



**The Rising Class of Emergent Farmers:
An Effective Model for Achieving Agricultural Growth and
Poverty Reduction in Africa?**

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Any views expressed or remaining errors are solely the responsibility of the authors.

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EXECUTIVE SUMMARY

The relative importance of small versus large farm enterprises in driving agricultural production growth and poverty reduction is a central development debate in Africa. More broadly this debate revolves around questions of farm land intensification versus extensification as the most effective means for addressing the persistent issues of food insecurity and hunger in Africa. On the one hand, there is a well-established literature that argues that the intensification of smallholder production is the most effective way of initiating sweeping beneficial changes in predominantly agrarian societies. On the other hand, there is a growing belief that massive constraints in African smallholder production and marketing systems make it improbable for very small farms to be engines of agricultural-led capital accumulation, land consolidation, farm expansion, and significant production gains. For them a strategy that seeks to stimulate large-scale agriculture can more effectively address the constraints to African food production.

Yet, seemingly contrary to the expectations of those who see little future in smallholder agriculture, Zambia has witnessed over the last 10 years a massive increase in the number of so-called emergent farmers. These are farmers that cultivate between 5 and 20 hectares of land, making them distinct, in terms of overall production and income, from the majority of smallholders, of whom 70% cultivate only two hectares of land or less. If this growth is being driven by a process of capital accumulation, area expansion, and farm consolidation among the small-scale farmers, then Zambia has achieved a truly remarkable improvement in smallholder-led agricultural growth. This article explores the factors driving the growth of the emergent farm sector in Zambia in an effort to identify the policies that contributed to this growth and to evaluate whether or not this strategy offers an effective way to address issues of poverty and hunger in Africa.

Data for this article comes from both nationally representative surveys on smallholder agriculture in Zambia as well as a structured survey conducted with 183 emergent farmers in four districts in Zambia.

To aid in our analysis we divide our sample of 183 emergent farmers into four mutually exclusive analytical groups based on the land tenure status of the farm and the primary source of capital used to attain emergent farm status. These categories are: (1) Those who became emergent farmers using income from a non-farm job and purchased their land with title; (2) Those who became emergent farmers using income from a non-farm job and acquired customary land with no title; (3) Those who used farming as the main vehicle for expanding into emergent farming, and have title to their land, and; (4) Those who followed an agricultural-led strategy and are on customary land with no title. The main findings on the articles are as follows:

- Over 70% of the emergent farmers interviewed held prior jobs other than as farmers. This suggests that many emergent farmers may not have achieved their current scale of farm operation through a process of agricultural-led income generation and area expansion. Rather, many emergent farmers may have achieved their scale of operation through what we will call a *lateral* entry into farming whereby an individual primarily engaged in non-farm employment was able to use savings to purchase land and farming assets.
- Of the farmers with title to their land and entered farming laterally (Group 1), 60% have held public sector employment. In comparison, only 15% percent of farmers in Group 4 were employed in the public sector. This suggests that land titling policies, aimed at driving investment in agriculture, are being overwhelmingly dominated by a relative elite minority of individuals with the social and economic power conferred through public sector employment.

- The promulgation of the 1995 Land Act may have facilitated the transition from urban to rural life for many former public sector employees. In particular, the 1995 Land Act made it possible for urban residents to acquire titled land in customary areas. The effect of the 1995 Land Act is clearly visible in the land acquisition strategies of farmers in Group 1. Fifty-five percent of all land transactions conducted by farmers in Group 1 involved purchasing of titled land, compared to zero percent for all other groups.
- Farmers in Group 2 utilized *vernacular* market mechanisms to acquire land, in the form of either purchasing untitled land in customary areas or through rental from a local resident. Conversely, there is very little evidence of farmers who followed an agricultural-led growth strategy utilizing markets to acquire their land. Instead, farmers in Groups 3 and 4 overwhelmingly 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 strategy, suggests that entrance into these markets tends to be achieved through access to off-farm capital sources and potentially the political power conferred through public sector employment.
- Initial farm sizes across all four groups, even at the 25th percentile level, exceed what is considered small-scale farm size in Zambia. This suggests that, in the same way that land markets in Zambia appear to be disproportionately captured by elites with access to off-farm income and political capital, farm growth among those that followed an agricultural-led development path appears to be predominantly captured by a relatively elite group of farmers. This suggests that initial land endowments may play a critical role in facilitating the attainment of emergent farming status for those following an agricultural-led pathway to emergent farmer status. The lack of evidence to support the assertion that improvements in the conditions of small-scale agriculture have contributed to growth in the emergent farm sector is unfortunate.

Over the last decade Zambia has witnessed both a significant increase in agricultural production, driven primarily by an expansion in area under-cultivation, favorable weather conditions, and an impressive expansion of relatively larger, indigenous Zambian farmers. Yet, poverty rates over the same period have remained virtually unchanged. Indeed rural poverty rates actually increased marginally from 77.3% in 2004 to 77.9% in 2010, a time period that coincided with a significant increase in spending on agriculture (CSO Living Conditions Monitoring Surveys 2004 and 2010). This suggests that while Zambia's agricultural development strategy has been relatively successful at providing a public spending and legislative environment in which emergent farmers can flourish, it has failed to provide a viable pathway out of poverty for the nation's millions of very small-scale farmers.

