



**GIS-BASED MAPPING ON SALT WATER INTRUSION INTO  
AGRICULTURAL LAND: A CASE STUDY IN NINTAVUR GRAMA  
NILADHARI DIVISION (GND) - 10, SRI LANKA**

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**Abstract**

Salt water intrusion into the agricultural land is a critical issue and growing matter of concern in order to conserve the agricultural land and to promote the agricultural productivity. Therefore, this is to explore and estimate the salt water intrusion into agricultural land using GIS technique in the coastal area of Ampara District particularly in Grama Niladhari Division (GND) of Nintavur - 10. For this study, 20 soil samples were collected and Global Positioning System (GPS) was used and pinpointed for each sampling location. The matrix was developed and the field measurement carried out based on the real measured electrical conductivity (EC) and PH values for estimated GIS mapping approaches. Descriptive statistical parameters were employed for minimum, maximum, mean, standard deviation, and coefficient of variation (CV) to analyze soil property data. Also, Soil salinity indicators (EC and PH) were mapped as raster layers using the interpolation technique that Inverse Distance Weighting (IDW) in ArcGIS 10.3 environment. As a result, this study, the soil of the agricultural area closed to the seashore is seriously affected due to the saline water intrusion.

**Keywords:** Saltwater, agricultural land, intrusion, GIS technique

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