

**Productivity of drought tolerant crops and their contribution to food security: a case of
Finger Millet and Sorghum in Tanzania**

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In recent years Tanzania has experienced alarming decrease of drought tolerant crops productivity. It was observed that despite dramatic increase of food crops production in the country, some of the regions especially semi-arid has experienced food insecurity. This study focuses on an empirical investigation of the determinants of drought tolerant crops productivity and their contribution to food security in Tanzania. The empirical results show that Total Factor Productivity (TFP) grew by 6.5 percent on average between 2008 and 2015. The regression result indicates that drought tolerant crops productivity is significantly determined by household size, household income, education level of household head and rainfall. Food security analysis found that for gross food security index result shows that about 73.2 percent of all household are food secure while 26.8 percent are food insecure if they do not sell and output harvested. The net food security index result shows that 66.2 percent of all household presented are food secure while 33.8 percent are food insecure if they sell some part of output harvested. The food consumption score results shows that 67.88 percent of all households are food insecure, 10.6 percent of all households are having average food consumption and finally 21.52 percent are having adequate food consumption score. Finally the logit results shows that total harvest stored, household size, drought tolerant crops total harvest and education have significant contribution to food security in Tanzania. Policies to strengthening input and product markets for drought tolerant crops in Tanzania's semi-arid production areas are recommended. Extension services have to be strengthened for the smallholder farmers and more research on high yielding varieties of sorghum and finger millet suitable for semi arid areas is encouraged.