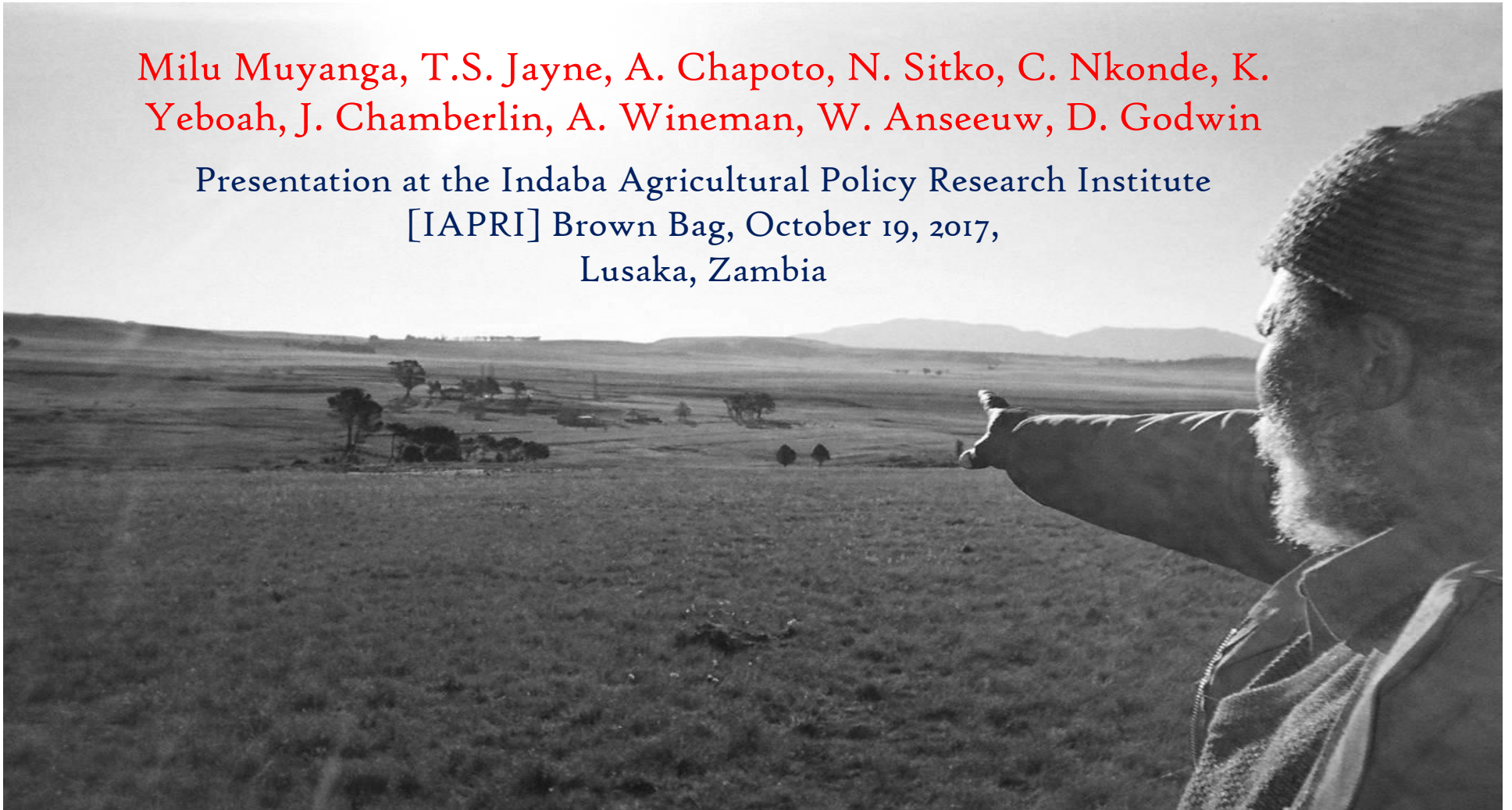


# Causes, consequences of changing farm size distributions in Africa, and implications on youth employment

Milu Muyanga, T.S. Jayne, A. Chapoto, N. Sitko, C. Nkonde, K. Yeboah, J. Chamberlin, A. Wineman, W. Anseeuw, D. Godwin

Presentation at the Indaba Agricultural Policy Research Institute  
[IAPRI] Brown Bag, October 19, 2017,  
Lusaka, Zambia





# 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.



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# Outline

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1. Document how rapidly farm structure is changing
2. Characteristics of MS farmers
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# Changes in farm structure in Zambia (2001-2012)

Farm size category	Number of farms		% growth in number of farms	% of total cultivated area	
	2001	2012		2001	2012
0 – 2 ha	638,118	748,771	17.3	34.1	16.2
2 – 5 ha	159,039	418,544	163.2	45	31.7
5 – 10 ha	20,832	165,129	692.6	14.3	25.0
10 – 20 ha	2,352	53,454	2272.7	6.6	15.0
20 – 100 ha	--	13,839	na	--	12.1
<b>Total</b>	<b>820,341</b>	<b>1,399,737</b>		<b>100</b>	<b>100</b>

**-39%**

**+91%**

Source: Zambia MAL Crop Forecast Surveys, 2001 and 2012

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Source: Zambia MAL Crop Forecast Surveys, 2001 and 2012

## Changes in farm structure in Tanzania (2008-2012), LSMS/National Panel Surveys

Farm size	Number of farms (% of total)		% growth in number of farms between initial and latest year	% of total operated land on farms between 0-100 ha		
	2008	2012		2008	2012	
0 – 5 ha	5,454,961 (92.8)	6,151,035 (91.4)	12.8	62.4	56.3	- 6.1%
5 – 10 ha	300,511 (5.1)	406,947 (6.0)	35.4	15.9	18.0	
10 – 20 ha	77,668 (1.3)	109,960 (1.6)	41.6	7.9	9.7	+ 6.1%
20 – 100 ha	45,700 (0.7)	64,588 (0.9)	41.3	13.8	16.0	
<b>Total</b>	<b>5,878,840 (100%)</b>	<b>6,732,530 (100%)</b>	<b>14.5</b>	<b>100.0</b>	<b>100.0</b>	

# Changes in farm structure in Ghana (1992-2013)

Ghana	Number of farms		% growth in number of farms	% of total cultivated area	
	1992	2013		1992	2013
0-2 ha	1,458,540	1,582,034	8.5	25.1	14.2
2-5 ha	578,890	998,651	72.5	35.6	31.3
5-10 ha	116,800	320,411	174.3	17.2	22.8
10-20 ha	38,690	117,722	204.3	11.0	16.1
20-100 ha	18,980	37,421	97.2	11.1	12.2
>100 ha	--	1,740	-	--	3.5
<b>Total</b>	<b>2,211,900</b>	<b>3,057,978</b>	<b>38.3</b>	<b>100</b>	<b>100</b>

+51%

Source: Ghana GLSS Surveys, 1992, 2013, Jayne et al., 2016, using data from Ghana GLSS Surveys I and IV.



# Available national datasets are unsuitable to understand changes in farm structure

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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

# Changes in farm size distributions: Summary

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1. Number of small farms growing **slowly**
2. Share of area under small farms **declining**
3. Number of medium-scale farms growing **rapidly**
4. Share of area under medium-scale is **growing**, and currently over 40% of farm holdings (> 25% of cultivated area)

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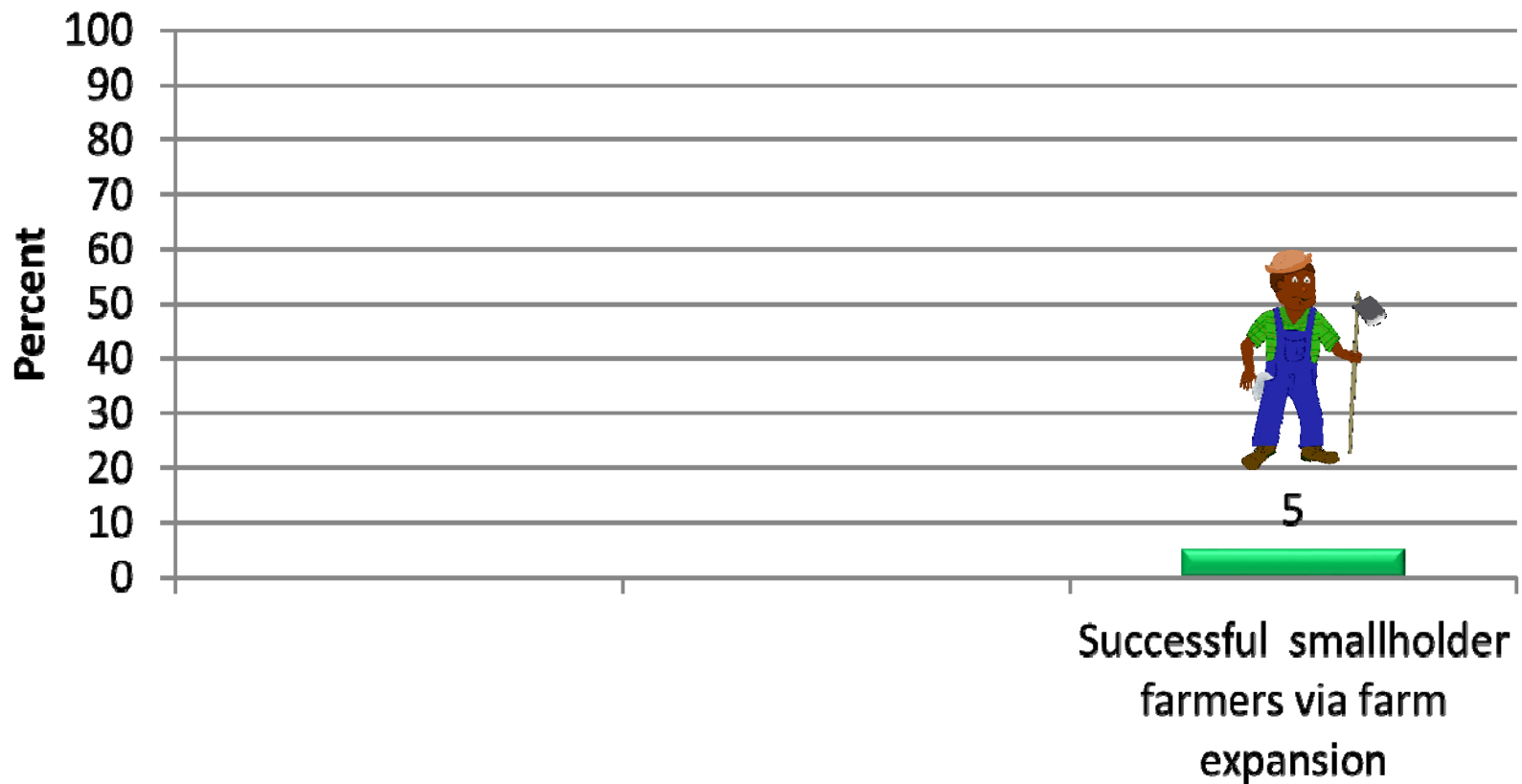
# Rise of the medium-scale farmers

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- Who are the medium scale farmers?
  - ✓ Farm-led?
  - ✓ Non-farm led?

