

Can Smallholders Farm Themselves out of smallholder farming and poverty?

Milu Muyanga & T. S. Jayne

Department of Agricultural, Food and Resource Economics

Michigan State University

Presentation at the Tegemeo Conference 2017 on *“Transforming
Agriculture for Inclusive Growth and sustainable livelihoods”*
December 5, 2017, Nairobi, Kenya





FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



Acknowledgements: The work highlighted here is jointly funded through the generous support of the American people through the United States Agency for International Development (USAID) under the Food Security Policy Innovation Lab and by the Bill and Melinda Gates Foundation under the Guiding Investments in Sustainable Agricultural Intensification Grant to MSU.



Introduction

- Smallholder farms constitute **over 70%** of farms in Africa, and majority of them are **poor** and **food insecure**
- Based on evidence from Asia, it has been generally accepted that a **smallholder-led strategy** holds the best prospects for achieving structural transformation and mass poverty reduction in Africa

Standard version of the structural transformation model (Mellor, 1976; Johnston and Kilby, 1975)

Farming is the primary source of employment for the majority of the population

*Structural transformation process start with **agricultural productivity growth***

*Smallholders but productive farmers with sufficient land **produce a surplus***

Money from the surplus production stimulates demand for goods and services

This in turn stimulates jobs in various off-farm sectors

Rural-urban migration, and gradual urbanization follows

Slow rate of population growth in rural areas and land consolidation

Agriculture declines in its relative share of total GDP over time

CONCERNS about the viability of a smallholder-led growth strategy in Africa

1. Small-scale farming in Africa has historically provided very **LOW RETURNS** to labor
2. Mounting **POPULATION** pressure and shrinking **FARM SIZES**
3. **UNSUSTAINABLE** forms of agricultural intensification with population growth
4. Changing **FARM STRUCTURE**-- rising proportion of land among medium-scale farms

CONCERNS about the viability of a smallholder-led growth strategy in Africa

Examining the viability of smallholder farming take on even greater policy importance in light of recent studies questioning the viability and even the objectives of promoting small-scale agriculture in Africa

“Favoring small farmers is romantic but
unhelpful”

[Collier and Dercon, 2014]

CONCERNS about the viability of a smallholder-led growth strategy in Africa

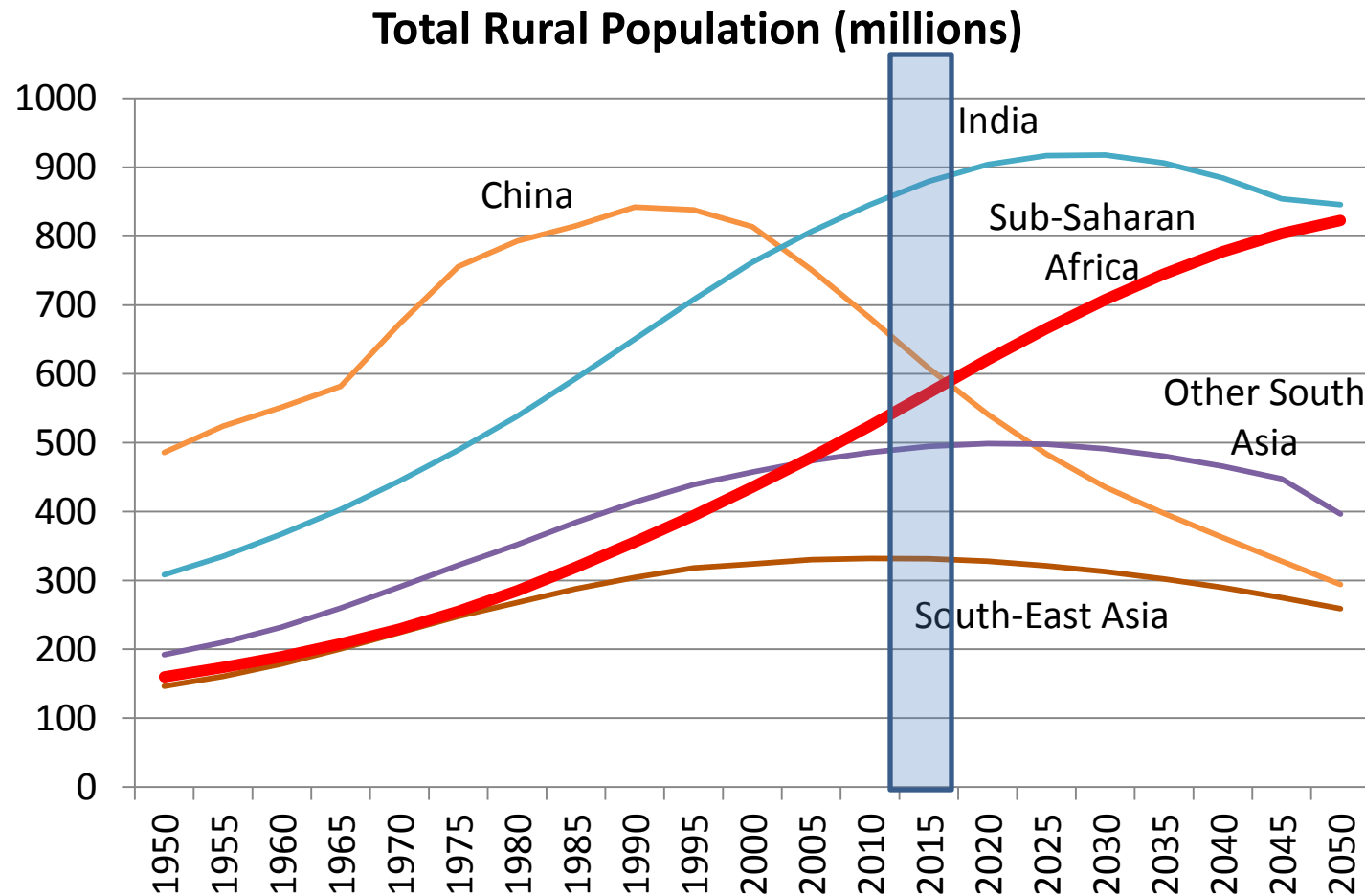
- I. Small-scale farming in Africa has historically provided very LOW RETURNS to labor
 - Most rural households now appear to be **seeking** ways to improve their livelihoods away from farming
 - Most rural households **attempt** to diversify into higher-return non-farm employment or getting out of farming entirely

