ANALYSIS OF SOIL EROSION PATTERN DUE TO HUMAN INTERVENTION IN THE WATERSHEDS OF TUNGABHADRA SUB-BASIN

VARUNA, M [1]. RAJESH GOPINATH [2] AND FATHIMA SAMANA, S [3].

[1] ASSISTANT PROFESSOR, DEPARTMENT OF CIVIL ENGINEERING, RVCE, BANGALORE, INDIA.
varun.m07@gmail.com

[2] ASSISTANT PROFESSOR, DEPARTMENT OF CIVIL ENGINEERING, AIT, BANGALORE, INDIA.
rajesh_rapidforce@yahoo.co.in

[3] ASSISTANT PROFESSOR, DEPARTMENT OF CIVIL ENGINEERING, AIT, BANGALORE, INDIA.
samanafathima@gmail.com

ABSTRACT

Soil erosion is a gradual process occurring due to the natural forces of wind, rainfall and surface run-off. Lately, its rate has accelerated due to human intervention. The current study is aimed at analyzing the soil erosion pattern for three watersheds of Tungabhadra sub-basin, namely Kumudavathi, Meruru2 and Meruru4. To achieve the objective, the research envisaged the physical characteristics of the watersheds by Morphometric analysis. Also, the Drainage Maps and Contour maps were prepared with the aid of Topographic maps obtained from the 'Survey of India' and 'Watershed Atlas'. Finally, soil erosion was determined by the 'Universal Soil Loss Equation'. The analysis has revealed a startling annual potential soil loss of 20.16, 46.08 and 32.90 tonnes/hectare for the aforementioned watersheds, respectively. The loss was found maximum in Meruru2, as the watershed was subjected to tremendous deforestation and mining activities being highly prevalent in Bellary region. Also, the loss in other 2 watersheds can be attributed to the makeover of the inherent land-use patterns to urbanization, industrialization, agricultural practices etc. The control measures apart from being sustainable, also need to focus on afforestation and preservation of tree cover mainly along the steep contour of the terrain.

KEYWORDS: Erosion, soil, deforestation, Tungabhadra, land-use.