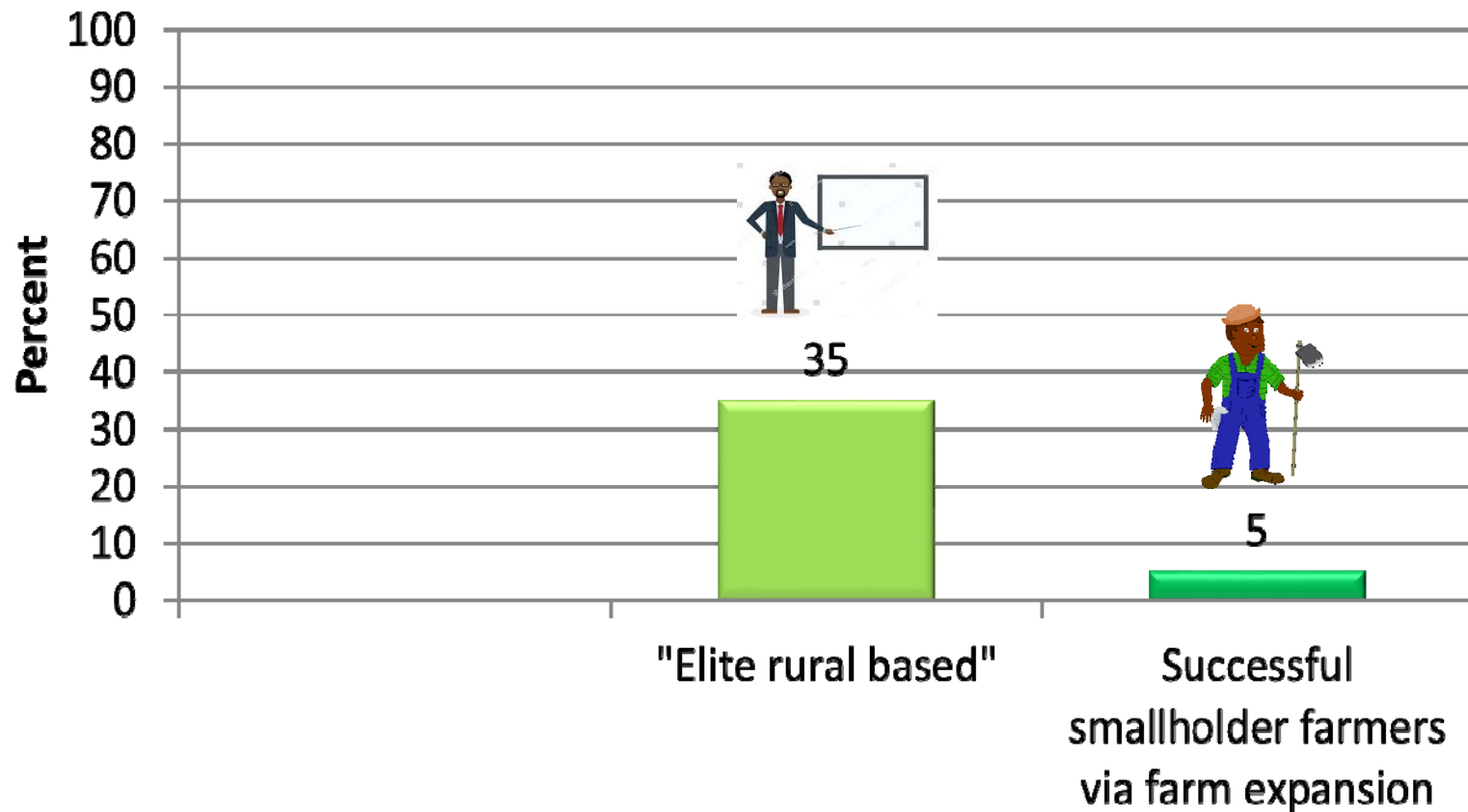
# Rise of the medium-scale farmers

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



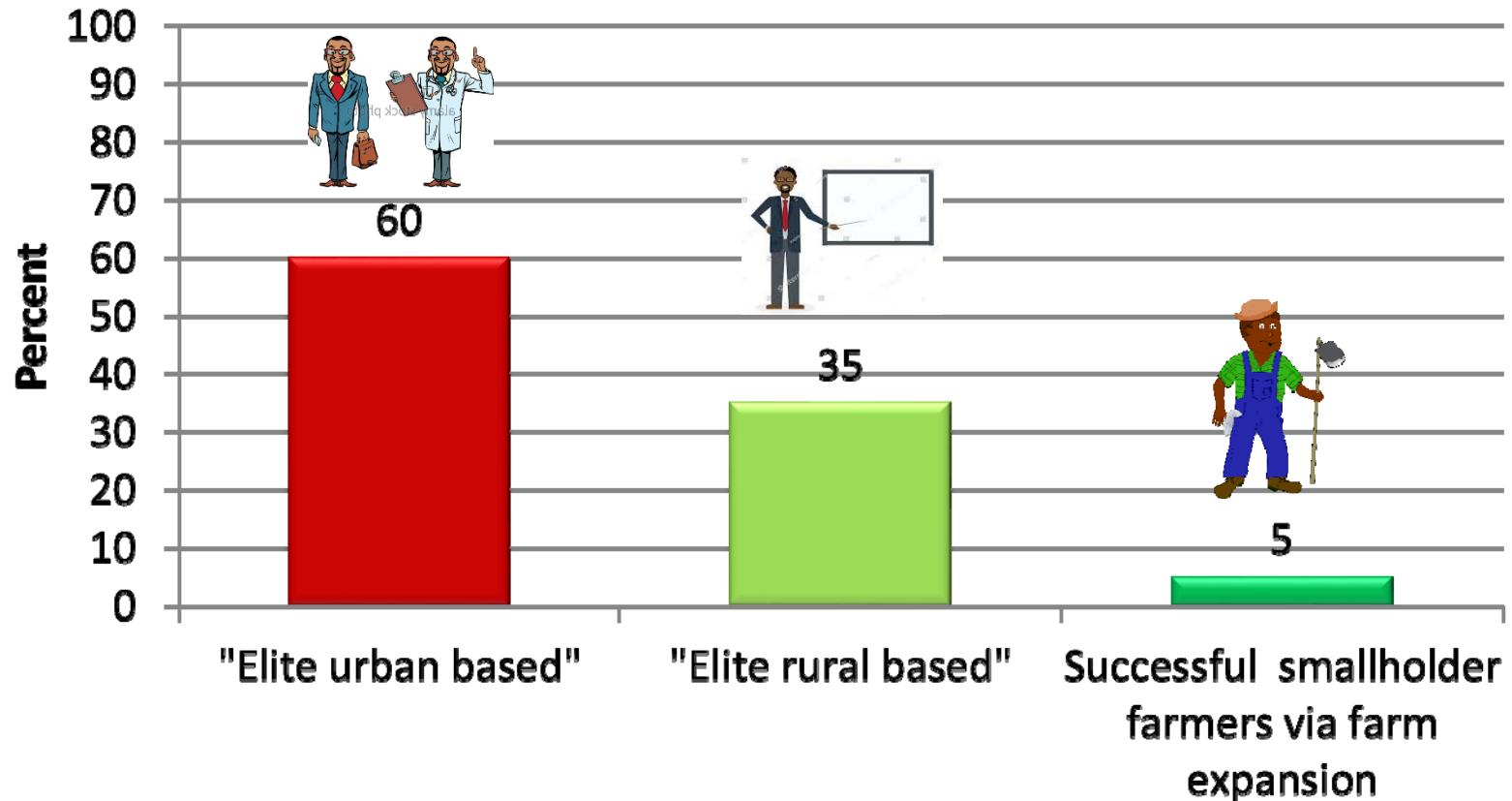
# Rise of the medium-scale farmers

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

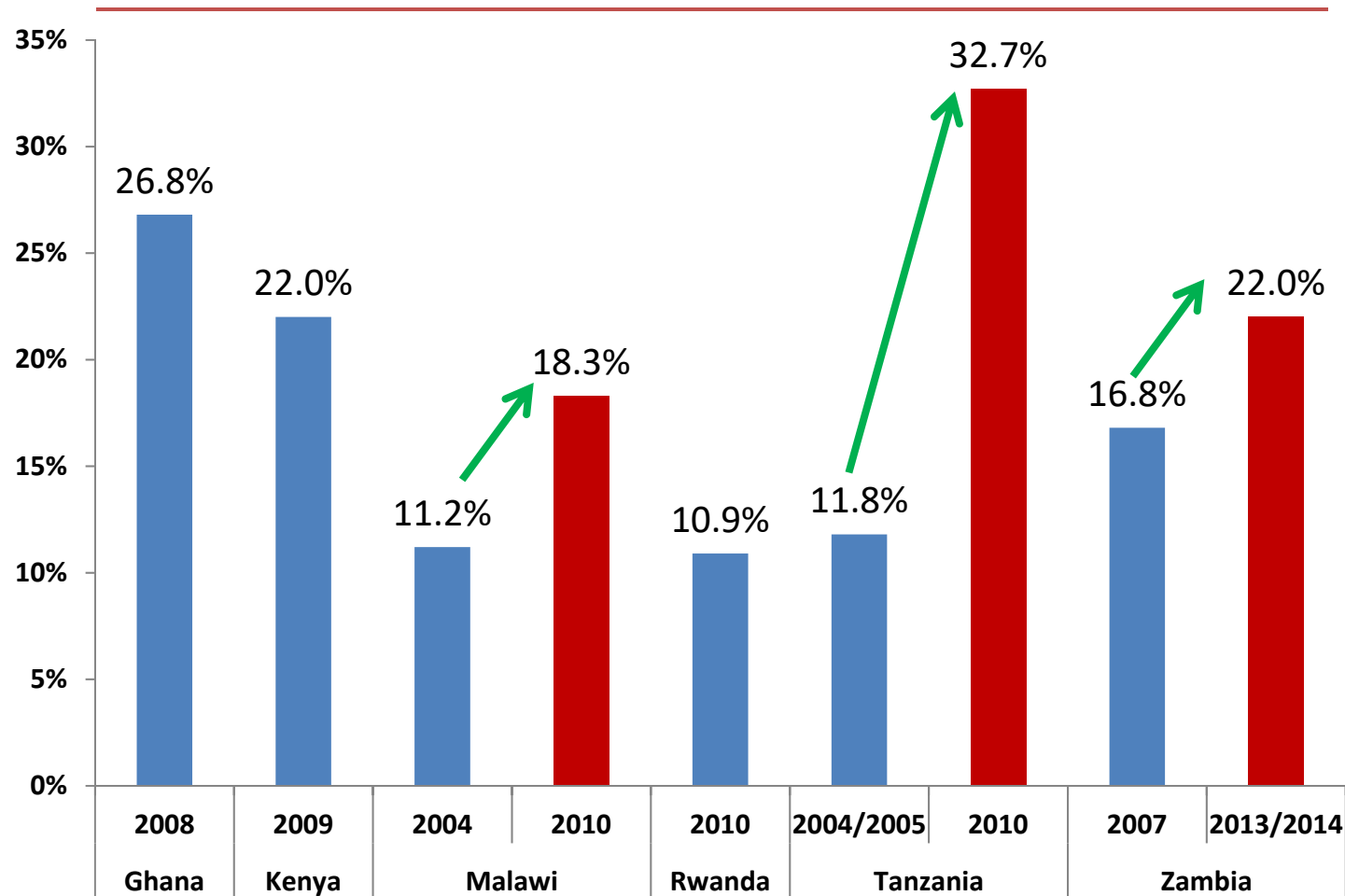


# Rise of the medium-scale farmers

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



# % of National Landholdings held by Urban Households



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



# 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

# Outline

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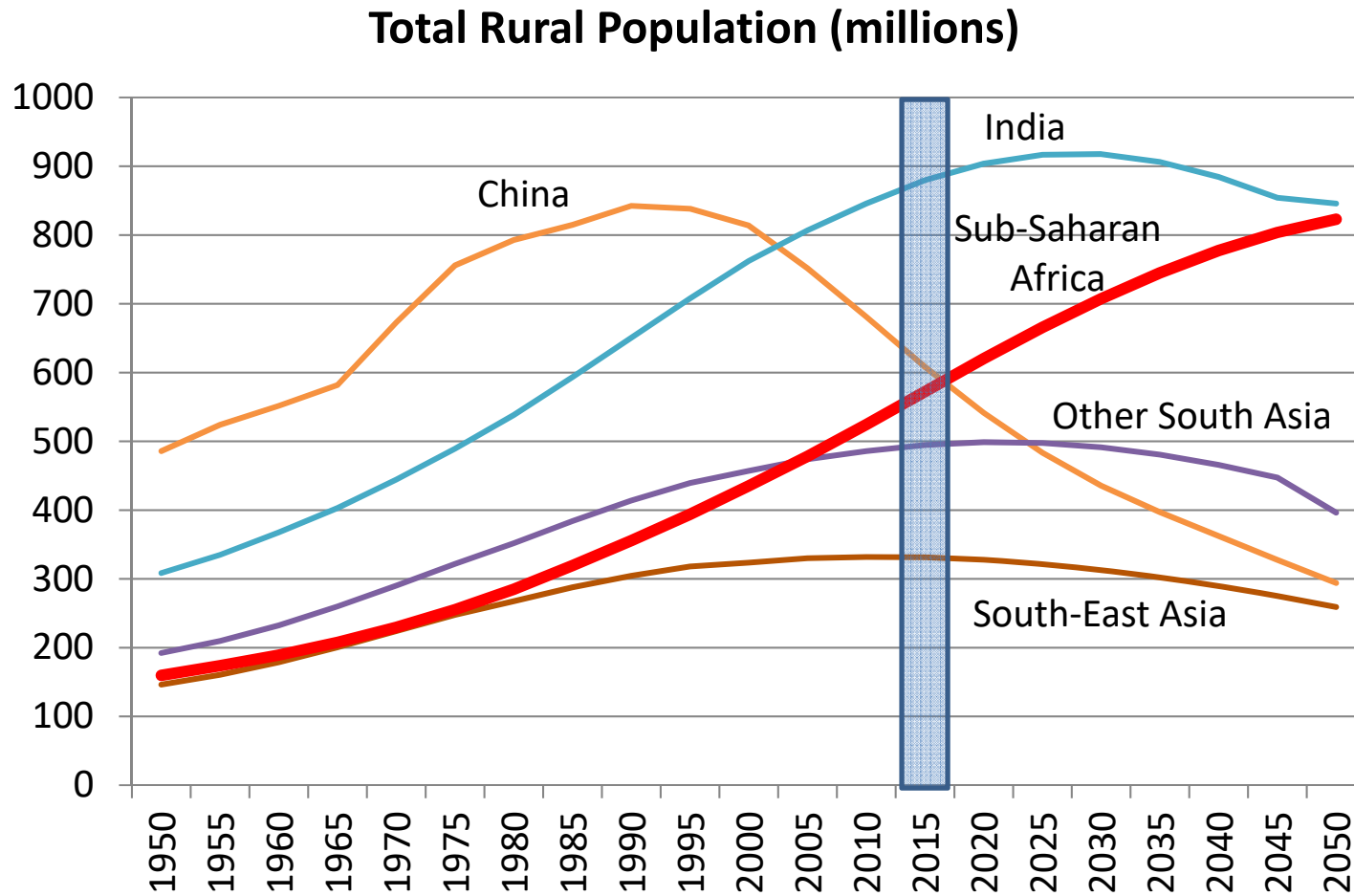