CONCERNS about the viability of a smallholder-led growth strategy in Africa

2. Mounting POPULATION pressure and shrinking FARM SIZES

- Rising rural population densities leading to declining land sizes
- Most African farms have little control over water, are prone to frequent droughts, and have only one growing season per year

Sub-Saharan Africa: only region of world where rural population continues to rise past 2050



Source: UN 2013

Population densities in 10 topmost densely populated districts in Kenya

Province	District	Rural population	Density	Rural area prop.
Western	Emuhaya	135,723	1,011	0.77
Western	Hamisi	148,259	948	1.00
Western	Vihiga	96,535	931	0.52
Nyanza	Kisii Central	283,117	844	0.93
Nyanza	Gucha	364,460	821	0.96
Nyanza	Manga	87,859	789	1.00
Nyanza	Nyamira	263,201	779	0.85
Central	Githunguri	128,643	772	0.96
Nyanza	Gucha South	146,307	760	0.94

Source: Republic of Kenya, KNBS, 2009 Population Census Data

CONCERNS about the viability of a smallholder-led growth strategy in Africa

3. UNSUSTAINABLE forms of agricultural intensification with population growth

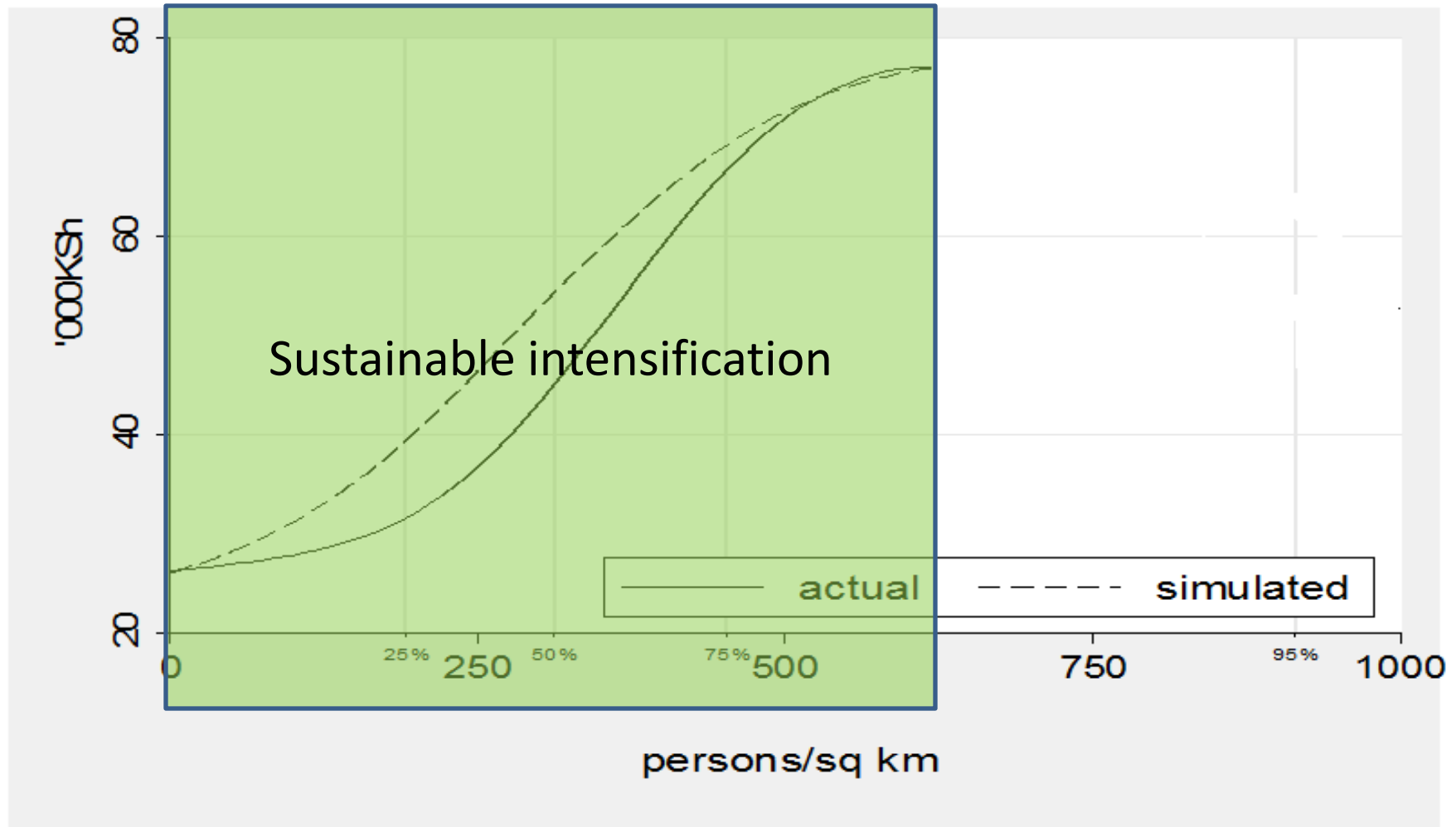
- Declining land sizes leading to **degraded soils**
- Reduced fallows leading to decline in **soil organic matter**
- **Micro-nutrient** deficiencies
- Soil **acidification** due to continued use of inorganic fertilizers
- **LEADING** to **soil-induced poverty traps**



