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David Atwood
USAID/BFS



Thom Jayne
Michigan State



Jerome Wolgin
USAID/AFR/SD

What Will It Take To Transform African Agriculture 2013-2030?





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Jeanne Downing

USAID/E3/MPEP

Jeanne Downing is the Senior Enterprise Development Advisor in E3's Office of Microenterprise and Private Enterprise Promotion (MPEP). Downing was in charge of the AMAP research effort focused on fostering opportunities for micro and small firms within global, regional, and domestic value chains. She has worked on small and microenterprise development over the last 25 years, concentrating primarily on value chains, business development services, and subsector analysis/development in over 15 countries in Africa, much of the Caribbean, and a handful of countries in Latin America and Asia. Downing has taught value chain development at The Johns Hopkins School for Advanced International Studies.



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Jerome Wolgin

USAID/AFR/SD

Jerome Wolgin currently advises the Africa Bureau on cost-benefit analysis, growth diagnostics, growth and poverty and economic trends and emerging issues in Africa. He is currently responsible for managing the process for developing a five year strategy for the Office. In the ten years between his first and second stints with USAID, he was a Lead Economist for the World Bank, working on Nigeria and donor partnerships. In his first twenty years at USAID, Wolgin worked on economic issues, especially economic policy across Sub-Saharan Africa.



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Thom Jayne

Michigan State University

Thom Jayne has been devoted to working with African colleagues to promote effective policy responses to poverty in Africa. Jayne is Professor of International Development in the Department of Agricultural, Food, and Resource Economics and is a member of the Core Faculty of the African Studies Center at Michigan State University (MSU). His research focuses mainly on how agricultural policies and public investments can contribute to sustainable and equitable development.



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David Atwood

USAID/BFS

David Atwood serves as Food Security Policy Advisor in USAID's Bureau of Food Security. He retired from the Senior Foreign Service with USAID in 2011, having served in a variety of roles managing expert development teams, including Director of Africa Bureau's Sustainable Development Office, short-term Deputy Director in Haiti of the USG Office of Earthquake Response Coordination, acting Deputy Assistant Administrator of the Europe and Eurasia Bureau (E&E), and Director of the E&E Office of Democracy, Governance and Social Transition.



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Eric Postel

USAID/E3

Eric Postel, USAID's new Assistant Administrator for the Bureau of Economic Growth, Agriculture, and Trade, was approved by the Senate on March 3rd. Postel has helped support economic development in more than 45 developing countries on four continents. Postel strongly supports President Obama's call to "elevate broad-based economic growth as a top priority" of U.S. overseas development efforts and looks forward to helping with Agency reforms. In particular, he plans to focus on helping field missions to create "measurable, sustainable impacts in partner countries yielding concrete development results."



