Food Policy 48 (2014) 194–202

Contents lists available at ScienceDirect

Food Policy

journal homepage: www.elsevier.com/locate/foodpol

Structural transformation or elite land capture? The growth of "emergent" farmers in Zambia

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ARTICLE INFO

Article history:
Available online 13 June 2014

Keywords:
Elite capture
Land policy
Agricultural growth
Small-scale agriculture
Zambia
Sub-Saharan Africa

ABSTRACT

Over the last decade, Zambia has witnessed a rapid increase in the number of medium-scale "emergent farms" cultivating 5–20 ha of land. This study analyzes the factors underpinning this growth. We find that the growth of emergent farmers in Zambia is primarily attributable to land acquisition by salaried urbanites and by relatively privileged rural individuals. We found little evidence to support the hypothesis that the rise of emergent farmers primarily represents a process of successful accumulation by farmers who began farming with less than 5 ha of land, a situation faced by more than 95% of farming households. We argue that these outcomes are the result of Zambia's land administration and agricultural spending policies. Rising concentration of landholdings in Zambia raises serious questions about the potential of current agricultural growth to act as a vehicle for broad based economic growth and poverty reduction.

Introduction

The global food price spike of 2008 has reinvigorated interest throughout the world in securing adequate food supplies. An outgrowth of this is a renewed focus on agricultural production in Sub-Saharan Africa. Global interest in African agriculture is expressed in two principle ways. First, following the L'Aquila G8 summit in 2009, donor countries pledged to increase spending on smallholder agricultural development. This commitment gave rise to a host of new funding streams for agricultural development, including the Global Hunger and Food Security Initiative and Feed the Future. Second, the recent food price spikes have sparked an intense interest by investors in agricultural land in Africa (Deininger and Byerlee, 2011; Thurow, 2010).

These divergent interests in African agriculture highlight a fundamental tension in current debates about land and the future of the continent's development. In particular, these debates revolve around the question of how to most effectively transform Africa's rural landscape from one characterized by a predominance of very small-scale, semi-subsistence farms to one that is much more productive and commercially oriented. On one side of this debate are those who argue that with an appropriate mix of public policy and spending a smallholder-led development trajectory can not only succeed in raising national food production, but will effectively reduce rural poverty in the process (Mellor, 1995). This smallholder-led commercialization trajectory underpins the economic structural transformation experienced in many Asian countries (Mellor, 1976; Johnston and Kilby, 1975; Lipton, 2006).

The other side of the debate stems from 40 years of frustration and apparent failure of small-scale African agriculture to register a measurable transformation to more commercialized and productive agricultural systems. A small, but growing chorus of voices argues that a myopic and "romanticized" policy focus on small-scale farming systems in Africa is misguided. Instead, given the perceived abundance of arable, under-utilized land in Africa, the more effective strategy for improving food security and lowering rural poverty in Africa is to encourage large-scale investment in commercial farming through a conducive land administration and public spending policy (Collier, 2008; Collier and Dercon, 2013). Proponents of this view argue that encouraging investments in commercial farming offers a number of advantages over efforts aimed at engaging millions of dispersed small-scale farmers. First, larger farms are in a better position to feed rapidly expanding cities in Africa than millions of small-scale farmers with little or no surplus to sell. Second, these farms can provide remunerative employment to people unprofitably engaged in semi-subsistence agriculture. Finally, larger farms are in a far better position than small-scale farms to adopt and adapt technologies to local contexts, thereby allowing them to maintain yield growth over time.

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http://dx.doi.org/10.1016/j.foodpol.2014.05.006
0306-9192/

Experiences from Southeast Asia and Latin America show that there are multiple pathways by which agricultural commercialization and land consolidation can occur (Poulton et al., 2008). Commercialization pathways can be usefully distinguished between those that were primarily driven by smallholder accumulation, such as in the Northeast region of Thailand, and those that developed through relatively capital-investment commercial agriculture, such as in the *Cerrado* region of Brazil (Poulton et al., 2008). Yet in Africa there is scant evidence on how commercialization and land consolidation occurs over time due to the limited and non-random nature of the studies to draw upon (e.g., Muyanga et al., 2013; Chapoto et al., 2013; Neven et al., 2009; Poulton et al., 2008).

Interestingly, in Zambia nationally representative survey data show a rapid increase in the number of so-called "emergent" farmers over the last decade. By government definition, emergent farmers are smallholders[1] who cultivate more than 5 ha and up to 20 ha of land. As the name implies, emergent farmers are often characterized as occupying a transitional phase between small-scale, semi-subsistence production and larger-scale, more commercial farming. Between 2001 and 2011 the population of emergent farmer households in Zambia grew by 62.2%, vastly outstripping the 33.5% growth rate of the total smallholder population. When disaggregated further, farm households cultivating between 10 and 20 ha actually increased by 103.1% during the same time period (Central Statistical Office, 2011). Farms controlling between 5 and 100 ha now account for more land than the entire small-scale farm sector. Along with these developments, nationally representative surveys show that the Gini coefficient of landholding distribution has increased in Zambia from 0.42 in 2001 to 0.49 in 2012 (Jayne et al., 2014). Curiously, however, Zambia, like many other countries in the region, has not witnessed a significant increase in agricultural labor productivity or wage rates (Potts, 2012), which were fundamental in triggering smallholder-led commercialization and consolidation in East Asia (Pingali, 1997). This study explores the pathways by which the emergent farming sector has grown in Zambia. We then assess how Zambia's pattern of land use dynamics is likely to affect the potential of agricultural growth to effectively reduce rural poverty and hunger.

