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Soil electrical conductivity changes in tsunami affected Southern coastal belt in Sri Lanka

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The deterioration of soil fertility due to the salt pollution of agricultural fields has been a major concern since the 26th of December 2004, when the tsunami ravaged thousands of kilometers of coast along the shore of the Indian Ocean penetrating from 0.5 km up to several kilometers inland. In addition, it also poses a major environmental hazard by degrading the quality of groundwater, decreasing wildlife diversity, degrading roads. The main objective of the present research study is to investigate and identify soil Electrical conductivity changers in tsunami affected and unaffected areas.

Within this study area 21 auger points were selected to for collect soil samples and auger points are represent both tsunami affected and non affected area. From each auger point, soil samples were taken from surface layer and each 50 cm depth until reach water table and also water samples were taken from auger holes and from dug wells near to auger holes. Soil physical parameters such as specific gravity, soil moisture, were determined. Soil chemical parameters such as pH, electrical conductivity (EC), total dissolved solids (TDS), and salinity were measured using pH meter and EC meter. The electrical conductivity (EC) of the soil in the tsunami affected area varies from 100 µS /cm to 422 µS/cm. A direct relationship between EC and soil depth can be detected. This may be due to salt leaching from surface layers toward the lower depth in tsunami affected areas. This may be the tsunami saline water deposit in the unsaturated area above the water level dissolved by atmospheric precipitation in to the groundwater.

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