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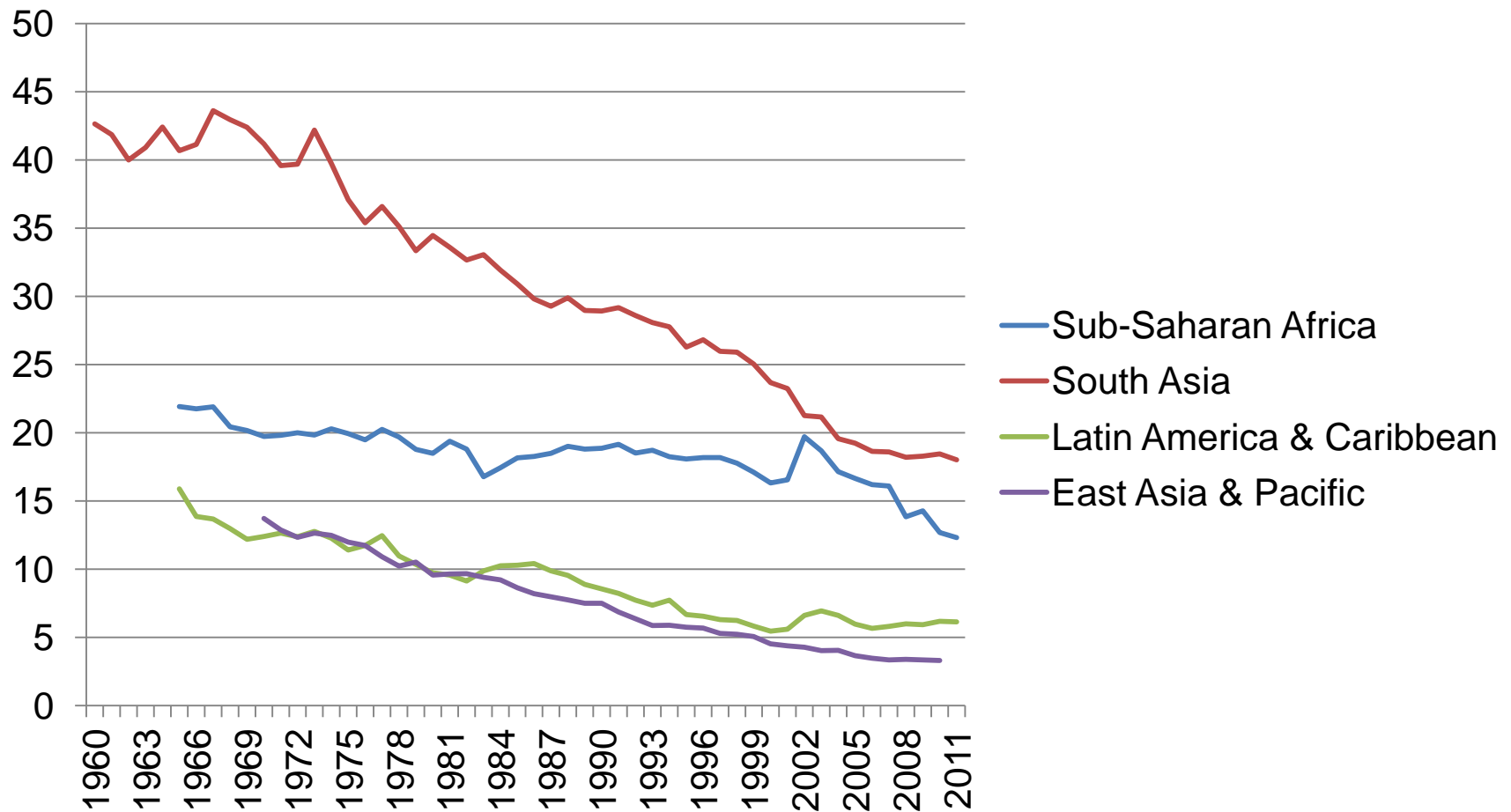
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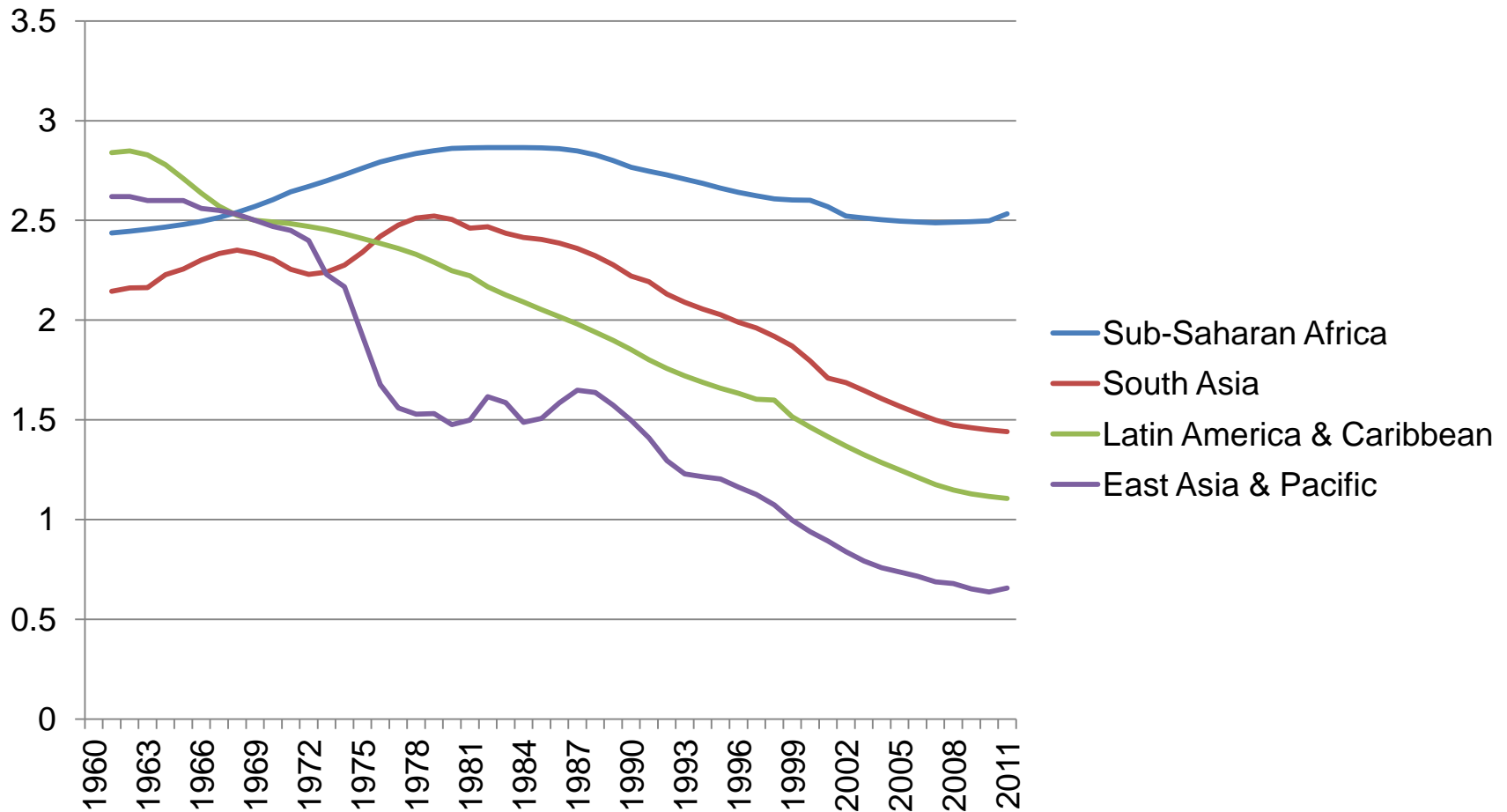
**Jerome
Wolgin**
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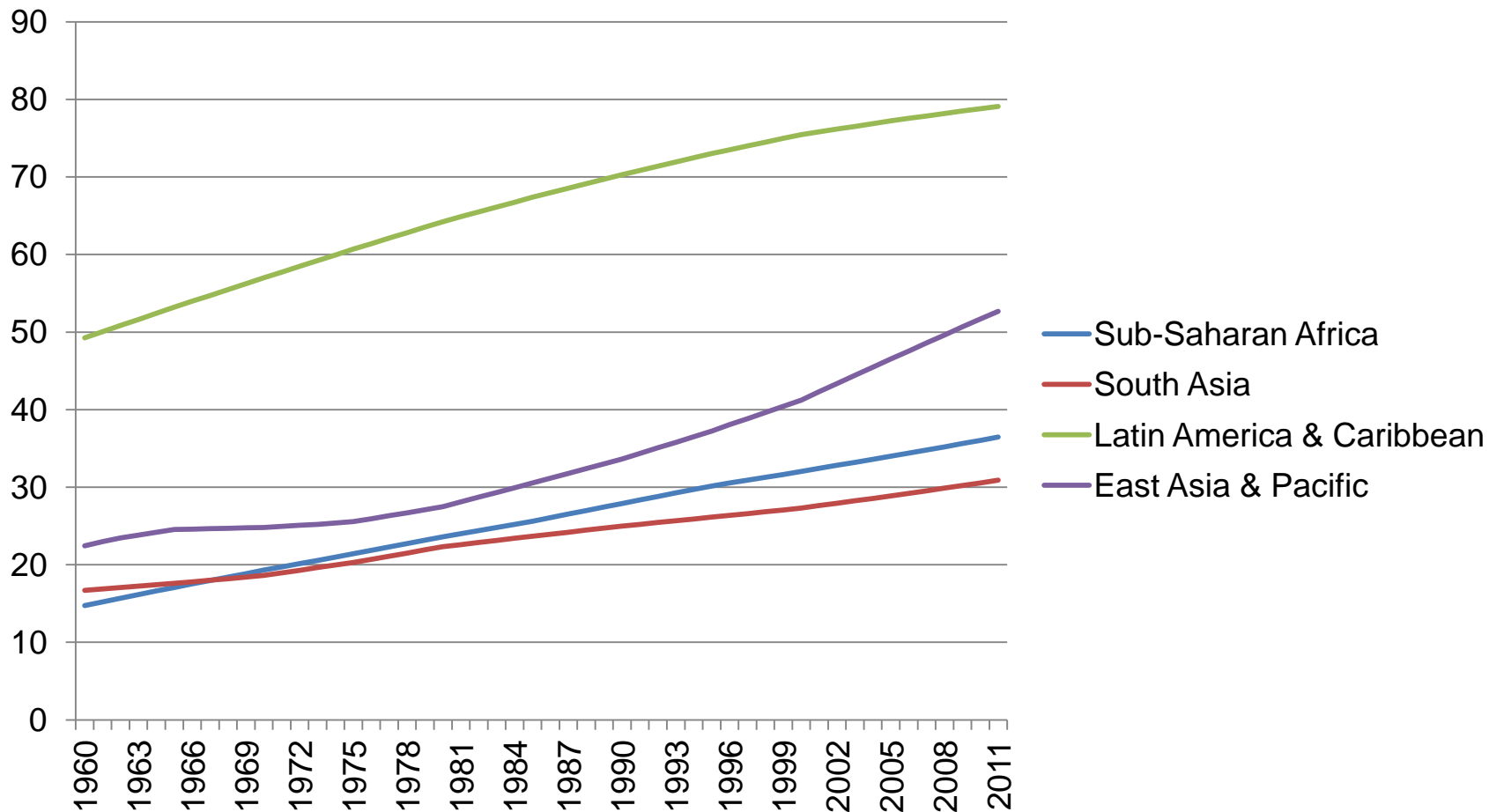
Share of Agriculture in GDP (%): 1960-2011