Data and methods

Throughout this article we follow the Government of Zambia's definition of small-scale, emergent, smallholder, and large-scale farmers. Small-scale farmers are those *cultivating* 0.1–4.99 ha of land, while emergent farmers are those *cultivating* 5–20 ha (although as will be shown they may own considerably more land than this). The sum total of small-scale and emergent farmers (i.e., cultivating 0.1–20 hectares) are referred to as "smallholders" while farmers cultivating more than 20 ha are known as "large-scale" farmers. We adopted this taxonomy because it allows us to use the Government's nationally representative survey data to speak to some of the factors driving the development of the emergent farm sector in Zambia.

Survey data on smallholder agriculture in Zambia comes from three sources: the Crop Forecast Survey (CFS), the Supplemental Surveys to Post Harvest Survey (SS), and the Rural Agricultural Livelihoods Survey (RALS) of 2012. These surveys are conducted by the Central Statistics Office in partnership with the Ministry of Agriculture and Livestock and the Indaba Agricultural Policy Research Institute. These surveys are nationally representative for the smallholder population. The CFS surveys are conducted annually, while the SS was conducted in 2001, 2004, and 2008 and contains information on non-farm income that is lacking from the CFS. The RALS is similar to the SS, but utilizes a new sample frame based on the national census of 2010. All of these surveys contain households farming between 0.1 and 20 ha and hence exclude farmers categorized as large-scale. Data on the large-scale farm sector is collected through a mail-in survey of the known population based on records of the Zambia National Farmers Union. Because of low response rates, the official estimates of the crop area and production of the large-scale farm sector and the number of farms are known to be seriously underestimated.

To augment the data gathered from the nationally representative surveys we designed and implemented a structured survey for emergent farmers, which was administered in July 2011 in four districts in Zambia: Mumbwa, Choma, Kalomo, and Mpongwe. The four districts were purposively selected based on the concentration and number of emergent farmers in the 2010/2011 CFS. To ensure a reasonable concentration to sample from, at least 3% of all farmers in the district had to be classified as emergent farmers. We selected districts along a continuum of concentrations to ensure geographic diversity in the sample. However, it is important to note that emergent farmers are overwhelmingly concentrated in districts that are in close proximity to the "line of rail" and the urban mining areas of the "Copperbelt." Of the 72 District in Zambia, Kalomo District had the highest concentration of emergent farmers in the country (15%), Mumbwa had the third highest concentration with 9%, Mpongwe was tied for seventh with 5%, and Choma was tied for ninth with a 3% concentration level. The data presented here are, therefore, not nationally representative, but they do provide indicative findings on the emergent farming sector in districts where emergent farmers are concentrated.

However, to derive our sample of emergent farmers we intentionally deviated from the Government's definition of emergent farmer. Rather than use area cultivated to define emergent farmers we used total farm size. We did this based on anecdotal evidence that some emergent farmers may cultivate more than 20 ha of land, yet still have little in common with the traditional large-scale farms in terms of race (most large-scale farmers in Zambia, at least until very recently, have been of European decent), farm size, access to finance, input application rates, productivity, and farm management strategies. We, therefore, derived our sample of emergent farms from those farmers who *own* 10–200 ha of land. However, out of a total of 183 emergent farmers interviewed for this article none *cultivated* less than 5 ha of land and only one cultivated more than 20. Therefore, the vast majority of our respondents conformed to the government's definition of an emergent farmer.

The purpose of this survey was to explore the historical trajectories by which these emergent farmers achieved their current scale of operation. As such, the survey focused on land acquisition strategies, financing sources for farm expansion, land use patterns, and employment history. While the survey was designed to understand how farmers achieved their current scale of operation, it did not explore in detail questions about current farm productivity, aside from general questions about land use, or farm labor usage.

Farmers meeting our land size requirement were randomly selected from farmer contact lists kept by the Zambian National Farmers Union (ZNFU) and the District Agriculture and Cooperatives Office (DACO). While in all likelihood these lists are not exhaustive, they provided the only viable means for randomizing our sample of emergent farmers in each of the districts.

The final data source was the Ministry of Lands, Natural Resources and Environmental Protection Land Information Management System which captures the particulars of persons or institutions to which leasehold titles are offered, the date of offer, the areas in which the particular pieces of land are located, the extent

[1] In Zambia "smallholders" are defined as cultivating up to 20 ha of land. The broad category of smallholder is divided between small-scale farmers, defined as cultivating less than 5 ha of land, and emergent farmers, defined as cultivating 5–20 ha.

of the land and the purpose for which the land will be used across the country.

Contextual factors driving the growth of the emergent farming sector

The growth of the emergent farmer sector in Zambia is occurring in the context of an agricultural policy environment that favors significant state investment in input and output market subsidies for low value staple crops. The concentration on public spending on input and output subsidies is complemented by a land administration system that explicitly or implicitly favors access to statutory land rights for outside investors over existing small-scale farmers. In this section we explore how the benefits of these spending and land policies are distributed and the implications this has for the recent growth of the emergent farmer population.

