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## Challenges of food security in Tanzania: Need for precise irrigation

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Food security exists when people at all times have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs for an active and healthy life. It involves assessment of food availability, access, utilization and stability using interrelated indicators. This study aims at discussing the food security challenges in Tanzania and the need to adapt precision irrigation. Precision irrigation involves an innovative system of monitoring and controlling soil moisture deficiency and the application of irrigation to developing conducive environment for the crop to develop. The food security status is assessed in terms of dietary diversity and the consumption behavior. It is quantified through Global Hunger Index (GHI) on 100-point scale. It has been noticed that Tanzania figured at 96 out of 118 countries in 2016. It has improved from a score of 42.4 alarming category to 28.4 serious category since 2000 to 2016. Energy supplied through food consumption shows an average value of 2205 kcal/capita/day. The food security challenges highlighted in this study include undeveloped agricultural technologies, limited income opportunities, increased population and barrier to market access. In order to meet these challenges, the use of precise irrigation techniques is emphasized. For example, currently the drip irrigation in Tanzania covers less than 0.1% of irrigated land and there is plenty of scope of precise irrigation. On-farm adaptive studies through participatory programs and farmers' field schools will help in capacity building to adapt scientific technology. In order to reduce transitory household food insecurity, the improved production mechanism, water use efficiency, increasing irrigated land, requirement and creation of proper storages, off-farm opportunities and market access are emphasized.

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