

Progress report on Advancing Methods for Global Crop Area Estimation, Matt Hansen, PI

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Reporting period - June 1, 2011 to December 21, 2011

Referring to the workplan on the following page, our progress to date includes derivation and application of generic MODIS-based growing season soybean indicator maps for the United States, Argentina and Brazil. We have aggregated those products to our sampling frame of 40km by 40km blocks and derived low, medium and high indicated soybean strata. Samples, 25 per stratum, have been selected as the basis for Landsat analysis. For the United States, all of the Landsat data have been downloaded. The method is employing three Landsat inputs: pre-peak condition, peak condition and post-peak condition Landsat images. The 75 U.S. samples are currently being mapped into soybean/no soybean characterizations. We have provided to USGS EROS the path/row locations of our sample blocks for Brazil and Argentina and EROS has tasked Landsat 7 to acquire every overpass for these locations from December through March of 2011-12.

RapidEye data for the U.S. have been collected, 7 images in the high soybean stratum, 4 in the medium and 3 in the low. These are currently being mapped as soybean / no soybean / no data classes for comparison with the Landsat depictions. RapidEye have also been tasked in a similar fashion for Brazil and Argentina with acquisition windows ranging from January 1 to March 1.

Field visits were also conducted for 5 sample blocks in the United States. For Brazil, counterparts at INPE are planning visits to a number of sample blocks this January and February. For Argentina, a February visit is planned by the PI to counterparts at INTA who are coordinating a visit to 6 sample blocks.

The United States data sets have been collected and are in the process of characterization, with a complete end-to-end analysis due early next year. Data collection is underway for Brazil and Argentina. China and a second application of the method for the United States await the August 2012 timeframe.

Workplan – red indicates completed task, blue indicates in progress.

Tasks	10-15-2011 to 5-31-2012	6-1-2012 to 5-31-2013	6-1-2012 to 5-31-2014
1 – Derive and apply generic growing season MODIS soybean indicator maps	United States - 2011 Argentina - 2012 Brazil - 2012	United States – 2012 China - 2012	
2 – Allocate Landsat samples	United States – acquire/pre-process and interpret Argentina – acquire/pre-process Brazil – acquire/pre-process	Argentina – interpret Brazil – interpret China – acquire/pre-process and interpret	
3 – Acquisition and mapping of RapidEye data	United States – interpret 2011 imagery Argentina – acquire and interpret 2012 imagery Brazil – acquire and interpret 2012 imagery	United States – acquire and interpret 2012 imagery China – acquire and interpret 2012 imagery	Produce Landsat-RapidEye area estimation intercomparison analysis
4 – Product synthesis, including national estimates and uncertainty analyses	United States – produce first end-to-end analysis	Argentina – complete national analysis Brazil – complete national analysis China – complete national analysis	Global synthesis analysis