2015
International
Year of Soils

Agricultural intensification- Kenya

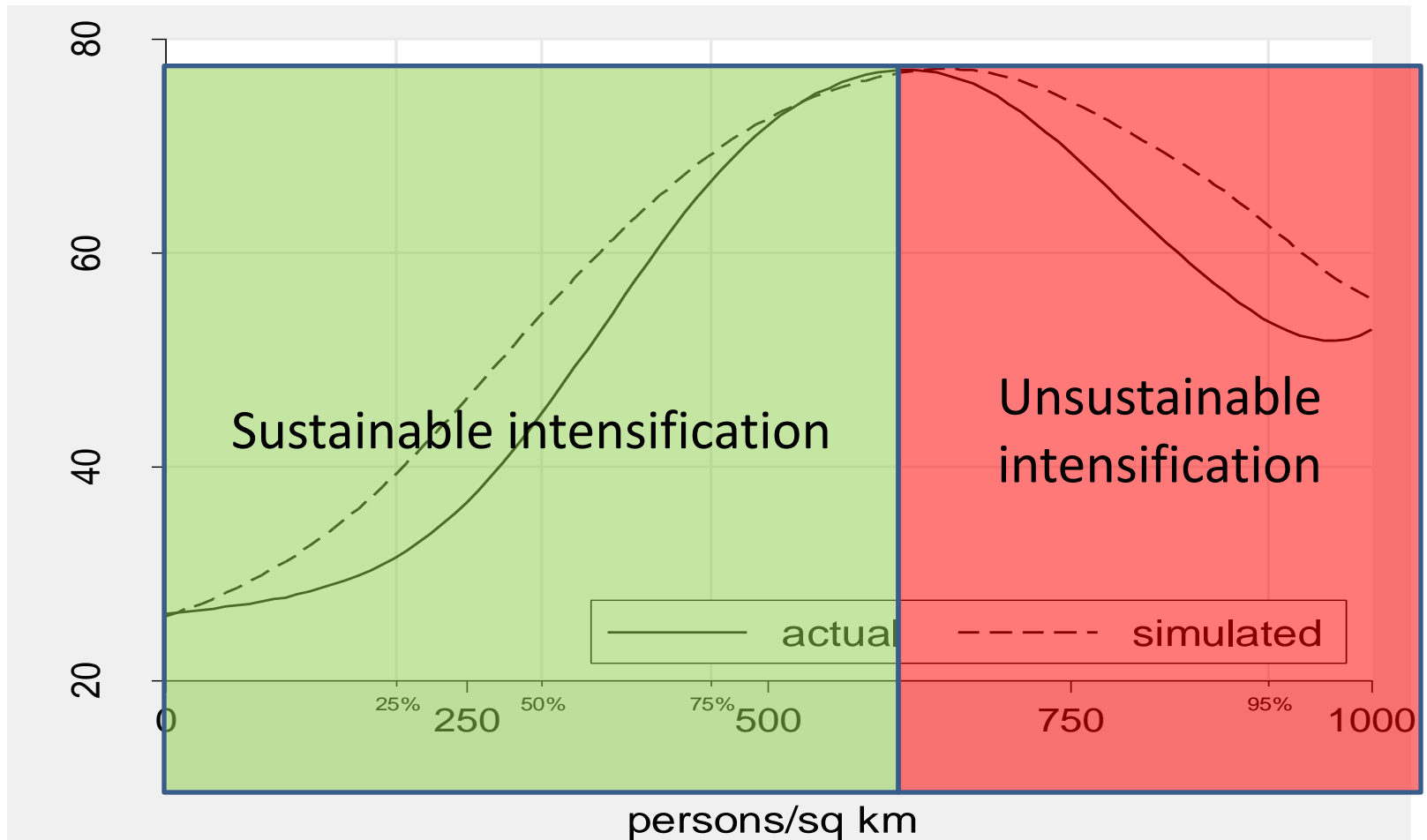
Figure 4: Net crop income per hectare cultivated