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ACRONYMS

ACF	Agricultural Consultative Forum
Afripop	A spatial database for Africa
CFS	Crop Forecast Survey
CSO	Central Statistics Office, Zambia
DACO	District Agriculture and Cooperatives Office
FAO	Food and Agriculture Organization of the United Nations
FISP	Farmer Input Support Programme
FRA	Food Reserve Agency
GAEZ	Global Agro-Ecological Zones
GMAs	Game Management Areas
GRUMP	Global Rural-Urban Mapping Project
IAPRI	Indaba Agricultural Policy Research Institute
ICARRD	International Conference on Agrarian Reform and Rural Development
IFDC	International Fertilizer Development Center
IFPRI	International Food Policy Research Institute
ILUA	Integrated Land Use Assessment
MACO	Ministry of Agriculture and Cooperatives, Zambia
MSU	Michigan State University
SIDA	Swedish International Development Agency
SSA	Sub-Saharan Africa
SS	Supplemental Surveys to Post Harvest Survey
USAID	United States Agency for International Development
USD	U.S. Dollar
ZMK	Zambia Kwacha
ZNFU	Zambian National Farmers Union

1. INTRODUCTION

Historically, in most of the world, the attainment of rapid reductions in poverty and hunger was initiated by sustained and broad-based agricultural growth (Johnston and Kilby 1975; Mellor 1976). Sub-Saharan Africa has yet to achieve sustained agricultural growth, but because the majority of its population remains engaged primarily in agriculture, it is difficult to identify what processes could kick-start broad-based growth processes leading to rapid poverty reduction other than agriculture.

While there is broad acceptance of the need for improving the levels of agricultural production and commercialization in Sub-Saharan Africa (SSA), there is significant debate about how to most effectively achieve this. Generally speaking, increases in agricultural production can be achieved through the intensification of production on existing land, by bringing more land into cultivation, or some combination of the two. Because SSA has both a massive yield gap in staple grains (Fischer, Byerlee, and Edmeades 2009) and is the only world region that has large tracts of arable land that are not being farmed (Thurow 2010; Deininger and Byerlee 2011), a combination of extensification and intensification processes is likely needed to trigger sustained agricultural production growth on the continent.

Two questions then emerge:

- First, in terms of spending priorities, which of these two pathways should be the focus of public and foreign assistance spending?
- Second, who should be the primary beneficiary of this spending, a minority of farmers with relatively large capital and asset bases, or the majority who languish under fairly severe asset constraints?

These fundamental questions are at the very heart of both academic and policy debates over the role of agriculture in addressing entrenched issues of poverty on the continent.

Proponents of the structural transformation paradigm argue that the intensification of smallholder production is the most effective way of initiating sweeping beneficial changes in predominantly agrarian societies (Johnston and Kilby 1975; Mellor 1976). Stimulating a process of broad-based smallholder-led agricultural growth, in which both very poor and better-off farmers are included, creates a build-up of purchasing power among millions of farmers, who subsequently recycle that money into the broader economy. The demand growth sparked by this process creates employment in urban areas and increases demand for food and other farm products, thus contributing to a virtuous cycle in which urban and rural labor forces provide markets for each other. Over time, as demand for non-farm products and services rise, the labor force responds by shifting from farm to non-farm sectors. One outcome of this process is both a smaller proportion of the population engaged in agriculture and more consolidated landholdings.

For others, massive constraints in African smallholder production and marketing systems make it improbable for very small farms to be engines of agricultural-led capital accumulation, land consolidation, farm expansion, and significant production gains (Collier 2008; Collier and Dercon 2009). Given the persistent food deficits in SSA, they argue, a more effective means for using public spending to achieve rapid increases in food productivity and poverty reduction is to support the development of larger more commercially viable farm enterprises. In this view,

providing a policy environment that is conducive to both investments in commercial farming operations and the growth of *viable* smallholders 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 smallholders with little or no surplus to sell. Second, these farms can provide remunerative employment to people unprofitably engaged in semi-subsistence agriculture. Third, larger farms are in a far better position than smallholders to adopt and adapt technologies to local contexts, thereby allowing them to quickly incorporate new technologies into their farm systems to maintain yield growth over time. Finally, decades of effort to promote smallholder development and food security in Africa have yielded slow progress. Indeed, over the last 40 years staple food yields in Africa have remained stagnant, while the average farm size has declined (Jayne, Chamberlin, and Muyanga 2012). These views have led a small but growing group, including many African policy makers, to argue that investment in small-scale farmers in Africa is simply not a viable option for achieving the sorts of structural transformations and food productivity gains the continent needs to address entrenched issues of poverty.

However, seemingly contrary to the expectation of those who see little potential in the future of small-scale agriculture, over the last decade, from 2000/01 to 2010/11, Zambia has witnessed a rapid increase in the number medium-scale, or *emergent* African farmers.¹ While the overall population of smallholders (defined as cultivating 20 hectares or less) has increased by 33.5%, the number of farmers cultivating between 5 and 20 hectares has grown by 62.2%.

Disaggregating these figures further shows that the number of farmers cultivating 10 to 20 hectares of land has increased by 103.1% (CSO 2011). At the same time national maize production has doubled and the real value of agricultural production has grown by 23%. If this growth is being driven by a process of capital accumulation, area expansion, and farm consolidation among the small-scale farmers, then Zambia has achieved a truly remarkable improvement in smallholder-led agricultural growth. Yet, the processes by which this growth has been achieved remain unclear. Is the growth of relatively larger smallholder farms in Zambia indicative of a process of inclusive broad-based structural transformation or is there something else driving this change?

The causes and consequences of the remarkable growth in the number of emergent farmers in Zambia warrants further investigation. Superficially, an investigation of the emergent farming sector will help to uncover the types of legislation, investments, and public policies that underpin this growth. This may help to guide policy-makers and other stakeholders as they seek to identify spending priorities to foster agricultural growth. Yet more profoundly, the rapid growth of the emergent farming sector raises questions about the potential consequences of this growth: are the policies and public investment strategies used to drive the spectacular increase in the number of larger-scale indigenous farms in Zambia gradually foreclosing effective responses to rural poverty and hunger on the continent? By exploring these questions this article hopes to provide

¹ Emergent farmer is a frequently used but hazy term. In Zambia the term is used to describe farmers cultivating more than five hectares of land. The term is also associated with innovation, dynamism, superior management skills, and greater access to capital, compared to conventional small-scale African farmers. For the remainder of this article we refer to African farmers cultivating more than five hectares as emergent farmers (although most own between 10-100 hectares), in contrast to both longstanding established large commercial farms, and to *small-scale farms* defined by the government of Zambia as those cultivating less than five hectares.

more clarity on the debate about the future of small-scale African agriculture in meeting the agricultural growth needs of the continent.