Distributional effects of Zambia's agricultural policy

Agricultural policy in Zambia is guided in large measure by the advocacy efforts of the Zambian National Farmers' Union (ZNFU), which represents the interests of emergent and large-scale farmers. Over the years, ZNFU has successfully shaped the terms of debate over agricultural development to favor its membership (Chapoto et al., 2010). This advocacy has contributed to an agricultural public spending strategy that reflects and defends the interests of larger-scale farms over small-scale producers, as well as land legislation that favors investment capital over the rights of farmers in customary areas. This is not a new phenomenon. As early as 1945, members of the African Farmers' Association, an important precursor to ZNFU, argued that the colonial government should specifically target better-off farmers with development interventions, stating that:

> "In any society of people it is bound to be two classes of people living side by side. Amongst Europeans there is a high class and a low class of people. Why should not these classes be distinctive amongst us as Africans of this country? A clear distinction of classes should be recognized by the government"
>
> [quoted in Chipungu (1988, 74)]

In Zambia, despite a rhetorical commitment to market liberalization in agricultural policy documents (MACO National Agricultural Development Plan, 2004), the advocacy efforts by ZNFU has help to reinvigorate public spending on two major subsidy programs: the Farmer Input Support Programme (FISP), which subsidizes inputs for maize production, and the Food Reserve Agency (FRA), which purchases maize from farmers at above-market prices. For the last decade these two programs have routinely accounted for over 70% of the budget allocated to the Ministry Agriculture (Mason et al., 2013). The distributional effect of this public spending within the smallholder sector is important element of the emergent farm growth process in Zambia.

The role of FISP in the growth of the emergent farm sector is largely the result of the intentional targeting of "viable" farmers, rather than the targeting of famers who lack the capacity to afford inputs at commercial rate. As stated in the Ministry of Agriculture's targeting guidelines, the "viability" of a farmer is measured by farm size and the ability to pay the upfront costs of participation in the program (MACO, 2011). Only farms larger than 0.5 ha may participate in the program, which excludes 15–20% of Zambia's poorest rural households (MACO, 2011; CFS, various years). If a farmer satisfies the land holding requirement, he/she must pay the cost of membership in a farmers' cooperative, through which the inputs are channeled, and to finance the cost sharing component of the subsidy itself. Burke et al. (2012) have calculated that the combination of these costs is equivalent to 20% or more of the gross household income of 60% of rural households in Zambia.

Table 1 clearly demonstrates the distributional effect of FISP targeting. Columns C and D show that emergent farmers, who only make up 3.8% of Zambia's smallholder households (Column B), are both far more likely than small-scale farmers to receive fertilizer through FISP (Column C) and tend to receive far greater amounts of fertilizer (Column D). Thus, while emergent farmers account for a small share of the smallholder household population, they receive approximately 15% of all FISP fertilizer (Column E).

The process of uneven accumulation initiated through FISP production subsidies is further entrenched through the output market supports offered by the FRA. The FRA provides pan-territorial and above-market prices for maize. As shown in Table 1 (Column F), the capacity to produce significant surpluses of maize is highly concentrated among the emergent farmer sector in Zambia. Indeed, on average only about 30% of Zambia's rural population is capable of producing a surplus of maize, though more than 80% grow maize (Mason et al., 2013). Within this surplus producing group, roughly 5% account for 50% of the total surplus maize production, while the remaining 25 account for the rest (Nkonde et al., 2011). Given this market participation structure, a disproportionate share of the public spending directed toward FRA is captured by a minority of farmers with the land and capital needed to produce significant maize surpluses.

The combined incentive structures created by FISP and FRA have had a measureable effect on land use and farm expansion in Zambia. Mason et al. (2012) estimate that between 2006–2008 and 2011, a period that coincided with a substantial ramping up of FISP and FRA spending, these two programs contributed to an increase of 23–27% in area under maize. Much of this came from expansion of new farm land. While the expansion of maize cultivation induced by input and output subsidies likely occurred on both new and existing farms, the distributional effects of these programs suggest that much of the expansion was likely concentrated among relatively wealthier households with larger landholding (both cultivated and uncultivated). This, in turn, is likely to affect the contribution of small-scale farm expansion to the growth of the emergent farmer population.

Distributional effects of land policies

In Zambia, as in other parts of Africa, land is administered through the parallel systems of customary and state land. State land is administered by the central government, which grants transferable leasehold titles of various durations. Conversely, customary lands are administered by traditional authorities, such as chiefs and headmen, who grant usufruct rights to individuals, but prohibit the buying and selling of this land. This administrative bifurcation has its roots in Zambia's colonial past. State lands, then referred to as crown land, were apportioned by the colonial administration in prime agriculture areas in an effort to lure European farmers to the region. Conversely, customary lands, and the customary authorities that administer them, were created in an effort to carry out the contradictory goals of "preserving" African cultural integrity while at the same time creating a political system that enabled the region to be administered by proxy via a small contingent of colonial administrators (Ranger, 1983; Berry, 1993).

Rather than dismantle this convoluted land administration system following independence, the post-independence Zambian state utilized its control over state land to entrench its legitimacy among the population and to confer benefits to its supporters. One of the principle ways in which this occurred was through the development of agricultural settlement schemes aimed at creating a cohort of more commercialized African farmers (Chenoweth et al., 1995; Smith, 2004). Settlement schemes differ

Table 1
FISP fertiliser received (2010/2011 crop season) and expected maize sales, 2011, by farm size category. *Source*: MACO/CSO Crop Forecast Survey, 2010/11. Reproduced from Jayne et al. (2011).

