



Drought responses and adaptation strategies to climate change by pastoralists in the semi-arid area, Laikipia County, Kenya

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Received: 29 January 2020 / Accepted: 15 March 2021 / Published online: 1 April 2021
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Abstract

This study was undertaken in Laikipia County, Kenya, to identify factors influencing the choices of strategies by pastoralists to adapt to climate change. The study particularly evaluates the role of perceived climate extremes (frequency of dry spells and droughts), early warning information, and access to private ranch grazing, in determining response decisions to climate change. Besides, we test if households jointly adopt climate change adaptation strategies. The primary data collected from 440 sample households was analyzed using the multivariate probit (MVP) model. In the MVP model, we consider the following measures: increased mobility (distance & frequency), storage/purchase of fodder, change in water management, partial shift to other livelihoods, and herd management. The results reveal that these adaptation strategies are jointly adopted by pastoralists as complements and substitutes. From the empirical result, the perceived increase in the number of dry spells and drought, access to early warning information, access to private ranch grazing, main market distance from homesteads, and the highest level of education in the household are the key determinants of the choices of adaptation strategies to cope with drought and climate change. From a policy perspective, this research contributes to the ongoing debate on best practices by addressing climate change-related challenges in semi-arid land management. Therefore, there is a need for early warning institutions to increase their visibility in the semi-arid areas by exploring effective methods of delivering climate risk information in good time. Improving access to market and private ranch grazing should be promoted in the Kenyan semi-arid areas. Given that pastoralists' perceptions of climate change and climate risk is a decisive variable in adaptation decision-making, there is need to improve the understanding of pastoralists' changing climatic conditions. Furthermore, since the results indicate that mobility and storage of fodder are substitutes, the adoption of hay production could become a key production strategy for pastoralists which will increase the competitiveness of their livestock in the market and increase milk production.

Keywords Adaptation strategies · Climate extremes · Climate change · Early warning information · Pastoralist · Kenya

JEL classification O13 · Q54

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