The article is organized as follows. Section 2 reviews the data sources and methods of analysis used in this article. Section 3 explores the legislative and public expenditure strategies driving the growth of the emergent farm sector in Zambia. Section 4 seeks to unpack some of the preconceptions about agricultural growth that underpin Zambia's agricultural development strategy. Section 5 draws on survey data with 183 emergent farmers in Zambia to analyze how they achieved their current scale of operation. Section 6 offers some concluding remarks.

2. DATA AND METHODS

For the purpose of this study we define emergent farmers as those who own or control between 10 and 200 hectares of land (although they may cultivate only a fraction of their total land). In most cases Zambian farmers who own or control 10 to 200 hectares of land have little in common with large-scale commercial farmers in terms of race (most commercial farmers in Zambia are of European decent), farm size, access to finance, input application rates, and farm management strategies. Farmers with less than 200 hectares of land are almost all indigenous Africans who tend to face the same sorts of finance constraints as smaller farmers. These are farmers who have achieved an asset base and production level that distinguishes them from most African farmers, of whom 70% have less than two hectares of land and generally have small and erratic surpluses to sell (Jayne et al. 2010).

Data for this article come from two primary sources. First, we use secondary household survey data from the Crop Forecast Survey (CFS) and the Supplemental Surveys to Post Harvest Survey (SS), both of which are conducted by the Central Statistics Office in partnership with the Ministry of Agriculture and Livestock. These surveys are both nationally representative for farms cultivating between 0.1 and 20 hectares. 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. Thus, this survey provides insights on the characteristics of farmers cultivating up to 20 hectares, but may exclude those emergent farmers cultivating a greater area.

However, anecdotal evidence indicates that many of the emergent farmers in Zambia cultivate over 20 hectares, thereby requiring us to collect additional data from this class of farm. For this purpose, we designed and implemented structured surveys with farmers owning between 10 to 200 hectares. This emergent farmer survey 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 farmers cultivating over 10 hectares of land in the 2010/11 CFS. To ensure a reasonable concentration of emergent farmers to sample from, at least 3% of all farmers in the district had to be emergent farmers. We selected districts along a continuum of emergent farmer concentrations to ensure geographic diversity in the sample. Of the 72 Districts 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. 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. A total of 183 emergent farmers were interviewed for this study.

3. LAND ABUNDANCE AND POLITICAL POWER: POLICIES TO DRIVE AGRICULTURAL PRODUCTIVITY GROWTH IN ZAMBIA

Understanding the factors driving the growth of the emergent farmer sector requires a close examination of the legislative and public spending environment within which this growth is occurring. In Zambia agricultural policy has been guided in large measure by two fundamental preconceptions: 1) land in Zambia is abundant; and 2) emergent farmers are in the best position to utilize this land to drive agricultural productivity growth.

Since independence the opening paragraph of nearly every National Agricultural Policy document has highlighted that Zambia is uniquely endowed with large swaths of potentially productive agricultural land that lays idle (e.g., MACO 2004: 1; MACO 1998). The notion of abundant, underutilized land implies that substantial agricultural production growth can be achieved by facilitating the productive utilization of these underutilized areas. The notion of abundant underutilized land also implies that land is not the binding constraint to agricultural development, increased food security, and lower rural poverty levels as it seems to be in many other countries.

The second fundamental preconception is an outgrowth of the first, and speaks directly to the ongoing debates about the viability of smallholder-led development as the principal engine of agricultural growth and poverty reduction. In Zambia agricultural policy has tended to reflect the belief that production growth is best achieved through public investments directed toward farmers with larger asset and capital bases. Assumptions about the advantages of targeting better-off farmers are reflected in government development programs dating back at least as far as the colonial era including African farmer improvement schemes, which targeted a select group of so-called progressive African farmers with preferential crop prices, input subsidies, and extension services (Chipungu 1988; Johnson 1956). Policy advocacy by powerful farm lobbies in Zambia has played an important role in advocating for this development strategy. Farm lobbies in Zambia date as far back as 1905. These have included the African Farmers' Association, the Rhodesia National Farmers' Union, the Commercial Farmers' Bureau, and most recently, the Zambian National Farmers' Union (ZNFU). As early as 1945, members of the African Farmers' Association 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” (Chipungu 1988, 74).

Since that time farm lobbies in Zambia have remained vocal proponents of directing government spending towards an elite minority of farmers in Zambia. Over the last decade ZNFU has been particularly effective at advocating for public spending and legislation that explicitly or implicitly favors the transfer of state resources to its members. Central to their advocacy efforts is the argument that the abundance of underutilized land in Zambia is a clear indication of the inability of the majority of Zambia's smallholders to effectively contribute to the nation's agricultural growth.

The interrelated assumptions about land availability and the limited capacity of relatively smaller-scale farmers to utilize Zambia’s land to drive agricultural growth are clearly reflected in both Zambia’s public spending priorities for agriculture and legislation governing land administration. In terms of public spending for agriculture two 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, routinely account for over 70% of the budget allocated to the Ministry Agriculture and 90-96% of the agricultural budget for poverty reduction (Mason et al. 2011). Yet these programs are not designed to address issues of rural poverty, rather they are meant to support the intensification of production and farm expansion among a relative minority of better-off Zambian farmers.