Source: Tegemeo Institute Panel Data, Kenya

Intensification tends to plateau at about 500–600 persons/km²

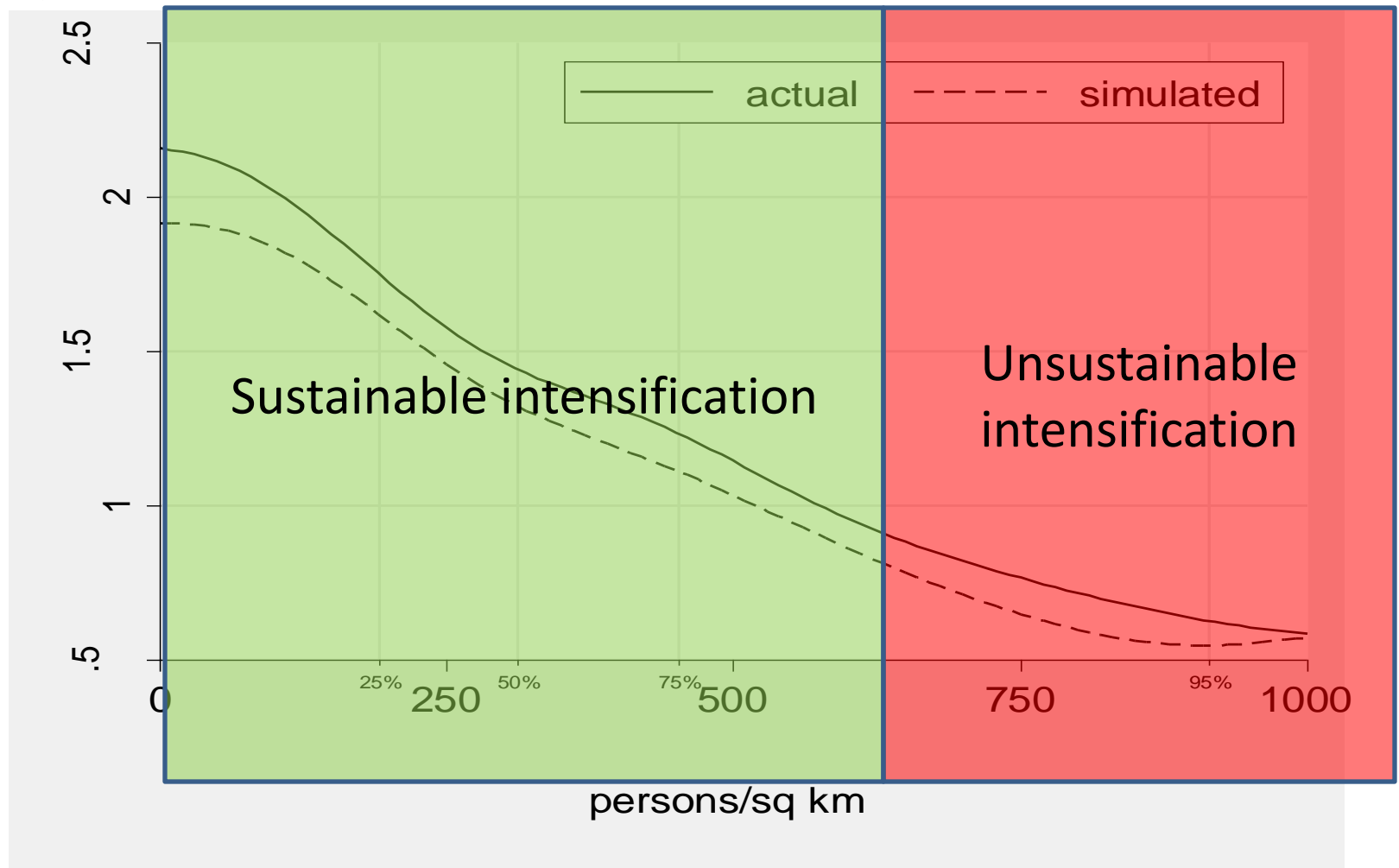
Figure 4: Net crop income per hectare cultivated



Source: Tegemeo Institute Panel Data, Kenya

Declining arable land per household in agriculture

Figure 1: Area cultivated per household



Source: Tegemeo Institute Panel Data, Kenya

Proportion of population facing unsustainable agricultural intensification in Kenya

Population density (persons/km² of arable land)	% of population (excluding urban areas)
0<den<=200	36%
200<den<=400	26%
400<den<=600	16%
600<den<=800	8%
800<den	14%
total	100%

