Monitored versus experience-based perceptions of environmental change: evidence from coastal Tanzania

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Abstract

The impacts of climate change are likely to exacerbate many problems that coastal areas already face. In this study, we used multinomial logistic regression to examine human perception of climate change based on a cross-sectional survey of 1253 individuals in coastal regions of Tanzania. This was complemented with time series analysis of 50-year meteorological data. The results indicate that self-rated ability to handle work pressure, self-rated ability to handle personal pressure and unexpected difficulties, age, region and educational status were significant predictors of perceived temperature change unlike ethnicity and gender. A disproportionately large percentage of respondents of all ages indicated that temperature was getting hotter between the past 10 and 30 years. This observation was supported by the time series analysis. Although respondents also alluded to changes in rainfall patterns in the past 10–30 years, time series analysis of rainfall revealed a different scenario except for Mtwara region of Tanzania. Because there is agreement between respondents' perceptions of temperature and available scientific climatic evidence over the 50-year period, this study argues that when meteorological records are incomplete or unavailable, local perceptions of climatic changes can be used to complement scientific climatic evidence. Based on the spatial differentials in climate change perception observed in this study, there is opportunity for a more locally oriented adaptation dimension to climate policy integration, which has hitherto been underserved by both academics and policymakers.

Keywords:

time series,
multinomial regression,
climate change,
policy,
temperature,
rainfall