FISP, for example, is designed to target “viable farmers with the capacity to grow at least 0.5 hectares of maize” (MACO 2011). Given land distribution pattern in rural Zambia, this requirement automatically excludes 15-20% of Zambia’s rural households that lack sufficient access to land. In Zambia, as in much of Africa, the relationship between farm size, poverty, and social marginalization is well established (Jayne et al. 2003; Berry 1993). Thus, the land size requirement for FISP explicitly excludes a large percentage of the poorest rural households. In addition, the upfront costs of acquiring FISP inputs, which include ZMK 250,000 in cooperative membership fees and ZMK 280,000 for the input pack itself, are equivalent to 20% or more of the gross household income of 60% of rural households in Zambia (Burke, Jayne, and Sitko 2012). As shown in Table 1, FISP targeting requirements larger-scale farmers tend to disproportionately benefit from the subsidy.

In addition to supporting input access for relatively larger maize farmers in Zambia, the government also provides significant output market support through the FRA. In Zambia the FRA provides pan-territorial prices for maize at above market prices. As a result, farmers are given a significant incentive to grow maize, even in regions or on farms that may not be well-

Table 1. FISP Fertiliser Received (2010/11 Crop Season) and Expected Maize Sales, 2011, by Farm Size Category

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 farmers expecting to sell maize (E)	Expected maize sales (kg/farm household) (F)
0-0.99 ha	596,334	39.6%	14.3%	24.1	22.2	135
1-1.99 ha	499,026	33.1%	30.6%	69.3	47.7	609
2-4.99 ha	354,116	23.5%	45.1%	139.7	64.0	1,729
5-9.99 ha	49,410	3.3%	58.5%	309.7	82.1	6,613
10-20 ha	6,999	0.5%	52.6%	345.6	86.8	15,144
Total	1,505,885	100%	28.6%	77.1	42.7	950

Source: MACO/CSO Crop Forecast Survey, 2010/11. Reproduced from Jayne et al. 2011

suited for maize production. Resultantly, this price incentive, in combination with FISP input subsidies, has contributed to a significant expansion of area under maize cultivation. Mason et al. (2011) estimate that between 2006-08 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 to 27% of area under maize cultivation. Much of this came from expansion into new farm land. Like FISP, FRA spending is directed toward larger, better capitalized farmers, because to benefit from FRA spending requires that a farmer produce a surplus of maize to sell. 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. 2011). 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). These farmers on average control significantly more land and more farm assets than the majority of smallholders (Mason et al. 2011). Thus, in an effort to encourage agricultural productivity growth and farm expansion into more of Zambia's under-utilized land, the government spends a huge percentage of its available agricultural budget supporting a small cohort of relatively better off farmers.

To aid in the appropriation and use of more of Zambia's land the 1995 Land Act was enacted to permit the conversion of customary land to leasehold title by both individuals and corporations. 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 and transferable leasehold titles of various durations are granted. Conversely, customary lands are administered by traditional authorities, such as chiefs and headmen, who grant usufruct rights to individuals. Historically the sale or purchase of customary land was prohibited. Yet, under the 1995 Land Act customary land can be transferred to leasehold title if traditional authorities grant consent. This effectively provides an incentive for traditional authorities to sell land over which they have jurisdiction to willing buyers. It also makes chiefs and headmen increasingly vulnerable to murky political and economic pressures to cede title of customary land to individuals from outside their local community, including foreign commercial farming interests and *urban big men* (Binswanger, Deininger, and Feder 1995; Bruce 1988; Downs and Renya 1988).

The 1995 Land Act is a critical piece of legislation for the government of Zambia as it pursues another of its key agricultural development and land use expansion schemes: farm blocks in customary areas (MACO 2004). To develop these blocks, the government has entered into negotiations with traditional authorities to cede large tracts of customary land and permit the issuance of titles in each of Zambia's provinces. In total more than one million hectares of land has been carved out of customary areas and converted to title under the farm block development scheme. Within each farm block, land 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 hectares of land. Linked to this core venture are several commercial farms, which are allocated 1,000-5,000 hectares, emergent farms of 100-500 hectares, and small-scale farms ranging from 20-40 hectares. Notice that these definitions of emergent and small-scale farms diverge significantly from both the accepted definitions used in the rest of the country and the experiences of most of Zambia's smallholders. The idea that a small-scale farm could be 40 hectares in size suggests that those who will acquire these *small* farms will not be the same sort of farmer, in terms of assets or capital, as the vast majority of Zambia's current smallholder population.

In addition to converting farm block land to leasehold title, and allocating it to investors and other interested parties, the government is investing in infrastructure, such as roads, electrification, and irrigation within the blocks. Between 2010 and 2011 the government of Zambia spent approximately USD 13 million in the development of these farm blocks. This far exceeds the approximately USD 4 million the government spent on public agricultural research institutions during the same time period (Kuteya and Kambole 2011). This spending pattern implies that the government's *de facto* agricultural development priority is to facilitate the acquisition and utilization of more of Zambia's land by well-capitalized individuals and corporations, rather than invest in similar public goods in the customary lands where the majority of the nation's farmers reside.

4. WHAT IF THEY ARE WRONG?

Notions of land abundance and the relative efficiency of larger farms to drive agricultural growth clearly serve as the foundation of Zambia's agricultural development strategy. But what if these assumptions are wrong?

There are two reasons to question assumptions about land availability in Zambia: 1) the amount of customary land available for smallholder cultivation is far less than commonly assumed; 2) Overall population density figures mask the fact that about 20% of Zambia's rural population live in densely populated areas exceeding 500 persons per km² where average farm size is quite low.

