# Changes in Irrigation Water Quality with the Distance from the Sea at Kaluthawalai Village of Batticaloa District



**BY**

**Mutthulingam Yogendran**



**DEPARTMENT OF AGRICULTURAL ENGINEERING**

**FACULTY OF AGRICULTURE**

**EASTERN UNIVERSITY**

**SRI LANKA**

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# ABSTRACT

Ground water is important source for irrigation in the coastal area of Batticoloa district. In this area intensive crop production taking place in sandy soil of coastal area: where major crop production is carried out in these areas when compared with another area in this district. Generally with an ever increasing demand for irrigation water supplies, farmers are frequently faced with utilization of poor quality irrigation water. The continued application of irrigation water and over exploitation of irrigation water from the ground by the long term pumping caused poor quality and detrimental effects can on the irrigation water that leads to reduction in the quality and growth of the plants.

In Kaluthavalai village tube wells, dug wells, agro-wells and are main water sources for irrigation. There may be a problem identified in a level of salinity, sodicity sodium, cations concentrations, Total dissolved solids and the pH can occur in tube well water for irrigation near to the above mentioned water sources that due to the influence of the sea water intrusions in to the coastal aquifer. When considered all the problems near the sea, the present investigation was carried out with a view of assessing the irrigation water quality by the sea water intrusions and seepage along distance from the sea to coastal area. In the view of the above representative area was selected. The irrigation water sample were collected in the months of July and August and analyzed for the pH, EC, Cations (Na, Ca and Mg), and derived parameters, SAR, and Ca/Mg. Their characteristics were compared according to the sites and distance from the sea to find out the trend and the influence of sea on their quality.

Results of the chemical analysis showed that water Samples indicating the pH greater than 7.0 indicating the alkaline nature it is vulnerable to irrigation. EC of irrigation water The EC values increased with the increase in distance from the sea but not reach to permissible level. Even though, it expresses high salinity in increasing level. TDS demising from 200m and then increasing upto 300m distance, no restriction to irrigation. Na Concentration increasing with the increasing distance from sea. When considering cation concentrations Ca was dominant in this study. As the main emphasis of the monitoring study of the level, SAR value 100 percent samples suitable for the irrigation, but there is fluctuation during study. All the water samples in study showed the mean Ca: Mg ratios greater than one. According to the mean values the water samples collected during this study showed less Mg hazard.

# CONTENTS