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Parker & Troutman (1989)

Chakrapani & Subramanian (1990)

Reid (1993)

Bray & Xie (1993)

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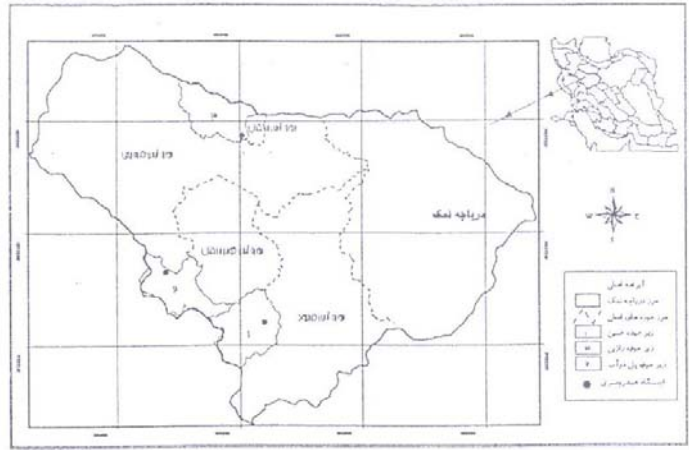
SPSS (GIS)

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Walling & Woodward (1995)

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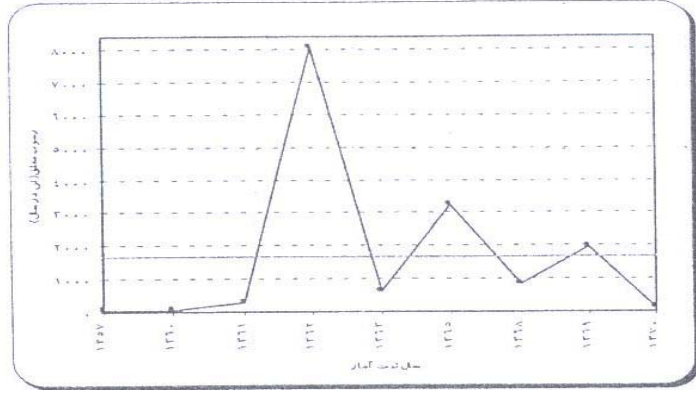
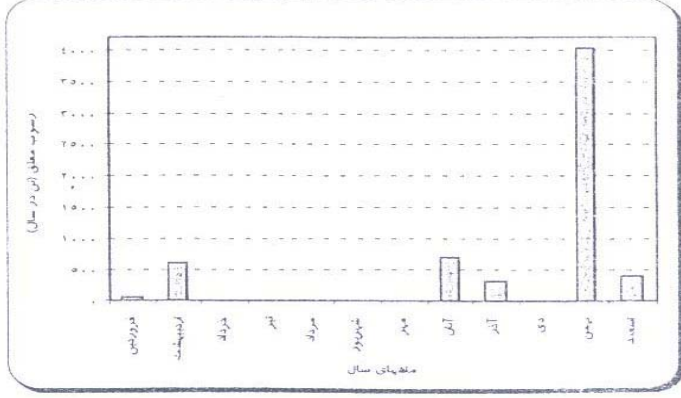
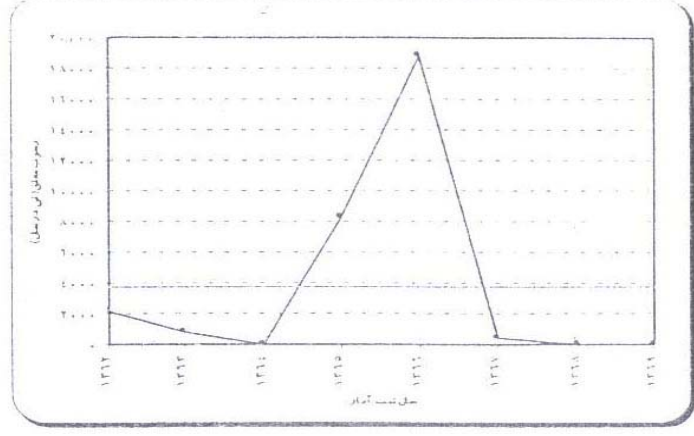
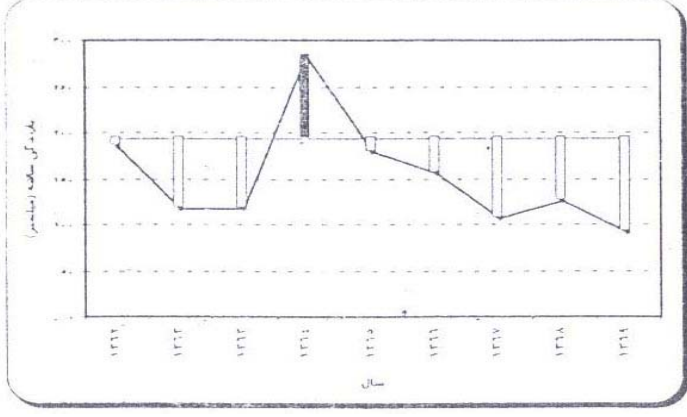
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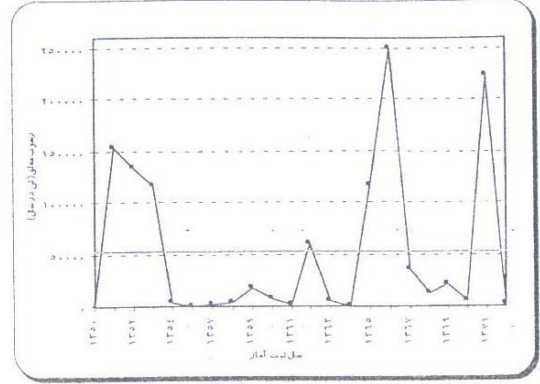
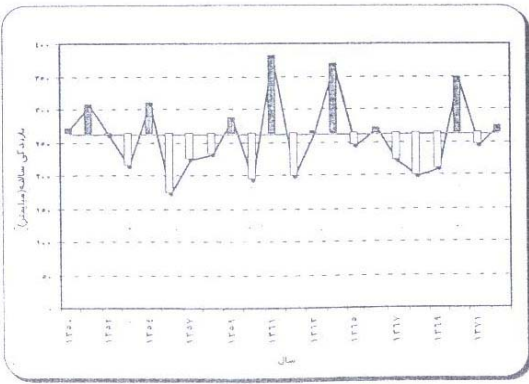
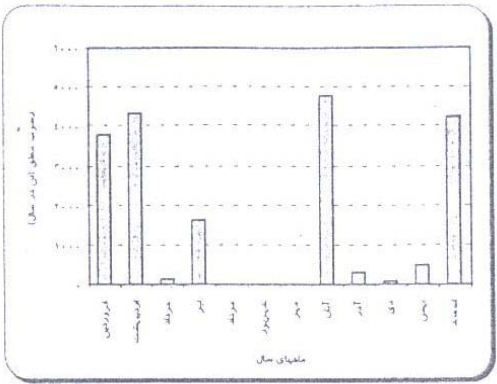
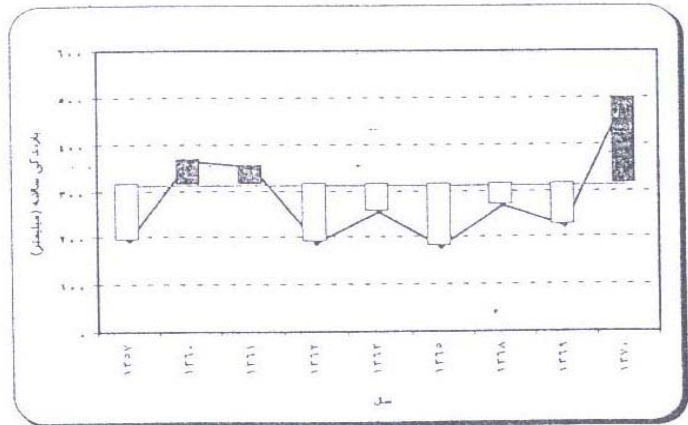
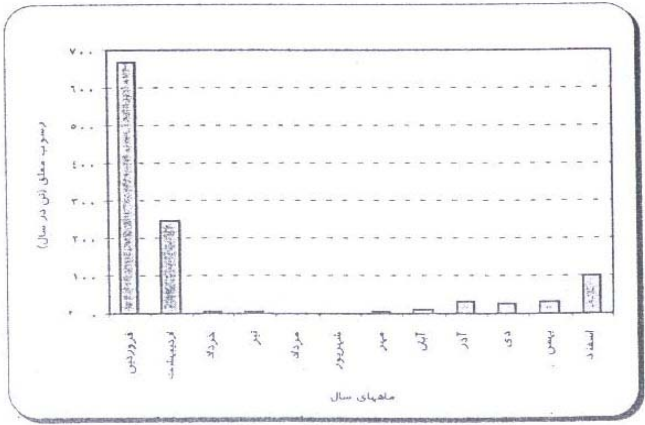
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Investigating effect of land use changes and geological formations sensibility to water erosion and sediment yield (Case study: Daryacheh - e – Namak)