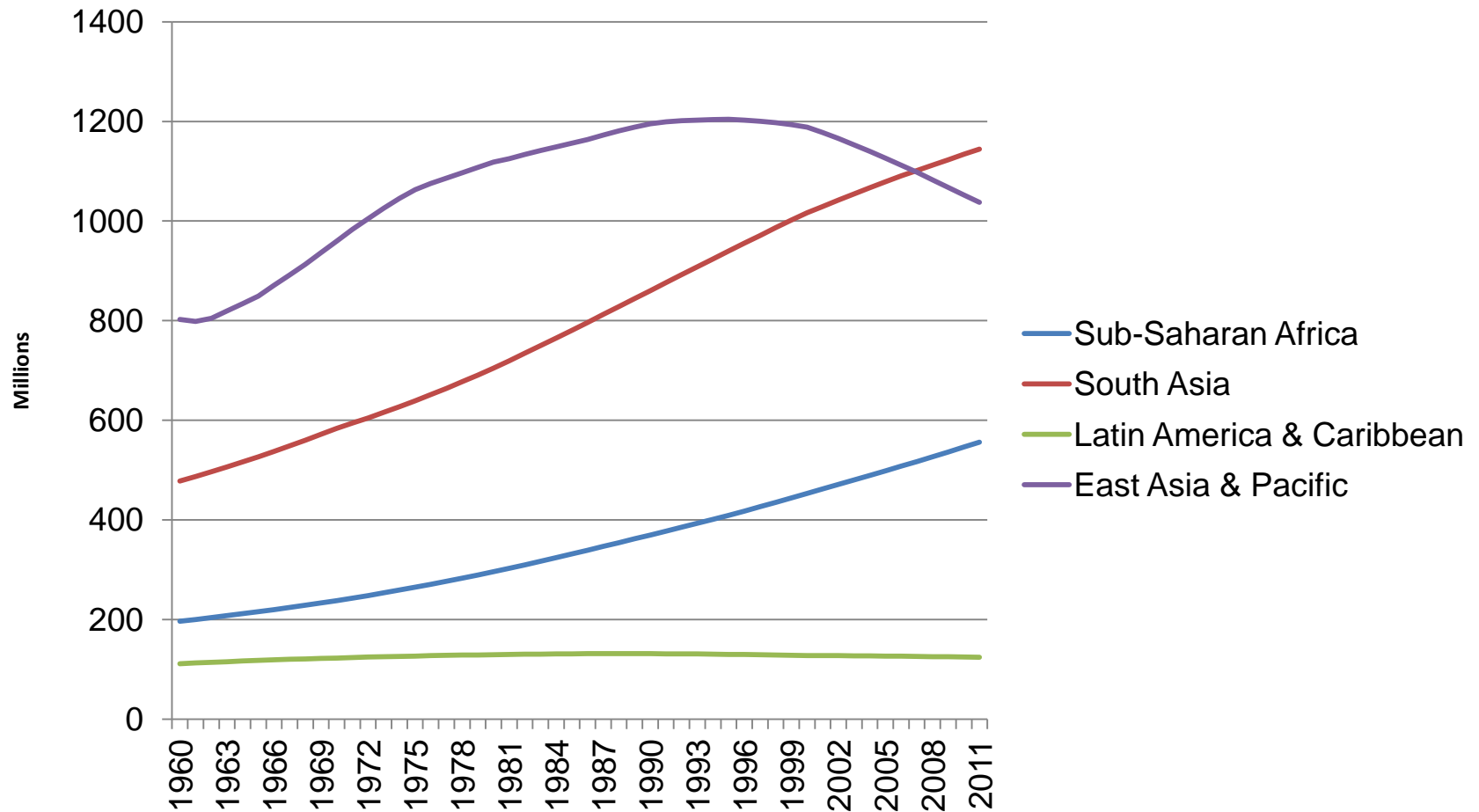
Population Growth Rates: 1960 - 2011



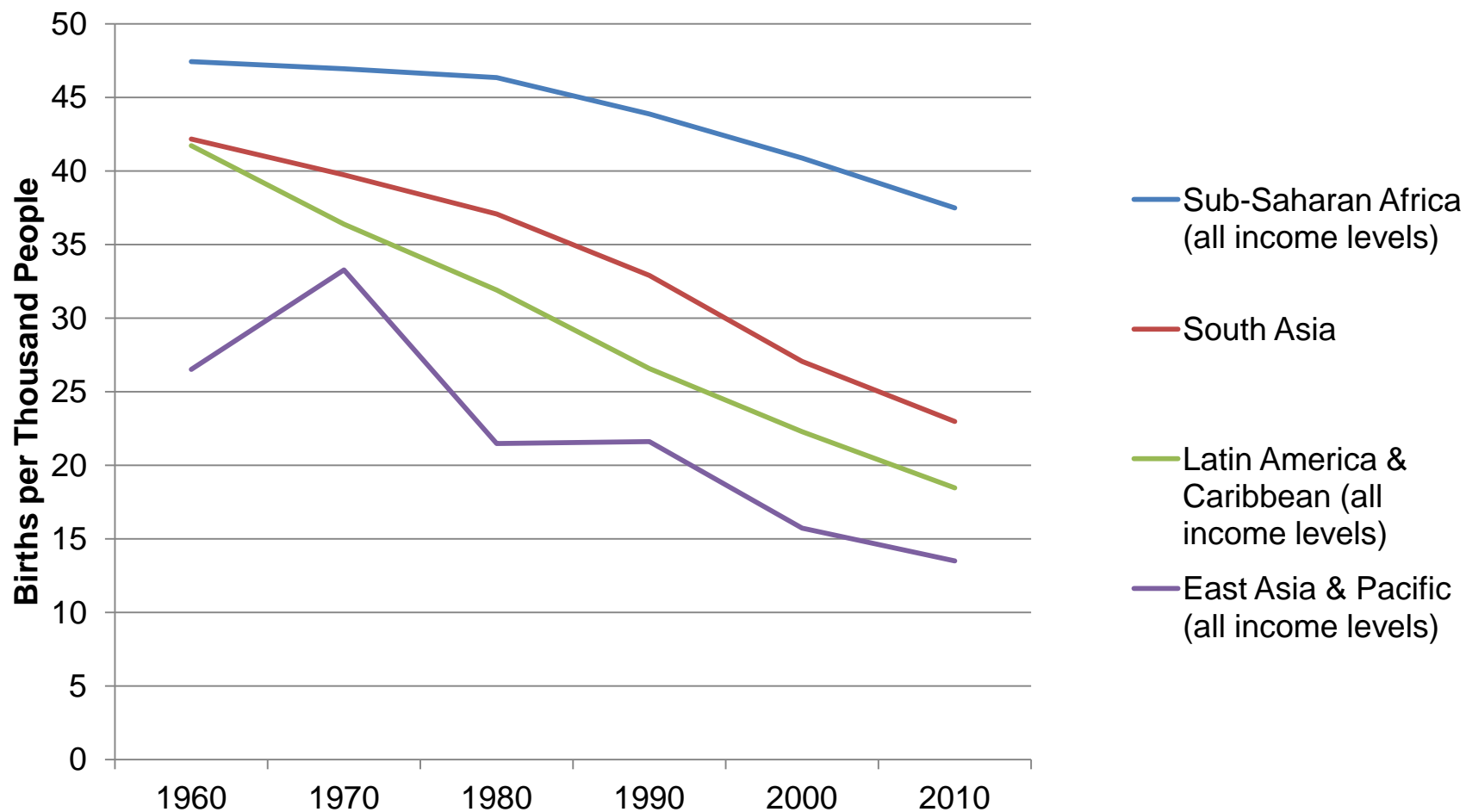
Urban Population as % of Total Population



