



# Can commercial farming promote rural dynamism in sub-Saharan Africa? Evidence from Mozambique

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## ABSTRACT

The impact of commercial farms on smallholders in developing countries remains highly controversial. This study draws on four periods of investments in commercial farming in Mozambique to frame an empirical analysis of their contemporary economic spillovers. We investigate the degree of selection of commercial farms into more favourable locations as well as the extent of heterogeneity in the effects of different commercial farming models on proximate smallholders. The analysis uses survey data covering all large commercial farms in Mozambique and which are linked to a nationally-representative survey of 6000 smallholders. Contrary to widespread assumptions that investors target only marginal farm land, we find that commercial farms are highly selective in their locations, preferring areas close to existing infrastructure and markets. Controlling for selection bias via reweighting and fixed effects, we find the presence of a commercial farm is associated with moderately higher incomes among neighbouring smallholders but a lower incidence of wage employment. Furthermore, these effects vary according to the type of commercial farming in place. More inclusive commercial models, such as those associated with out-grower schemes, appear to generate larger benefits. We conclude that broad generalizations about commercial farming investments must be replaced by more nuanced discussions of alternative investment models.

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## 1. Introduction

The importance of agriculture to processes of social and economic development is well established (Christiaensen, Demery, & Kuhl, 2011; Johnston & Mellor, 1961; World Bank, 2008). Nonetheless, there remains widespread concern that agricultural sectors in many low income sub-Saharan African (SSA) countries continue to show sluggish growth (Gollin, Lagakos, & Waugh, 2014; McMillan & Rodrik, 2011). In this context, increasing attention has been given to the ways in which commercial forms of agriculture might stimulate rural economies and contribute to more rapid aggregate growth. For instance, in apparent contrast to perspectives advocating that smallholders should be a primary focus of policy interventions in the agricultural sector (Chang, 2009; Dorward, Kydd, Morrison, & Urey, 2004; Kydd, Dorward, Morrison, & Cadisch, 2004), Collier and Dercon (2014) argue that an exclusive focus on smallholders will not drive structural transformation in Africa. Rather, they recommend an alternative model for agriculture,

based on new forms of commercial organization involving ‘hybrid’ forms of interaction between smallholders and commercial (farm) enterprises.

Interest in the role of commercial farming in SSA is not limited to academia. Much of the impetus for an explosion of research on this topic over the past ten years has been a flurry of foreign investment in land. Rigorous data on the magnitude and coverage of investment deals in the sector is hard to come by. Arezki, Deininger, and Selod (2015) combine information from three global databases; and, with reference to the period 2008–2012, they estimate that around 50 million hectares (ha) of land in developing countries was targeted by external investors, with the largest amount of land being in SSA. More recent data, compiled in the Land Matrix database, indicates that global investment deals covering 48 million ha of land have been concluded, and that Africa continues to be the most targeted continent.<sup>1</sup>

The drivers behind these trends have been widely investigated. Scholars emphasise the roles of global commodity prices, concerns around food and energy security, and the changing nature of production and trade in agricultural commodity markets. With respect

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<sup>1</sup> Data taken from <http://landmatrix.org/en/>, retrieved 28th November 2016.

to the latter, [Clapp \(2014\)](#) points to a trend of financialisation in these markets, while [Tomei and Helliwell \(2016\)](#) argue that the distinction between fuel and food commodities has become blurred. Additionally, the conventional wisdom of an inverse relationship between farm size and productivity in low-income settings has been challenged. Technological innovations, improvements in labour monitoring and greater vertical integration of global value chains appear to have augmented the potential for economies of scale in farming ([Deininger & Byerlee, 2012](#)), increasing the commercial viability of larger units ([Foster & Rosenzweig, 2011](#)).

This paper does not shed light on the drivers of external investments in agricultural land across SSA. Nonetheless, debates of this sort point to the complex and shifting nature of commercial agriculture across the region. This is exemplified by the diverse origins and types of investors involved, ranging from multinational commodity traders to state-owned enterprises based in other developing countries ([Scoones, Amanor, Favareto, & Qi, 2016](#)). It is also clear that investments vary enormously in terms of the extent and type of land acquired, the activity undertaken, and their relationships with local farmers. At risk of stating the obvious, there are fundamental differences between, say, industrial monocropping at the frontier of the Amazon rainforest and out-grower schemes for organic coffee in Uganda (e.g., [Borras & Franco, 2010](#)).

The diversity of commercial investment in the agricultural sector in SSA represents our point of departure in this study. Critically, this diversity presents a challenge to any research on their economic impacts. Indeed, reflecting both this challenge and data limitations, it is unsurprising that a majority of existing studies in this area pursue a case-based approach ([Cotula, 2013](#); [Cotula, Vermeulen, Mathieu, & Toulmin, 2011](#)). Case studies have the advantage of being able to reflect the nuances of specific deals and contexts. However, specific cases are often selected for their high visibility or controversy-value, which makes generalization to other situations open to question.