Total area cultivated (maize + all other crops)	Number of farms (A)	% of farms (B)	% of farmers receiving FISP fertilizer (C)	kg of FISP fertilizer received per farm household (D)	% of Total FISP fertilizer received (E)	% of farmers expecting to sell maize (F)	Expected maize sales (kg/farm household) (G)
0–0.99 ha	596,334	39.6	14.3	24.1	12	22.2	135
1–1.99 ha	499,026	33.1	30.6	69.3	30	47.7	609
2–4.99 ha	354,116	23.5	45.1	139.7	43	64.0	1729
5–9.99 ha	49,410	3.3	58.5	309.7	13	82.1	6613
10–20 ha	6999	0.5	52.6	345.6	2	86.8	15,144
Total	1,505,885	100	28.6	77.1	100	42.7	950

in their structure and purpose, but the overall land distribution and administration patterns are similar. Settlement scheme land is administered under statutory tenure, either on state land or former customary land. The plots sizes on the schemes range from 10 to 200 ha (Smith, 2004), though some plots can exceed 1000 ha. These plots are given to individuals, either freely or for a nominal processing fee, while state official frequently select the land beneficiaries.

While early efforts were made to draw relatively successful farmers from customary land areas into the schemes, the distribution of settlement scheme land has also been used as a state patronage tool for rewarding retired or retrenched civil servants (Ray, 1977; Chenoweth et al., 1995). Overall the scale of these settlement schemes is quite large. Though more recent figures are not available, as of 1995 settlement schemes occupied more than 375,000 ha (Chenoweth et al., 1995). As this suggests, the allocation of large tracts of titled state land by the government through these settlement schemes may be implicated in the process of emergent farmer growth in Zambia.

Yet, potentially more important for the recent growth of the emergent farm sector is the promulgation of the 1995 Land Act. The 1995 Land Act permits the legal conversion of customary land to leasehold title (Brown, 2005). This conversion process, however, has high transaction costs associated with it. Though difficult to quantify, these costs include those associated with gaining consent from relevant traditional authorities to permit the conversion and cadastral surveying cost. Through the 1995 Land Act, customary authorities are placed in a position where they can act with virtual impunity in terms of who can acquire and alienate land under their control (Brown, 2005). As such, there is a real fear that through the 1995 Land Act, customary authorities are made vulnerable to political and economic pressures to cede title of customary land to individuals from outside their local community, including foreign commercial interests and "urban big men" (Binswanger et al., 1995; Bruce, 1988; Downs and Reyna, 1988).

Based on data collected by the Ministry of Lands, a total of 5098 land conversions have been recorded between 1995 and 2012, amounting to approximately 280,000 ha of customary land that is now administered through leasehold title by individuals for agricultural purposes.[2] This comes to an average of 54 ha per transaction. To put this in perspective, the scale of customary land conversion for agricultural purposes amounts to 12% of the total area cultivated in 2012 by smallholder farmers. These conversions are heavily concentrated in the areas close to urban areas with relatively good access to markets; 73% of the acquisitions occurring in the relatively urbanized provinces of Lusaka, Central, and Copperbelt. Given that the rapid growth of the emergent farmer population has coincided with both the promulgation of the 1995 Land Act and an economic boom period that has contributed to significant income growth in urban Zambia, there is a possibility that some segment of the growth in the emergent farmer population is the result of salaried urbanites acquiring title to customary land through the 1995 Land Act.

The 1995 Land Act also facilitates the state's continued efforts to appropriate land for large-scale farm development schemes, similar to the settlement schemes already discussed. In particular, the Land Act has enabled the state to carve out roughly one million hectares of customary land for the purpose of developing "farm blocks." Within each farm block the government has committed to invest in electrification, water, roads, schools, health clinics and other public services. Land within the farm blocks is divided into four categories. The first is the so-called "core-venture," which is a large-scale corporate interest that is allocated 10,000 ha of land. Linked to this core venture are several "commercial farms," which are allocated 1600–4000 ha, emergent farms of 50–900 ha, and small-scale farms ranging from 10 to 50 ha. While the government has officially set aside 30% of these "small-scale" farms for "women and vulnerable populations," the non-refundable application fees of ZMK 250,000–ZMK 3,500,000 (roughly US$50–US$700) make it unlikely that many capital-constrained small-scale farmers would be able to participate in this program. Indeed, media reports on the Nansanga farm block, the largest such farm block in the country, suggest that the creation of the farm block has led to the eviction of 9000 local residents who were unable to meet the application requirements to acquire land (Zambia Post Newspaper, August 17th 2011).

While Zambia's land administration policies have likely played an important role in the population growth of emergent farmers, the ways in which titled land is allocated, both through the allocation of farm block and settlement schemes land by the state, as well as through murky negotiations between individuals and customary authorities, raise serious concerns about the types of land users that are being given statutory land title. By structuring the systems for allocating titled land in ways that have a tendency to limit existing smallholder participation and to attract individuals from outside the agricultural sector, such as urban wage earners or retired civil servants, there is an increased probability that the land will be allocated to sub-optimal land users, investing in land for speculative, rather than productive purposes (Deininger, 2011). In the short term this may lead to under-utilization of land and poor returns in terms of overall agricultural production.

There are also very real long-term concerns with Zambia's current land administration strategy.

