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A CASE STUDY

Google earth engine based assessment of soil loss using the RUSLE Model: A study of Cauvery Delta Zone, Tamil Nadu, India

■ **Selvakumar Selvaraj, Venkadesh Samykannu, Boomiraj Kovilpillai and Rajarathinam Palanivel**

SUMMARY

Tamil Nadu is very susceptible to soil erosion due to its deforestation, urbanization, complicated terrain and heavy rainfall. The objective of this study was to estimate soil erosion in the Cauvery-delta zone (CDZ) of Tamil Nadu, India, using the Revised Universal Soil Loss Equation (RUSLE) model in Google Earth Engine (GEE) platform. The GEE environment provides a faster and better method for spatial output maps. Several parameters including runoff-rainfall erosivity factor (R), soil erodability factor (K), topographic factor (LS), cropping management factor (C), and support practice factor (P) takes into consideration for RUSLE model. The result revealed that the annual average soil loss within the Cauvery delta zone is approximately 49.08 t/hac/year (metric tonne per hectare per year). The study area has a 45 % very high erosion risk, 42.6 % severe erosion risk, and 8.4 % high risk. Other erosion risk classes, such as slight and moderate erosion, accounted for 3 % and 1 % of the total area, respectively. The results of the study indicate that GEE allow targeted solution to reduce future soil erosion.

Key Words : RUSLE; Google earth engine, Soil erosion, Soil erosion intensity, The cauvery-Delta zone

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MEMBERS OF THE RESEARCH FORUM

Author to be contacted :
Selvakumar Selvaraj, Department of Soil and Water Conservation Engineering), Water Technology Centre, Tamil Nadu Agricultural University, **Coimbatore (T.N.) India**

Address of the Co-authors:
Venkadesh Samykannu and Boomiraj Kovilpillai, Department of Environmental Sciences, Agro Climate Research Centre, Tamil Nadu Agricultural University, **Coimbatore (T.N.) India**

Rajarathinam Palanivel, Department of Agronomy, Institute of Agriculture, **Trichy (T.N.) India**