SMALLHOLDER ACCESS TO LAND IN ZAMBIA
EMERGING RESEARCH FINDINGS & IMPLICATIONS FOR RURAL DEVELOPMENT

M. Hichaambwa, J. Chamberlin & IAPRI team
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Purpose of presentation

- To highlight key findings coming out of our ongoing research related to rural land in Zambia
- To make the case that
  - despite Zambia’s land abundance, there are significant land access challenges which face many smallholders;
  - addressing these challenges is of central importance to achieving broader agricultural and rural development goals
Outline

- Motivation: observed inverse relationship between landholding size & poverty
  - Constraints to smallholder expansion
- Institutions affecting access & security
  - Land titling
- Other land-related research
  - Land markets, rural mobility, forest-cover change
- Policy implications of emerging results
Smallholder farm size and poverty

- Broad-based ag growth is most powerful source of poverty reduction in developing world
  - since most rural people work in agriculture
- However, in Zambia, agricultural growth since 2000 has taken place without poverty reduction
  - rural poverty rates have remained above 80%
- This suggests that agricultural growth is not broad-based
  - most smallholders are excluded from growth process and hence remain in poverty
Zambian growth: 2005-2012

Source: GRZ, CSO
But persistently high poverty…

Source: LCMS, various years
#1: Smallholdings are unequally distributed

- 44% own <1 ha
- 64% own <2 ha
- 30% own 2–5 ha
- 6% own 5–20 ha
- Holdings within the smallholder sector are highly skewed
#2: Agricultural sales & market orientation are positively correlated with farm size

<table>
<thead>
<tr>
<th>Farm size category</th>
<th>Avg 2002/3 ag sales (constant 2011 ZMW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2 ha</td>
<td>1,051</td>
</tr>
<tr>
<td>2 to &lt;5 ha</td>
<td>3,121</td>
</tr>
<tr>
<td>5 to &lt;10 ha</td>
<td>6,536</td>
</tr>
<tr>
<td>10 to 20 ha</td>
<td>11,633</td>
</tr>
<tr>
<td>Total</td>
<td>2,063</td>
</tr>
</tbody>
</table>

Source: Supplemental Surveys, 2004 and 2008; Rural Agricultural Livelihoods Survey

Low annual household agricultural sales for the majority
#3: Agricultural growth is strongly associated with farm size

<table>
<thead>
<tr>
<th>Farm size category</th>
<th>Avg 2002/3 ag sales (constant 2011 ZMW)</th>
<th>% growth (2002/3 – 2010/11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2 ha</td>
<td>1,051</td>
<td>7.8</td>
</tr>
<tr>
<td>2 to &lt;5 ha</td>
<td>3,121</td>
<td>9.1</td>
</tr>
<tr>
<td>5 to &lt;10 ha</td>
<td>6,536</td>
<td>35.9</td>
</tr>
<tr>
<td>10 to 20 ha</td>
<td>11,633</td>
<td>40.6</td>
</tr>
<tr>
<td>Total</td>
<td>2,063</td>
<td>14.8</td>
</tr>
</tbody>
</table>

Employment multipliers generated in ag growth is limited due to the small proportion of SHH involved...

Too little for poverty reduction for the majority

Source: Supplemental Surveys, 2004 and 2008; Rural Agricultural Livelihoods Survey
#4: Poverty rates are persistently high, especially for the smallest farmers.
But Zambia is a land-abundant country!