CONCERNS about the viability of a smallholder-led growth strategy in Africa

4. Changing FARM STRUCTURE-- rising proportion of land among medium-scale farms

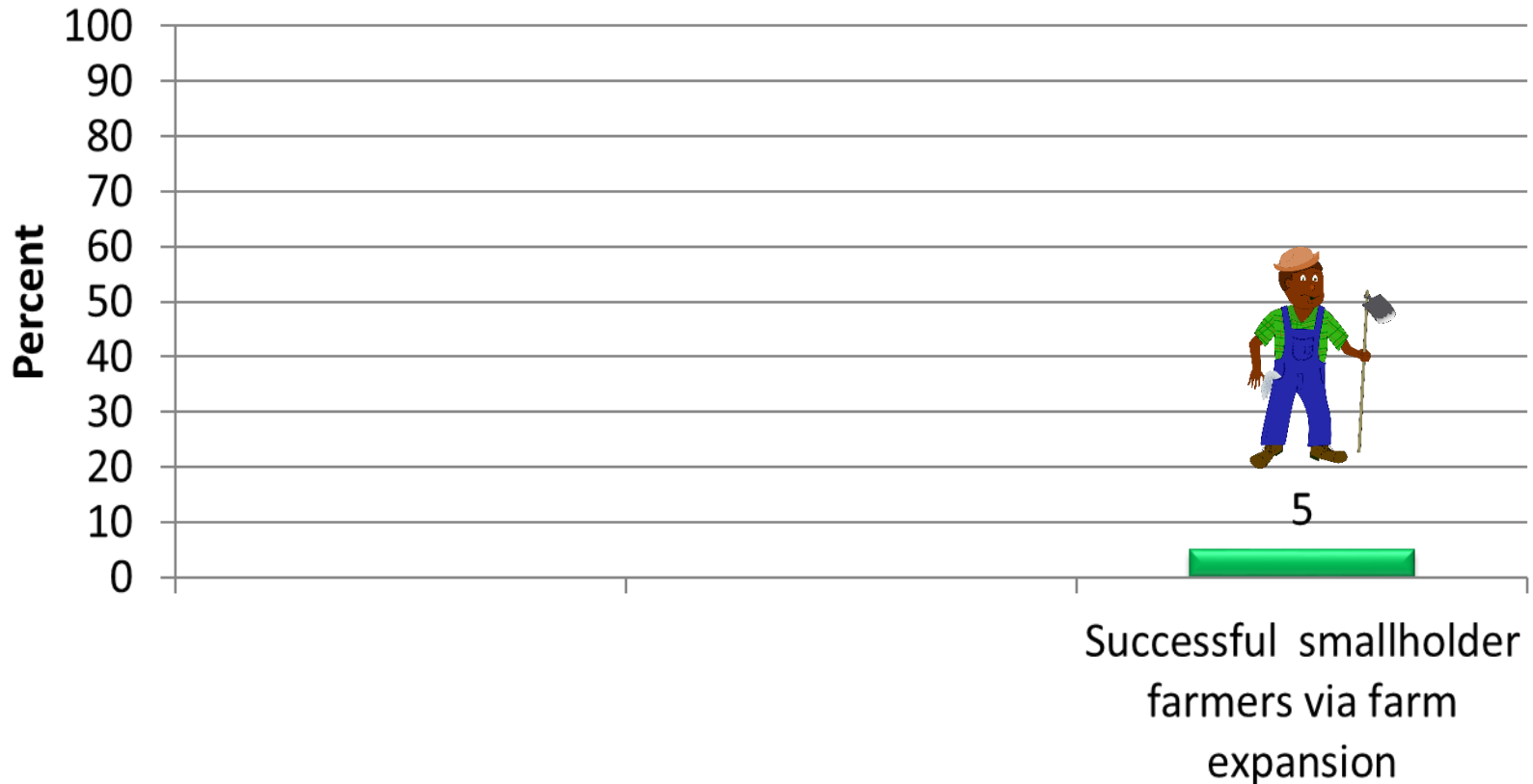
Farm structure in Kenya

Land under cultivation category	Number of farms '000	Share of farms (%)	Share of landholding (%)	Share of net crop production (%)	Share of net farm production (%)	Share of crop production sales (%)
1 ha and below	3,735.10	71.80	34.39	40.83	38.67	33.42
above 1 to 5 ha	1,388.34	26.69	56.36	52.68	54.44	53.89
above 5 to 20 ha	74.09	1.42	8.36	5.83	6.17	11.03
above 20 ha	4.64	0.09	0.89	0.66	0.72	1.66
Total	5,202.17	100.00	100.00	100.00	100.00	100.00

Source: Republic of Kenya. 2005. Kenya National Bureau of Statistics, Kenya Integrated Household Budget Survey (KIHBS) 2004/05 survey data