S. Feiznia^{*1}, A. Mohammadi², M. Mohseni-Saravi³ and F. Ghadimi – Aross – Mahalleh⁴

¹ Professor, Faculty of Natural Resources, University of Tehran, I.R. Iran

² Senior Expert, Ministry of Jihad – e – Agriculture, Research Centre of Markazi Province, I. R. Iran

³ Associate prof, Faculty of Natural Resources, University of Tehran, I.R. Iran

⁴ Assistant prof, Technical University of Elmo – Sanaat, I. R. Iran

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Abstract

Three sub-catchment of Daryachen Namak Drainage Basin, including Khomain, Pole-Doab and Rasin, were chosen as the areas to be studied. By using remote sensing data, land use maps of the chosen sub-catchments for years of 1956 and 1995 were prepared by application of ILWIS software and changes in the land use were evaluated quantitatively. Later, based on geological maps and field controls, the map of the susceptibility of geological formations and rocks of each sub-catchment to erosion was prepared. Figures of water discharge and sedimentation in the last 24 years in three hydrometric stations in Khomain, Pol-Doab and Razin as well as precipitation figures, were received and variation of sediment yield in the three sub-catchments was determined. In the next stage, sedimentation variations in each sub-catchment, along with change in the land use in different periods and with various areas and different levels of sensibility to the erosion of geological formations and lithological units were compared. It can be concluded that least land use change and low sensibility of rocks to water erosion belong to Pol-Doab. In spite of low sensibility of existing rocks and formations in Rasin sub-catchment, its sediment yield is high in comparison to two other studied sub-catchments which was found out to be due to excessive land use change. Finally, it was figured out that both use change and sensibility of formations and rocks to erosion significantly contribute to sedimentation while the former has a greater effect on sediment yield.

Key Words: Daryacheh-e-Namak, Drainage Basin, Land use change, Rocks Sensibility, Sediment yield, Water erosion