"Labor is the binding constraint, not land"

Source: AfriPop, for year 2010
Multiple constraints to expansion

- Labor does seem to be a key constraint but is not the only one.
- Availability of traction technologies (oxen, tractors) is also important.
- Evidence that land availability is also a factor (esp. high-density & accessible).
Perceptions of limited land availability

<table>
<thead>
<tr>
<th>Rural population density (persons/(\text{km}^2))</th>
<th>Percentage of respondents reporting “no unallocated land is available in this area”</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 25</td>
<td>54%</td>
</tr>
<tr>
<td>25 - 50</td>
<td>76%</td>
</tr>
<tr>
<td>50 - 100</td>
<td>72%</td>
</tr>
<tr>
<td>&gt; 100</td>
<td>84%</td>
</tr>
<tr>
<td>National</td>
<td>59%</td>
</tr>
</tbody>
</table>

No Land Available
- <20%
- 20-40%
- 41-60%
- 61-80%
- >81%
Decreasing farm sizes & fallow

% changes in area: 2001-2008

-60%
-50%
-40%
-30%
-20%
-10%
0%

least dense
2nd
3rd
most dense

change in land holding
change in fallow
Increasing competition for land

- Land grabs, displacement, squatter evictions
  - German et al. 2010, Brown 2005

- Increasing commoditization of land
  - incl. in customary tenure where sales are not legal
  - winners and losers
  - Sitko 2010; (SSA: Chimhowu & Woodhouse 2006)

- Frequent commentary in popular press
  - e.g. illegal speculation by government officials
High rural-rural mobility

- Land availability not a constraint everywhere, but it is in at least some places.
- We know that there is surprisingly high mobility in rural Zambia: 25-50% identify as non-local.
  - Field visits to high mobility areas indicate land and wage labor are primary factors.
  - Movement into buffer zones of PAs → forest loss.
- Limited absorption capacity of NFE/urban areas.
Many constraints have strong spatial expressions

Report that land is available

Indicates the relevance of investments in infrastructure, services and market development, especially in more remote areas
Summary of key points

- Farmland is key asset for rural growth & poverty reduction
- We are concerned about distribution of constraints to using land
  - Availability to good quality land
  - Capacity to exploit it efficiently & sustainably
- Constraints are multi-dimensional, implying multi-dimensional responses
Investment & policy options

1. Public investments
   - Rural infrastructure
   - Disease control
2. Promote the development of traction markets
3. Support the Land Audit
4. Strengthen incentives for investments & intensification
5. Facilitate resettlement?
6. Encourage the development of land markets?

Institutional reform?
Does Smallholder Land Titling Facilitate Agricultural Growth?

Jordan Chamberlin, Munguzwe Hichaambwa, Nicholas Sitko
Land titling in Zambia

- Most land in Zambia under customary tenure
- However, increasing conversion of customary to leasehold tenure
  - 1995 Land Act formalized conversion mechanisms
  - Ministry of Lands: plots titled for agricultural purposes has increased by 183% since 1995
- Survey data:
  - 8.4% smallholders have title to at least some portion of their the land under their control
  - 9.8% of smallholder land area
Titling & agricultural development

- Theory is straightforward:
  \[ \text{title} \rightarrow \text{security, collateral} \rightarrow \text{investments} \]

- Empirical evidence elsewhere in SSA is mixed

- Institutional context may favor access by elites
  - Land Act does not identify development objectives
    - But productivity growth is a major policy objective of gov’t
  - Primary access mechanisms:
    - Via state: settlement & resettlement schemes, farm blocks
    - Direct conversion (requires approval of chief)
What role does land titling play in smallholder agricultural development in Zambia?

1. Who acquires title?
2. What are the impacts of title on farm investment, productivity & income?
3. How does the institutional setting (of the title acquisition process) condition these outcomes in systematic ways?
Data & methods

- Rural Agricultural Livelihoods Survey: 2012
  - 8,600+ smallholder households
- Geospatial data: access, population density

- Household econometric model
  - Determinants of title acquisition
  - Impacts of title possession on farm orientation & investments
Where are titled smallholders located?

