Theme 3 | Soil data for policy and decision-making

Modeling Water Erosion in Mali: A spatial analysis for agricultural landscapes

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INTRODUCTION

Assessing soil losses and understanding the factors (including rainfall, soil characteristics, relief, vegetation cover, soil management and conservation practices) is essential to implementing sustainable interventions.

To address this challenge, we used the Revised Universal Soil Loss Equation (RUSLE) through Google Earth Engine platform, to identify vulnerable areas to the occurrence of water erosion in two water basins in southern Mali in 2023.

DATA AND METHODS

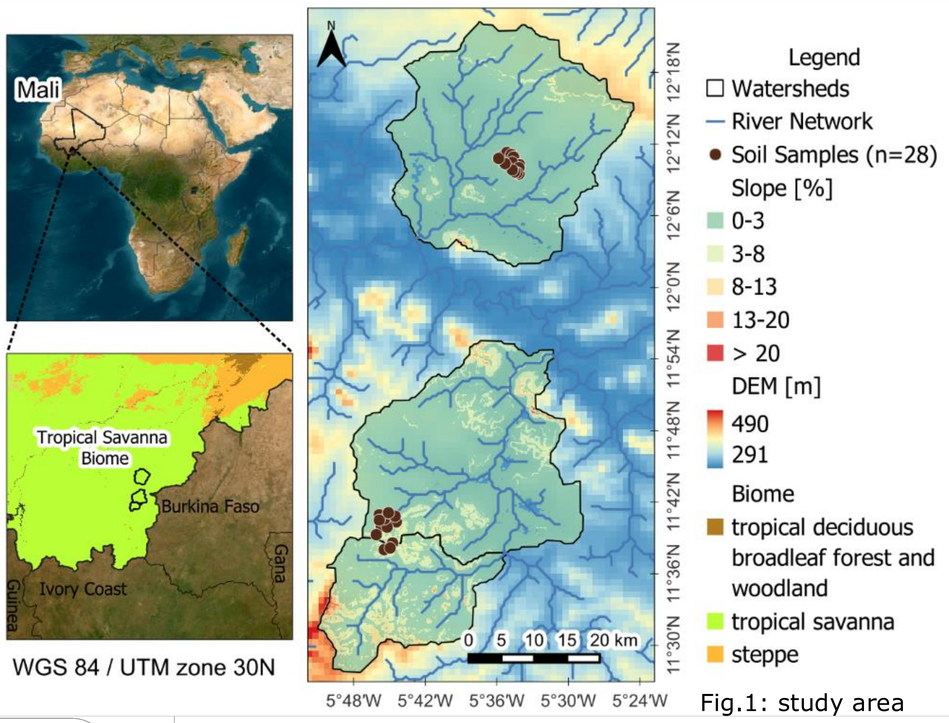

Fig.1: study area

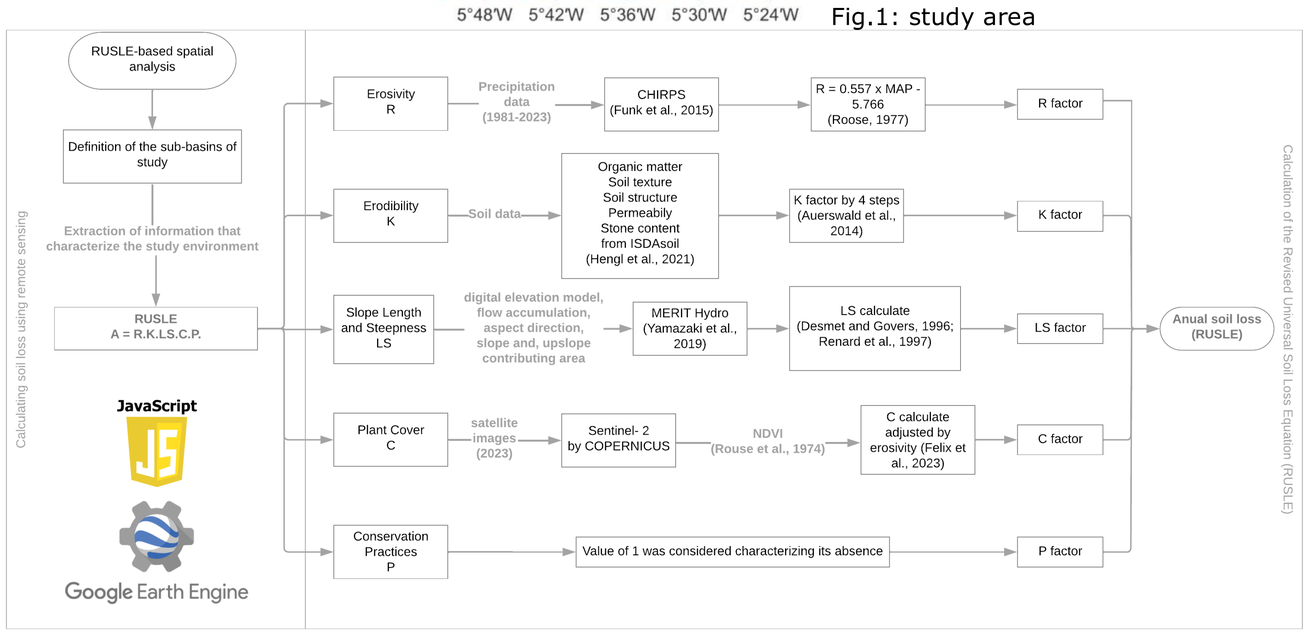

Fig.2: methodological flowchart

RESULTS AND DISCUSSION

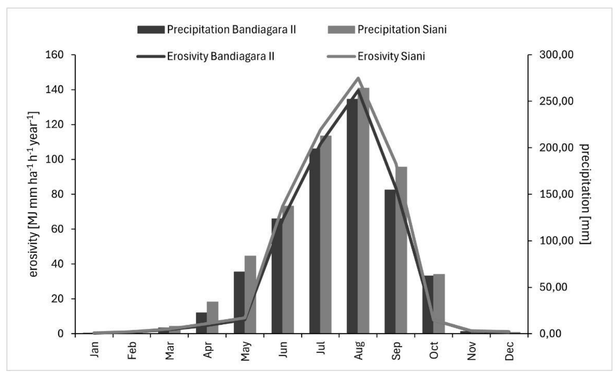

