

Remote Sensing Application in China's Crop Acreage Estimation

Wei ZHOU

National Bureau of Statistics, Beijing, China weizhou@263.net

To acquire the planted acreage of major grain crops in a timely, accurate and cost-effective way is a goal for the National Bureau of Statistics (NBS) of China. In recent years, NBS has collaborated with some research institutes to apply the remote sensing technology in improving the method for crop surveys, especially in the acreage estimation for major grain crops. In the Chinese context, the remote sensing application in crop survey currently emphasized the following three aspects. First, by using multi-source and multi-temporal remote sensing imagery to extract the land cover types and major planted crops, an area frame is constructed and updated for crop sample design. Second, a strategy of sample selection is developed in order to make reasonable stratification and select samples to be surveyed as ground truth. Finally, combining the ground survey data with the classified grain acreage from remote sensing imagery as an auxiliary data, a linear model is adopted to produce the crop acreage estimation with a satisfied precision. Taking the year 2011's autumn crop survey in Heilongjiang province with the support of remote sensing imagery as an example, this paper illustrates the whole procedures.

Key Words: Area Frame, Support Vector Machine, Sample Selection, Linear Regression Estimation.