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# Causes of changing farm size distributions

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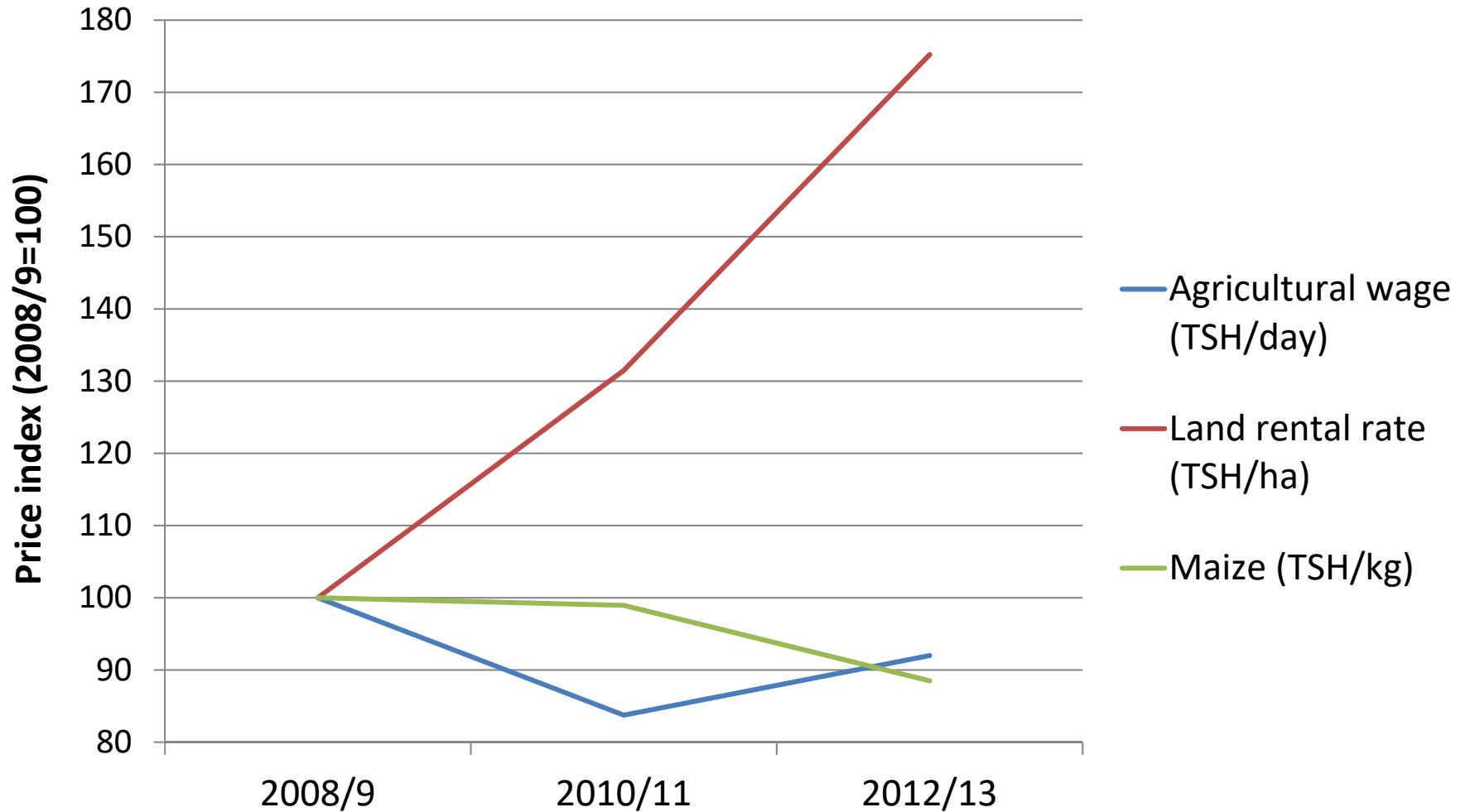
1. Rise in world food prices – heightened investor interest in farmland
2. Urban elite capture of land policy / farm lobbies
3. Rapid population growth
  - Fragmentation/subdivision in areas of favorable mkt access
  - Land inheritance declining
  - Rising land scarcity → land markets → rising land prices
4. Rise of new towns converting formerly remote land into valued property

