

Article title	Can farming provide a way out of poverty for smallholder farmers in central Mozambique?
Keywords	Smallholder farmers
Authors	Wilson Leonardo , Gerrie W.J. van de Ven, Argyris Kanellopoulos, Ken E. Giller
Abstract	<p>Given that agriculture is a key economic activity of the majority of people living in rural Africa, agricultural development is at the top of the agenda of African leaders. Intensification of agriculture is considered an entry point to improve food security and income generation in sub-Saharan African (SSA). We used a farm optimization model to perform ex-ante assessment of scenarios that could improve gross margin, a farmer's objective, and maize sales, a national policy objective to improve food security, of large and small farms in maize-based farming systems in two posts representative of rural Mozambique (Dombe and Zembe Administrative Posts in Central Province). For selling maize, farmers first had to be maize self-sufficient. We explored two options for increasing agricultural productivity: (i) extensification, to expand the current cultivated area; and (ii) intensification, to increase input use per unit of land. We considered two scenarios for each of the two options. Extensification: current situation (SC1), hired labour (SC2) and labour-saving (SC3). Intensification: land-saving (SC4) and combined improvement (SC5). For each scenario, we maximized gross margin and maize sales for large and small farms and assessed the trade-offs between the two goals. We further explored the impact of increasing labour and land availability at farm level beyond the current observed levels. SC4 substantially increased both gross margin and maize sales of large and small farms in both posts. Minor trade-offs were observed between the two goals on large farms whereas we saw synergies between the goals for small farms. In Dombe, the gross margin of large farms increased from \$ 5550 to \$ 7530 y-1 and maize sales from 12.4 t to 30.4 t y-1. In Zembe, the annual gross margin increased from \$ 1130 up to \$ 2410 per farm and annual maize sales from 5.1 t up to 9.5 t per farm. For small farms in Dombe, the gross margin increased from \$ 1820 to \$ 2390 y-1 and maize sales from 3.0 t to 9 t y-1. In Zembe, the annual gross margin increased from \$ 260 to \$ 810 and annual maize sales from 2.0 t to 3.6 t per farm. With the most optimistic scenarios and conditions of more hired labour and labour-saving technologies, both farm types substantially increased both gross margin and maize sales. We conclude that with available resources, the possibilities for increasing gross margin and maize sales are greater where agroecological conditions are more favourable and are much higher for larger farms. Without interventions that allow small farms to access more labour and land, intensification of agriculture is likely to happen only on farms of better-resourced households, indicating the need for alternative forms of on- and off-farm income generation for poorer farmers. The contribution of agriculture to national food security has to come from the large farms, requiring policy support.</p>
Publication date	2018
Link to the actual article	https://doi.org/10.1016/j.agsy.2018.06.006