Recent analyses suggest that the prevailing wisdom that 94% of Zambia's 74 million hectares of land is under customary administration, and by implication available for cultivation, is misleading (Metcalfe, 2005; Chizyuka et al., 2006; Kalinda et al., 2008). Once national parks, forest reserves, and game management areas are

[2] This figure is likely a gross underestimate of the scale of the customary land that has been converted given delays in land acquisition entries at the Ministry of Lands.

accounted for only 41%, or roughly 30 million hectares, of Zambia's land actually remains available for smallholder cultivation under customary land administration. Yet this figure includes areas that are not suitable for intensive crop production or grazing. Moreover, this figure may not account for the entirety of the land that has been alienated through the 1995 Land Act. Thus, in all likelihood there is far less land available for small-scale farmers than many policy-makers in Zambia assume.

Growing evidence of land scarcity in some areas is revealed in survey data. According to the nationally representative 2012 Rural Agricultural Livelihoods Survey, over 56% of smallholder households indicated that their local customary authorities no longer had land available to allocate. These figures are significantly higher in the provinces where the majority of title conversions are taking place. For example, 72%, 63%, and 59% of respondents in Copperbelt, Lusaka, and Central Provinces respectively claim that traditional authorities in their village have no land to allocate. While a definitive assessment is impeded by the unknown backlog of land transfers registered by the Ministry of Lands, the continuation of current policies encouraging the alienation of customary land at a quite rapid pace runs the risk that it will foreclose the potential for crop land expansion in the remaining customary areas. Such a scenario, in turn, would erode the potential for a broadly based smallholder-led agricultural development path.

How did emergent farmers achieve their current scale of operation?: Understanding the growth trajectories of Zambia's emergent farmers

As the preceding discussion suggests, the rapid growth in the number of emergent farmers in Zambia is occurring within a political and economic context that does not provide obvious pathways for capital and land accumulation by small-scale farmers. It is, therefore, important to assess the extent to which small-scale farmer participated in the growth of the emergent farm population in Zambia. To do this we draw on survey data collected from 183 emergent farmers.

Based on our analysis of Zambia's land and public spending policies we divided our sample of emergent farmers into four mutually exclusive analytical groups. As detailed Table 2, these categories are: (1) individuals who *primarily* used non-farm income, what we refer to as "lateral entry," to achieve emergent farm status and have land with title; (2) same as (1) but acquired customary land with no title; (3) those who *primarily* reinvested earnings derived from small-scale agriculture to achieve emergent farm scale and have titled land, and; (4) same as (3) but without acquiring title to land.

This stratification allows our analysis to be cognizant of two important factors. The first is the role being played by those who were (and potentially remain) primarily involved in non-farm employment in the growth of the emergent farm sector, relative to small-scale farmers who primarily rely on farm income. The second is the role of land markets in the process of emergent farmer land accumulation.

Table 2
A typology of emergent farmer.

	Have title to land	No title to land/ usufruct tenure structure
Entered emergent farming after having non-farm job	Group 1	Group 2
Entered emergent farming through growth of small-scale operation	Group 3	Group 4

Using these analytical categories we will explore the development trajectories of our sample of emergent farmers from three different, but interrelated perspectives: (1) What was the role of off-farm income in financing the growth of the emergent farm sector?; (2) What were the modes of land acquisition and what are the implications in terms of land use?; (3) How did emergent farmers expand the size of their farms over time?

The role of off-farm income in the growth of the emergent farm sector

Our preceding analysis of the agricultural spending and land administration context suggests that off-farm income may play an important role in the growth of the emergent farm population. As shown in Table 3, summing the number of respondents that fall into Groups (1) and (2) shows that a total of 105 of the 183 (57%) emergent farmers interviewed for this research indicated that the primary source of capital they used to achieve emergent farm scale was off-farm income. For these lateral entrants into emergent farming, off-farm income provided the necessary capital to acquire land and other farm assets to initiate farming.

Yet off-farm employment is not isolated to those who claim to have entered emergent farming laterally. Indeed, 39% of farmers in Group (4) held or continue to hold off-farm employment. In total 73% of our emergent farmer sample indicated that they have held or continue to hold off-farm employment. Moreover, the duration of employment, particularly for respondents in Groups (1) and (2), is quite long, average close to 10 years for each group. This suggests that many of the respondents have used well-established off-farm careers as entry points into emergent farming. The fact that such a minority of respondents demonstrated the capacity to achieve emergent farming status in the absence of off-farm income suggests that under Zambia's current agricultural development framework, off-farm income is an important precondition for achieving farm consolidation.

Moreover, the type of employment pursued by the respondent appears to influence the development of the emergent farming sector. In particular, a majority of respondent in Groups (1) and (2), i.e. farmers who achieved emergent farming status primary through financing from off-farm income, have been employed as civil servants, including as teachers, agricultural extension officers, and healthcare providers. We will return to this point in the next section.

Table 3
Age, education and employment history of the head of household. *Source*: Emergent Farmer Survey.