Source: RALS 2012
Comparing titleholders & non-titleholders

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HHs without title</th>
<th>HHs with title</th>
</tr>
</thead>
<tbody>
<tr>
<td>% female headed household</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Average age of household head</td>
<td>44.6</td>
<td>45.7</td>
</tr>
<tr>
<td>% related to local traditional authority</td>
<td>53</td>
<td>24</td>
</tr>
<tr>
<td>% households headed by migrants</td>
<td>53</td>
<td>77</td>
</tr>
<tr>
<td>Level of education hh head in years</td>
<td>5.6</td>
<td>7.6</td>
</tr>
<tr>
<td>% households in private waged labour</td>
<td>15</td>
<td>27</td>
</tr>
<tr>
<td>% households receiving pension</td>
<td>0.5</td>
<td>1.7</td>
</tr>
<tr>
<td>% households in public waged labour</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>% households earning business income</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>Average number of adult equivalent</td>
<td>4.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Average total land holding size in Ha</td>
<td>2.7</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Source: RALS 2012
## Agricultural income & land title

<table>
<thead>
<tr>
<th></th>
<th>Median income (ZMW)</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Farm income</td>
<td>Total income</td>
<td>% farm income in total</td>
</tr>
<tr>
<td>Non title-holders</td>
<td>3,340</td>
<td>4,866</td>
<td>68.6</td>
</tr>
<tr>
<td>Title-holders</td>
<td>2,915</td>
<td>6,900</td>
<td>42.2</td>
</tr>
<tr>
<td>Total</td>
<td>3,305</td>
<td>4,998</td>
<td>66.1</td>
</tr>
</tbody>
</table>

Source: RALS 2012
Effect of title on farm management & investment strategies

<table>
<thead>
<tr>
<th>Farm outcomes</th>
<th>has title (=1) Average Partial Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm share of household income</td>
<td>-0.044 ***</td>
</tr>
<tr>
<td>Marketed % of farm production</td>
<td>0.025 *</td>
</tr>
<tr>
<td>Crop intensity (kwacha/ha)</td>
<td>-353.36 ***</td>
</tr>
<tr>
<td>Livestock intensity (kwacha/ha)</td>
<td>0.055</td>
</tr>
<tr>
<td>Irrigation</td>
<td>0.025 ***</td>
</tr>
<tr>
<td>Manuring</td>
<td>0.018</td>
</tr>
<tr>
<td>Fallowing</td>
<td>-0.005</td>
</tr>
<tr>
<td>Erosion management</td>
<td>0.016</td>
</tr>
<tr>
<td>Planting soil-fertility trees</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Titling is not leading to farm-level productive investments...
Summary of results

- On the whole, smallholder title-holders are:
  - Economically orientated toward wage earnings, rather than agriculture
  - Earn less agricultural income than those with customary tenure
  - Make fewer productive investments (except irrig.)

- Results suggest speculative rather than productive objectives for title acquisition
  - Raises questions about role of titling in dev’t
Summary of results

- Institutional access to title by smallholders favors
  - Individuals migrating into an area, not local residents
  - Individuals with access to off-farm income, primarily public sector employment, not individuals primarily engaged in farming

- Results suggest a pattern of awarding title to relatively unproductive land users
Conclusions

- Zambia’s system of awarding title is not achieving the sorts of agricultural growth outcomes envisaged
  - There is a concern that the system is aiding speculative land acquisition at the expense of local smallholders

- Long-term consequences:
  - As land constraints grow this could limit the capacity of productive smallholders to expand
  - Stifle smallholder growth prospects
Recommendations

- Devise strategies to enable smallholders, individually or collectively, to access title:
  - Make process of granting title in customary areas more inclusive
  - Decentralize administrative processes
- Revenue from conversion:
  - Currently any payment to award title goes to the chief or other authorities
  - Revenue generated transparent and utilized on public works
Recommendations

- Support on-going land audit:
  - Urgent need to know how much customary land is actually available
  - Transparent registry system can aid development of credit and land markets
Other IAPRI land studies

- **Rural land markets**
  - Rental markets are small but developing: 3% of smallholders rent in (0.5% rent out)

- **Rural population mobility**
  - 20-40% of rural households *on average* are relocating from elsewhere

- **Forest cover change**
  - Moderate but steady loss of forest cover
Key messages

