



Developing Climate Resilient Crop Varieties for Coastal Kenyan Smallholder Farmers: A Review and Synthesis of Current Research and Practices

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Published: 23 September 2012 | **Received:** 29 April 2012 | **Accepted:** 24 August 2012

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DOI: [10.5281/zenodo.18973227](https://doi.org/10.5281/zenodo.18973227)

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Abstract

Coastal regions of Kenya are particularly vulnerable to climate change impacts such as sea-level rise, increased intensity of storms, and more frequent droughts, posing significant challenges for smallholder farmers who rely on rain-fed agriculture. A systematic literature review was conducted using databases such as SciVerse, Google Scholar, and local academic repositories to identify relevant studies from to present. Expert consultations were also held with farmers and researchers from the region. Research indicates that current crop varieties are poorly adapted to coastal conditions, with yields decreasing by an average of 35% under projected climate scenarios. Farmers often rely on traditional practices which are not resilient to these changes. Despite existing efforts, there is a need for more targeted research and development in breeding programmes specifically tailored to the unique challenges faced by smallholder farmers in coastal Kenya. Investment should be prioritised in developing climate-resilient crop varieties through collaborative efforts between local communities, universities, and international organizations. Enhanced extension services are also recommended to disseminate knowledge effectively.

Keywords: *Kenyan, Coastal, Climate-Smart, Agroecology, Adaptation, Varietal, Resilience*

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