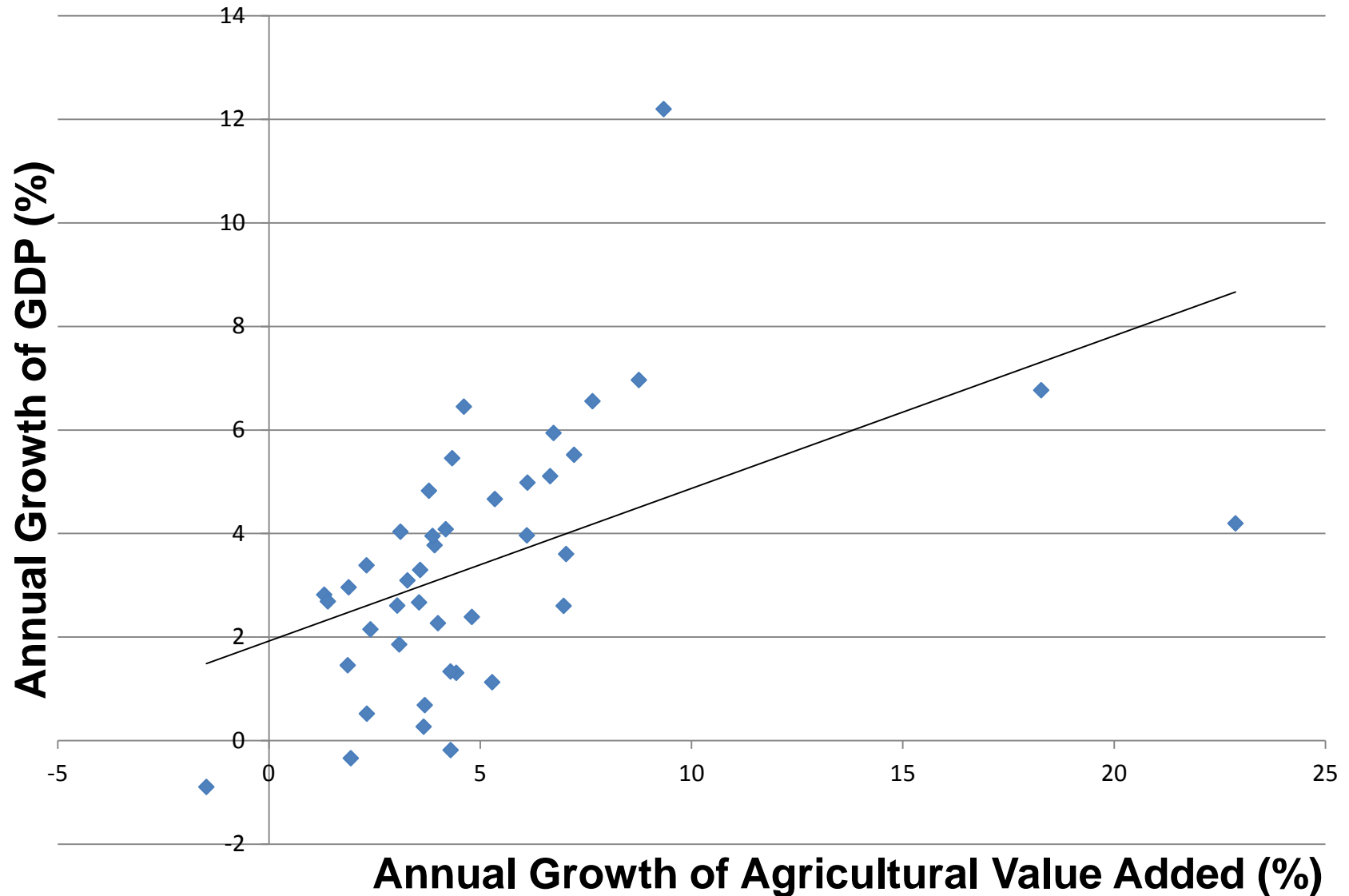
Total Rural Population: 1960 - 2011



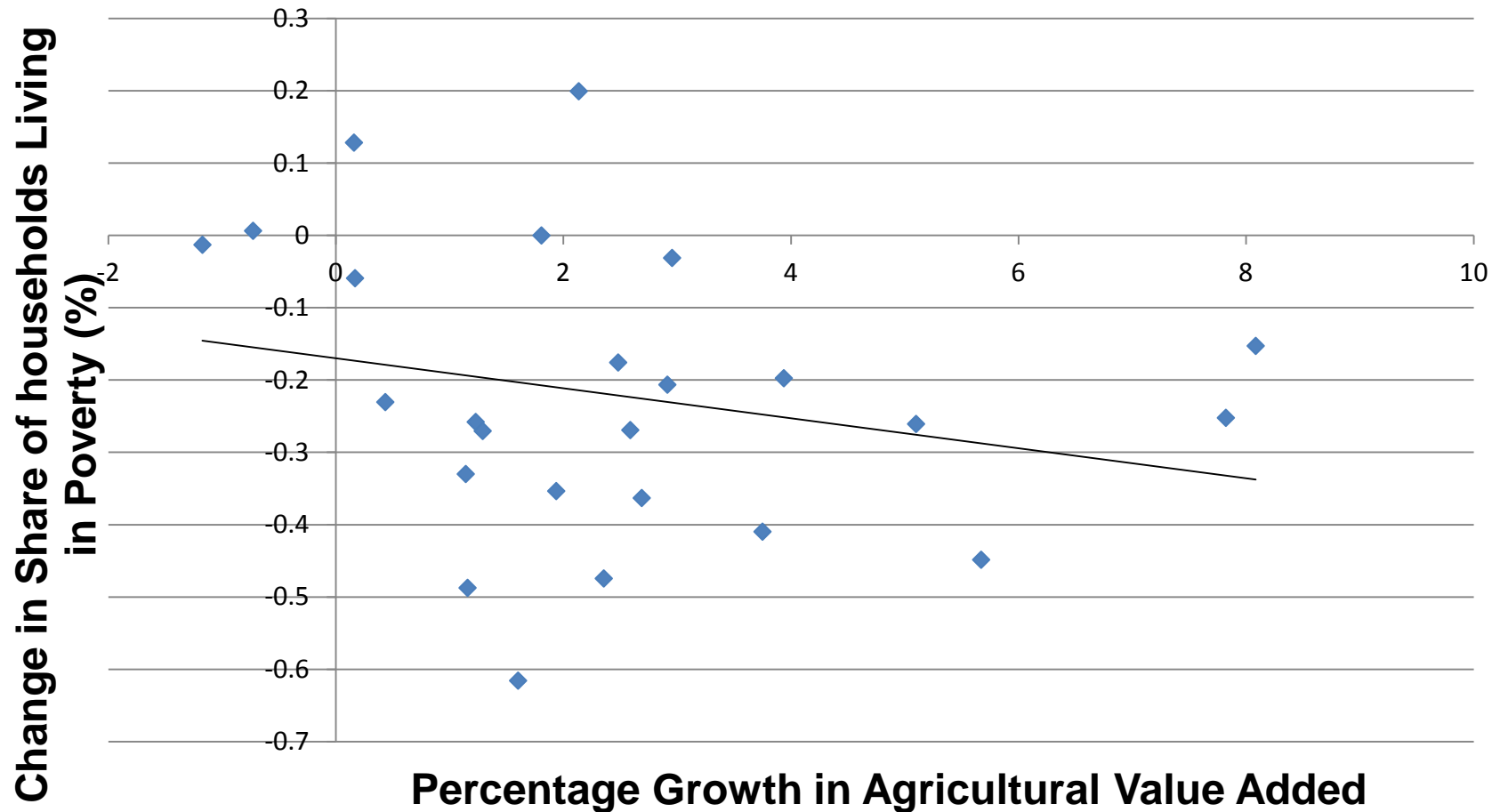
Crude Birth Rates: 1960-2010



SSA: Agricultural and GDP Growth: 1996-2011



SSA: Poverty Change and Agricultural Growth





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**Thomas
Jayne**
Michigan State
University