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

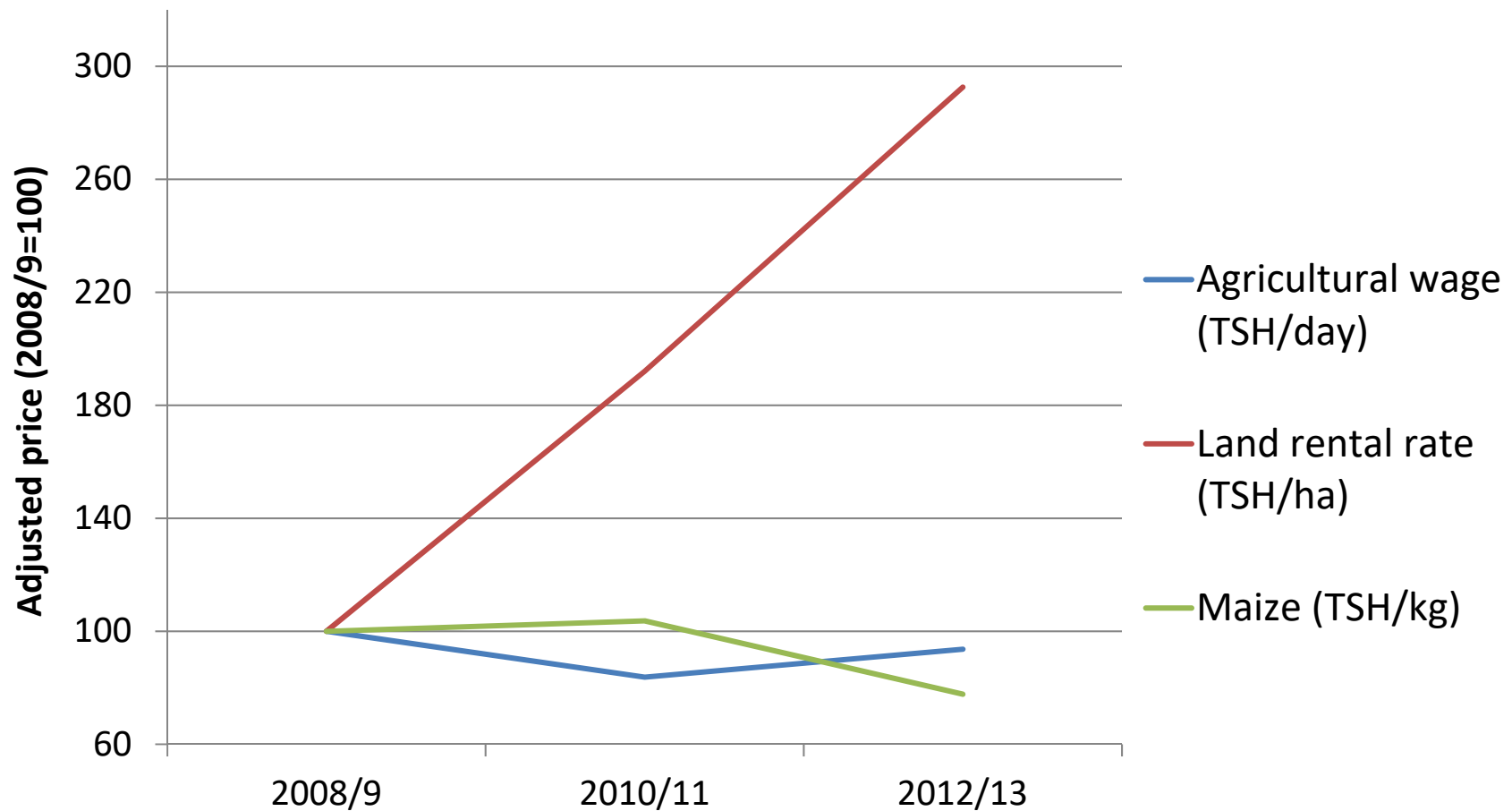


Source: UN 2013

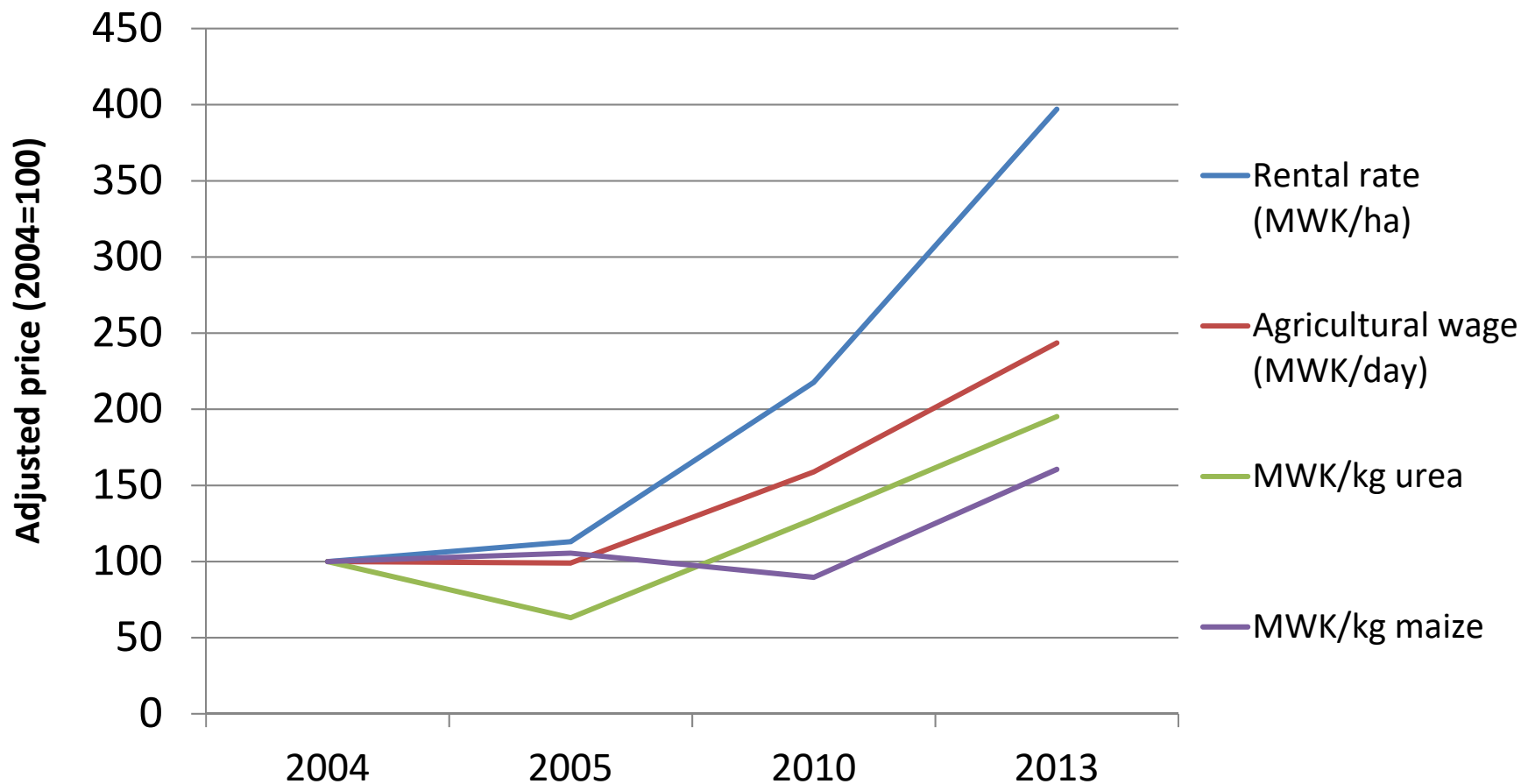
# Output and factor price indices, northern Tanzania



# Output and factor price indices, western Tanzania



# Output and factor price indices, rural Malawi, 2004-2013



Sources: IHS for land and wages; FEWSNET for urea and maize

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# Consequences of changing farm size distributions (+++)

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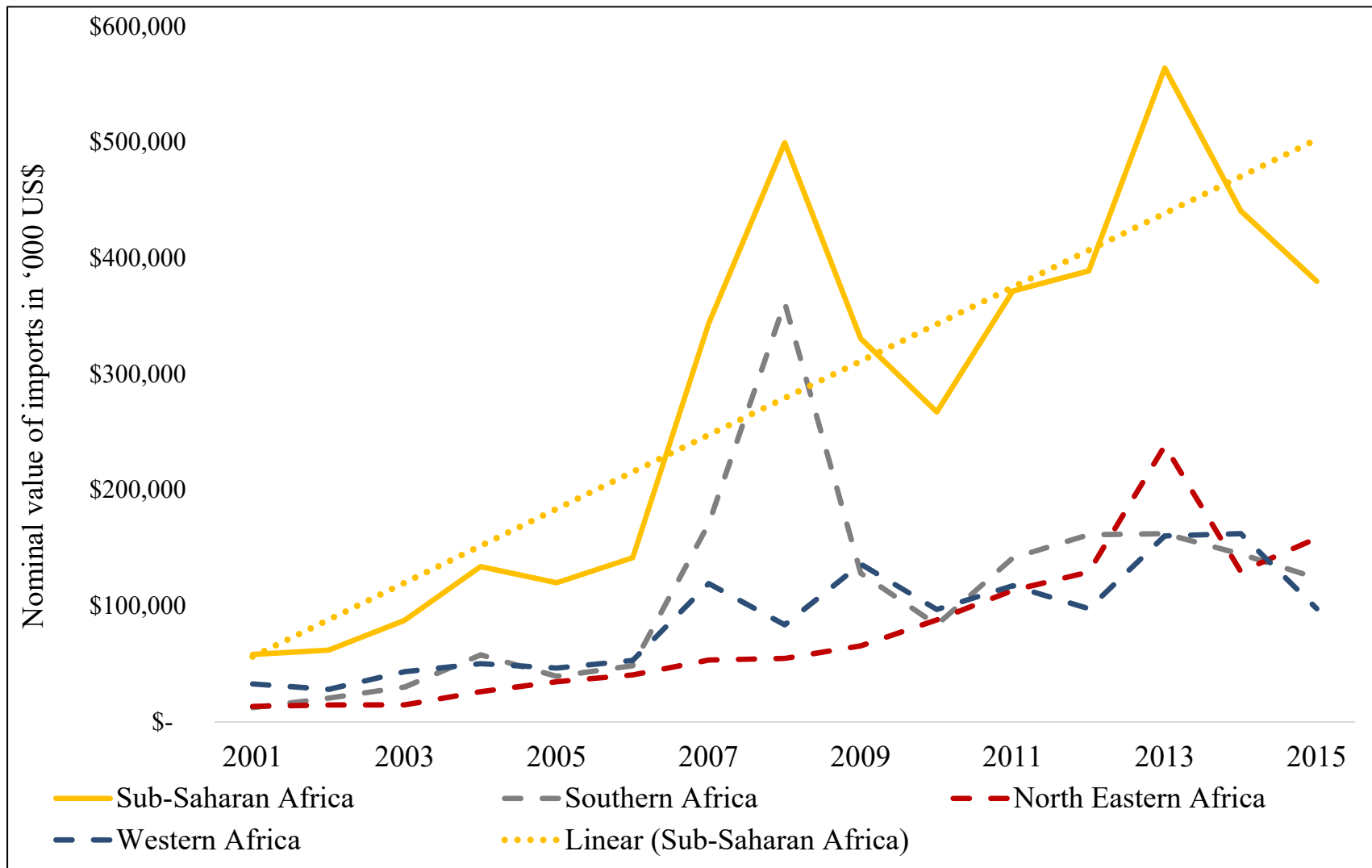
1. Rising use of **mechanization**
2. More **capital** using/labor-saving forms of agricultural production
3. Medium-scale farm contributing a large share of **marketed grains**- Kenya, Tanzania, Zambia
  - Selling to large grain traders
  - Higher prices due to reduced transaction costs
4. **Productivity** differences between small and medium-scale farms – limited evidence
  - But reasons to believe that capitalized and educated MS farms will be more productive

# Consequences of changing farm size distributions (---)

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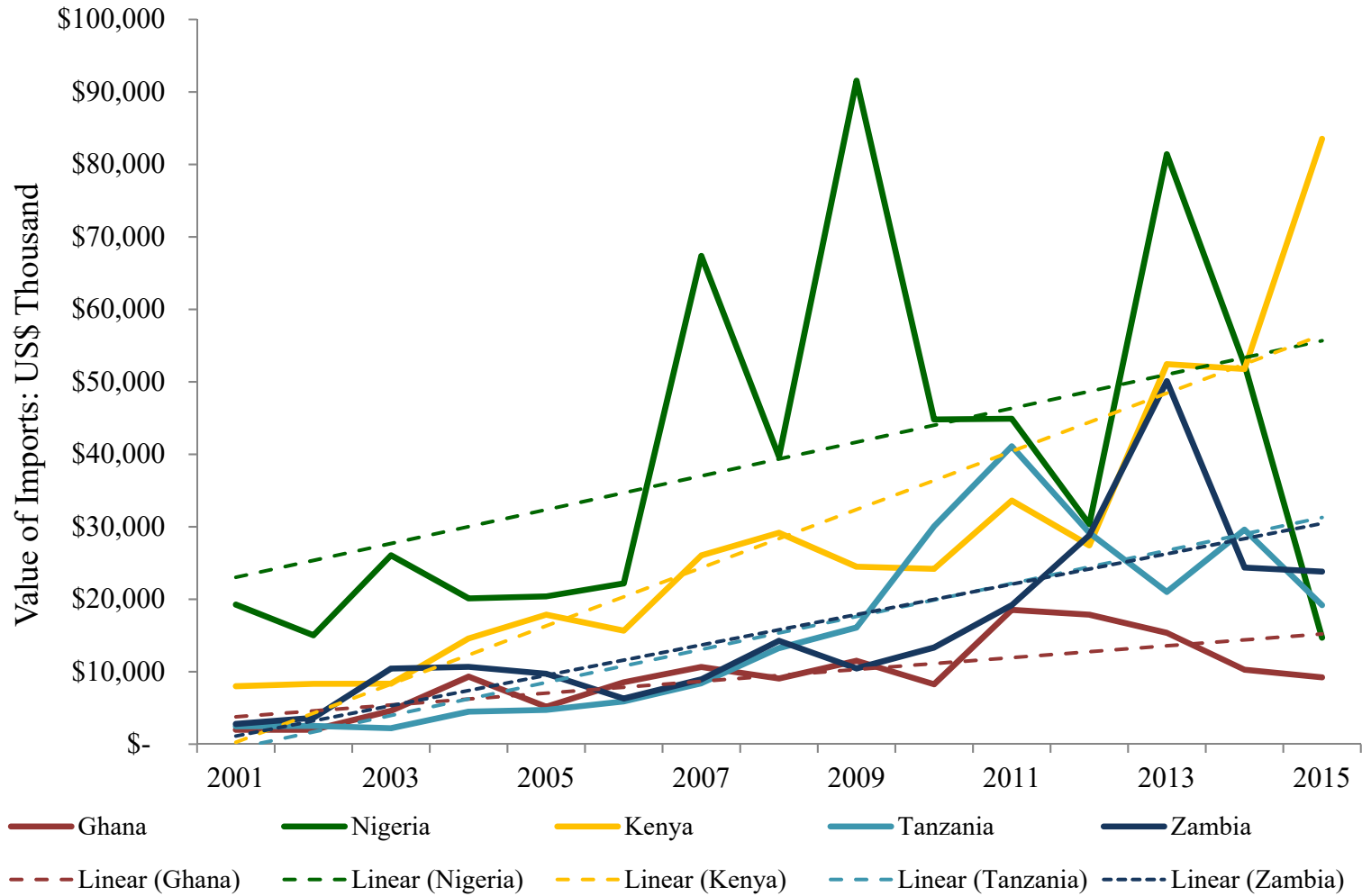
5. Growing **land scarcity** driven by middle/high income urban people seeking to acquire land – not just for land
  - Speculation, housing/properties, farming
6. **Rising challenges of youth access to land** → migration
7. Rising **inequality** of farmland distribution
  - Some **displacement**
  - Rising land prices → **straining youth access to land**