On the first point, recent research has shown that the assumption that 94% of Zambia's land is under customary rule and is, by implication, available for cultivation is misleading. In particular, this figure fails to account for a number of administrative designations that prevent farmers from accessing this land, as well as the increasing amount of land that has been carved out of customary areas and converted to leasehold title. Metcalfe (2005) and others (Chizyuka et al. 2006; Kalinda et al. 2008), have attempted to quantify the actual amount of customary land available to smallholders as follows:

"Although it is sometimes stated that 94% of Zambia falls under customary tenure from that proportion must be deducted the 8% of the country designated as national parks and further 8% designated as forest reserves. From the remaining 76% must be deducted 2% for urban areas and 12% as unspecified areas (e.g., state farms, property, military, research stations, etc.). Finally, from the remaining 64% the Game Management Areas (GMAs) that make up 23% of Zambia's land area must be considered" (Metcalfe 2005: 7).

This means that approximately 41% of Zambia's land is actually under customary administration and available for smallholder production. Yet this figure includes mountainous areas, marshes, and swamps, areas that are permanently flooded, infested with tsetse flies, and/or too arid to be suitable for intensive crop production. Thus, there is considerably less land that is suitable for cultivation.

Turning to the second point, recent analysis using two different spatial databases, the Global Rural-Urban Mapping Project (GRUMP) and AfriPop (a spatial database for Africa). suggest that while large tracts of land in do indeed conform to the notion of low population densities in rural Africa, the vast majority of rural households are actually cooped up in relatively small areas where population densities are high (Jayne, Chamberlin, and Muyanga 2012). These databases allow the distribution of Zambia's rural population to be examined at the 1 square kilometer pixel level. Once all pixels containing less than 10% arable land or exceeding 2,000 persons per km² are excluded, a more nuanced picture of land access conditions in rural Zambia emerges. Roughly 35% of Zambia's rural population reside in pixels exceeding 500 persons per km² (Table 2), which is considered by at least one study to be the maximum carrying capacity for land under intensive cultivation (Henao and Baanante 1999). This suggests that much of Zambia's rural population is concentrated in a relatively small area, where population pressures are becoming acute. These are primarily customary land areas where investments into basic public services and infrastructure have been made.

Table 2. Rural Population Density Distribution on Land Categorized as Arable, GRUMP 2010

	Percentiles of all pixels with arable land ranked by population density							Mean across all pixels
	5 th	10 th	25 th	50 th	75 th	90 th	95 th	
Ethiopia	48	70	113	151	237	517	695	239
Ghana	32	44	70	128	653	1453	1775	440
Kenya	38	71	185	393	648	960	1170	465
Malawi	63	84	136	230	374	587	812	307
Mozambique	7	14	30	68	494	965	1394	287
Nigeria	36	45	91	194	458	1274	1687	401
Rwanda	162	229	346	450	558	780	1354	519
Tanzania	11	16	36	59	143	886	1546	228
Uganda	50	84	163	277	438	658	915	349
Zambia	7	12	23	332	944	1186	1210	450

Data sources: Year 2010 population estimates from GRUMP; arable land is the share of all pixels classified as cultivated in the Global Agro-Ecological Zones (GAEZ) 3.0 database. Data and information available at:

<http://www.iiasa.ac.at/Research/LUC/GAEZv3.0/>

Note: These estimates are based on all 1 km² grid cells (pixels) categorized as rural and with at least 10% of the grid cell being arable land and below 2000 persons per km².

In addition to some potentially serious reservations about the extent to which land is actually available for smallholder cultivation in Zambia, there is evidence that the chosen benefactors of the bulk of public spending on agriculture – the minority of relatively better off farmers – is also misplaced. There are two potential reasons for this: 1) inverse-productivity analyses routinely show that small farms tend to be more productive than larger farms, and; 2) the growth linkages literature suggests that in predominantly agrarian societies, increasing the productivity of millions of small-scale farmers supports broader economic development better than other development strategies.

A vast literature on farm size efficiency shows that, in general, smallholder farmers are more efficient food producers than larger farmers, especially after taking into account the various advantages given to large farm owners (Deininger and Binswanger 1992; Carter 1984; Schultz 1964; Hayami and Otsuka 1993). In Zambia, a recent analysis of maize yield responses to fertilizer application shows that despite the government explicitly targeting larger farms, households with the smallest farms actually utilize fertilizer more efficiently (Burke, Jayne, and Sitko 2012). This suggests that while the smallest farms do experience a number of constraints to production and marketing that are related to their scale, evidence suggests that when provided with a level playing field they often outperform larger farms in terms of productivity.

Another well-documented phenomenon is that improving the productivity of smallholders offers greater growth linkages than investments in any other sector (Delgado et al. 1998; Mellor 1995). Growth linkage studies suggest that increases in smallholder productivity provide substantial benefits to the broader economy, both in terms of declining food prices for consumers and demand growth for durable goods through increased purchasing power among smallholders. If efforts to promote agricultural development exclude the majority of smallholders, rural poverty

tends to persist, while urban development challenges are exacerbated as more and more young people are pushed off unproductive farms in search of urban employment.

Taken together there is real concern that the growth of the emergent farmer sector in Zambia may be coming at the expense of small-scale farmers, and may be undermining Zambia's long-term potential to increase agricultural production in a way that can effectively address rural poverty.