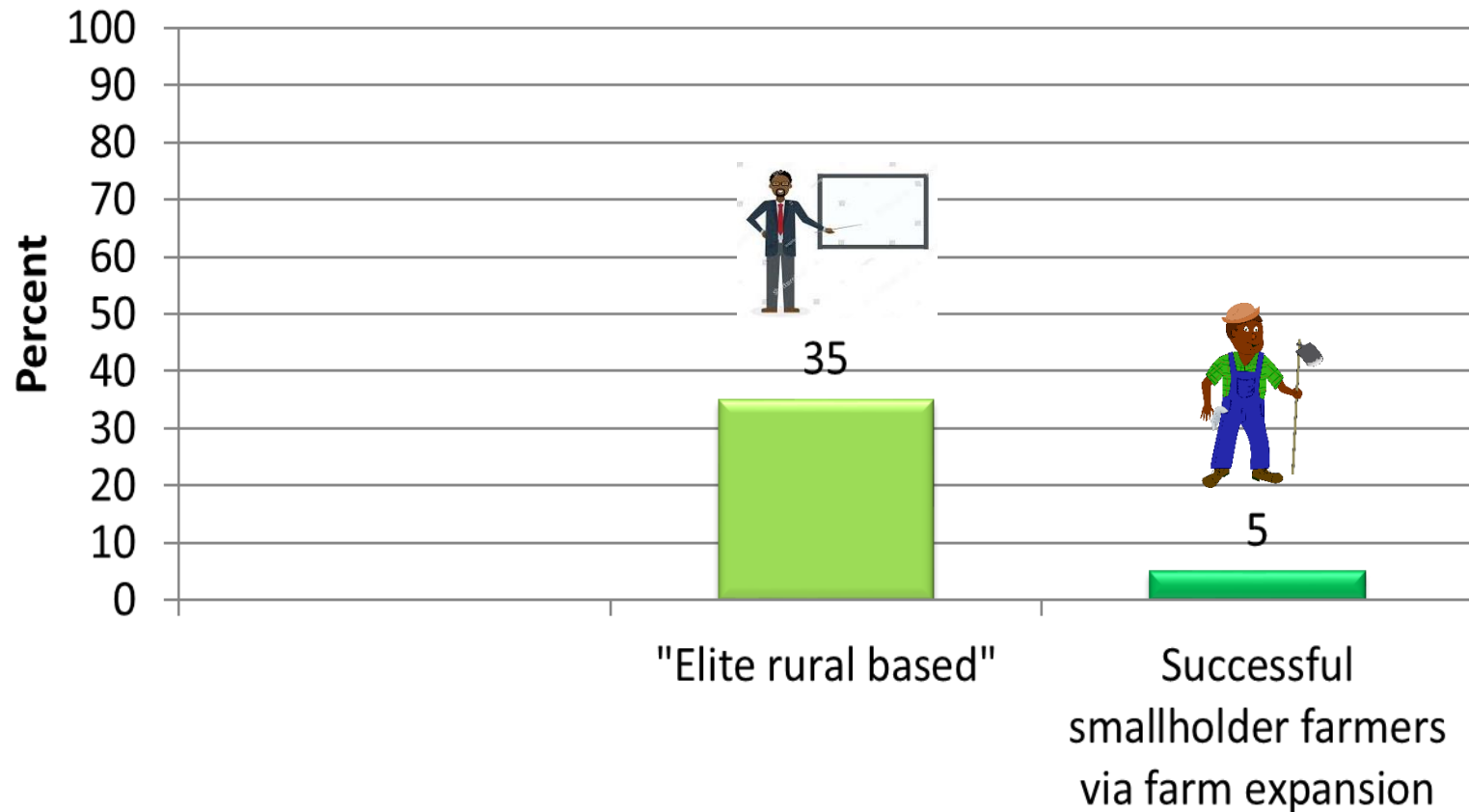
Rise of the medium-scale farmers

Three sub-categories of medium scale farmers (Kenya, Zambia, Ghana)



