

Identification of the Natural Drainage Pattern and Evaluation of Incongruent Land Uses: Based on Northern Province

P. Bharathy¹ and K. Suthakar²

^{1,2}Department of Geography, University of Jaffna, Sri Lanka.
bharathyonnaiah90@gmail.com

ABSTRACT:

Water is an important resource in all natural resources on surface of the earth. As, water is required for living and other associated activities, we have to protect natural drainages and catchment areas. However the natural drainages and catchment areas are not protected because of increasing population, development process occurred in village and town, improper land uses, war and war actions. Hence, barriers have occurred along with drainage courses and which causes for the flood, draught and other natural disaster and consequently there were impacts on social, economic and environment. To minimize the above impacts we have to identify the land use on natural drainage tendency. In recent years data gathered from advanced remote sensing technologies in the form of Digital Elevation Model (DEM) and used in researches relevant to the natural drainages. There are number of catchments and natural drainages are located in the Northern Province, however, no researches were carried out to identify and to map the same using the satellite remote sensing technologies. This research was carried out for the purposes of identifying the natural drainage pattern using DEM from ASTER satellite, to map land use pattern from satellite images and to evaluate land uses which are incongruently located on the path of natural drainage pattern in the Northern Province. Accordingly, 5.2 percentages of built-up land and residential land use and another 6.2 percentage of agricultural land use were identified along the paths of natural drainages and these land uses are significantly reduced or blocked the run off of the natural drainages. This study helps to gain comprehensive knowledge on natural drainage patterns and catchments, to manage the water resources and to allocate land for land uses on sustainable basis.

Keywords: digital elevation model, natural drainages, incongruent land uses, Vanni Region.