Abstract

Several studies have been carried out to find an appropriate method to classify the remote sensing data. Traditional classification approaches are all pixel-based, and do not utilize the spatial information within an object which is an important source of information to image classification. Thus, this study compared the pixel based and object based classification algorithms using RapidEye satellite image of Eti-Osa LGA, Lagos. In the object-oriented approach, the image was segmented to homogenous area by suitable parameters such as scale parameter, compactness, shape etc. Classification based on segments was done by a nearest neighbour classifier. In the pixel-based classification, the spectral angle mapper was used to classify the images. The user accuracy for each class using object based classification were 98.31% for waterbody, 92.31% for vegetation, 86.67% for bare soil and 90.57% for Built up while the user accuracy for the pixel based classification were 98.28% for waterbody, 84.06% for Vegetation 86.36% and 79.41% for Built up. These classification techniques were subjected to accuracy assessment and the overall accuracy of the Object based classification was 94.47%, while that of Pixel based classification yielded 86.64%. The result of classification and accuracy assessment show that the object-based approach gave more accurate and satisfying results

Keywords

RapidEye Satellite Image, Pixel-based Classification, Object-based Classification