# ABSTRACT

This study was conducted to evaluate the spatial temporal variability in the soil of Lahore District, covering physiochemical parameters (pH, EC, soil saturation, texture, organic matter), macronutrients (P, K, Ca, Mg), micronutrients (Mn, Cu, Zn, Fe) and heavy metals (Al, As, Cr, Na, Ni, Pb). Thirty four samples were randomly collected from different areas (agricultural land, landfill sites, residential and industrial areas) of Lahore district. Two samples were collected from each site, first from 0-6 inch depth and second from 6-12 inch depth. Heavy metals and nutrients were analyzed through ICPOES methodology, and physiochemical parameters were analyzed by comparing with already set International Standards. Results revealed that Lahore district keeps both alkaline and non saline soil with poor organic matter status. Soil texture identified as loam and clay loam. Macronutrients (K, Ca, and Mg) and micronutrients (Mn, Fe, Cu, and Zn) in the soil are available in adequate amount. Phosphorus concentration is poor in soil. Toxicity of Al, As, Cr, Ni and Pb does not exist in the soil because concentration of these metals is below the lethal level as per International Standards. But soil of Lahore District survives with toxicity of Na. Temporal change in land-use and land-cover were also measured through remote sensing technique using Landsat images. A notable reduction has been observed in green areas which have been converted into residential or commercial areas. Strict administrative monitoring and control is needed to prevent natural pattern of the soil, and continual studies should also be conducted.