Growth pathway	Lateral entry in emergent farming		Agricultural-led growth strategy	
Tenure status	Titled land Group 1	Customary land Group 2	Titled land Group 3	Customary land Group 4
1. Count (*n*=)	35	70	6	72
2. Percent of total sample	19%	38%	3%	39%
3. Median Date of Birth of HH	1954	1963	1962	1966
4. Average years of education of HH	11.6	10.7	9.1	8.0
5. Have held a job other than as a farmer (% of respondents)	100%	100%	0%	39%
6. Average duration of employment (years)	9.9	9.9	0	5.7
7. Formerly or currently employed in the public sector (% of respondents)	63%	57%	0%	7%

Superficially, the fact that much of the growth in the emergent farm sector appears to be attributed to individuals using off-farm income, particularly from public sector employment, to acquire land and enter the agricultural sector may support the notion that inherent limitations of scale–scale agriculture prevent a widespread transition to larger, more commercialized production systems (Collier and Dercon's, 2013). However, in the context of Zambia's agricultural development strategy and the unacknowledged land pressures building in customary areas, we feel that this finding deserves a more nuanced interpretation. In particular, the fact that statutory land titling is concentrated among farmers entering the sector laterally suggests that: (1) efforts to encourage land titling in Zambia is supporting emergent farmer development, but in a way that appears to exclude those without the income and social capital conferred through waged employment, and; (2) Because most farmers following an agricultural-led growth strategy (Groups 3 and 4) appear to be excluded from acquiring title, the future capacity of small-scale farmers to expand their area of cultivation may be systematically constrained as more and more land in customary areas is titled to individuals entering farming laterally. In other words, land titling may be implicated in process of elite capture of land, at the possible expense of future small-scale farm growth and farm consolidation.

Land acquisitions and the emergence of a land market

Examining how and when emergent farmers acquired their land provides additional insights into the factors driving the growth of the emergent farming sector in Zambia. Table 4 row 3 shows the distribution of emergent farmers' first land acquisition by decade. What is immediately evident is that across all four groups the majority of initial land acquisitions occurred after 1990. This pattern can be usefully interpreted in the context of both the unique demographic shift that occurred in Zambia in the 1990s and the promulgation of the 1995 Land Act.

Table 4
Land acquisitions strategies, land markets, and land utilization among zambian emergent farmers. *Source*: Emergent Farmer Survey.

Growth pathway	Lateral entry in emergent farming		Agricultural-led growth strategy	
Tenure status	Titled land Group 1 (%)	Customary land Group 2 (%)	Titled land Group 3 (%)	Customary land Group 4 (%)
1. Decade of First Land Acquisition				
a. 1959 or earlier	0	1	0	0
b. 1960 through 1969	2	0	0	3
c. 1970 through 1979	8	4	0	6
d. 1980 through 1989	17	4	38	11
e. 1990 through 1999	19	24	25	33
f. 2000 through 2009	46	61	38	44
g. 2010 or later	8	7	0	3
2. Mode of Land Acquisition				
a. Given by chief	15	24	13	23
b. Given by headman	0	35	0	39
c. Given by relative	10	6	25	22
d. Purchase, with title	42	0	0	0
e. Purchase without title	0	14	0	3
f. Rental	0	12	0	1
g. Inheritance	4	9	25	13
h. State land given to the farmer[a]	29	0	38	0
3. Percent of total land owned that is cultivated in 2010/2011	28	49	25	41

[a] Land is given to farmers by the government through resettlement schemes and farm block development schemes.

In much of Africa, the late 1980s and early 1990s was a time of major economic reform initiated as part of broader debt restructuring programs. In Zambia, structural adjustment programs began in earnest in 1991, with the presidential election of Fredrick Chiluba. A significant part of this economic reform centered upon the privatization of Zambian parastatals, including the privatization of Zambia's mining sector. This privatization, in turn, led to a massive loss of public sector jobs and contributed directly to a unique demographic shift in Zambia. The job losses that occurred in the wake of privatization and the financial collapse of the central government precipitated a massive migration of people from urban to rural areas. As public sector employees lost their jobs many migrated into rural areas to begin farming (Ferguson, 1999; Potts, 1995). This migration from urban to rural Zambia likely explains much of the land acquisition that occurred in the 1990s, particularly for the lateral entry groups.

Yet beginning in the 2000s the effect of urban to rural migration on the rural population waned. Since then, land acquisitions among the lateral entry groups are more likely linked to the dramatic economic growth that has taken place in Zambia coupled with favorable land administration policies. Buoyed by high global copper prices, Zambia's principle foreign exchange earner, and favorable macroeconomic conditions, Zambia has sustained economic growth rates of over 5% since 2005. This growth has expanded employment opportunities in the country and facilitated a decline in poverty rates, particularly in urban area (CSO Living Conditions Monitoring Survey, 2004 and 2010). With few alternative investment opportunities, a supportive public spending system for larger farms, and enabling land legislation, urban investment capital may be drawn into the farming sector in ways that are having a measurable impact on the growth of the emergent farm sector.

The 1995 Land Act's influence on external investment in land is evident when looking at purchases of titled land by farmers in Group (1). Forty-two percent of all land transactions conducted by farmers in Group (1) involved purchasing of titled land, compared to 0% for all other groups. Moreover, access to titled land appears to be an outgrowth of state patronage. As can be seen in Group (1), row 4 h, 29% of lateral entry farmers were given land by the state, primarily through settlement schemes. This suggests that participation in agricultural land alienation is often enabled by some combination of income conferred through off-farm employment and/or links to the state through civil service employment. There is, unfortunately, no evidence of farmers following primarily an agricultural-led growth strategy participating in statutory land markets.