Fig.3: Influence of the temporal pattern of the monthly precipitation for the temporal patterns of the rainfall erosivity.

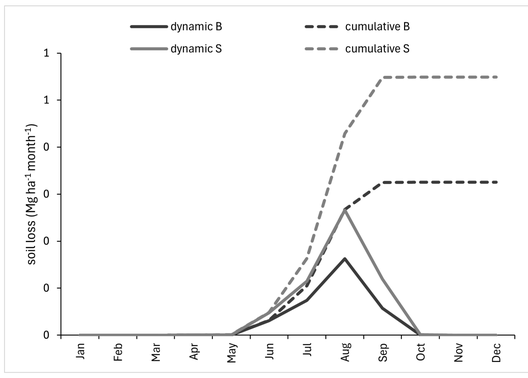

Fig.4:Comparison of the distribution of monthly soil loss rates (dynamic), a cumulative annual soil loss rate divided by twelve to result in a pseudo-monthly resolution and, cumulative soil loss rate.

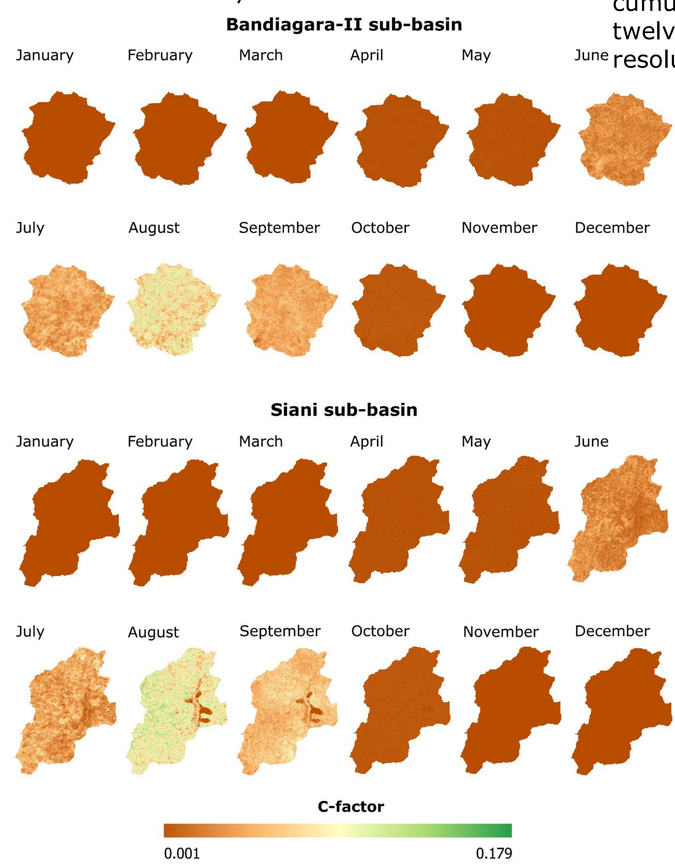

Fig.5:C-factor during the months of 2023 in the two sub-basins of Bandiagara II and Siani.

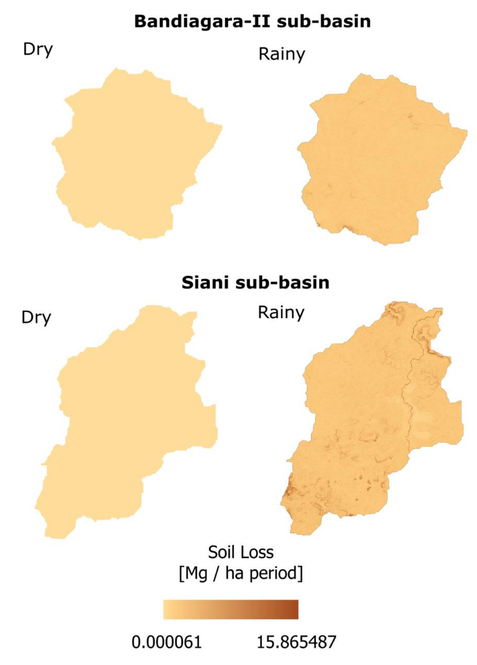

Fig.6:Spatiotemporal patterns of soil erosion risk in the dry and rainy season.

CONCLUSIONS

Modeling water erosion is crucial for planning interventions and implementing soil management and conservation practices, in order to ensure the sustainability of agricultural ecosystems.

ACKNOWLEDGEMENTS

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