

Quantifying the Cost of Climate Change Impact in Nigeria: Emphasis on Wind and Rainstorms

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KEYWORDS ITCZ. Damage. Urban Forestry. Death. Linesqualls. Trade Wind. Infrastructure.

ABSTRACT Wind related hazards have not been adequately acknowledged as environmental problem like flooding and gully erosion that needs to be properly addressed by the Nigerian Government. This is in spite of the fact that it claims lives, destroys buildings and social infrastructure annually. This prompted this study that dwell on quantifying the cost of climate change impact in Nigeria with special emphasis on wind and rainstorm hazards on building and infrastructures between 1992 and 2007. Climate data (air temperature, rainfall, wind speed) and cost of wind/rainstorm damage were collected from 12 out of the 36 states in Nigeria. Time series, graphs and chi-square were the statistical tools used to evaluate the relationships between climate elements and rate of damage. The results show evidence of climate change with increasing temperature and decreasing rainfall. Wind and Rainstorm damage show evidence of seasonality, which is higher at the beginning and end of the rainy season, following the movement of the ITCZ. Total lives lost were 199 persons and cost of property damaged worth ₦85.03 billion (\$720.6 million). It is recommended that while causes of climate change should be minimized, adequate developmental policies and planning that focus on wind and rainstorm hazards' awareness and preparedness should be vigorously pursued by both individuals and the government. Wind factors should be taken into consideration while building.