**Land Use Land Covers Changes before and after Constructing Lower Paunglaung Dam**

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Abstract—In this study, Lower Paunglaung dam is chosen for the case study. It is located at 19 º 47' 17" north latitude and 96 º 19' 59 " east longitudes in Mandalay Division boundary area in Myanmar. This project is on the Paunglaung River, a tributary of the Sittaung River. It is located southeast of Pyinmana Hill in southwestern Shan State, just 13 kilometers from Nay Pyi Taw. It is an underground power station with an installed capacity of 280 MW and 911 GWh annual generation. It aims to meet water demand for irrigation and to generate the hydropower. It was started in 1998 and commissioned in 2005. The climate of the study area is semi-arid region. This study presents the land use land cover changes (before and after) due to the constructing of Lower Paunglaung dam. In this study, DEM is created from source data (contour lines or point data) through the process of interpolation. The contour maps (1:50000) of the study area are imported to ArcGIS software. These maps are digitized and digitized topographic maps are used in preparation of DEM with cell size 5m x 5m. And then, watershed is delineated from a DEM by computing the flow direction or flow accumulation and using it in the watershed function. After that, the watershed area of the Lower Paunglaung dam is approximately 317.2 km2 and the flooded (or) reservoir area is approximately18 km2 according to the GIS map analysis. A false colour composite of the ASTER image for the study area is generated and geo-referenced based on the WGS 1984 and Zone 47. The satellite images (Landsat ETM and IRS) of 2000 and 2010 are used to classify the land use land cover maps. The rectified images are interpreted using the method of unsupervised classification (Kmeans) in the ENVI 4.2 package. In conclusion, a combination of aerial photographs and satellite remote sensing (IRS) images is used for land use land cover classification and analyse the land use land cover changes between 2000 and 2010 of the study years.

Keywords— Lower Paunglaung dam, topographic maps (1:50000), satellite images, digital elevation model, watershed area, land use land cover.

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