Abstract

In arid and semi-arid lands (ASALs), low adoption of integrated soil fertility and water management (ISFWM) technologies has contributed to food and nutrition insecurity. A study was conducted to assess factors influencing smallholder farmers' adoption decision of ISFWM technologies in Mwala and Yatta Sub-Counties. A questionnaire was administered to 248 respondents in the study region. Selection of household heads was done in 'Farmer-led adoption approach' sites otherwise known as Primary and Secondary Participatory Technology Evaluations (PPATEs and SPPATEs) and Non-PPATEs/SPATEs sites in both Sub-Counties. Relationships between different variables were determined by the Tobit model. The results revealed that group membership ($P<0.016$), inaccessible credit services ($P<0.017$), gender ($P<0.025$), age and access to agricultural extension services ($P<0.027$) influenced adoption of ISFWM technology significantly. Cost of inputs and access to radio information ($P<0.01$), access to appropriate farm machines ($p<0.001$), cost of labor and farmers' perception on seasons' reliability ($P<0.004$) and out-put markets ($P<0.006$) were reported to affect adoption of ISFWM practices highly significantly. Descriptive statistic results indicated that majority of the respondents (93.9%) in the project areas were adopting a combination of tied ridges, organic fertilizer and improved seed compared to only 6.1% in the non-project area. There was also significantly ($P<0.01$) higher adoption (76.5%) of a combination of tied ridges, both fertilizer and improved seed in the project area in contrast to merely 23.5% in non-project area, as well as those adopting (80%) a combination of zai pit, both fertilizer and improved seed compared to only 20% in non-project area. Policy makers should focus on availability of affordable credit facilities and farm machines, ease access to information, labor and input-output markets for enhanced farm productivity and livelihoods of the smallholder farmers in ASALs.