# Nominal value of tractor imports to Sub-Saharan Africa (excluding South Africa), 2001-2015



Source: vanderWesthuisen, forthcoming

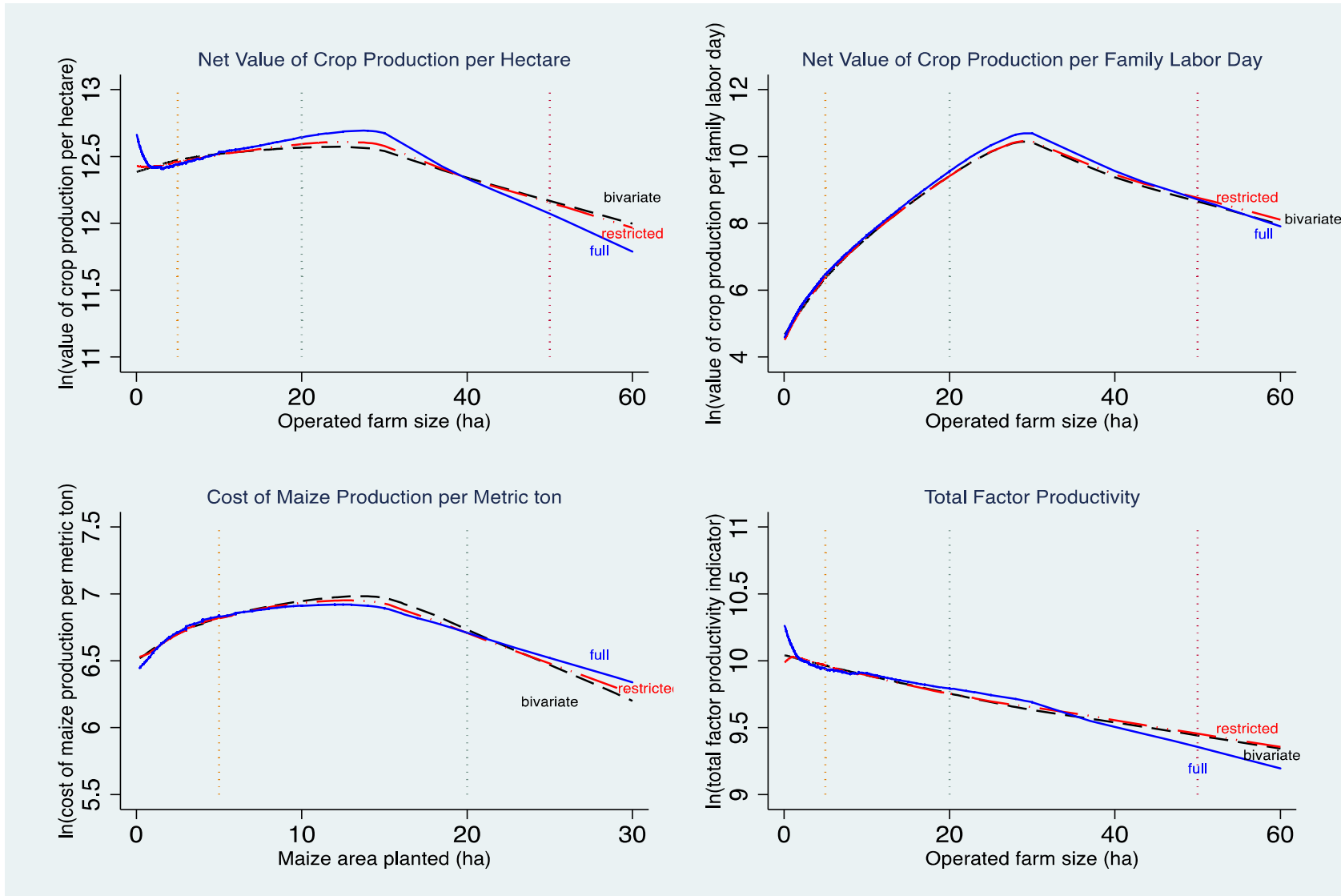
# Nominal value of tractor imports in selective Sub-Saharan African countries (2001-2015)



Source: vanderWesthuisen, forthcoming

# Productivity differences between small and medium-scale farms

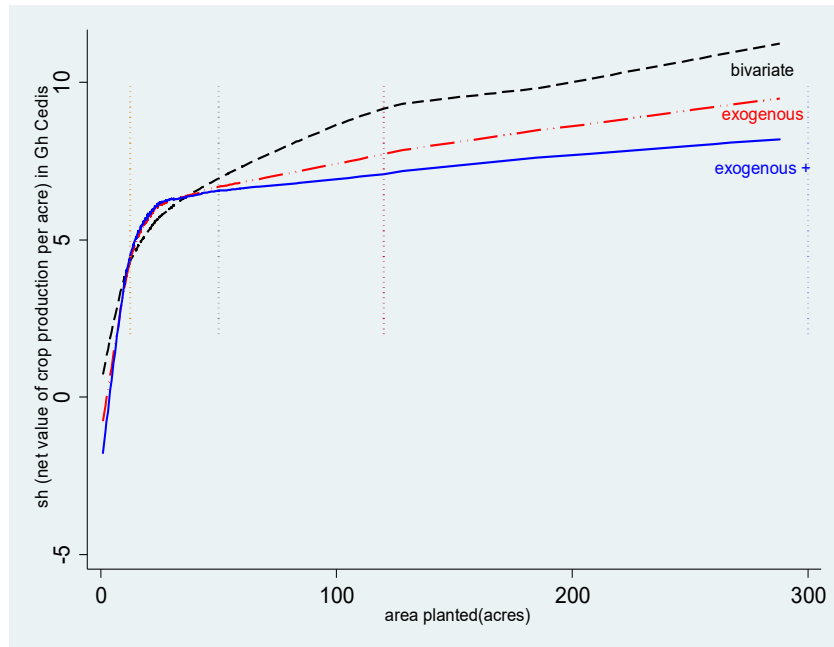
## ZAMBIA



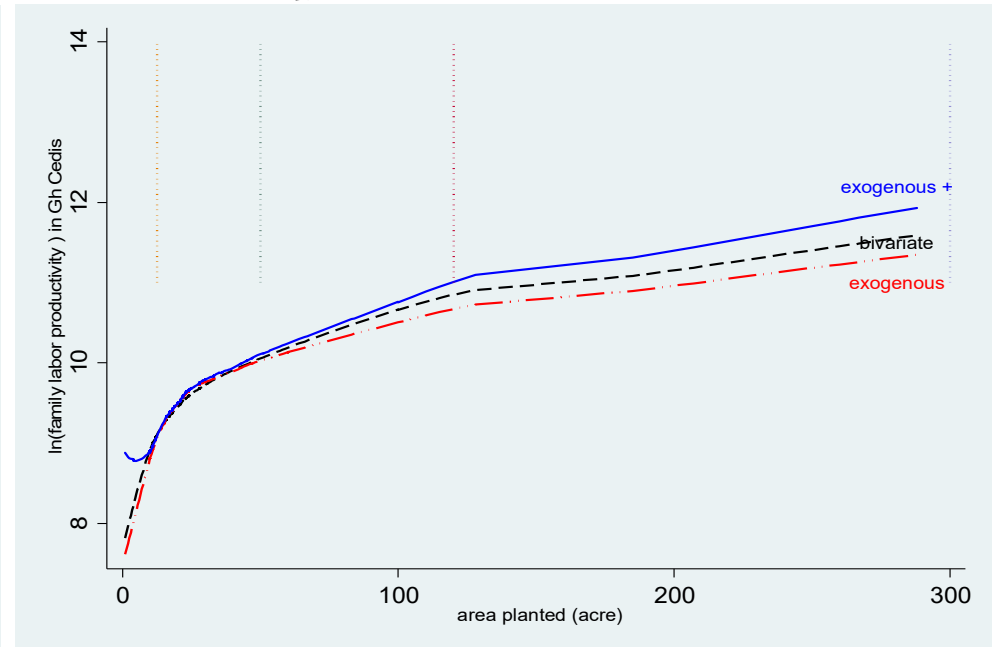
# Productivity differences between small and medium-scale farms [cont.]