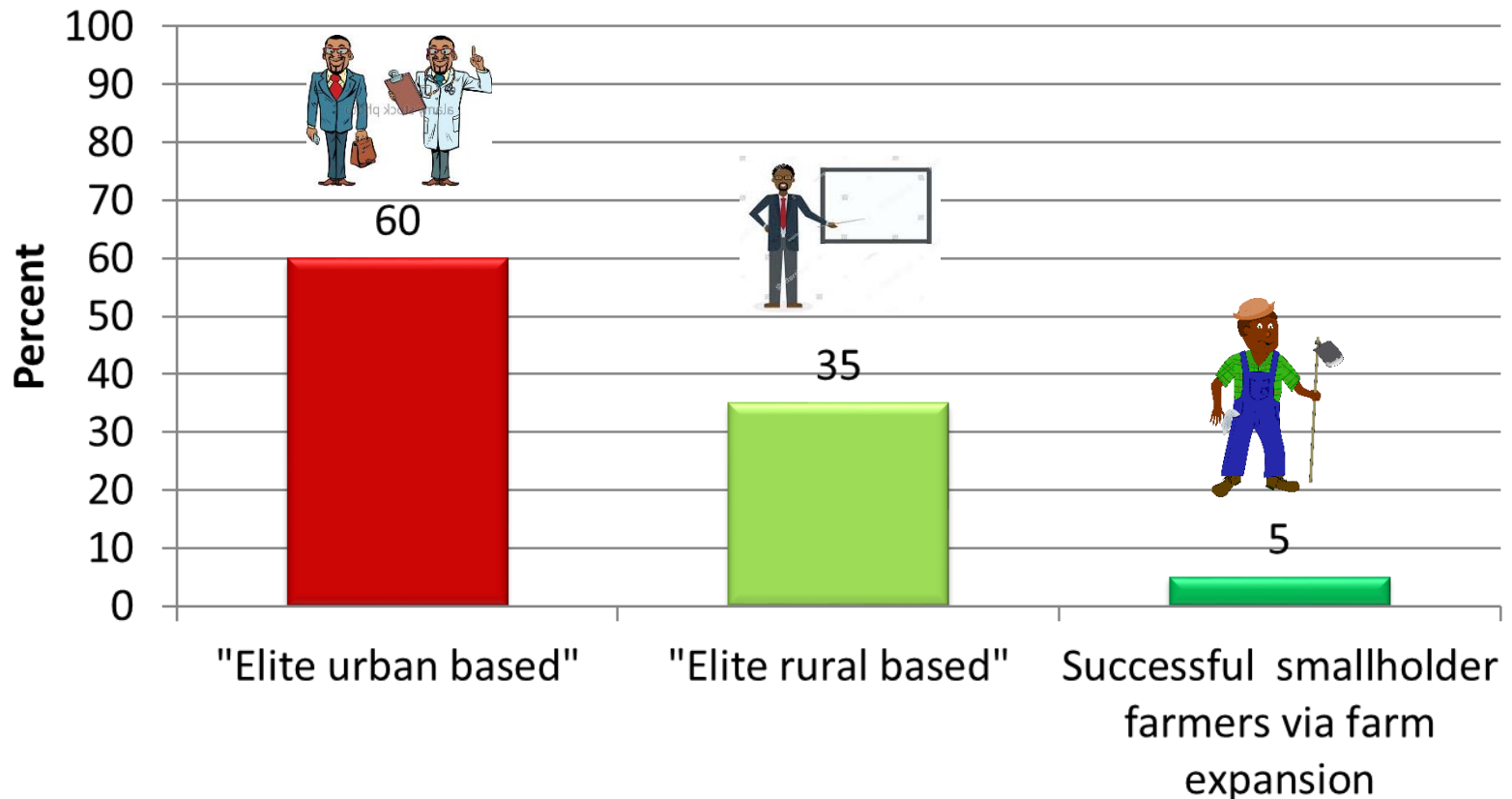
Rise of the medium-scale farmers

Three sub-categories of medium scale farmers: Kenya, Zambia, Ghana



Rise of the medium-scale farmers

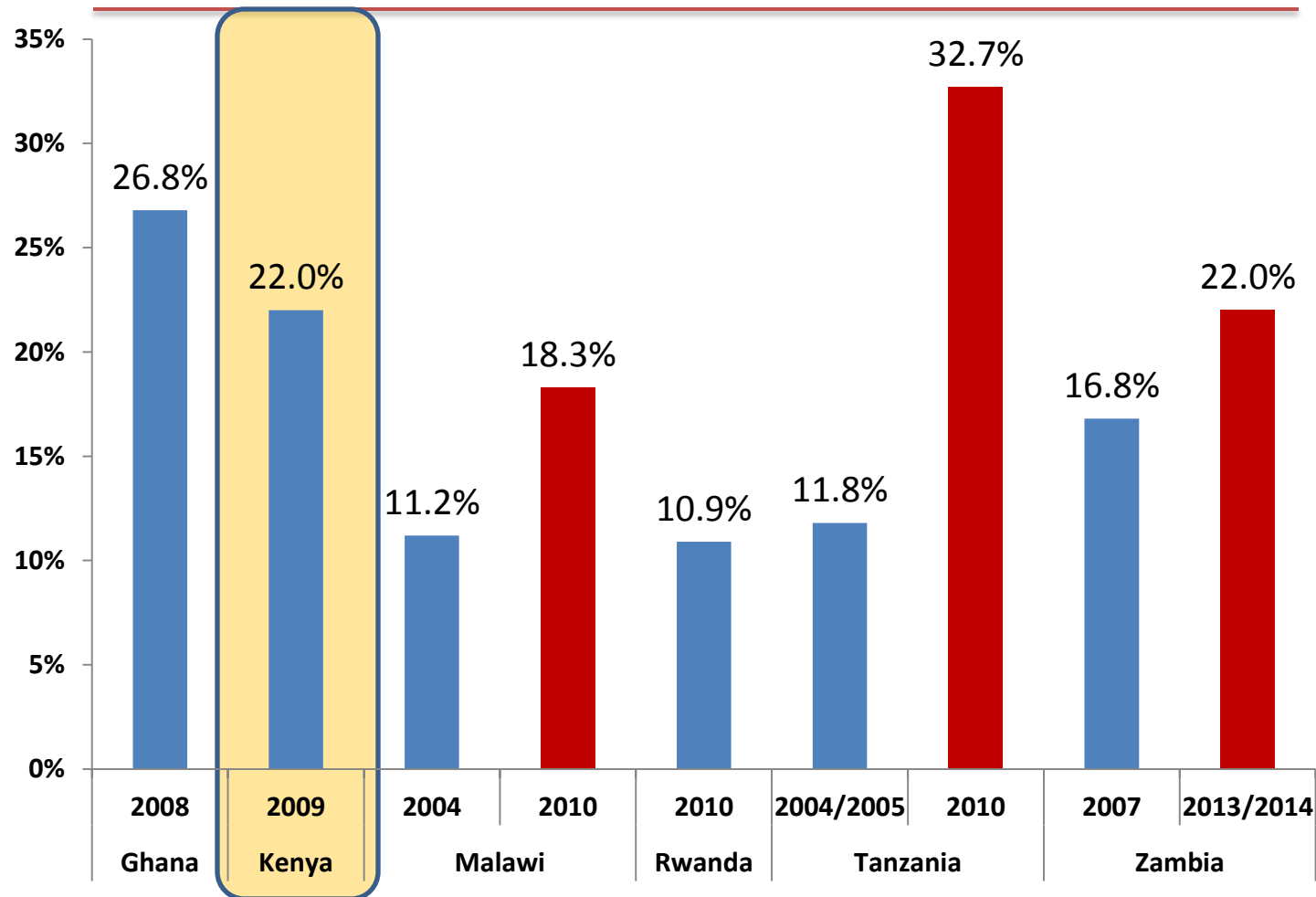
Three sub-categories of medium scale farmers: Kenya, Zambia, Ghana



Type I: Urban-based investor farmer

	Mode of entry to medium-scale farming status: acquire farm using non-farm income	
	Zambia	Kenya
	(n=164)	(n=180)
% of cases	58	60
% men	91.4	80
Year of birth	1960	1947
Years of education of head	11	12.7
Have held a job other than farmer (%)	100	83.3
Formerly /currently employed by the public sector (%)	59.6	56.7
Current landholding size (ha)	74.9	50.1
% of land currently under cultivation	24.7	46.6
Decade when land was acquired		
1969 or earlier	1.1	6
1970-79	5.1	18
1980-89	7.4	20
1990-99	23.8	32
2000 or later	63.4	25

% of National Landholdings held by Urban Households



Source: Demographic and Health Surveys, various years between 2004-2014.

CONCERNS about the viability of a smallholder-led growth strategy in Africa

4. Changing FARM STRUCTURE-- CAUSES

- a) Rise in world food prices – heightened investor interest in farmland
- b) Urban elite capture of land policy / farm lobbies
 - Access to capital, management expertise, ability to navigate complex traditional and/or statutory land institutions
- c) Elite capture of government input and output policies
- d) Rise of new towns converting remote land into valued property
- e) One-way direction flow of migration from farm to off-farm sectors may not generally apply in Kenya

