

POSTER SUMMARY

**CLIMATE PROOFING SUGARCANE AGRICULTURE:  
THE SASRI INTEGRATED RESEARCH, DEVELOPMENT  
AND INNOVATION PORTFOLIO**

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**Abstract**

The South African Sugarcane Research Institute (SASRI) undertakes research, development and innovation (RDI) on behalf of the South African sugar industry to ensure the sustainability of sugarcane production into the future. Of particular relevance are investigations that seek to determine the potential impacts of mid- and late-century climate change scenarios on production and to formulate appropriate resources, technologies, recommendations and best management practices to enable mitigation and adaptation. As such, the SASRI portfolio is strongly multi-disciplinary and integrated, spanning climate change, drought adaptation, crop management, water management and bio-energy RDI that aims to deliver outcomes for application to strategic and tactical decision-making at industry, regional, farm and field levels. The purpose of this poster paper is to outline the SASRI RDI project portfolios that address outcomes in four specific areas related to climate change adaptation: (a) best management adaptations to maximise yield and profitability under the expected mid-century climate; (b) adaptable, drought-tolerant sugarcane varieties to sustain the Industry into the future; (c) systems for sustainable crop management under conditions of reduced water availability and quality, as well as the anticipated increased frequency of extreme climatic events; and (d) support of a prosperous grower cohort that deploys effective water management practices for sustainable sugarcane farming. In addition, RDI addressing climate change mitigation strategies is described, particularly with regard to increasing on-farm energy- and irrigation water use efficiencies and the development of resources and technologies in support of biomass deployment to future bio-energy applications. Strategic collaborations and partnerships in these RDI endeavours will be acknowledged, particularly the invaluable contributions from university partners, funding agencies and non-profit organisations.

*Keywords:* climate change, adaptation, mitigation, water management, sustainability, drought