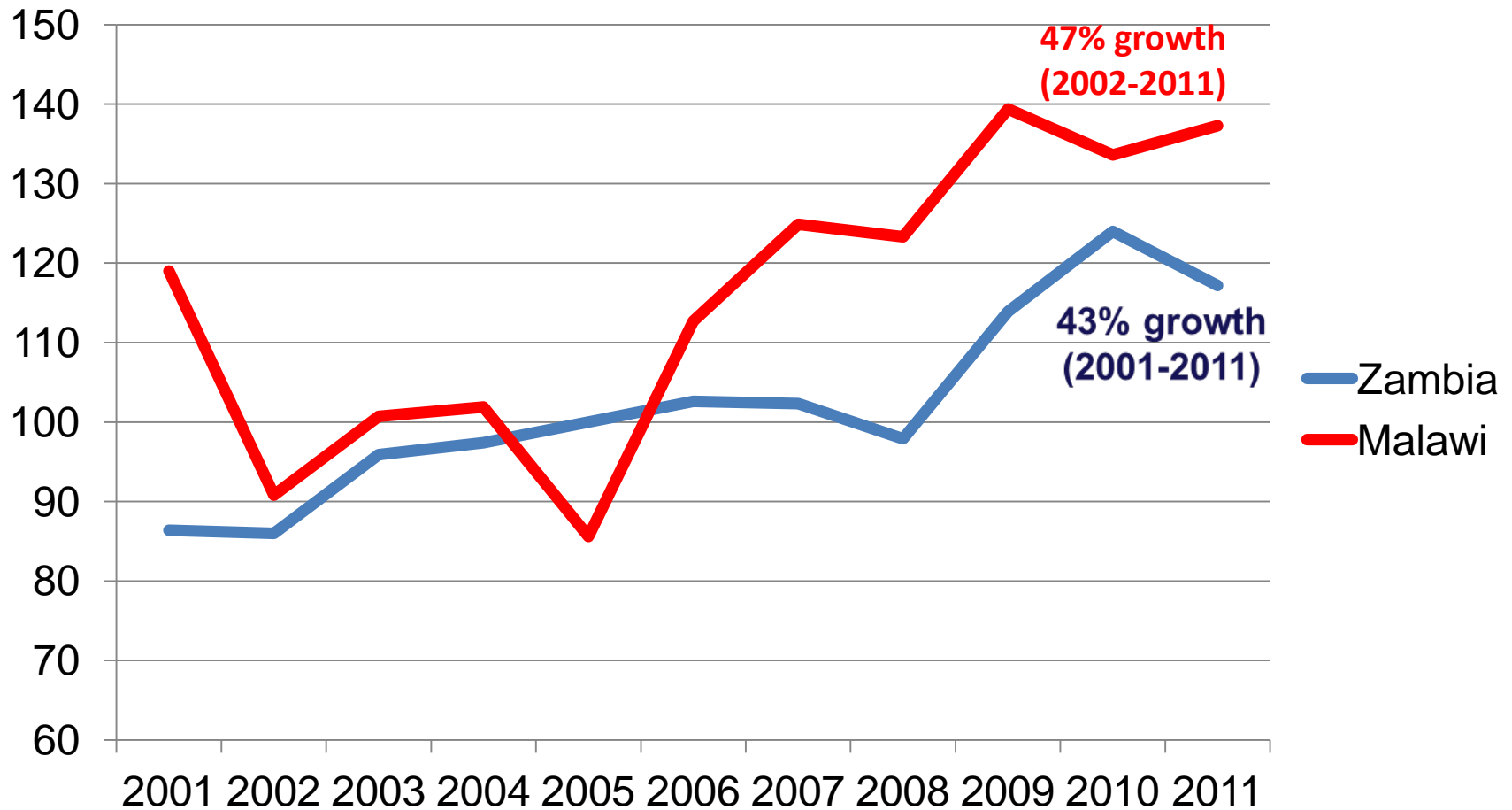


Main questions:

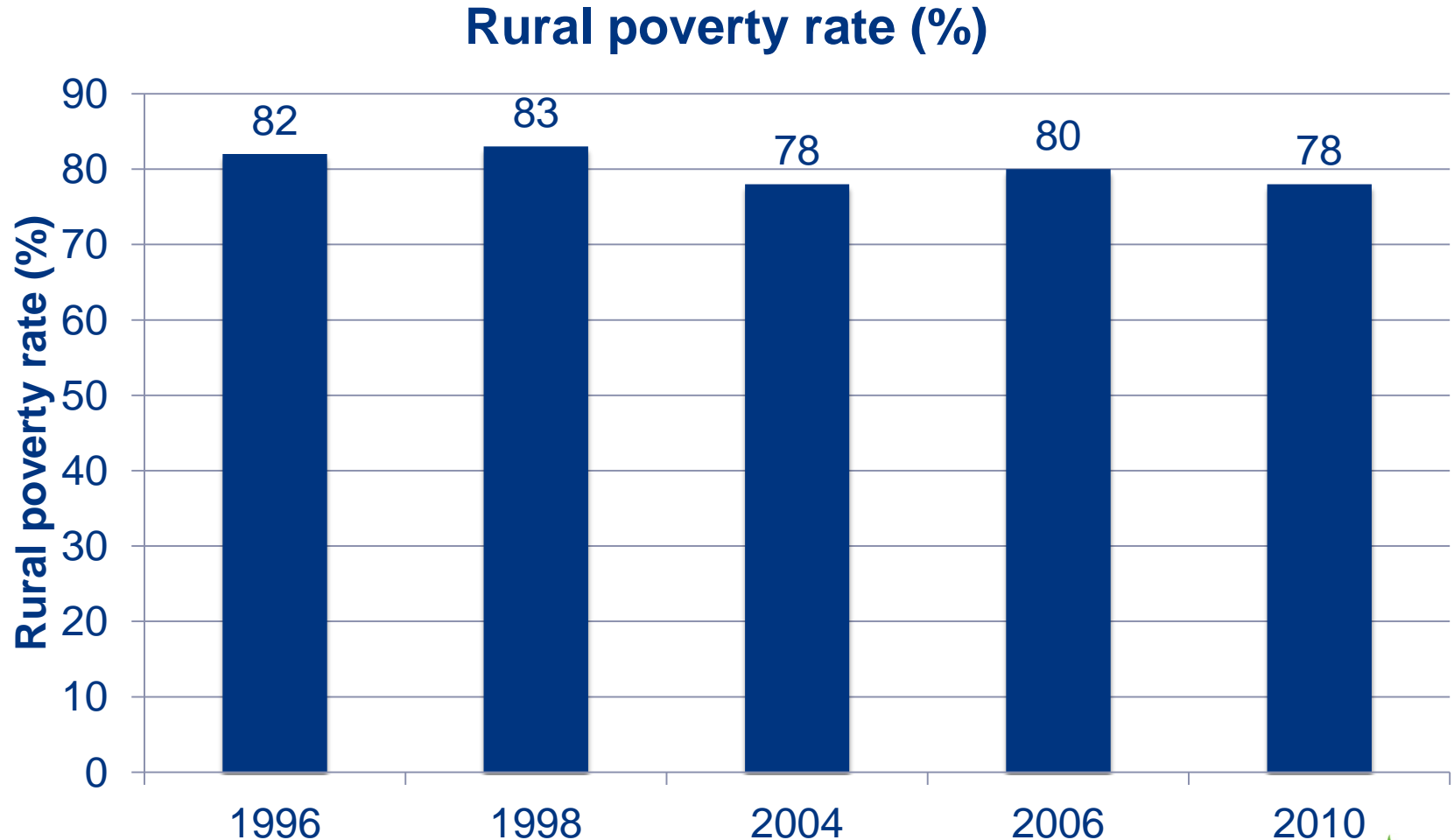
1. How will the transformation occur?
2. Why are we seeing agricultural growth lead to poverty reduction in some countries and not in others?
3. Is it realistic to expect the bottom 50% of smallholder farmers to participate in agricultural-led transformation?
4. Which policy levers are the most important?

Why is there a variable relationship
between agricultural growth and
poverty reduction?

