Land use and cover mapping with airbone hyperspectral imager in Setiu, Malaysia.

ABSTRACT

In recent years, land use and land cover plays a pivotal role in global environmental change. Under these circumstances,the need of a new dimension for detecting land use and cover is getting more imperative for conservation and effective management of land use and cover types. Importantly, the use of information technology to support decision making in detecting land use and cover is essential and recent. One of the technologies used is Airborne Remote Sensing. The objective of this study is to identify, quantify, classify and map land use and land cover mapping in Setiu, Terengganu using UPM-APSB's AISA airborne hyperspectral remote sensing. Detection of land use and cover was performed using airborne hyperspectral imaging data taken on 20 April 2006 with the support of existing land use and cover maps. The size of the study area is 100 ha. The image was displayed in ENVI 4.0 Software using bands 202217 (RGB) combination. The data were then enhanced and classified for different land use and cover classes. From the data analysis, the image can be classified into eight classes. The classes are 2-3 years old oil palm plantation, 4-5 years old oil palm plantation, young (3-4 years old) rubber plantation, matured (15-17 years old) rubber plantation, vegetation crops, open area, road and river. The land use and land cover classes area distribution of the plots under study in Setiu, Terengganu were 4.18 ha, 8.58 ha, 6.26 ha, 70.43 ha, 2.98 ha, 2.31 ha, 2.78 ha, and 2.48 ha. Overall, the classification accuracy of interpretation of the airborne imagery for land use and cover in Setiu, Terengganu is 89.51 and kappa coefficient is 0.86. This study shows that, airborne hyperspectral remote sensing technique is capable in identifying, quantifying, classifying and mapping land use and cover in Setiu, Terengganu, hence a good decision support tool in land use and cover planning and management.