5. HOW DID EMERGENT FARMERS ACHIEVE THEIR CURRENT SCALE OF OPERATION?

The rapid growth of emergent farmers in Zambia is taking place within the context of an agricultural development strategy that either implicitly or explicitly supports a minority of rural residents. Because the vast majority of the government’s agricultural budget supports these better off farmers, the rapid growth of the emergent farmer sector in Zambia is not necessarily surprising. Given that very little of the government’s agricultural budget is directed toward the 70% of truly small-scale farmers, who farm less than two hectares of land, it is not clear if small-scale farmers have been participants in the evident growth of the emergent farming sector. In other words, is there evidence that at least a portion of the growth of the emergent farm sector is the result of some of small-scale farmers accumulating capital and expanding their area of cultivation? In this section we explore how 183 emergent farmers in Zambia achieved their current scale of operation in order to assess the extent to which the rapid development of the emergent farmer sector does or does not reflect a broader improvement in the conditions and growth opportunities of Zambia’s small-scale farmers.

5.1. Analytical Categories

To aid in our analysis we divide our sample of emergent farmers into four mutually exclusive analytical groups based on the land tenure status of the farm and the primary source of capital used to attain emergent farm status. Table 3 details these categories as: (1) those who became emergent farmers using income from a non-farm job and purchased their land with title; (2) those who became emergent farmers using income from a non-farm job and acquired customary land with no title; (3) those who used farming as the main vehicle for expanding into emergent farming, and have title to their land and; (4) those who followed an agricultural-led strategy and are on customary land with no title. The justification for this categorization is described below.

5.2. Land Tenure Status

We divided our sample between those with title to at least a portion of their land and those who are operating entirely under the customary land tenure system for two primary reasons. First, there is the obvious benefit of exploring the characteristics of farmers who are gaining access to titled land.

Table 3. Emergent Farmer Groups

	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

Source: Authors.

Second, by examining land acquisition and farm expansion strategies by tenure status we can gain insights into the presence of so-called vernacular land markets in customary areas, i.e., illicit markets for the buying and selling of customary land in the absence of legal titles (Chimhowu and Woodhouse 2006; Colin and Woodhouse 2010). Ethnographic evidence from across the continent suggests that these markets are developing rapidly (see Colin and Woodhouse 2010 for a review), including in Zambia (Sitko 2010). The vernacular market literature suggests that population pressures stimulate the development of land markets that are embedded within a set of local power relations, which may systematically privilege some with access while excluding others. In the context of a policy environment that presupposes that farmers have virtually unlimited access to land it may be instructive whether or not vernacular land markets are part of the development strategies pursued by emergent farmers.

5.3. Source of Capital for Attaining Emergent Farm Status

The second analytical categorization concerns the primary source of the capital used by the farmer to attain emergent farming status. To examine this we stratify the sample into whether their main source of capital was from farm income or off-farm income. Over 70% of the emergent farmers interviewed held prior jobs other than as farmers. This suggests that many emergent farmers may not have achieved their current scale of farm operation through a process of agricultural-led income generation and area expansion. Rather, many emergent farmers may have achieved their scale of operation through what we will call a lateral entry into farming whereby an individual primarily engaged in non-farm employment was able use savings to purchase land and farming assets. This stratification allows us to assess the extent to which it is primarily farm or non-farm income that is driving the growth of emergent farmers.

5.4. Emergent Farmer Growth Trajectories

We will explore the development trajectories of our random sample of emergent farmers from three different, but interrelated perspectives: the role of off-farm income sources, modes of land acquisition, and farm size growth through additional land acquisitions. By exploring how current emergent farmers generated capital for farm investment, acquired their land, and extended their farm sizes over time we hope to clarify the extent to which the growth of the emergent farming sector in Zambia is embedded within a broader process of small-scale farmer capital accumulation, land acquisition, and productivity growth.

5.5. The Role of Off-farm Employment

Survey data from emergent farmers suggest that off-farm employment plays a foundational role in the rapid growth of the sector. Off-farm jobs were the primary form of employment for 71% of the sample at some point in their lives. In the case of the 46% of farmers who followed an agricultural-led development pathway, off-farm income provides an important source of supplemental capital to acquire farm assets. For the 54% who entered farming laterally, off-farm income provided the startup capital to initiate farming. Yet the type and source of off-farm income plays an important role beyond simply providing capital. Given what appears to be

growing land constraints in rural Zambia, and the potentially opaque nature of land administration and distribution in Zambia, where traditional authorities and individuals within the central government wield an inordinate amount power over land distribution, certain types of employment may provide an individual with the local political power to access land markets that other forms of employment may not offer (Binswanger, Deininger, and Feder 1995).

As shown in Table 4, when the sample of emergent farmers is divided into our four analytical groups a striking pattern emerges in terms of the relative proportion of farmers in each category who have held public sector employment. Of the farmers with title to their land and entered farming laterally (Group 1 row 7), 60% have held public sector employment. In comparison, only 15% of farmers in Group 4 were employed in the public sector.

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 lend credence to the theories about the inherent limitations of small-scale agriculture (Collier and Dercon 2009). Yet 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. The fact that farmers entering the sector laterally are alienating large tracts of customary land suggests that: 1) efforts to encourage greater land utilization by allowing land titling in customary is supporting emergent farmer development, but in a way that appears to actively exclude those without off-farm income and power conferred through primarily public sector employment, and; 2) because small-scale farmers appear to be excluded from acquiring title, the future capacity of very 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.

Table 4. Age, Gender, Education and Employment History of the Head of Household

Growth pathway	Lateral Entry in Emergent Farming		Agricultural-led Growth Strategy	
	Titled land Group 1	Customary land Group 2	Titled land Group 3	Customary land Group 4
1. Count (n=)	30	70	7	76
2. Percent of total sample	16%	38%	4%	42%
3. Median Date of Birth of HH	1954	1963	1962	1966
4. Percent Female Headed	6.7%	10%	14.3%	6.6%
5. Average years of education of HH	10.6	10.7	9.1	8.0
6. Have held a job other than as a farmer (% of respondents)	93%	93%	29%	46%
7. Formerly or currently employed in the public sector (% of respondents)	60%	50%	29%	15%

Source: FSRP Emergent Farmer Survey 2011.