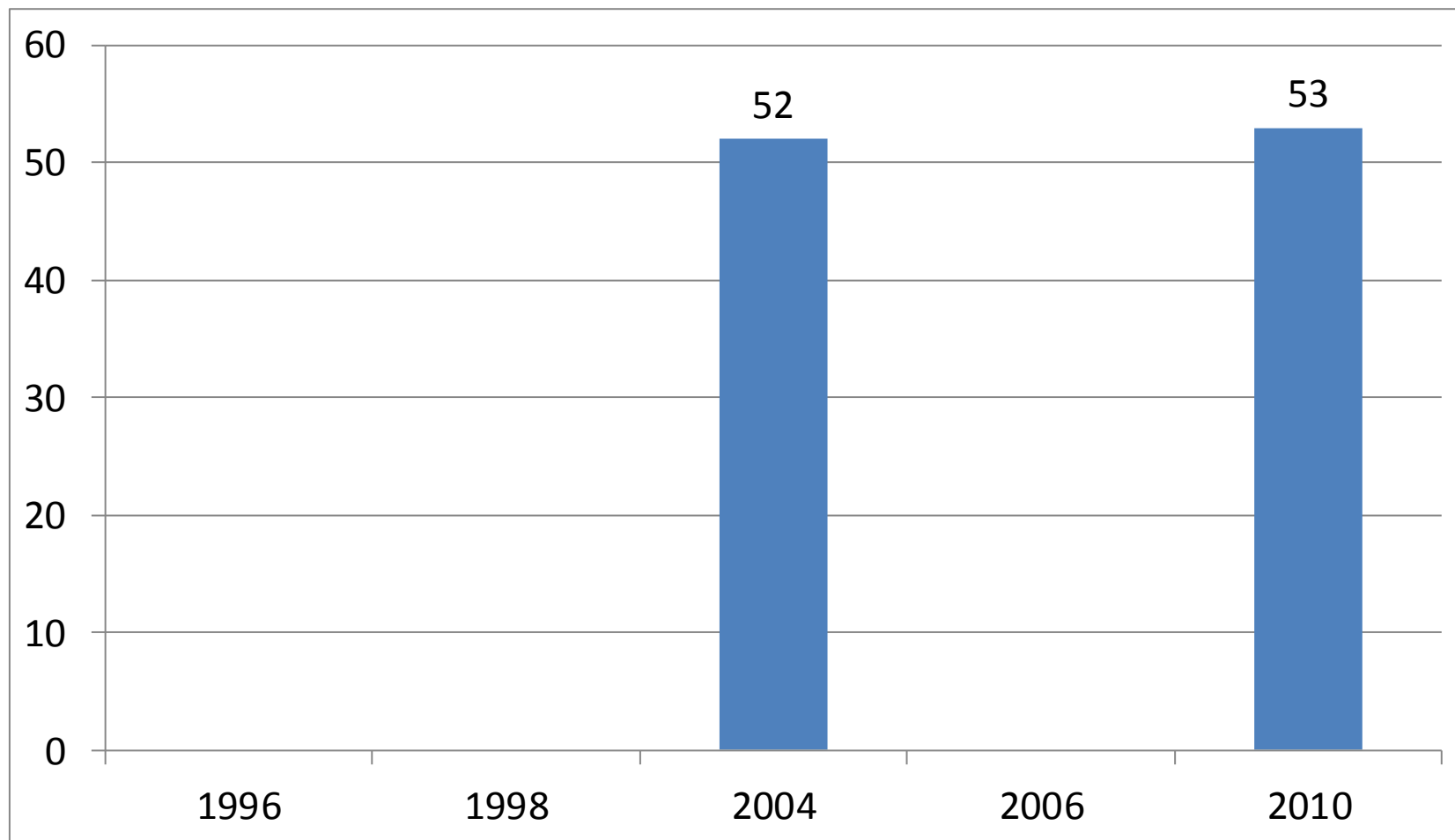
Agricultural Production Indices, FAOSTAT



