Abstract

Most cities in Africa's developing countries are evidently growing leading to significant modification on climate over the cities that affect human comfort and his environment. Proper urban atmospheric planning and management are thus key to making cities environmentally sustainable. To achieve all these, urban weather and climate needs continuous monitoring to offer accurate, reliable and timely update of any significant changes. This study examined the modification of wind speed and direction by urbanization process. There is need to understand the modification of wind since the wind spped and direction greatly affects dispersion of pollutants in the city and distribution of heat which affect human comfort. The study utilized land surface albedo, decadal population data and daily wind speeds and direction. The wind was analyzed using wind rose plot and the population and albedo analyzed by carrying out trend analysis. The urbanization is evidenced by the reducing urban land surface reflectivity and the increasing population. Wind direction does not show modification by urbanization, however, its magnitude has exhibited a reduction with time. The reduction in wind speed is harmful to human and animal comfort and the environment at large. Practical approaches such as proper planning of the cities to minimize further modification by urbanization have been made. The choice of residential and industrial places is also emphasized with regard to these findings. The findings of this work are thus important for multi-sectoral use in the urban centres in Kenya.