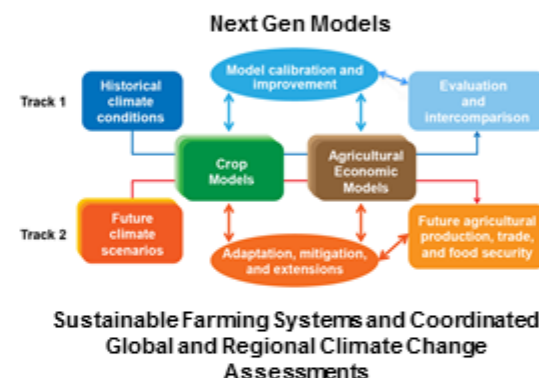
"From gene-based modeling to policy recommendations"



**CRAFT : The Climate Change, Agriculture and Food Security (CCAFS) Regional Agricultural Forecasting Toolbox**



Dynamic simulation of growth, development and yield



**Food Security in Punjab, Pakistan**  
Adapting rice-wheat farming to climate change



**AgMIP**  
Policy Brief  
Key Messages Punjab, Pakistan  
Adaptation using different crop varieties and management practices can help reduce production losses and poverty risks caused by increases in temperature and greater rainfall variations.  
Climate change in the Pakistan Punjab region is predicted to increase the temperature of up to 3°C, increasing rainfall, and drought.  
Increased crop production is expected to increase the average of 10% to 15%.  
Heavy rainfall and increasing flooding may cause loss of soil and crops, affecting food security.  
Water stress of irrigation water in the Punjab area could lead to increased production.  
Punjab is a rice-wheat, wheat, and cotton area. Rice is a water-intensive crop, and cotton is a drought-tolerant crop. The shift from rice to cotton could lead to changes in water use and crop production.  
The model predicts that the adoption of better crop varieties and management practices could lead to a 10% to 15% increase in crop production.  
Additional adaptation measures could be implemented to reduce the negative impacts of climate change.