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An analysis of climatic impacts and adaptation strategies in Tanzania

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Abstract

Purpose – The purpose of this paper is to investigate climate change perceptions and adaptation strategies in the communities of Morogoro region of Tanzania. Climate change is a vital issue of global concern.

Design/methodology/approach – Rain fall data trends collected from different meteorological stations in the region were useful in assessment of climate variability and change trends from the historical perspective. In addition, quantitative interviews, surveys and focussed discussion groups were used to collect data capturing past and present trends in the catchment, and reasons provided by 199 respondents from a total of six villages. The data were collected with the aid of trained research assistants and trained graduates selected from each of the randomly select villages.

Findings – Significant differences in rainfall intensities have been recorded by use of feedback results from analysis of variance tests conducted. Major indicators of climate variability and change include: increased dry spells (39.7 per cent), drying of rivers (34.7 per cent), a reduction in water flows (14.6 per cent) and poor economy of the area (11.1 per cent).

Research limitations/implications – The scope of the study does not cover certain aspects such as the spatial and temporal changes in daily temperature which could have provided important and additional dimension. This study also did not take into consideration institutional arrangements required to successfully implement national adaptation programmes to climate change. Finally, it is important to remember that peoples' perceptions determine the social mental picture of climate change.

Practical implications – The study suggests the need for leverage on resource use through education and good governance strategies to be employed by resource planners, leaders and policy makers.

Social implications – This study links scientific and participatory data as an approach for incorporating modern technologies and local knowledge into the design of useful practices and strategies as well as their successful implementation. Opinions from communities supported the urgent need for effective use and management of resources while laying emphasis on advancement of both indigenous and imported technologies.

Originality/value – An understanding of how the community views climate change is crucial in design of practices aimed at improving their well-being. In this regard, a study investigating smallholder farmers' views regarding major drivers of change, assessing main factors leading to changes in climate experienced and identifying potential coping strategies against climate change, was conducted in East Africa, Tanzania between 2009 and 2010. This paper identifies potential resilient practices intended to minimize destruction and maximize opportunities likely to benefit Morogoro region.