



MWCropDSS 2.0 Minimum Data Set for Model Application to assess impact of climate change scenarios on rice production and food security

Introduction

Agricultural systems are becoming ever larger and increasing complex as climate change evolve. Scarce agricultural resources, water and nitrogen, make efficiency critically important, and with respect to crop production and food security context that involves many stakeholders with conflicting objective and priorities, it is feasible and appropriate to deal with major land use policies and investments in a holistic manner with involvement of multiple interest groups and organizations. This exercise introduces the assessment of the impacts of climate change using the MWCropDSS, a new version of CropDSS version 1.0, using CSM model, i.e. CSM-CERES rice model, on production systems and the connection to food security at the provincial level. It assumes that the user is familiar with DSSAT and its associated tools to create the appropriate input files to run the CSM model.

Objective

To provide a clear and concise summary for MWCropDSS spatial data preparation for model application under climate change scenarios.

Spatial Data (Map in Shapefile format)

Administrative boundary

Map of administrative boundary.

- PRVCODE (Provincial code)
- PRVNAME (Provincial name)
- AREA_M (Area of the province in square meter or sq.m.)
- AREA_RAI (Area of the province in rai-a Thai's area measurement unit = 1,600 sq.m.)
- HECTARES (Area of the province in hectare)

Crop area boundary

Map of cropped area under investigation, with the following attribute fields;

- SMUCODE (Simulation Mapping Unit which is a combination of WSTA code and SOIL_ID)
- HECTARES (Area of the SMU in hectare)

Attribute Data (in text file format)

Soil series data

See SOIL.SOL file under DSSAT v4.5 shell for details.

Climate scenario weather data

See any weather data file under DSSAT v4.5 shell for details.

Crop management data

See any weather data file under DSSAT v4.5 shell for details.