## GHANA

Net value of production on area planted in Acres

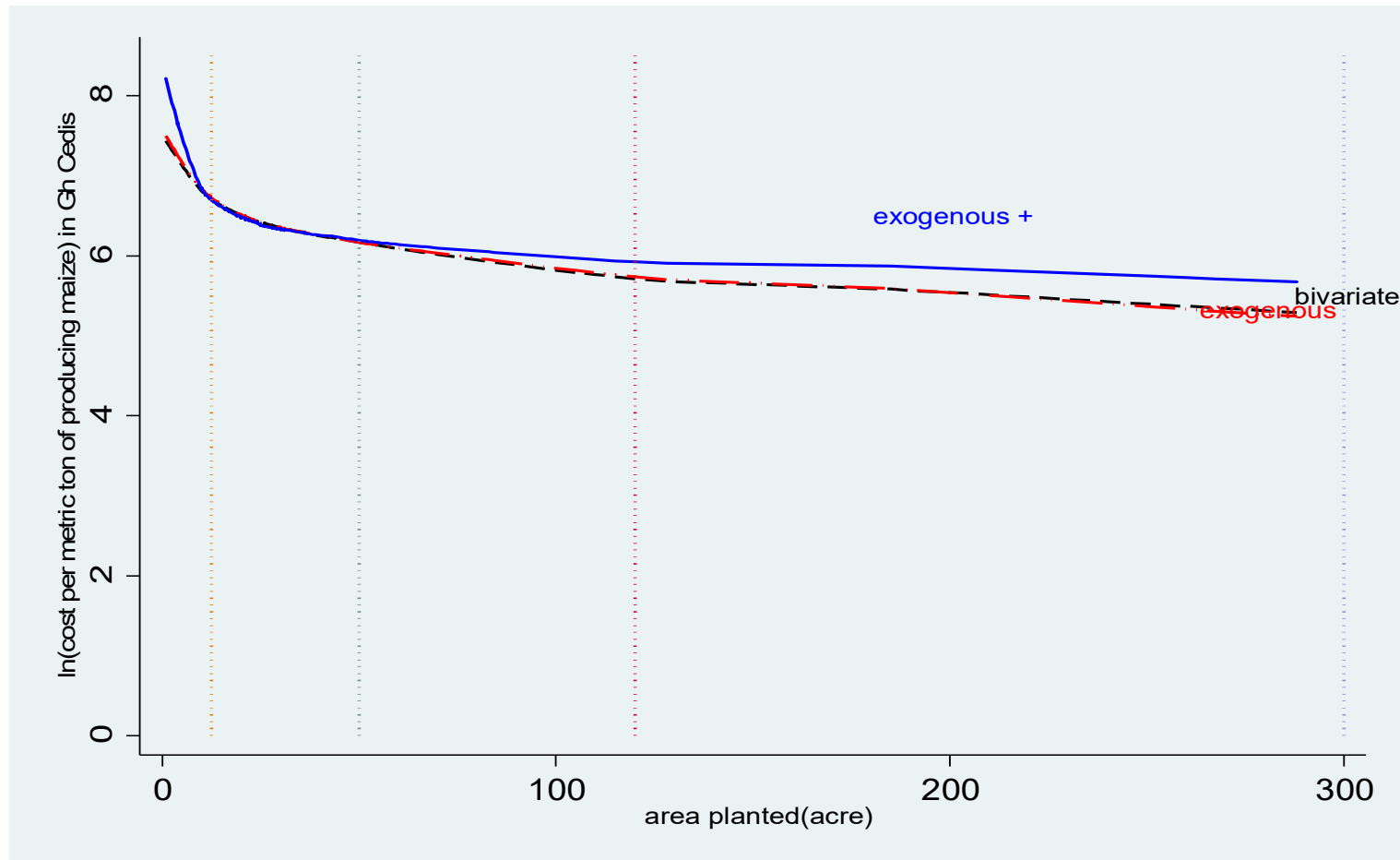


Family labor productivity on area planted in Acres



# Productivity differences between small and medium-scale farms [cont.]

**GHANA:** Cost of maize production on area planted in Acres



# KENYA: full sample

Figure 1(a): Value of crop production/ha planted

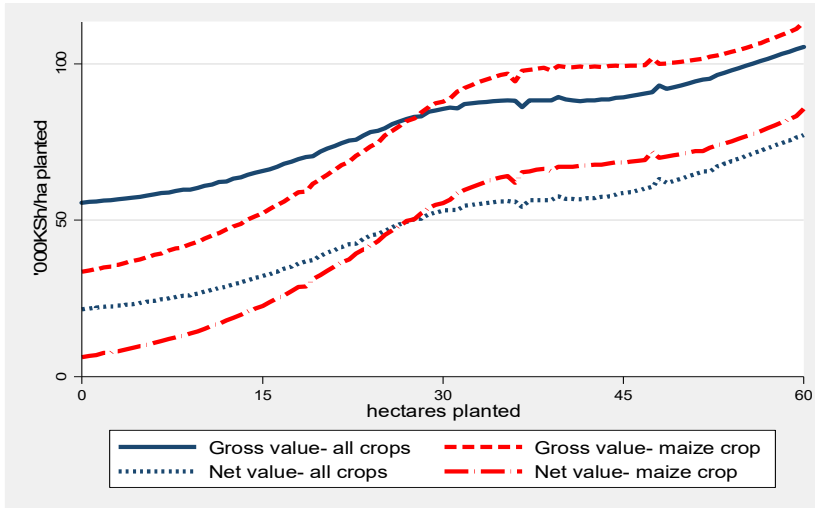


Figure 1(b): Total factor productivity

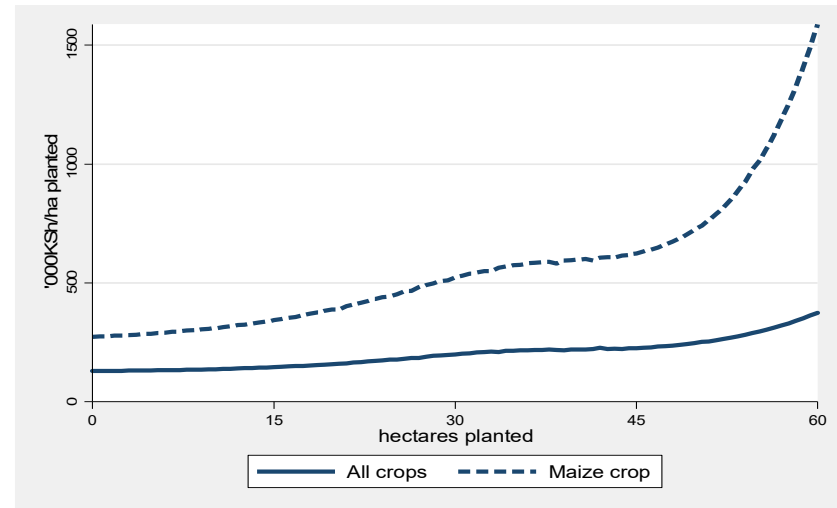


Figure 1(c): Gross value of output/total costs

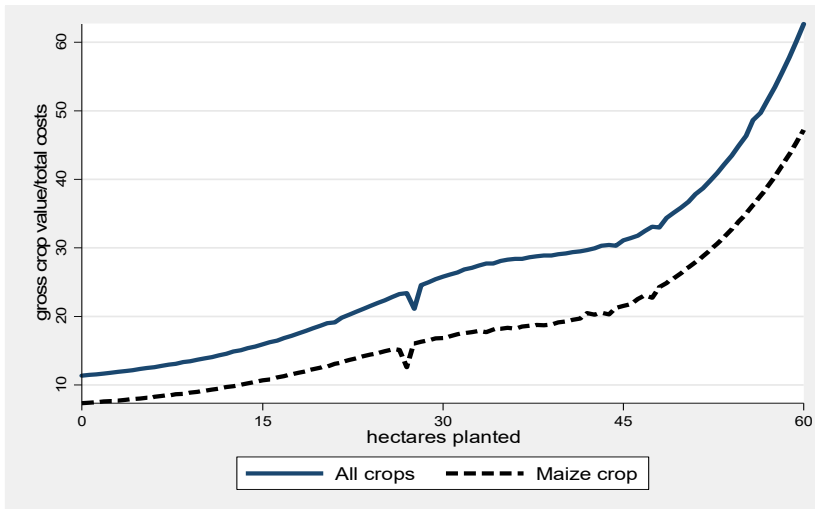
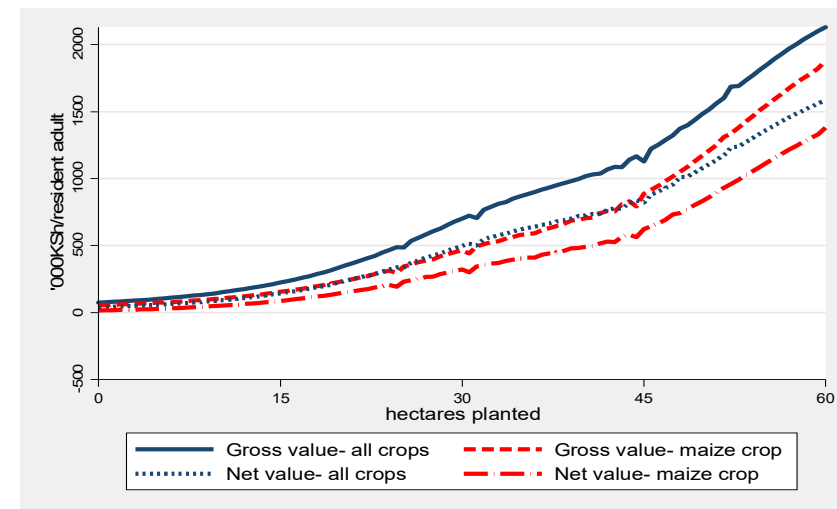


Figure 1(d): Value of crop production/resident adult





# KENYA: smallholder sample

Figure 2(a): Value of crop production/ha planted

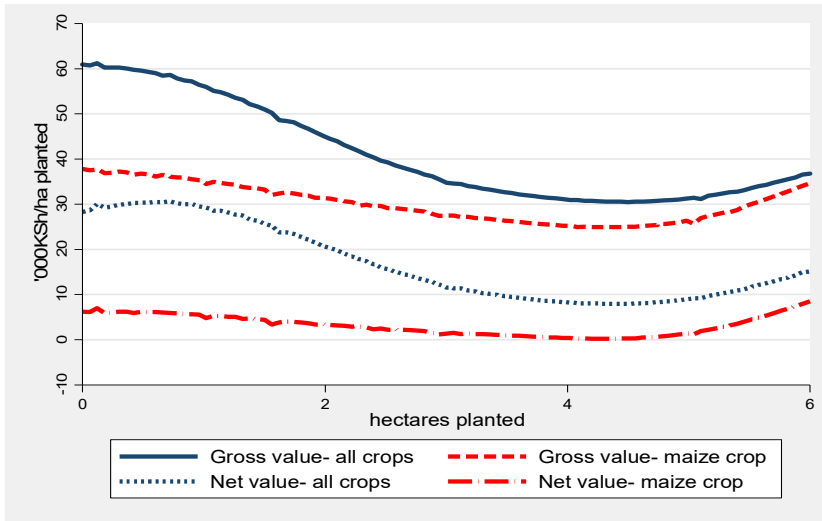


Figure 2(b): Total factor productivity

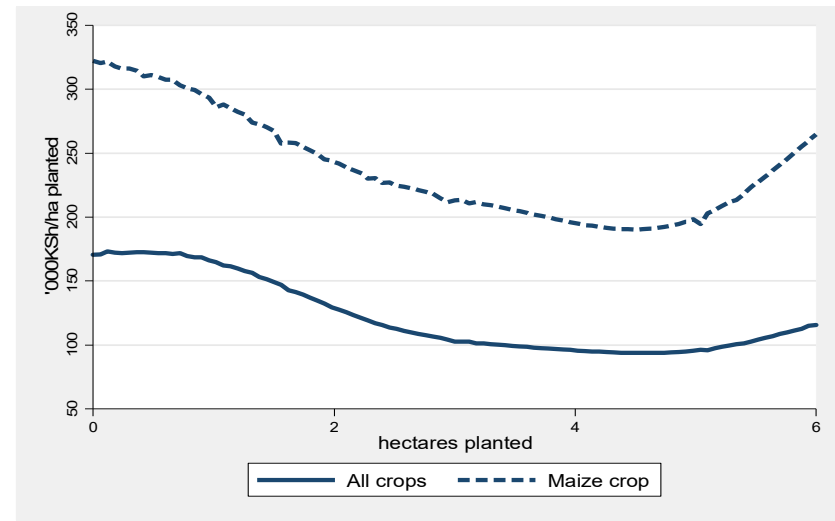


Figure 2(c): Gross value of output/total costs

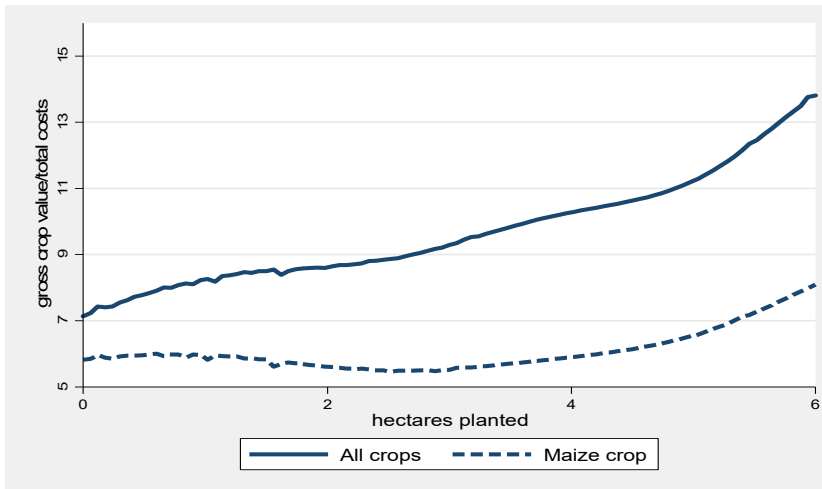
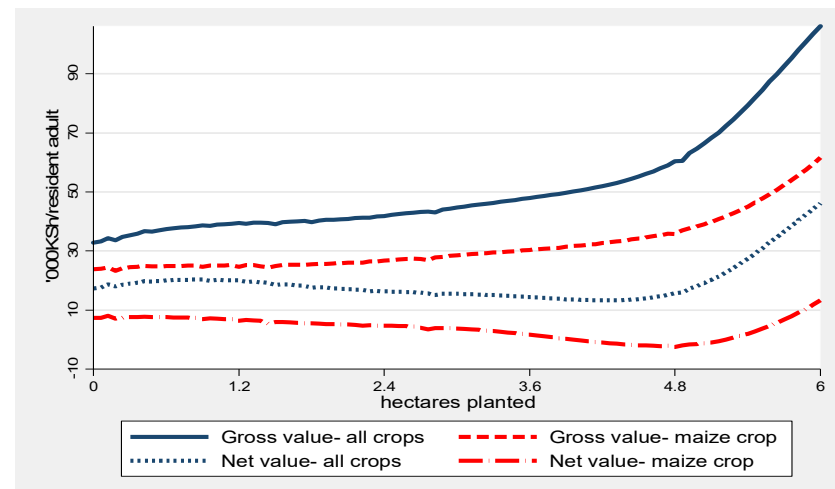


