



Operational Remote Sensing Program Requirements

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Remote sensing methods and technologies have advanced significantly in recent years and are becoming embedded and operational in many organizations and some Agricultural Statistical Agencies. The United States Department of Agriculture's National Agricultural Statistics Service (NASS) has used remote sensing to internally produce crop acreage estimates in an operational mode since 2007. Today, in-season acreage estimates are generated for 20 different crops in over 27 of the major producing states. This paper will outline the basic requirements for an operational remote sensing program; satellite imagery, ground reference data, image processing and geographic information systems (GIS) software applications, highly trained staff, robust geospatial and statistical methodologies, and have the capacity to meet strict deadlines. First and foremost, a reliable, frequent, cost effective, and timely source of medium resolution satellite imagery must be available for the area of interest. Second, a source of robust annual inventories of ground reference data is essential for the current year crops as well as at least quinquennial updates for the non-agricultural land cover area. Thirdly, adequate computer and software resources are required with readily available Commercial off the Shelf (COTS) applications to process and derive the remote sensing land cover classifications and calculate area estimates. A trained workforce with software knowledge and fluencies in the methodologies are prerequisites. Accurate estimates must be produced in a timely manner to be useful for agricultural stakeholders, with final public dissemination of the geospatial land cover data completing the process.

Keywords: geographic information systems; satellite imagery.