The present study contributes to a small quantitative literature on the impact of (recent) commercial investments in agriculture on local smallholders. [Section 2](#) begins by summarising the general literature on these impacts, distinguishing between impacts in different domains that merit separate treatment. [Section 3](#) presents what is known about commercial agricultural investments in Mozambique, which constitutes the focus of our empirical analysis. As we note, Mozambique has been one of the foremost targets of investors seeking access to agricultural land in the SSA region; but these investments have been highly varied and few have progressed to full-scale implementation.

The history and varied experiences of commercial farming in Mozambique inform our research questions. Our overall focus is on whether there is evidence for positive economic spillovers running from larger-scale commercial farms to neighbouring smallholders. The specific sub-questions are: (i) to what extent are there systematic patterns to the location decisions of commercial farms; and (ii) do economic spillovers vary between different types of commercial farms? The first question is relevant not only to debates around land access but also to explore the possible role and direction of omitted variables (selection) bias in the analysis of spillover effects. The second question attends to the key issue of heterogeneity in the type of activities undertaken, which remains a dominant theme throughout.

To answer our research questions, we combine nationally-representative agricultural survey data on over 6000 smallholders collected in 2012 with data covering all commercial farms in the country operating at the same time. Our research questions, data sources and methods are set out in [Section 4](#), while the results are presented in [Section 5](#). With respect to the first question, our main finding is that commercial farms operating in Mozambique

are highly selective in their locations. They are more likely to be located in relatively close proximity to smallholder farmers who use more advanced production techniques and live close to urban areas but do not have formal title to their land. With respect to spillovers, we find some evidence of a moderate positive association between the presence of a commercial farm and the welfare of local smallholders. However, we also find a small negative effect on access to paid employment, which we interpret as pointing to changes in labour allocation (specialization). Critically, these impacts are not uniform but vary significantly according to the type of commercial farming found in operation. Specifically, we find the most robust positive income effects among smallholders located close to commercial farms that produce permanent crops; and we find these effects are largest among smallholders who are themselves outgrowers. As such, our findings indicate that the local economic effects of commercial farms are highly heterogeneous, in turn implying that crude generalizations may be misleading.

## 2. Investment in commercial farming

Literature concerning commercial farming in developing countries is voluminous.<sup>2</sup> As already noted, commercial farming is a broad term that captures many different activities. To narrow the discussion, our interest focuses on larger-scale commercial agricultural projects. As such, commercial farming activities undertaken by smallholders, such as sale of cash crops, are not a main focus. With respect to the impacts of larger-scale commercial activities, [Table 1](#) sets out three distinct domains within which such effects are often debated. The table identifies the domains and provides corresponding examples of how local actors may be included or excluded via different choices within each domain. The latter reflects our primary interest in impacts on local human actors and adopts an analytical axis of inclusion/exclusion frequently found in the critical literature (e.g., [White, Borras, Hall, Scoones, & Wolford, 2012](#)).

As can be seen from the table, the three domains refer to distinctive aspects of agricultural investments within which one often encounters substantive variations between different types of initiatives. Although the domains are inter-related, many controversies relate to impacts in specific areas. The first row refers to impacts within the domain of natural capital, which embraces access to and use of the natural environment such as land, soil quality, water resources and broader eco-system services. Impacts within this domain account for much of the recent literature on land investments where concerns around dispossession have dominated critiques of deals in the developing world, giving rise to the term 'land grabs' ([Wolford, Borras, Hall, Scoones, & White, 2013](#)). However, impacts in this domain may not *only* be viewed negatively. Natural capital can be 'priced' such that existing smallholders gain from changes in ownership or use rights. Also, agricultural investments may be bundled with investments in public infrastructure, bringing new opportunities to local populations, as envisaged under various 'growth corridor' initiatives.

The second row of [Table 1](#) concerns impacts in the sphere of productive relations. This refers to the different ways commercial operations may be structured, focussing specifically on the extent to which they employ local inputs. As with the previous domain, impacts here may be direct or indirect. Direct effects come mainly through labour contracts and purchases of outputs from local smallholders, such as under outgrower schemes. While the latter have a long and complex history ([Glover, 1984](#)), a substantive literature points to positive effects of these schemes on local

<sup>2</sup> Relevant studies include: [Glover, 1984](#); [World Bank, 2008](#); [Bolwig et al., 2009](#); [Jones and Gibbon, 2011](#); [Oya, 2012](#); [Smalley, 2013](#).

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