Figure 2(d): Value of crop production/resident adult



# KENYA: crop production costs

Figure 4(a): Aggregate production costs/ha planted

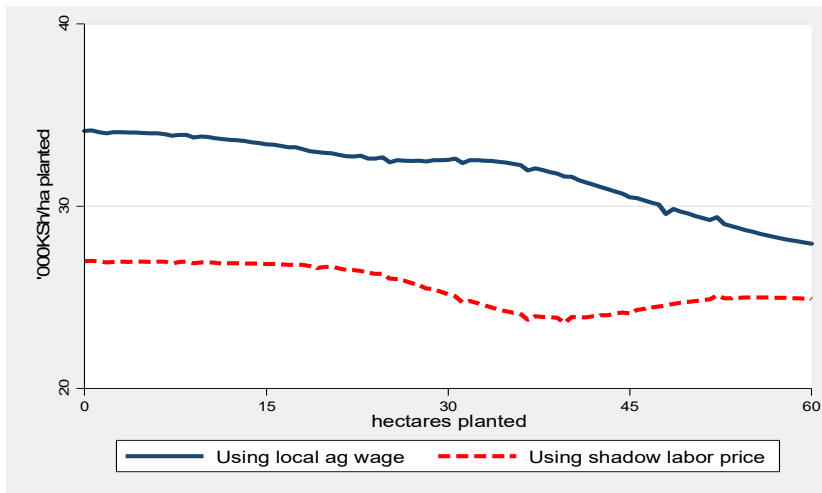


Figure 4(b): Disaggregated production costs/ha planted

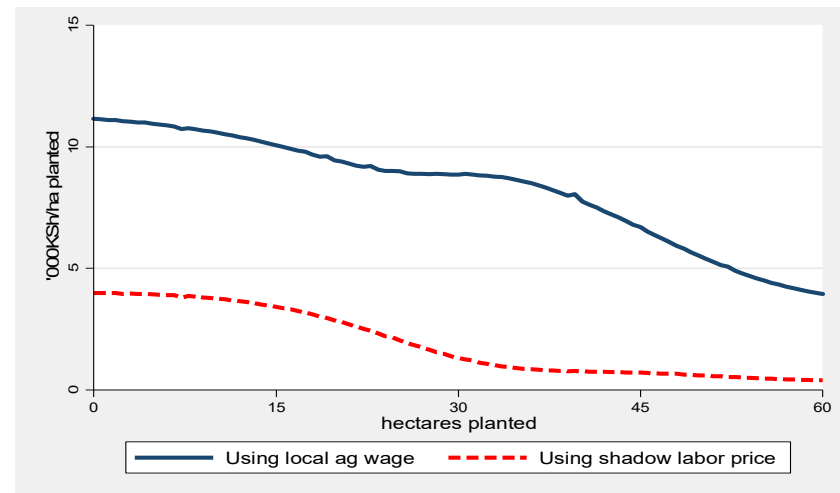


Figure d(c): Labor costs/ha planted

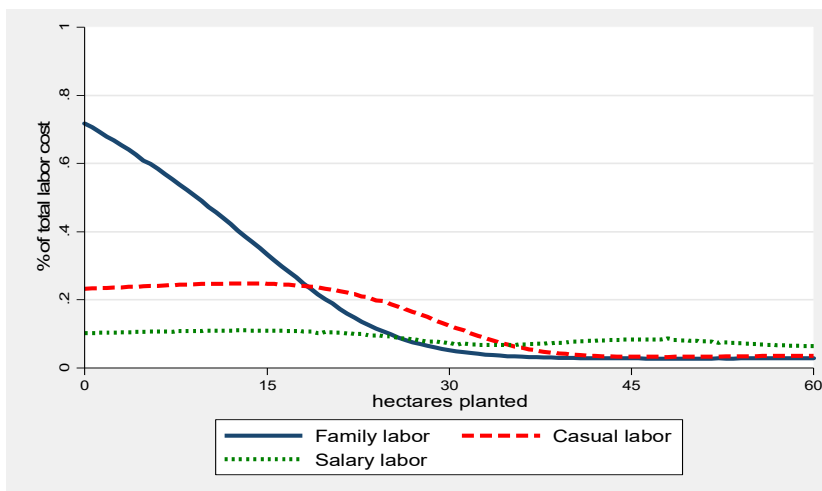
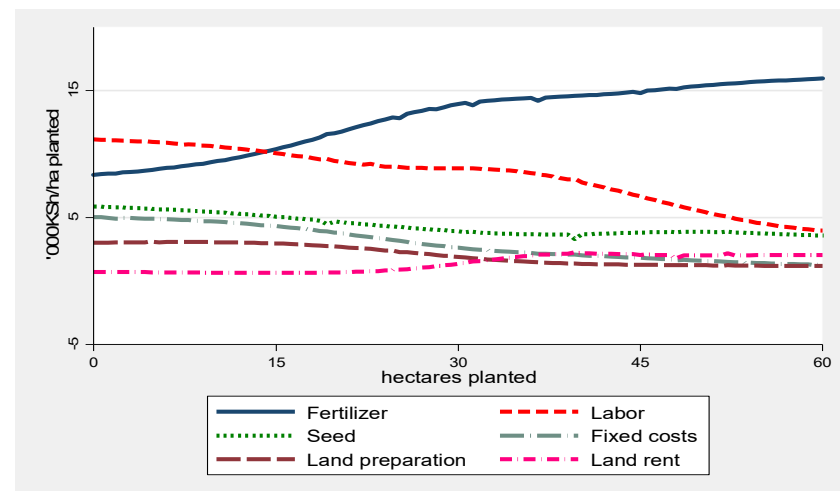


Figure 3(d): Disaggregated labor costs /ha planted



# GINI coefficients in farm landholding

	Period	Movement in Gini coefficient:
Ghana (cult. area) (GLSS)	1992 → 2013	0.54 → 0.70
Kenya (cult. area) (KIHBS)	1994 → 2006	0.51 → 0.55
Tanzania (landholdings) (LSMS)	2008 → 2012	0.63 → 0.69
Tanzania (area controlled) (ASCS)	2008	0.89
Zambia (landholding) (CFS)	2001 → 2012	0.42 → 0.49

Source: Jayne et al. 2014 (JIA)

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# Implications for policy

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## 1. The “transition” issue

- How to transform African economies from current situation to more diversified and productive economies

## 2. Agricultural productivity growth will be the cornerstone of any comprehensive youth livelihoods strategy:

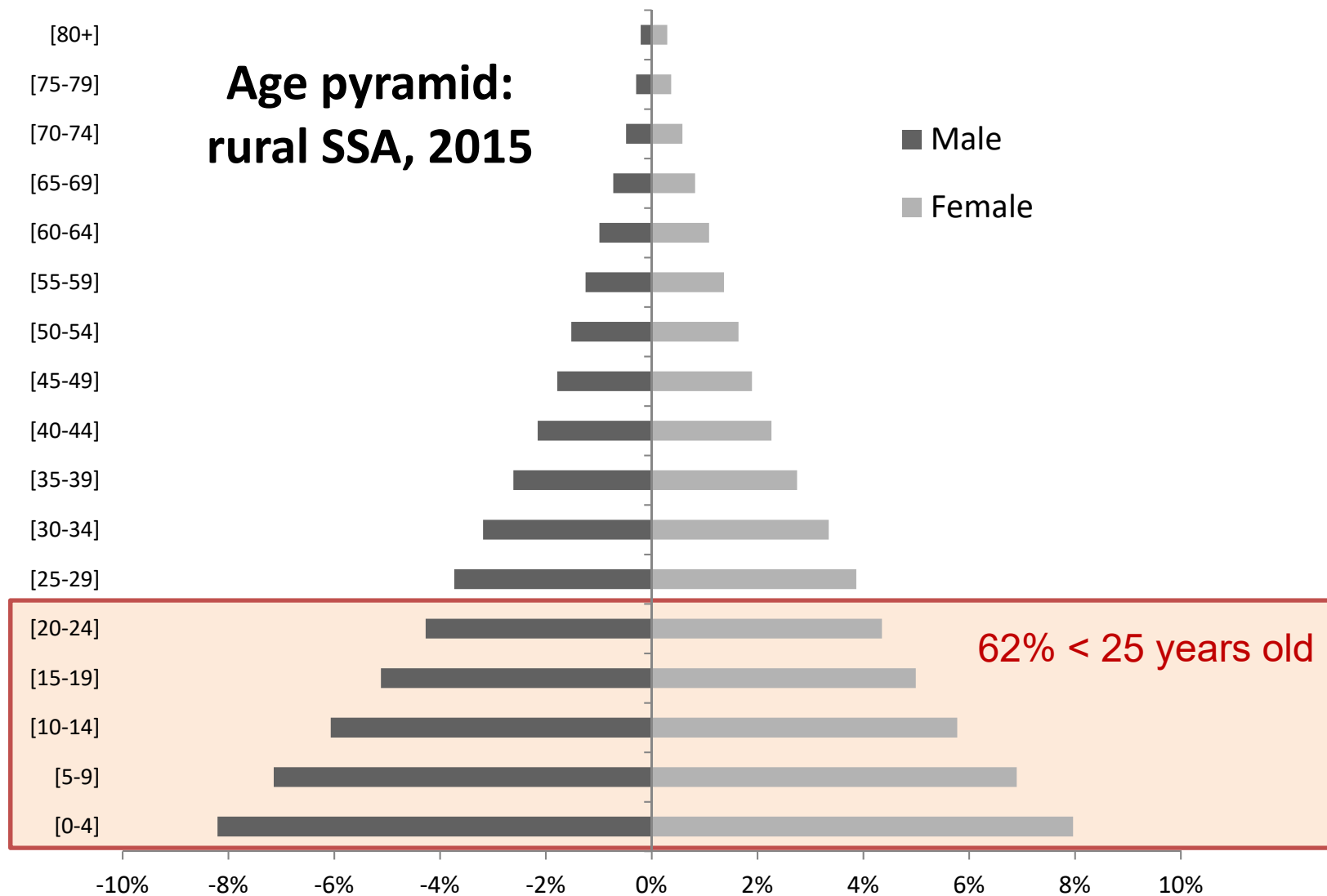
- Ag productivity growth influences
  - Pace of labor force exit out of farming
  - Labor productivity in broader economy

