

ENVIRONMENTAL CHALLENGES AND THE IMPACT OF DESERTIFICATION ON THE VEGETAL COVER IN PARTS OF JIGAWA STATE, NIGERIA

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Abstract: *desertification describes circumstances of land degradation in arid, semi-arid and dry sub-humid regions resulting from the climatic variations and human activities. The present threat of desertification in the Sahel region of Nigeria has reached an alarming stage where crops cultivation and animal rearing/grazing are no more productive. The objective of the research paper was to map out and analyze the land cover changes at a scale 1:100000 from the satellite images 1986 and 2009; to establish and appraise the relationship between rainfall and temperature on desertification and to assess the role of human activities to desertification of the study area. The materials and methods used included Landsat TM and ETM of various time periods, climate parameters of rainfall and temperature (i.e. forty-five years of rainfall and temperature data) and data were also acquired from oral and written questionnaires administered. The data obtained from research questionnaire were analyzed using the SPSS. The study employed both descriptive and inferential statistical analyses to get frequency distribution tables, percentages to determine the proportion of the variables, and the variables were tested using correlation and chi-square contingency. The result of the investigation has revealed the extent (rate of change) Vis-à-Vis desertification of the study area. The result of the human factor has remained the major cause of desertification. Most of the arable land has been over cultivated and also the land reserved for animal grazing have been subsumed by farmers leaving no portion for animal grazing. Most of the trees are either cut down for crop cultivation or titled as means for cooking fuel. In conclusion anthropogenic and climatic factors are the principal causes of desert encroachment in Jigawa state. The desertification has led to sand encroachment and to accelerated development of dunes. The area has also been subjected to a vegetation cover transformation. Pastures have deteriorated in quality and quantity, but in many parts, the degradation is still reversible if land use is organized.*

Keywords: *Landsat imageries, Desert encroachment, Land use, Climate parameters and wind storm*