Yet, it is not just statutory land markets that are disproportionately being utilized by farmers entering the agricultural sector laterally. As shown in Table 4 Row 4 e and f, 26% of all land transactions conducted by farmers in Group (2) utilized so-called "vernacular" market mechanisms to acquire land. These vernacular markets entail transfers of land for cash, through sales or rentals, in the absence of formal title, and often without the direct knowledge of the customary authority (Chimhowu and Woodhouse, 2006; Collins and Woodhouse, 2010; Sitko, 2010). There is very little evidence of farmers who followed an agricultural-led growth strategy utilizing vernacular markets to acquire their land. Instead, farmers in Groups (3) and (4) overwhelming depend on "traditional" modes of land acquisition, including through traditional authorities, inheritance, or from living relatives. The preponderance of farmers in Group (2) utilizing vernacular land markets in customary areas, relative to those who followed an agricultural-led growth strategy, suggests that entrance into these markets

Table 5
Current and initial farm sizes by percentile and mean. *Source*: Emergent Farmer Survey.

Growth pathway	Lateral Entry in medium-scale farming		Agricultural-led growth strategy	
Tenure status	Titled land Group 1	Customary land Group 2	Titled land Group 3	Customary land Group 4
1. Total current land area owned and/or rented (ha)				
25th percentile	20.3	20.3	24.0	19.3
50th percentile	40.1	39.0	30.0	39.3
75th percentile	297.4	111.5	154.8	86.2
Mean	157.8	34.4	112.17	36.1
2. Size of initial land acquisition (ha)				
25th percentile	12.6	11.8	6.0	10.8
50th percentile	25.0	25.9	27.0	26.3
75th percentile	252.1	78.9	131.5	63.3
Mean	158.0	27.6	54.1	26.0

tends to be achieved through access to off-farm capital sources and potentially the political power conferred through public sector employment. Among other things, utilizing vernacular land markets in customary land areas requires significant political and economic power to protect these transactions from any punitive repercussions from traditional authorities, who tend to deem these transactions as illegal and a direct threat to their sovereignty over land distribution (Sitko, 2010).

The uneven ways in which the benefits of land market access are distributed across the four groups of emergent farmers has important implications for the future development of the agricultural sector and the potential for involving more small-scale farmers into a process of agricultural-led growth. With population pressure constraining land access in some customary areas, and land inheritance frequently leading to the fragmentation of existing land (Chapoto et al., 2007), the potential to utilize customary modes of land acquisition to expand into the emergent farm category is becoming increasingly difficult. As these traditional forms of land acquisition become less available, farmers will have to depend on emerging statutory and vernacular markets to acquire land, both to begin their farming careers and to expand landholdings. If, as these data suggest, it is primarily those who enter farming laterally who have the necessary income, education, and social capital to access land markets, then the potential for engaging existing small-scale farmers in a process of farm size growth is severely limited.

Furthermore, the opaque ways in which titled land is distributed in Zambia, either through murky negotiations between individuals and traditional authorities or through apportioning land by the state to individuals, may lead to sub-optimal outcomes in terms of land utilization. As shown in Table 4, row 5, respondents operating on titled land cultivate on average less than 30% of their total available land. Even accounting for a reasonable land area under fallow this figure is low, and stands in marked contrast to the overall smallholder population, where on average 87.3% of all available land is cultivated (CSO Supplemental Survey, 2008). The sub-optimal agricultural production outcomes associated with smallholder land titling is supported by regression results using nationally representative survey data. Hichaambwa et al., 2014 find, holding all other factors constant, possessing land title is associated with a 137% reduction in smallholder farm income at a 5% level of probability.

However, underutilization of farm land by larger land owners extends beyond just those farmers operating under formal land title. Nationally representative statistics from Zambia show that smallholder households that owned 10–20 ha of land in 2011/2012 cultivated on average just 36% of their land. The situation worsens for farms greater than 20 ha, which cultivated just 11% of their total holdings.

Of course, land utilization may be a function of duration of land ownership. As such, under-utilization of land may simply be a result of relatively new land acquisition or the use of land for grazing purposes. If that is the case, we would expect to see a positive correlation between the percent of a farmers' total land holding that is utilized for cultivation or grazing and duration of control over the land. Contrary to that expectation, however, our results show that the correlation between duration of land control and the percent of land owned that is utilized is weak (−0.022) and not statistically significantly different from zero ($p = 0.766$). Thus, the longer a respondent controls a plot of land does not lead to a measurable change in the utilization of that land. This is a disappointing finding, and suggests that current land policies are likely not promoting the sorts of agricultural outcomes that would be consistent with an agricultural-led structural transformation.

Land expansion through additional land acquisitions

Evidence presented thus far suggests that much of the growth of the emergent farming sector is being driven by individuals utilizing the economic and social capital conferred from non-farm income to acquire land in customary areas. This does not, however, necessarily imply that the growth of the emergent farm population has entirely excluded small-scale farmers. To better assess small-scale farmer participation in this growth, we examine changes in initial and current land size holdings. This enables an assessment of the prevalence within our sample of emergent farmers who began their farming career with limited access to land— a situation faced by the vast majority of Zambia's small-scale farmers. Evidence that some portion of the sample has grown from a small land base of less than 5 ha to a larger operation would be an encouraging finding, and would suggest that opportunities exist within Zambia's farming sector for small-scale farmers to transition to a larger scale of operation.[3] Table 5 presents the initial and current land holdings of our sample, disaggregated by emergent farmer group and percentile.

