

Rainwater Harvesting Technologies and Soil Moisture Conservation in Marginalised Semi-Arid Soils of Southern Africa

Justin Chipomho, Chimweta Moreblessing, Fortunate Makore & Parwada Cosmas

Abstract

Rain-fed crop production by smallholder farmers in arid and semi-arid regions of Sub-Saharan Africa (SSA) is highly vulnerable to the effects of climate change. Marginal soil fertility and environmental adversities caused by climate change such as global warming, erratic rainfall pattern, extended dry spell, drought and declining soil fertility negatively affect crop productivity resulting in food insecurity. Rainwater harvesting technologies (RWHT) offer potential solution to crop resilience under moisture stress, which is frequently encountered by farmers under dry-land crop production in the semi-arid regions of SSA. However, the success of these water harvesting technologies and their long-term sustainability in crop production on marginalised soils is missing. The objective of this book chapter is to review different RWHT, their potential to transform and provide sustainable dry-land crop production, food security and generate income for smallholder farmers in marginalised semi-arid soils in the southern region.