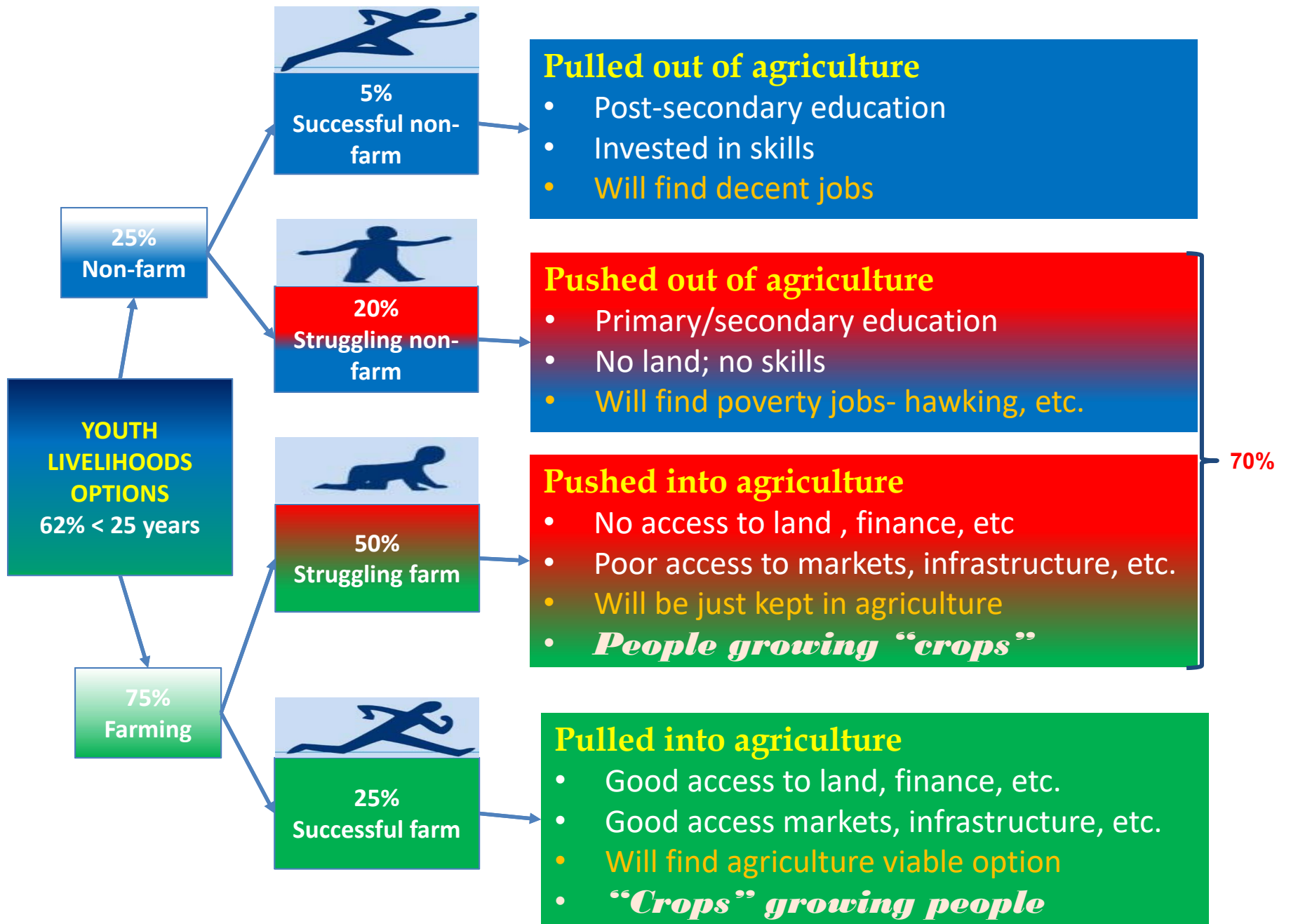
# Implications for policy (cont.)

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3. Agricultural sector policies must anticipate and respond to:
  - Rising land prices, decline of inheritance, market as increasingly important mode of acquiring land
  - Resources needed for youth to succeed in farming (access to land, finance, etc.)
  - Distinguish between “trying to keep youth in agriculture” vs. “giving youth viable choices”

# Looming employment challenge in SSA







# Structural transformation pathway

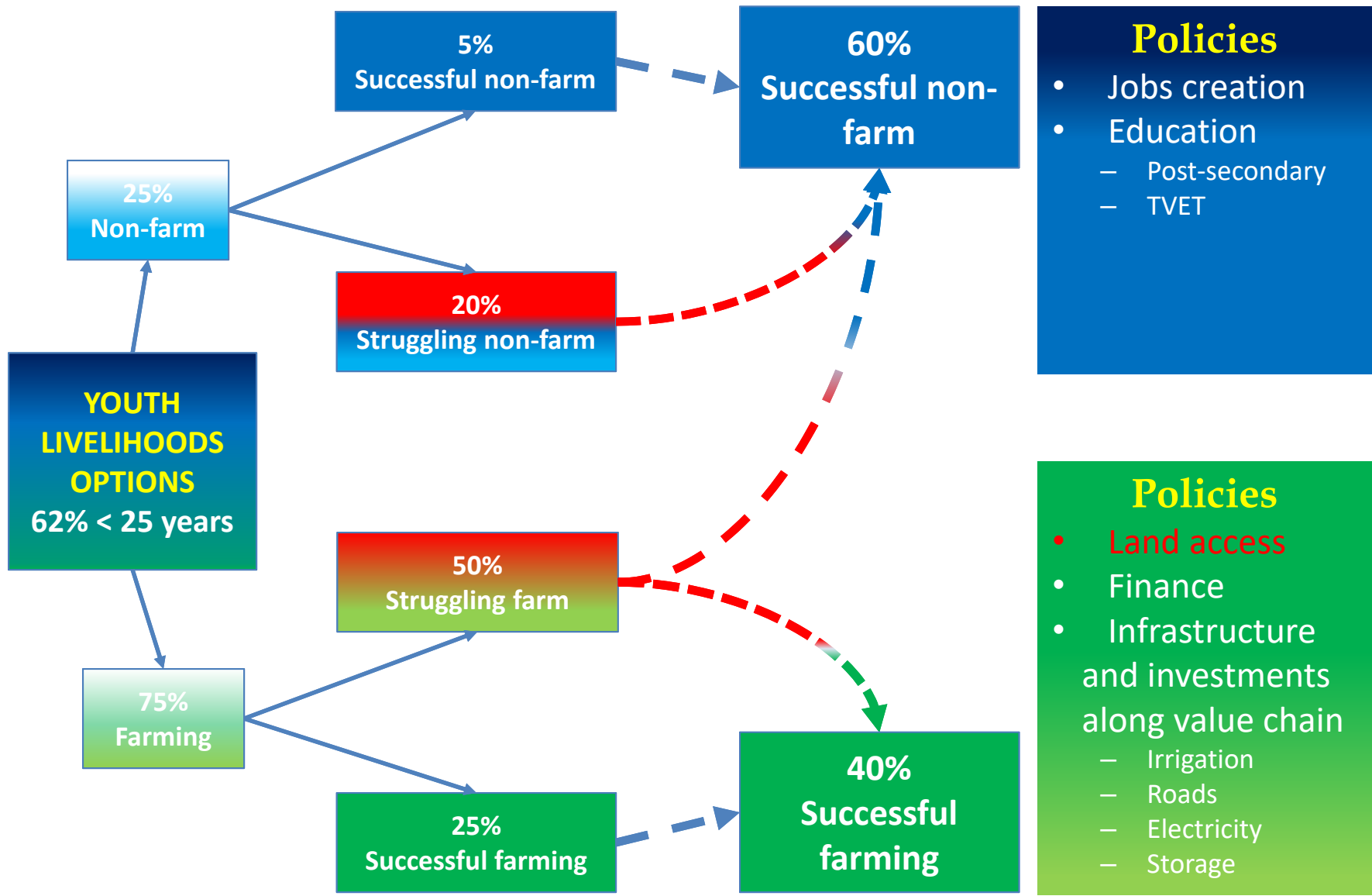
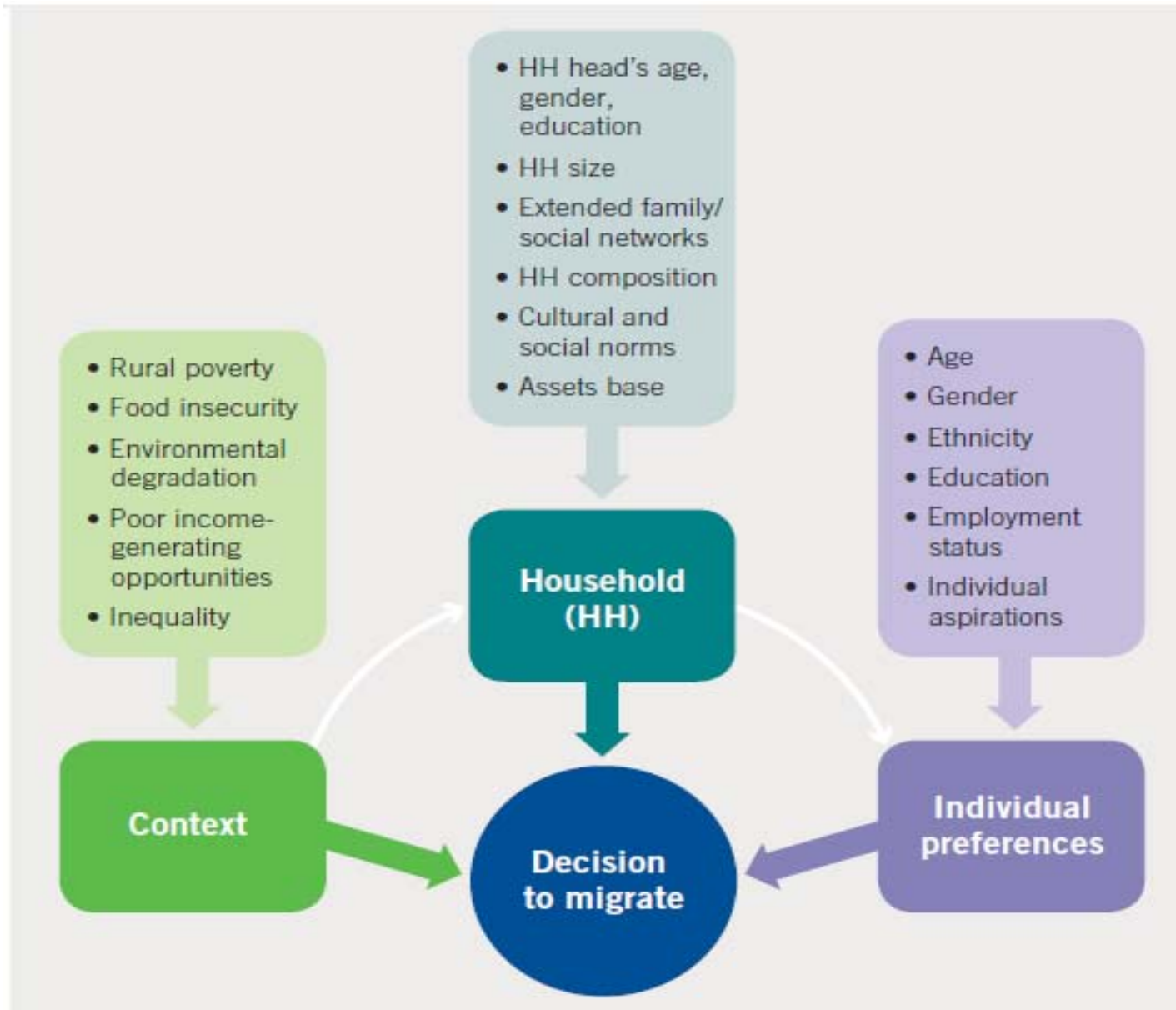


Figure 1: Determinants of distress migration by the youth



Source: Deotti and Estruch (2016)

# Major challenges/research issues for land policies: How to effectively

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1. Strengthen **land use planning** to identify surplus agricultural land that can be allocated to investors without displacing local people
2. Encourage **access to unutilized land** to those who can raise agricultural productivity
3. Provide stronger **land rights for women**: while many African countries have new laws recognizing gender equality, implementation is weak, especially given continued dominance of customary practices, which tend to discriminate against women

Thank  
You