CONCERNS about the viability of a smallholder-led growth strategy in Africa

4. Changing FARM STRUCTURE– CONSEQUENCES [+++]

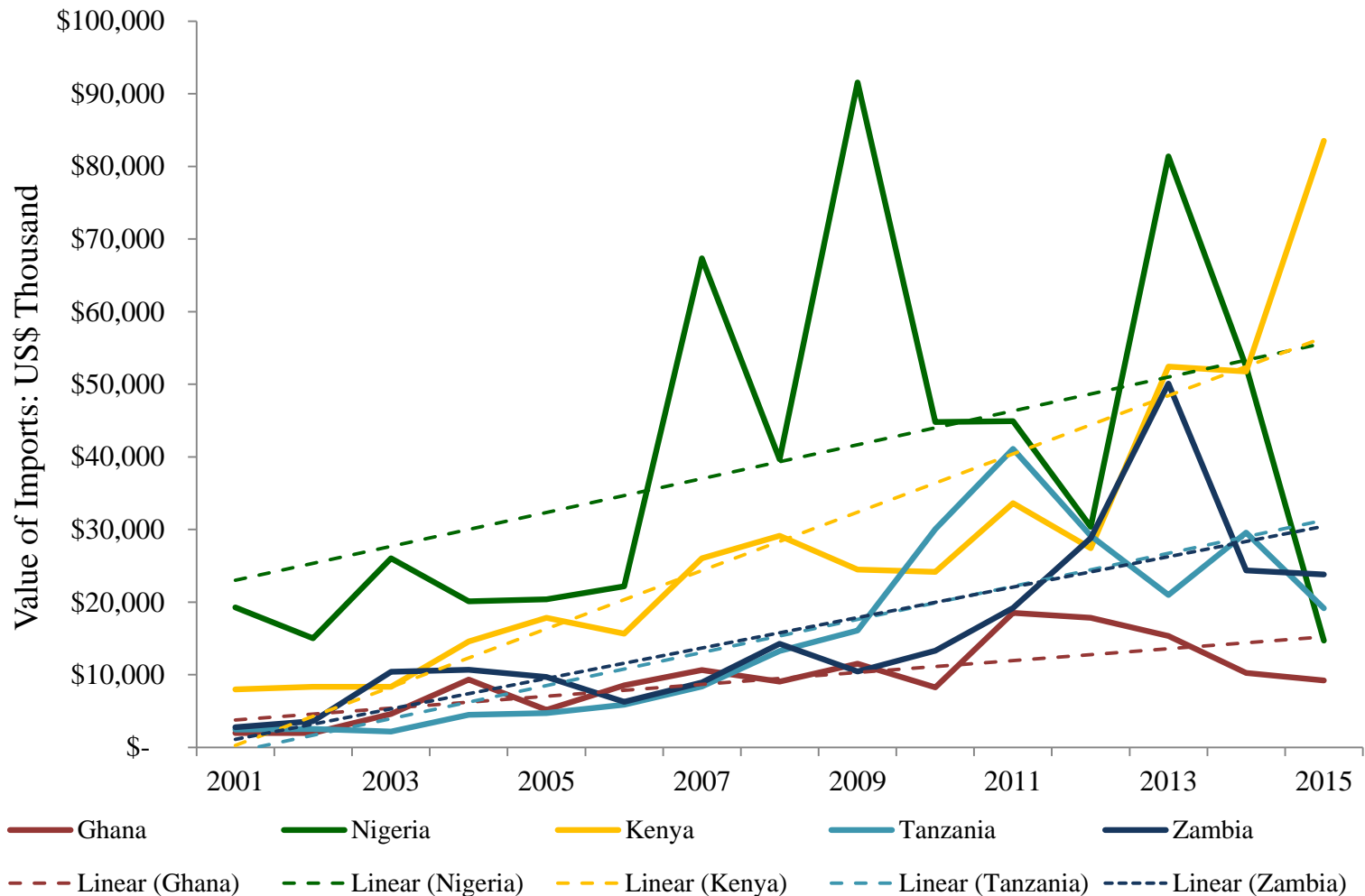
- a) More **capital** and **labor-saving** technologies use–
 - Example: rising use of **mechanization**
- b) Medium farms **more productive** than small-scale farms
 - Reasons to believe that capitalized and educated MS farms are more productive
- c) Vent-for-surplus
 - Medium-scale farm contributing a large share of **marketed surplus**
 - Selling to **large grain traders**, get higher prices due to reduced transaction costs

CONCERNS about the viability of a smallholder-led growth strategy in Africa

4. Changing FARM STRUCTURE- CONSEQUENCES [---]

- a) Growing land **scarcity**
- b) Rising **inequality** of farmland distribution
 - Some displacement of smallholders
- c) Is mechanization **displacing** agricultural employment?

Nominal value of tractor imports in selective Sub-Saharan African countries (2001-2015)



Source: vanderWesthuisen, forthcoming

Conclusion

1. Smallholder farming is under siege- only a few can **FARM themselves out of smallholder farming**
 - Most smallholder farms have become “too small” to generate meaningful production surpluses and participate in broad-based inclusive agricultural growth processes given existing technologies
2. Continued concentration of arable land may have profound consequences for both the pace and the nature of growth within rural economies
 - Relatively egalitarian land distribution patterns have tended to generate more broadly based growth

Implications for policy

1. The “transition” issue still alive
 - How to transform Kenyan economy from current situation to more diversified and productive economy
2. Agricultural **productivity growth** will STILL be the cornerstone of any inclusive economic development and improved livelihoods:
 - Multiplier effects: ag productivity will influence the pace of growth in non-farm jobs
 - Pace of labor force exit out of farming
 - Labor productivity in broader economy
3. Multiplier effects may be much weaker when the source of agricultural growth is concentrated

3 categories of activities that promote structural transformation

1. Actions that the private sector will undertake on its own
 - Example: distribution of inputs to areas where demand is strong
2. Actions that the private sector will undertake if governments create a favorable ‘enabling environment’
 - Example: distribution of inputs to areas where demand would be strong with improved road, port, communications infrastructure
3. Actions that the private sector will not do under most circumstances and that governments must do
 - Example: Infrastructure, education, R&D, extension services

Tomorrow belongs to people who
prepare for it today

--African Proverb--

Thank You

Available national datasets are unsuitable to understand changes in farm structure

1. Sample proportional to population and tend to systematically under-sample large farms
2. Often exclude non-smallholder farming sectors by default or design
3. Tend not to prompt urban households about farmland they may cultivate or own away from their main urban residences
4. Truncate landholding data