Volume XXXIX-B3

Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXIX-B3, 421-425, 2012
www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XXXIX-B3/421/2012/
doi:10.5194/isprsarchives-XXXIX-B3-421-2012

MAPPING MAJOR CROPPING PATTERNS IN SOUTHEAST ASIA FROM MODIS DATA USING WAVELET TRANSFORM AND ARTIFICIAL NEURAL NETWORKS

N. T. Son[1], C. F. Chen[1], and C. R. Cru[2]

[1]Center for Space and Remote Sensing Research, National Central University, Jhongli, Taiwan
[2]Department of Civil Engineering, National Central University, Jhongli, Taiwan

Keywords: MODIS data, Croplands, Wavelet transform, Artificial neural networks (ANNs), Southeast Asia

Abstract. Agriculture is one of the most important sectors in the economy of Southeast Asia countries, especially Thailand and Vietnam. These two countries have been the largest rice suppliers in the world and played a critical role in global food security. Yearly rice crop monitoring to provide policymakers with information on rice growing areas is thus important to timely devise plans to ensure food security. This study aimed to develop an approach for regional mapping of cropping patterns from time-series MODIS data. Data were processed through three steps: (1) noise filtering of time-series MODIS NDVI data with wavelet transform, (2) image classification of cropping patterns using artificial neural networks (ANNs), and (3) classification accuracy assessment using ground reference data. The results by a comparison between classification map and ground reference data indicated the overall accuracy of 80.3% and Kappa coefficient of 0.76.

Conference Paper (PDF, 2065 KB)

Citation: Son, N. T., Chen, C. F., and Cru, C. R.: MAPPING MAJOR CROPPING PATTERNS IN SOUTHEAST ASIA FROM MODIS DATA USING WAVELET TRANSFORM AND ARTIFICIAL NEURAL NETWORKS, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXIX-B3, 421-425, doi:10.5194/isprsarchives-XXXIX-B3-421-2012, 2012.

Bibtex EndNote Reference Manager XML