An analysis of land use/land cover changes using remote Sensing data and its impacts towards sediment loading In Padas river sub-catchment

ABSTRACT

Human activities surrounding natural rivers may cause its profile area to change in terms of depth and size. The objective of this study was to investigate the land use and land cover (LULC) changes and its impacts towards the soil stability on the sediment loading. Two satellite images Landsat 5 for year 1991 and Spot 5 for year 2010 were classified using remote sensing and Geographic Information System (GIS) which describe the land cover and land use change (LULC) within 20 years of time for the river sub-catchment. The study area was classified into seven categories on the basis of field study and remote sensing data. From the images, the land use alteration was dominated by palm oil with an increase of 16.84% and rubber plantation showed a declination of 31.29%. Meanwhile for land cover, cleared land area show the highest alteration with an increase of 22.63% while forest area showed declination with 18.68%. By using statistical methods, the trend analysis of suspended sediment was performed by One Way ANOVA with post-hoc comparisons test and the results showed that the suspended sediment concentration has increased by 10.07% (15.69 mg/L) from 1991 to 2010. This study shows that the conversion of forest and rubber areas to palm oil and urbanized area around the sub-catchment area have increased the sediment contribution to Sg. Padas, Beaufort.