- Land is a critical development asset
  - Skewed distributions within smallholder sector
  - Inequitable distribution of growth appears linked to inequitable distributions of land access
- Land institutions may be important policy levers
  - Farm size not fully explained by factor endowments
  - Remaining inequalities may be reinforced by existing institutions
- Land access issues of increasing importance...
  - ↑ pop densities, ↑ investor interest, limited NFRE
For more information, please visit us at:
http://www.iapri.org.zm/
or
http://fsg.afre.msu.edu/zambia/
Decreasing land-labor ratios

![Graph showing decreasing arable land per capita for World, Sub-Saharan Africa, and Zambia from 1960 to 2010.](image)

Source: World Development Indicators, World Bank
Decreasing land-labor ratios

<table>
<thead>
<tr>
<th>Countries</th>
<th>Arable land to labor ratios</th>
<th>2000-09 as % of 1960-69</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>0.501</td>
<td>0.444</td>
</tr>
<tr>
<td>Zambia</td>
<td>0.643</td>
<td>0.607</td>
</tr>
<tr>
<td>Kenya</td>
<td>0.462</td>
<td>0.364</td>
</tr>
<tr>
<td>Uganda</td>
<td>0.655</td>
<td>0.569</td>
</tr>
<tr>
<td>Malawi</td>
<td>0.480</td>
<td>0.466</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>0.613</td>
<td>0.550</td>
</tr>
<tr>
<td>Rwanda</td>
<td>0.212</td>
<td>0.213</td>
</tr>
<tr>
<td>Mozambique</td>
<td>0.356</td>
<td>0.337</td>
</tr>
<tr>
<td>Ghana</td>
<td>0.646</td>
<td>0.559</td>
</tr>
<tr>
<td>Nigeria</td>
<td>0.982</td>
<td>0.860</td>
</tr>
</tbody>
</table>

- Zambia trends similar to SSA in general and to high density countries!

Source: World Development Indicators
Traction technology usage at different levels of market access

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Competition for land at different levels of market access

Report that land is available

Has titled land
## Probability of title possession

<table>
<thead>
<tr>
<th></th>
<th>APE</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>years education</td>
<td>0.006***</td>
<td>(0.000)</td>
</tr>
<tr>
<td>age of head</td>
<td>0.000</td>
<td>(0.364)</td>
</tr>
<tr>
<td>female head (=1)</td>
<td>0.010</td>
<td>(0.308)</td>
</tr>
<tr>
<td>farm size (ha)</td>
<td>0.003***</td>
<td>(0.000)</td>
</tr>
<tr>
<td>adult equivalents</td>
<td>0.002</td>
<td>(0.182)</td>
</tr>
<tr>
<td>assets (kwacha)</td>
<td>0.021***</td>
<td>(0.000)</td>
</tr>
<tr>
<td>kin to chief (=1)</td>
<td>-0.042***</td>
<td>(0.000)</td>
</tr>
<tr>
<td>migrant (=1)</td>
<td>0.036***</td>
<td>(0.000)</td>
</tr>
<tr>
<td>waged, priv. (=1)</td>
<td>0.041***</td>
<td>(0.000)</td>
</tr>
<tr>
<td>waged, gov't (=1)</td>
<td>0.034**</td>
<td>(0.046)</td>
</tr>
<tr>
<td>pop. density</td>
<td>0.001***</td>
<td>(0.000)</td>
</tr>
<tr>
<td>km to tarmac</td>
<td>-0.000***</td>
<td>(0.001)</td>
</tr>
<tr>
<td>hours to town</td>
<td>-0.004***</td>
<td>(0.000)</td>
</tr>
</tbody>
</table>

| N                             | 8432    |         |
- Farm sizes smaller than expected thresholds
- Farm sizes are shrinking over time
- Fallow rates are declining
- Widespread perceptions of limited land
- Reports of competition and displacement
- High rural movement

These sectoral characteristics are not consistent with a simple “labor is the binding constraint” story!