



Tropentag, September 18-20, 2019, Kassel

“Filling gaps and removing traps
for sustainable resource management”

Determinants of the Adoption of Sustainable Intensification in Southern African Farming Systems: A Meta-Analysis

QIAN GUO, EMMANUEL OLATUNBOSUN BENJAMIN

Technische Universität München (TUM), Dept. of Production and Resource Economics, Germany

Abstract

Climate change and environmental degradation are major threats to sustainable agricultural development in sub-Saharan Africa, especially, Southern Africa. Thus, the concept of sustainable intensification (SI), i.e. getting more output from less input using certain practices that are environmental friendly, has become an important topic among researchers and policy makers in the region in the last three decades. A comprehensive review of literatures on SI in the region identify nine relevant drivers of adoption of SI among (smallholder) farmers in Southern Africa. These drivers include (i) age, (ii) size of arable land, (iii) education, (iv) extension, (v) gender, (vi) household size, (vii) income, (viii) membership in farming organisation and (ix) access to credit. We present the results of a meta-analysis of 21 papers on the impact of these determinants on SI adoption among (smallholder) farmers in Southern African Development Community (SADC) using random-effects estimation techniques for the true effect size. While our result suggests that variables such as extension, education, age and household size may influence the adoption of SI in SADC, factors such as access to credit and women smallholder farmers are also of great importance. The challenges credit constraint poses to farmer’s ability (especially women) to adopt sustainable practices can be perceived as a major hindrance to rural agricultural development in Sub-Saharan Africa. On the other hand, credit constraint has also been observed to promote sustainable agricultural practices, among smallholder farmers, if monetary incentives and compensations are adequate. Decision-makers should therefore concentrate efforts on these factors in promoting SI across the SADC.

Keywords: Adoption, climate change, effect size, meta-analysis, random-effects model, smallholders, Southern Africa Development Community (SADC), sustainable intensification