In other words, in terms of the role of land titling on the development of the emergent farm sector, our findings indicate that land titling may be implicated in process of elite capture of land, at the possible expense of future smallholder growth and farm consolidation.

5.6. 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 5 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.

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 large-scale urban to rural migration. As public sector employees lost their jobs many migrated into rural areas to begin farming (Ferguson 1999; Potts 1995).

The promulgation of the 1995 Land Act may have facilitated the transition from urban to rural life for many former public sector employees. In particular, the 1995 Land Act made it possible for urban residents to acquire titled land in customary areas. The effect of the 1995 Land Act is clearly visible in the land acquisition strategies of farmers in Group 1. Fifty-five percent of all land transactions conducted by farmers in Group 1 involved purchasing of titled land, compared to zero percent for all other groups.

However, it is not just statutory land markets that are disproportionately being seized by farmers who entered the agricultural sector laterally. As shown in Table 5, Rows 4 e and f, 25% of all land transactions conducted by farmers in Group 2 utilized vernacular market mechanisms to acquire land, in the form of either purchasing untitled land in customary areas or through rental from a local resident. Conversely, there is very little evidence of farmers who followed an agricultural-led growth strategy utilizing markets to acquire their land. Instead, farmers in Groups 3 and 4 overwhelmingly 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 strategy, suggests that entrance into these markets 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 (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 customary areas, and land inheritance frequently leading to the fragmentation of existing land (Chapoto, Jayne, and Mason 2007), the potential to utilize customary modes of land acquisition to expand into the 10-200 hectare farm size category is becoming increasingly difficult. As these traditional forms of land acquisition become less available, more and more farmers will have to depend on emerging statutory and vernacular markets to acquire land, both to begin their farming careers and to acquire additional land. If, as these data suggest, it is primarily those who enter farming laterally who have the necessary income, education, and social capital to access markets, then the potential for engaging small-scale farmers in a process of farm size growth is severely limited.

Table 5. Land Acquisitions Strategies, Land Markets, and Land Size of Medium Scale Farmers

Growth pathway	Lateral Entry in Emergent Farming		Agricultural-led Growth Strategy	
	Titled land Group 1	Customary land Group 2	Titled land Group 3	Customary land Group 4
1. Count (n=)	30	70	7	76
2. Percent of total sample	16%	38%	4%	42%
3. Decade of First Land Acquisition				
a. 1959 or earlier	0%	0%	0%	1%
b. 1960 through 1969	0%	0%	13%	2%
c. 1970 through 1979	11%	4%	0%	6%
d. 1980 through 1989	21%	5%	38%	10%
e. 1990 through 1999	18%	25%	38%	31%
f. 2000 through 2009	45%	59%	13%	48%
g. 2010 or later	5%	8%	0%	3%
4. Mode of Land Acquisition				
a. Given by chief	0%	21%	13%	27%
b. Given by headman	0%	36%	0%	36%
c. Given by relative	8%	7%	25%	21%
d. Purchase, with title	55%	0%	0%	0%
e. Purchase without title	0%	17%	0%	3%
f. Rental	0%	10%	0%	2%
g. Inheritance	5%	10%	25%	11%
h. State land given to the farmer**	32%	0%	38%	0%

Source: FSRP Emergent Farmer Survey 2011.

**Note: Land is given to farmers by the government through resettlement schemes and farm block development schemes.

5.7. Land Expansion through Additional Land Acquisitions

While there is clear evidence that much of the growth of the emergent farming sector is being driven by individuals utilizing the power conferred from non-farm income to acquire land in customary areas, this does not necessarily imply that the growth of the emergent sector has entirely excluded smallholders. Examining changes in initial and current land size holdings, particularly in Groups 3 and 4, allows us to assess the extent to which growth within the emergent sector is being driven by a process of agricultural-led capital accumulation. Evidence that some portion of the sample has grown from a small (less than 5 hectares) to emergent-scale operations would be an encouraging finding, and would support the conclusion that while public spending is not explicitly aimed at small-scale farmers it does provide incentives and opportunities for them to transition to a higher order of production. To examine the extent to which a transition from small to emergent farming is occurring in Zambia we disaggregate the initial and current farm sizes of our sample into percentile groups and means (Table 6).

Two important issues are immediately apparent in Table 6. First, across all groups current land holdings are quite large, with means ranging from 37 to 168 hectares, with larger land holdings concentrated among those with title to their land. Second, initial farm sizes across all four groups, even at the 25th percentile level, exceed what is considered small-scale farm size in Zambia. This suggests that, in the same way that land markets in Zambia appear to be disproportionately captured by elites with access to off-farm income and political capital, farm growth among those that followed an agricultural-led development path appears to be predominantly captured by a relatively elite group of farmers.

This is an important finding, and suggests that initial land endowments may play a critical role in facilitating the attainment of emergent farming status for those following an agricultural-led pathway to emergent farmer status. The lack of evidence to support the assertion that improvements in the conditions of small-scale agriculture have contributed to growth in the emergent farm sector is unfortunate. If Zambia's agricultural development strategy created opportunities for some small-scale farmers, with less than five hectares of land, to produce a surplus, accumulate more productive farming assets, and successfully expand their farm sizes over time into emergent status, we would have expected to see at least some portion of this emergent farmer sample conforming to this pattern. However, as shown in row 2, 75% of Group 3's initial farm size was at least 15 hectares, and 75% of Group 4's initial farm size was at least 10 hectares. In other words, very few of these farmers started out as small-scale farmers with less than five hectares, and none of them started with less than two hectares, the situation in which 70% of rural Zambian households find themselves in. By contrast, among those that began with relatively large tracts of land there is considerable evidence of farm expansion through subsequent land acquisitions.