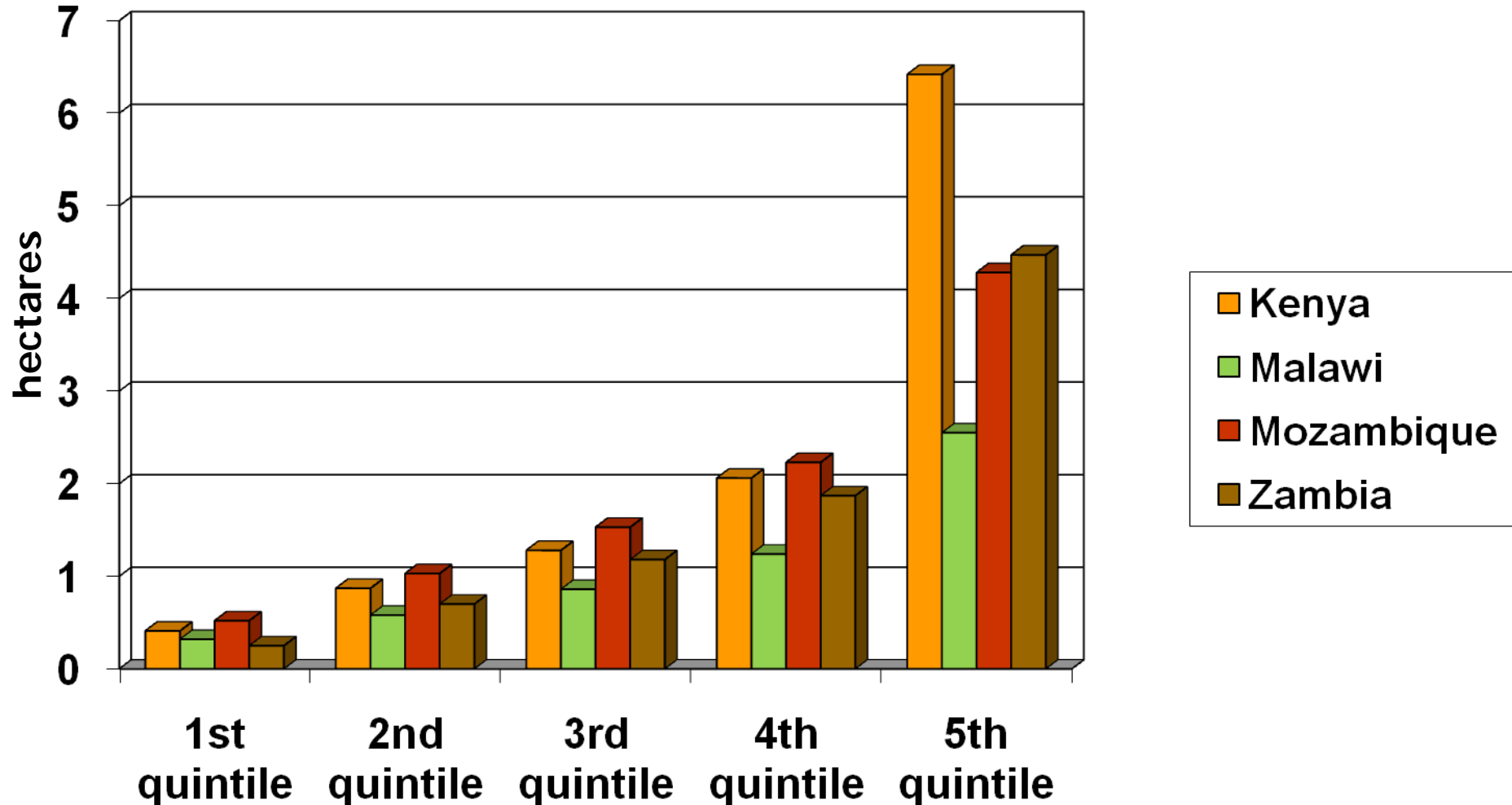
Rural headcount poverty rates, Zambia



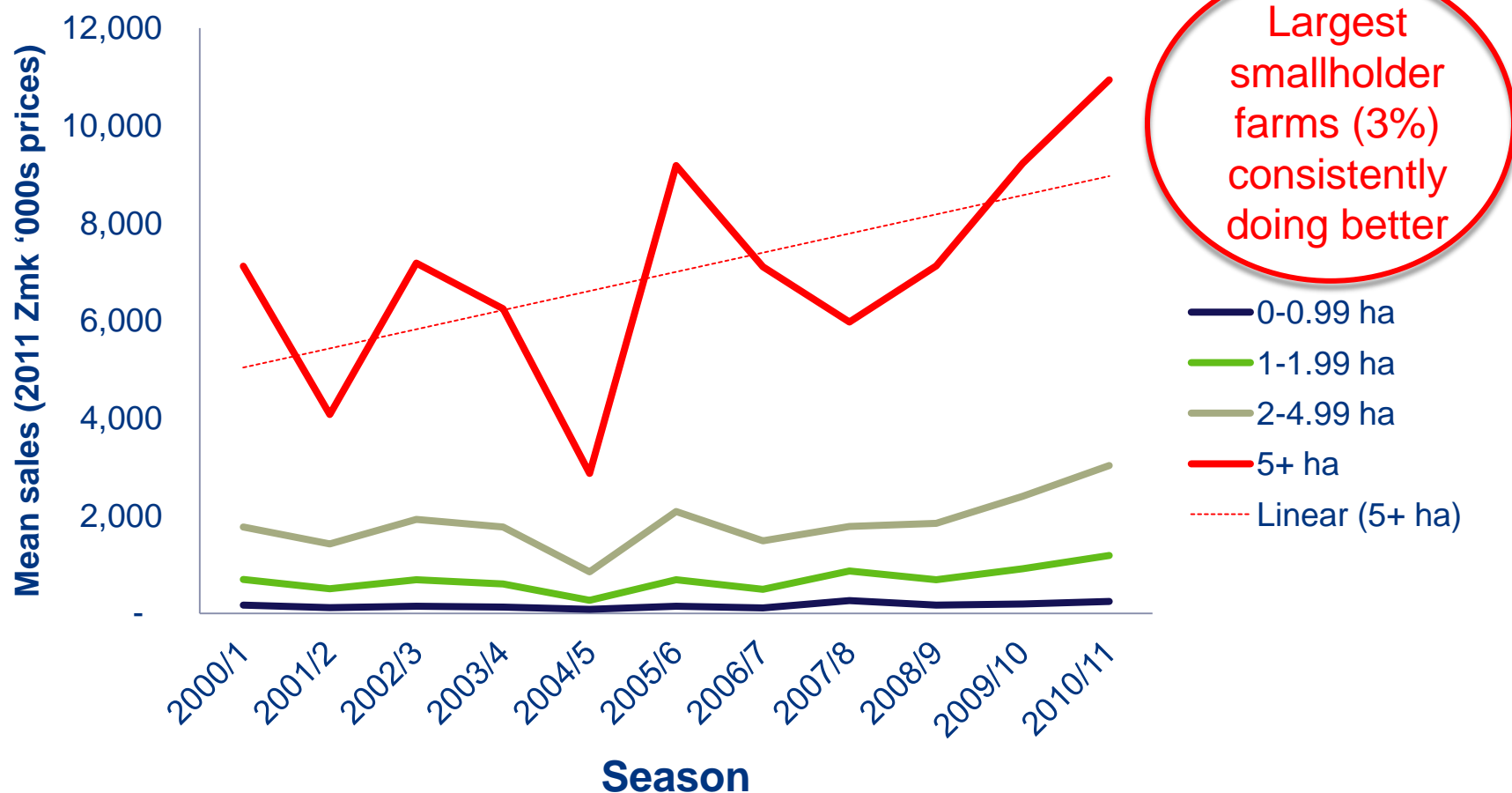
Rural headcount poverty rates, Malawi



Distribution of farm sizes in smallholder farm sectors



Crop sales by farm size over time - Zambia



Source: MACO CFS 2000/1 to 2010/11 and authors' computations

Differences in state support for agriculture and participation in growth processes – Zambia (2011 harvest)

Total area cultivated (maize + all other crops)	Number of farms	% of farms			
	(A)	(B)			
0-0.99 ha	616,867	41.9%			
1-1.99 ha	489,937	33.3%			
2-4.99 ha	315,459	21.4%			
5-9.99 ha	42,332	2.9%			
10-20 ha	6,626	0.5%			
Total	1,471,221	100%			

*2011 vs. average of 2005-2008 harvest

Source: Ministry of Agriculture/CSO Crop Forecast Survey, 2010/11

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Differences in state support for agriculture and participation in growth processes – Zambia (2011 harvest)

Total area cultivated (maize + all other crops)	Number of farms	% of farms	Change in mz output per farm* (kg)		
	(A)	(B)	(C)		
0-0.99 ha	616,867	41.9%	157.2		
1-1.99 ha	489,937	33.3%	665.7		
2-4.99 ha	315,459	21.4%	2,030.1		
5-9.99 ha	42,332	2.9%	7,036.6		
10-20 ha	6,626	0.5%	6,298.4		
Total	1,471,221	100%	953.7		

*2011 vs. average of 2005-2008 harvest

Source: Ministry of Agriculture/CSO Crop Forecast Survey, 2010/11

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Differences in state support for agriculture and participation in growth processes – Zambia (2011 harvest)

Total area cultivated (maize + all other crops)	Number of farms	% of farms	Change in mz output per farm* (kg)	kgs FISP fertilizer received per household	
	(A)	(B)	(C)	(D)	
0-0.99 ha	616,867	41.9%	157.2	24.1	
1-1.99 ha	489,937	33.3%	665.7	69.3	
2-4.99 ha	315,459	21.4%	2,030.1	139.7	
5-9.99 ha	42,332	2.9%	7,036.6	309.7	
10-20 ha	6,626	0.5%	6,298.4	345.6	
Total	1,471,221	100%	953.7	77.1	

*2011 vs. average of 2005-2008 harvest

Source: Ministry of Agriculture/CSO Crop Forecast Survey, 2010/11

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Differences in state support for agriculture and participation in growth processes – Zambia (2011 harvest)

Total area cultivated (maize + all other crops)	Number of farms	% of farms	Change in mz output per farm* (kg)	kgs FISP fertilizer received per household	Expected maize sales (kg/farm household)
	(A)	(B)	(C)	(D)	(E)
0-0.99 ha	616,867	41.9%	157.2	24.1	135
1-1.99 ha	489,937	33.3%	665.7	69.3	609
2-4.99 ha	315,459	21.4%	2,030.1	139.7	1,729
5-9.99 ha	42,332	2.9%	7,036.6	309.7	6,613
10-20 ha	6,626	0.5%	6,298.4	345.6	15,144
Total	1,471,221	100%	953.7	77.1	950

