The Application of Satellite Remote Sensing Techniques for Monitoring Mangrove Forest in Yambye Township, Rakhine State, Myanmar

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Abstract

The study area lies between north latitudes 19° 5′ and 19° 25′ and between east longitudes 93° 50′ and 94˚5′. It is located in the northeastern part of Yambye Township, Rakhine State, and southwestern part of Myanmar. This Wunbaik mangrove forest is one of the largest mangrove forests in Rakhine State. The purpose of this study was to monitor the changes of mangrove forest cover spatially and temporally between 1990 to 2013. The multispectral and temporal Landsast data of 1990, 2005 and 2013 with 30 meter resolution were used for the classification of forest cover in the study area. Visual interpretation techniques were employed in the study for monitoring and mapping mangrove cover changes of this area. In the study, geo-referencing is done in WGS 1984 Datum with UTM Zone 46 North map projection system. The selection of classification algorithm was supervised classification techniques with maximum likelihood classifier for selecting a number of training samples. Generation of confusion matrix by using ground truth data and ROIs for the validation of results. The analysis of mangrove forest cover changes were carried out the use of change detection analysis based on ground check surveys. Then, presentations of forest cover map and the results of change detection analysis for Wunbaik mangrove area. Therefore, satellite remote sensing techniques can be an effective tool for mangrove researchers, planners, and provide important & useful information for many resource management decisions relating to the long term management of mangrove forests.

Keywords: satellite, monitor, landsat, resolution, geo-referencing, WGS, UTM

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