



Reduction Model of Erosion and Sedimentation Watershed (DAS) on Brantas Upstream-Indonesia as an Attempt for Land and Water Resources Conservation



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BACKGROUND

- ✓ Damage to watersheds (DAS) in Indonesia is increasing along with deforestation for farmland and utilization of timber
- At this time the percentage of land use in the subzone Lesti is 0.92% of freshwater, 7.54% of gardens, 0.25% of meadow, 20% of residential, 21.6% of irrigated rice, 0.45% of forest, and 49.24% of land filled.

THE AIM OF THE RESEARCH

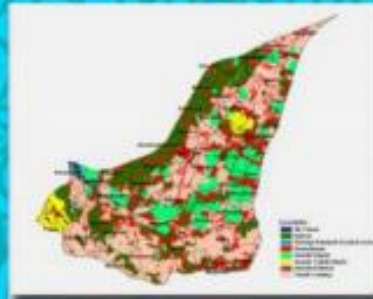
The aim of this study was to examine the erosion control techniques, sediment, runoff and designing functionality that supports the conservation area subzone Lesti as for the benefit of this model is to provide recommendations to the relevant agencies on the reduction of erosion and sedimentation models applicative that support conservation in the watershed.

METHOD

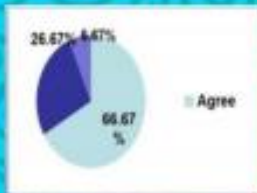
- ✓ The study was conducted in Sub-Lesti DAS, Brantas Upstream DAS, Malang, East Java province of Indonesia
- ✓ The main objective of the study was to assess the value of erosion, sediment and runoff in the subzone Lesti
- ✓ Sediments were taken periodically, especially during the rainy season and analyzed in the laboratory

LAND USE IN THE LESTI WATERSHEDS

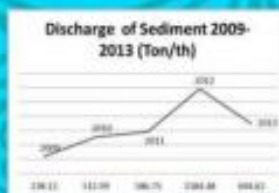
Java Map



A SURVEY OF THE COMMUNITY



SEDIMENT DISCHARGE



RESULT

The value erosion and sediment load in the Lesti watersheds flow were calculated using the formula of USLE. Correlation between the concentration of sediment drift (C) and the value of watershed discharge Lesti is C.

SCENARIOS OF LAND USE IN THE LESTI WATERSHEDS



CONCLUSION

- ✓ Correlation between the concentration of sediment drift (C) and the value of watershed discharge Lesti is $C = 0.0112 Q_w^{0.98}$
- ✓ Opinion society of agree land use change from the fields into the garden
- ✓ Model reduction of erosion and sedimentation were carried by scenarios of land use change that field into the garden with an area of garden 10%, 20%, 30% and 40%