*2011 vs. average of 2005-2008 harvest

Source: Ministry of Agriculture/CSO Crop Forecast Survey, 2010/11

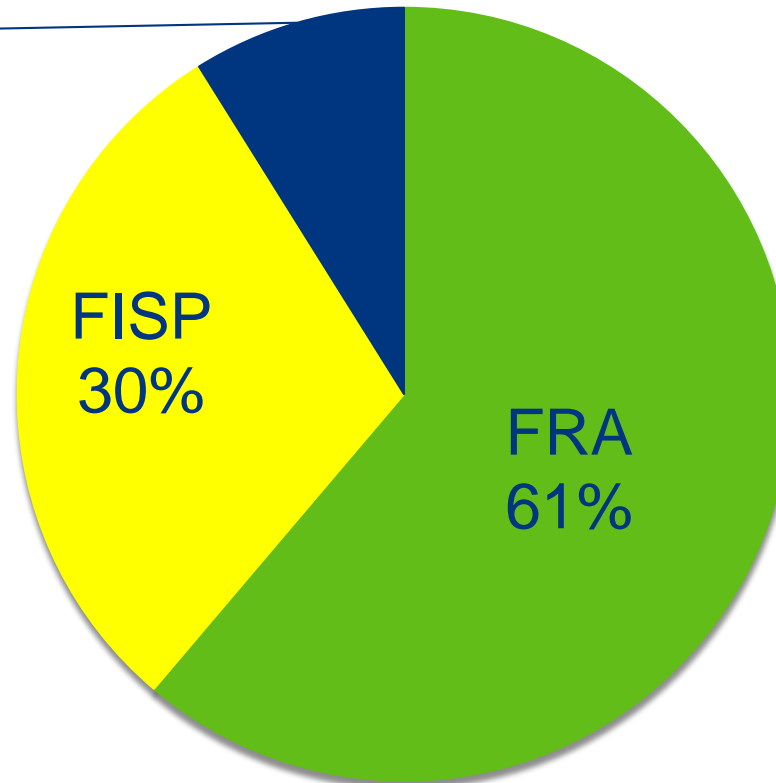
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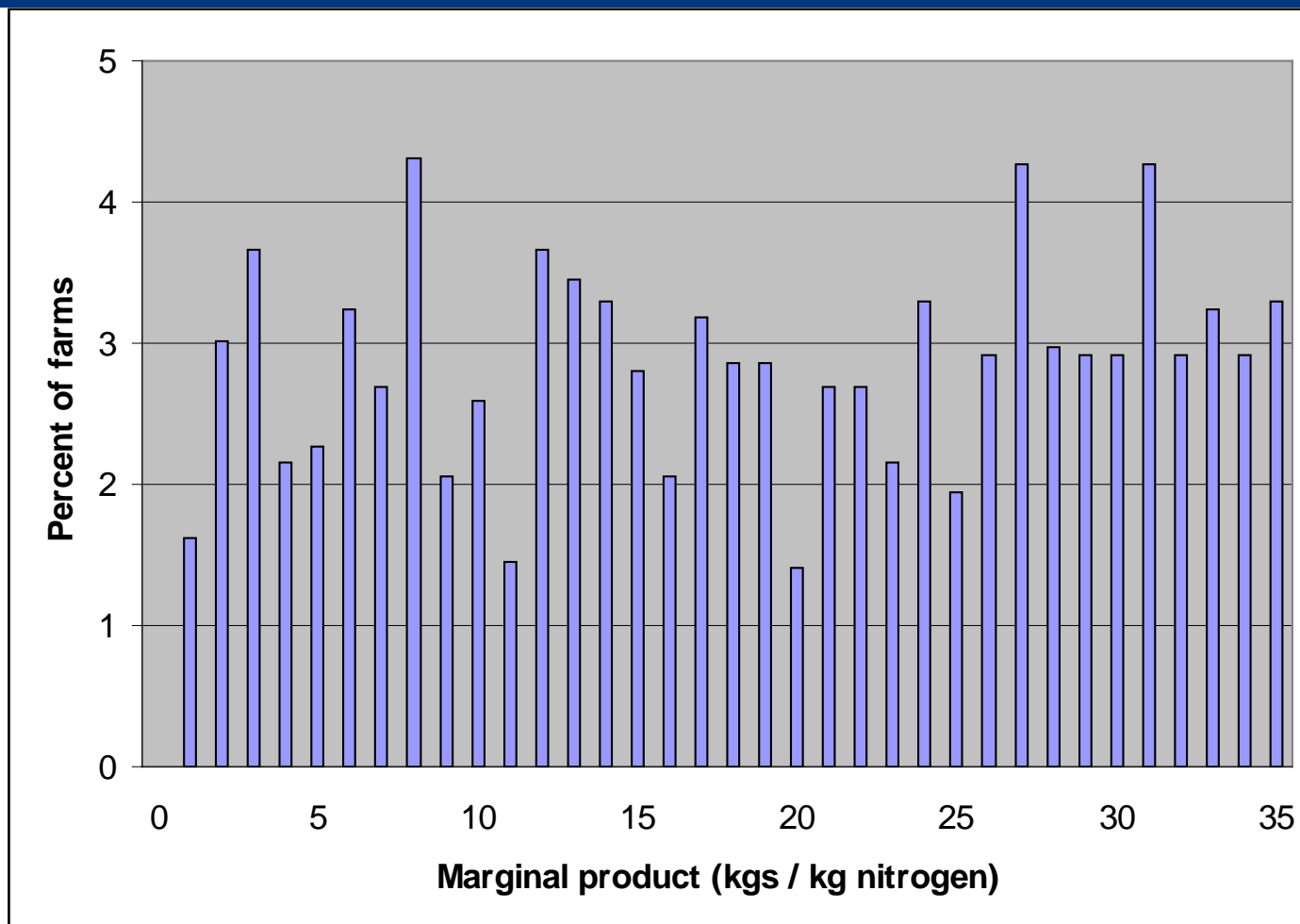
Public spending on agriculture, 2010

Other
9%

- Seed improvement
- Farm extension / training programs
- Irrigation systems
- Responding to climate change
- Policy analysis
- Rural electrification
- Road-rail-port infrastructure
- Land grant university system



Variation in farmers' efficiency of fertilizer use on maize, Agroecological Zone IIa, Zambia



Note: Zone IIa is a relatively high-potential zone suitable for intensive maize production

Ranking with respect to ***agricultural growth***: Evidence from Asia

	The Economist	IFPRI
Policies	1	
Road investment	2	1
Agricultural R&D	3	2
Agricultural extension services	4	
Credit subsidies	7	3
Fertilizer subsidies	5	4
Irrigation	6	5

Ranking with respect to **poverty reduction**: Evidence from Asia

	The Economist	IFPRI
Policies	1	
Road investment	2	1
Agricultural R&D	3	2
Agricultural extension services	5	
Credit subsidies	7	3
Fertilizer subsidies	4	4
Irrigation	6	5

Main questions:

1. How will the transformation occur?
2. Why are we seeing agricultural growth lead to poverty reduction in some countries and not in others?
3. Is it realistic to expect the bottom 50% of smallholder farmers to participate in agricultural-led transformation?
4. Which policy levers are the most important?

Thank You





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What Will An African Agricultural Transformation Look Like

- Fundamentally similar to the agricultural transformations of Asia, Europe, US:
 - Primarily small-farmer based
 - Higher labor and land productivity
 - Farmers create employment/income links off-farm
 - Mechanization increases
 - Larger and fewer farms; marginal farms exit
 - Migration from rural to urban areas

How Long Will it Take?

- How and when are key in poverty impact
 - Policy and investment can facilitate these processes in ways that either help or hurt rural people
- Percent vs absolute numbers in agriculture:
 - Rural pop share declines, but absolute rural pop grows
 - So more rural people need employment/income
 - Ag Share of GDP declines but absolute ag GDP grows
 - So labor demand, and wages, increase with higher ag GDP
- Food security = food and employment/income

How to Get There: Causes vs Consequences

- Mechanization/large farms/migration: cause or consequence
 - Rising wage rates will make mechanization competitive
 - Successful farmers wanting more income expand
 - Push (poverty) and pull (wages/services) factors drive migration
- Don't treat these important consequences as causes of agricultural transformation.
 - Seeing mechanization, migration, or farm consolidation as levers to modernize agriculture can foreclose employment and income opportunities for rural people.
 - Rototiller example Southeast Asia vs. Bangladesh

What Don't We Know About the Transformation of Agriculture in Africa?

- How to achieve large scale transformation with high crop diversity and limited irrigation?
- Which small farmers can meet new quality/safety demands of globalization?
 - Can Africa's farmers compete with imports to meet increasingly stringent urban demand?
- Which scale of small farms can adopt more productive technologies or specialize?
- What policy levers can increase off-farm employment?

How Will It Happen?

The bad way:

- Special treatment/subsidies for large farms, mechanization; drive people off land.

The good way:

- High-impact investments to increase small farmer productivity – policies, R&D, infrastructure, market links

Creating a “virtuous” trajectory of agricultural transformation:

- Small farmers drive broader labor demand, employment, higher wages



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Questions?





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Stay In Touch

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KDMD

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Disparities within smallholder agriculture, Zambia - 2008

		N=	Farm size (ha)	Asset values (US\$)	Gross rev., maize sales (US\$)	Gross rev., crop sales (US\$)	Total hh income (US\$)
Top 50% of maize sales		30,150 (2%)	7.2	3,703	3,199	4,213	7,324
Rest of maize sellers		467,320 (30%)	1.9	257	181	330	1,021
Households not selling maize		1,010,014 (67%)	1.1	129	0	128	456

Source: CSO Supplemental surveys, 2008

Do larger farms use fertilizer more efficiently?

Farm size (ha)	Kgs maize per kg N nutrient
0-0.99	11.94
1-1.99	10.91
2-4.99	11.09
5-9.99	11.48
10-20	10.80



Sources: Burke et al. (2012a), Ricker-Gilbert et al.

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