The lack of evidence of truly small-scale farmers participating in the attainment of emergent farmer status is in all likelihood the outgrowth of an agricultural development strategy that explicitly creates an uneven playing field in the agricultural sector. By investing public funds in input subsidies and output market supports that can be expropriated by an elite minority of farmers, the opportunity for engaging the majority of Zambia's small-scale farmers in the process of agricultural-led capital accumulation and land expansion appears limited. Indeed,

Zambia's current investment strategy comes at a huge opportunity cost for investments that could provide small-scale farmers with the opportunity to grow, including investments in research and extension, roads, education, health care, or electrification.

Table 6. Current and Initial Farm Sizes by Percentile and Mean

Growth pathway	Lateral Entry in Medium-Scale Farming		Agricultural-led Growth Strategy	
	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)				
25 th percentile	27	10	24	16
50 th percentile	55	20	80	27.5
75 th percentile	150	40	183	50
Mean	168.32	37.31	105.57	36.87
2. Size of Initial Land Acquisition (ha)				
25 th percentile	25	8	15	10
50 th percentile	49	16	30	19
75 th percentile	240	35	107	35
Mean	176.9	27.79	63	25.8

Source: FSRP Emergent Farmer Survey 2011.

6. CONCLUSION

Over the last decade Zambia has witnessed both a significant increase in agricultural production, driven primarily by an expansion in area under-cultivation, favorable weather conditions, and an impressive expansion of relatively larger, indigenous Zambian farmers. Yet, poverty rates over the same period have remained virtually unchanged. Indeed rural poverty rates actually increased marginally from 77.3% in 2004 to 77.9% in 2010, a time period that coincided with a significant increase in spending on agriculture (CSO Living Conditions Monitoring Surveys 2004 and 2010). This suggests that while Zambia's agricultural development strategy has been relatively successful at providing a public spending and legislative environment in which emergent farmers can flourish, it has failed to provide a viable pathway out of poverty for the nation's millions of very small-scale farmers. This is worrying, not only because of the immediate social consequences of pervasive poverty and wealth inequality, but also because of the longer term implications of how this growth is being achieved.

Our results show that the spectacular growth in Zambia's emergent farming sector has been driven by two primary factors. The first is the increasing number of urban Zambians using off-farm income and political acumen to buy into agriculture and acquire large tracts of land in customary areas. The second is a process of agricultural-led capital accumulation and land acquisition, which is disproportionately being captured by a minority of farmers with initially large land and other asset endowments. In the short-term these exclusionary development trajectories will do little to address the pressing needs of the majority of Zambia's rural population. Yet, given that land available for smallholder production is not nearly as abundant as policy-makers assume the more worrying implication of Zambia's agricultural growth strategy is the way in which it impinges on the future potential to use agriculture in Zambia as an engine of broad-based economic growth and rural poverty reduction. As more and more of Zambia's customary land is appropriated by urban and rural elites it is possible that the majority of small-scale farmers will find themselves increasingly cooped up in areas where population densities constrain their options for using agriculture as a viable pathway out of poverty.

The long-term implications of using public spending and legislation to promote farm extensification and consolidation by a minority of Zambian elites is significantly magnified in the context of the on-going land grab occurring in Africa. Since the beginning of the global food price crisis of 2008 there has been growing interest by multinational corporations in African farm land. The World Bank estimates that prior to 2008, the annual expansion of global agricultural land was less than 4 million hectares. With the onset of the global food crisis, farmland acquisitions skyrocketed. By the end of 2009, it is estimated that 56 million hectares of large-scale farmland deals were announced, 70% of which were in Africa (Deininger and Byerlee 2011). With favorable land policies and agricultural legislation, Zambia has become an important destination for foreign investment in agricultural land acquisition. This will undoubtedly further exacerbate land pressures in Zambia's customary land areas and make it even harder to facilitate smallholder access to sufficient amounts of land to become viable farm enterprises.

It may not be too late to change course. By reallocating public spending for agriculture and addressing shortcomings in Zambia's land administration, conditions can be created to allow smallholders to participate in the agricultural development process. In particular, the 1995 Land Act must be revised in ways that make the process of land titling in customary areas more

transparent and amenable to smallholder participation. Without changes to the Land Act, more and more land in customary areas will be alienated to wealthy elites, which will make it increasingly difficult for smallholders to invest farm proceeds in area expansion. Secondly, the government must redirect its spending priorities to the agricultural sector away from subsidies that are disproportionately expropriated by rural elites, and toward public goods that can be appropriated by even the smallest-scale farmers in Zambia. This would include investments in rural infrastructure, education, health, extension services for land constrained farmers, and crop research and development that caters to the needs of small-scale farmers.

Without simultaneous improvements in land policy and public spending on smallholder-led agriculture, structural barriers will inhibit Zambia's small-scale farmers from contributing to, and benefiting from, broad-based structural transformation processes. Under this scenario, we agree with Collier and Dercon (2009) that small farms would have a limited future, not because small farms are less productive or less dynamic than large-scale farms as they argue, but rather because the political process was unable to put into place a policy environment or a pattern of public investments that was supportive of, or at least neutral to, a pro-poor agricultural growth strategy. The unfortunate outcome of this scenario would be an agricultural landscape increasingly resembling the *latifundia* systems of Latin America, with a relatively small number of large and established elite farmers co-existing with millions of small-scale and impoverished semi-subsistence farmers who depend on the wage labor opportunities on the large farms for their livelihoods.

A more consolidated agricultural sector is undoubtedly part of Africa's future development, but this consolidation would have much brighter prospects if it resulted from an economic process in which smallholders have the potential to participate, not a political process that disenfranchises them based on assumptions that they cannot contribute.

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