An investigation of how dose the accuracy of validation data and the definition of LC/LU classes affect the accuracy of land cover maps at the global scale

ABSTRACT

Accurate and timely land cover information is essential to parameterize land surface processes in regional-to-global scale. Remotely sensed imagery has several advantages including its objectivity, synoptic view, large scale and relatively short time intervals. A series of satellite derived land cover products were generated to provide for the science community. To know the accuracies of those data in global scale, relative evaluation of these data and validation with global scale are crucial. Previous researches have translated the different legend into a compatible legend to compare different land cover maps and their accuracies. Although efforts in harmonization and validation are mentioned in nearly all related mapping projects, there is only limited compatibility and comparability between these different maps and their thematic legends. The purpose of this study is to investigate the impact of thematic legend and the accuracy of validation data on the accuracy of global land cover map. The three land cover products used in this study are MODIS C5, GLCNMO 2005 and GlobCove 2009. In order to do this, we define a new matric legend which presents the land cover and land use type separately. The volunteered data used to generate the ground reference data set provided by Degrees of Confluence project and the Google Earth derived reference data were used as validation data.