

Satellite Imagery System in Water Resources Management: Impacts from the Land Use and Land Cover Change

ABSTRACT

Background and Objective: Water Resource is a critical requirement of human existence for all social and economic endeavors. The occurrence of high human activities, especially in agriculture, tourism and industry breaks the balance between water supply and demand that significantly increases the vulnerability of regions into more damaging impacts. The main objective of this study is to determine the increase in water demand by land-use changes and at the same time to assess the land use and land cover change in the region. **Materials and Methods:** The research was performed by remote sensing Landsat 8 Operational Land Imager/Thermal infrared Scanner (OLI/TIRS) 30 m Satellite Imagery analysis. **Results:** The findings show that the average rate of increase in water demand was estimated at 0.22% each year for domestic, commercial and industrial sector usage and 43.08% per year for the agricultural sector. **Conclusion:** This study shows how different water extraction by the society through land-use change has affected the water availability throughout the region.