Three important findings are apparent in Table 5. First, across all groups current land holdings are quite large, with means ranging from 34 to 158 ha (though only one respondent in the sample cultivated more than 20 hectares). Second, larger land holdings are concentrated among those with title to their land. Finally, initial farm sizes across all four groups, even at the 25th percentile level, meet or exceed 6 ha. This initial land endowment places these farmers in an elite minority of Zambian smallholder; only about 3% of Zambian smallholders own 6 ha of land or more (CSO Supplemental Survey, 2008). This suggests that, in the same way that land markets in Zambia appear to be disproportionately

[3] Note that in this section we discuss total landholdings rather than area cultivated. This was necessitated by challenges related to the recall period. Few respondents in our survey were able to remember the exact amount of land they cultivated in their first farming season, but all could remember the total amount of land they held at the time.

captured by individuals with access to off-farm income and political capital, farm size growth among those primarily engaged in agriculture appears to be predominantly confined to a minority of rural residents who started out in a relatively privileged position with regard to initial landholding size.

Conclusion

Our evidence suggests that the rapid growth of the emergent farmer sector in Zambia is not a reflection of a widespread transition among small-scale farmers to a higher order of production and commercialization. Instead, it appears that much of the growth of the emergent farming sector can be explained by a legislative and public spending framework that favors both the alienation of large tracts of agricultural land by non-smallholder farmers, coupled with the disproportionate capture of agricultural public spending by a rural minority.

The rapid growth in urban incomes in Zambia over the past decade has provided a growing number of urban wage earners with the financial capacity to seek out new investment opportunities. In the context of a favorable agricultural development strategy, and given the uncertainty of many other types of investment in Zambia, many salaried urban-based Zambians are directing their resources towards investments in agricultural land. It is interesting to note that while our sample did not include regions in close proximity to major urban areas, our sample still reflected a large number of these "lateral entrants" into agriculture. In all likelihood, if rural regions close to major urban areas were included, the scale of lateral entry into agriculture or acquisition of agricultural land by urban wage earners would be significantly higher. This suggests that in some regions of Zambia, a "land grab" is underway. This is not the same type of land grab that makes headlines in local or international press, though the effects in terms of future land access for the local smallholder population may be the same. Moreover, our findings suggest that land acquisition by urban wage earners may have little effect on agricultural growth in Zambia, as these individuals, particularly those who acquired title to their land, are utilizing just a fraction of their land for the purpose of agricultural production.

The apparent widespread under-utilization of land among emergent farmers, particularly those holding title to their land, draws into question Zambia's agricultural public spending strategy, which is disproportionately directed to their benefit. While state support for emergent farmers through input and output market subsidies appears to be effective at increasing staple food production, especially on farms that are already relatively large, our findings suggests that this spending strategy is ill-equipped for enrolling small-scale farmers into a sustainable process of capital accumulation. Indeed, the fact that many emergent farmers appear to have access to off-farm income sources raises questions as to whether state subsidies for this sector are even necessary.

It can be argued, alternatively, that while a public expenditure strategy disproportionately targeted to relatively large farms may not directly benefit small-scale farmers, it provides potential indirect benefits through employment effects on large farms. While our data preclude a direct analysis of labor market effects of the growth in the emergent sector, the fact that emergent farmers utilize less of their land for agricultural purposes than the average smallholder in Zambia suggests that the employment affect per hectare owned on emergent farms is likely to be limited. Indeed, while the emergent farm sector has contributed importantly to the impressive growth of Zambian agriculture over the 2000–2011 period, the persistence of high rural poverty rates raises questions about how broadly spread the indirect growth effects have been. Over the same period in which Zambia witnessed rapid growth in the emergent farmer population, rural poverty levels actually increased marginally from 77.3% in 2004 to 77.9% in 2010 (CSO Living Conditions Monitoring Surveys, 2004 and 2010).

What do these findings tell us about the prospects of engaging small-scale farmers in a process of agricultural transformation? Do these findings support the conclusion that insurmountable barriers within the smallholder sector preclude these farmers from meaningfully increasing production, expanding their land holdings, and increasing their income, as is sometimes argued (Collier and Dercon, 2013; Collier, 2008)?

To the contrary, we believe that lack of evidence of small-scale farmers participating in the growth of the emergent farmer population should be interpreted as a failure of policy rather than as an inherent failure of the sector itself. As has been argued elsewhere, the halting development of the small-scale farm sector in much of Africa reflects the outcome of policies and legislation that have discriminated against them and excluded them from appropriating public spending on agriculture (Mosley, 2002; Deininger and Binswanger, 1995). Thus, while we agree with Collier and Dercon (2013) that a more consolidated agricultural sector must be part of Africa's agricultural future, we question the logic of attempting to achieve this by leap-frogging sustained investments in smallholder-led development. Rather than beginning with the assumption that small-scale farmers are inherently handicapped by their scale of operation, attention must be given to the reasons why political processes have so far failed to institute policies, legislation, and public expenditure patterns supportive of, or at least neutral to, a pro-poor agricultural growth strategy. By redoubling multilateral donor attention on the political processes of rural development it may be possible – at the margin or perhaps more comprehensively – to achieve farm consolation through a broadly-based smallholder development strategy, as was achieved in many parts of Asia in the second half of the 20th century. This approach is likely to hold the brightest prospects for enabling agricultural growth to translate into the achievement of arguably more central policy goals in Africa such as the alleviation of poverty, food insecurity, and related outcomes that are highly dependent on how valuable natural resources are distributed.

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