

## Abstract

Despite the widespread scientific debate concerning the impacts of climate change and variability (CC & V), not much is known about rural farming households' perceptions of these impacts on their agricultural practices. This is especially so in Africa. In order to address this pressing research need, this study documents those perceptions using data from household interviews at four sites in Kenya selected using a temperature analogue approach. A pair of sites was selected with a semi-arid climate (Katumani and Kambi ya Mawe) and a second pair selected with a sub-humid climate (Kabete and Muguga). Within each pair, sites have similar rainfall totals and patterns but have mean annual temperature differences of between 1.5 and 300C. Thus the warm sites (Kambi ya Mawe and Kabete) are expected to be representative of the cool sites after global warming. Eight agricultural practices that influence productivity were selected for analysis. Significantly, more farmers at the drier sites reported having perceived more changes in the past 30 years than in the past 10 years in nearly all the selected agricultural practices ( $\chi^2 = 147.68$ , Cramér's  $V = 0.52$ ,  $p \leq 0.001$   $df = 7$  for 30 years and  $\chi^2 = 135.95$ , Cramér's  $V = 0.187$ ,  $p \leq 0.021$   $df = 7$  for 10 years). In addition, there was a strong association between the perceived changes and the regions (semi-arid and sub-humid) for the last 30 years ( $\chi^2 = 147.68$ , Cramér's  $V = 0.52$ ,  $p \leq 0.001$   $df = 7$ ). The study also showed that there was significant association between the observed changes in agricultural practices and household gender ( $\chi^2 = 43.51$ ;  $p \leq 0.001$ ). Interestingly, female-headed households observed changes in 62.5% of the selected agricultural practices in all the regions. These perceived changes could be classified as adaptation strategies for the changing climatic conditions. However, successful implementation of farming technologies and methods that are adapted to climate change will require a gendered approach and agroecological sensitive strategies for different regions.