



Motivations for adoption and adaptation of sustainable intensification innovations for smallholder farms in East and Southern Africa

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Abstract

Diversity among farms and within farming systems needs to be addressed when developing technology innovations to ensure wide adoption and sustainability of smallholder farming systems. There is also need to analyze and understand motivation drivers for adopting particular innovations, suitability of innovations promoted and the associated trade-offs faced by smallholder farmers. This can help to shape the existing systems in a more sustainable way and bring out scalable innovations that strengthen systems' resilience. We assessed the factors that explain choices of innovations and the adoption of local and externally proposed innovations by smallholder farmers in maize and legume cropping systems in Eastern and Southern Africa and the trade-offs associated with such choices. We used Likert scale data obtained from household surveys using a motivation questionnaire. The collected data was subjected to descriptive analytical procedure to produce data summaries and motivations for adopting sustainable intensification innovations in Babati district based on self-determination theory. According to the descriptive analytical results and findings, farmers in Babati District perceived SI innovations to be beneficial to them with an average score of 4.24 on a scale from 1-5 (where 1 means strongly disagree and 5 means strongly agree). The technologies of priority implemented in the district are intercropping (87%), improved maize and legume seeds (94%), improved spacing between plants and within rows (81%), and manure application (87%). Three farmer endowment levels were developed based on their land sizes, thus Low Resource Endowments (LRE <5 acres), Medium Resource Endowments (MRE >5 acres - <=10 acres) and High Resource Endowments (HRE >10 acres). Land was chosen because it is a very important component of rural household wealth. These were used in the subsequent analysis to compare different levels of motivations across different farm types (subsistence and semi commercial farms). Farmers of these three endowment levels expressed increasing scores for increasing levels of self-determination from extrinsic (3.58 out of 5), to introjected (3.99 out of 5), identified (4.32 out of 5) and intrinsic (4.28 out of 5) motivation. The level of experienced autonomy was considerably lower for LRE farmers than for MRE and HRE farmers. Despite the low stated attachment to external incentives for motivation, the most indicated constraints to adoption were related to financial resources (average score of 3.69 out of 5) and time requirements (3.09 out of 5). Lack of knowledge was not identified as an important barrier to adoption of SI technologies (<2.50). Promotion of SI innovations in Babati district was found to be influenced by extrinsic rewards such as money, inputs, seeds and machinery among other incentives to induce intrinsic motivation for adopting SI innovations.

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