

FACTORS AFFECTING THE PERFORMANCE OF TSHIOMBO IRRIGATION SCHEME IN LIMPOPO PROVINCE, SOUTH AFRICA

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Abstract. Smallholder irrigation farming is valuable for improving the welfare of rural communities in South Africa. Irrigation schemes in South Africa perform below average as some have collapsed. Boosting performance of irrigation schemes will ensure economic sustainability for low-income earners. There is little scholarly literature on factors affecting performance of smallholder irrigation schemes in South Africa. Therefore, this study assessed factors affecting yield and gross margin of sweet potato in the Tshiombo Irrigation Scheme. Data was collected using structured questionnaires, focus group discussions and in-depth interviews. The performance of the irrigation scheme was analysed using the ordinary least square method. The yield or gross margin of sweet potatoes were used as proxies for the scheme performance. Six estimators, namely age of farmers (−0.022), labour availability (−0.185), cultivated area (−0.130), pesticide subsidy (0.138), market price (6.090), and distance of the plot from the main canal (0.191) significantly impacted performance of the scheme. A minimum participation of farmers in the value chain exposed them to lower market prices. The gross margin was generally low due to limited participation of aging farmers in the value chain. The performance of the scheme can be improved through providing and ensuring competitive prices and encouraging youth to participate in the scheme farming by providing lucrative market prices.

Keywords: Economic incentives, sustainability, gross margin, institutions, sweet potatoes

INTRODUCTION

Hunger and malnutrition are major challenges in the 21st century given that malnutrition has increased from 181.7 million in 1990–1992 to 232.5 million in 2014–2016 in Africa (Jha, 2019). In South Africa, high levels of malnutrition among resource-constrained smallholder farmers have propelled the government to adopt a National Development Plan (NDP) aimed at developing and improving the livelihoods of over 370,000 people mainly in rural areas (Pienaar and Traub, 2015). Agriculture is expected to eradicate hunger and improve nutritional security in the world by 2030 (FAO et al., 2018). Yet, persistent droughts due to dynamic climate events have reduced crop yields in rain-fed farming systems (Van Averbeke et al., 2011). On that account, the potential of smallholder irrigation schemes (SIS) in sustaining the livelihoods of 389 million people surviving on less than \$1.90 in sub-Saharan Africa (SSA) is widely acknowledged (Mundial, 2017). Smallholder irrigation schemes are of significant value in South Africa where 13.8% of the national households depend on subsistence agriculture as their key source of livelihood (Lehohla, 2016). SIS are useful in mitigating the negative effects of climate change such as water stress, mid-season and periodic dry spells, and crop failure (Mhembwe et al., 2019).

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