Under-appreciated Aspects of Smallholder Agriculture:

Possible Implications for Information System Design

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Presentation to WorldAgInfo Project Design Team

Agricultural Consultative Forum
Lusaka, Zambia
August 13, 2007

True or False:

1. Less than 40% of smallholder farmers sell staple grain
2. More than 30% of smallholder farmers cultivate less than 1 hectare
3. Staple food is no longer the dominant source of cash income for smallholder farmers in the region
4. Fertilizer use by smallholder farmers is higher than it was in 1990.

Four “empirical regularities” of African smallholder agriculture:

Fact #1

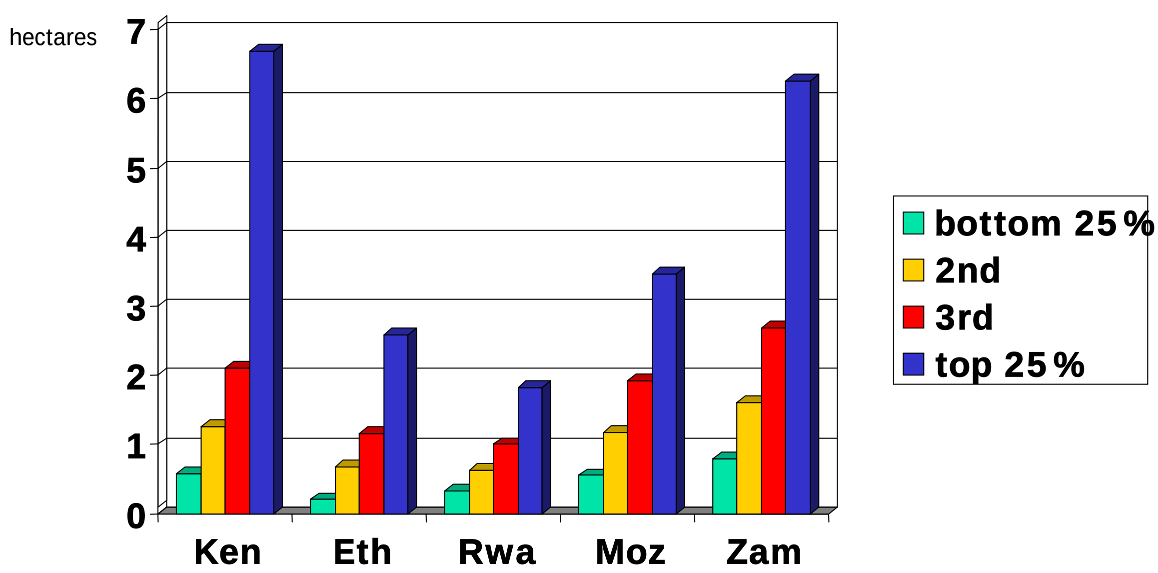
- Emerging land pressures are generating fundamental challenges for poverty reduction and investment strategies

Cultivated land per agricultural person (hectares)

	1960-69	1970-79	1980-89	1990-99
Ethiopia	0.508	0.450	0.363	0.252
Kenya	0.459	0.350	0.280	0.229
Mozambique	0.389	0.367	0.298	0.249
Rwanda	0.215	0.211	0.197	0.161
Zambia	1.367	1.073	0.896	0.779
Zimbabwe	0.726	0.664	0.583	0.525

Source: FAOStat website: Source: FAO Stat database: www.faostat.fao.org/

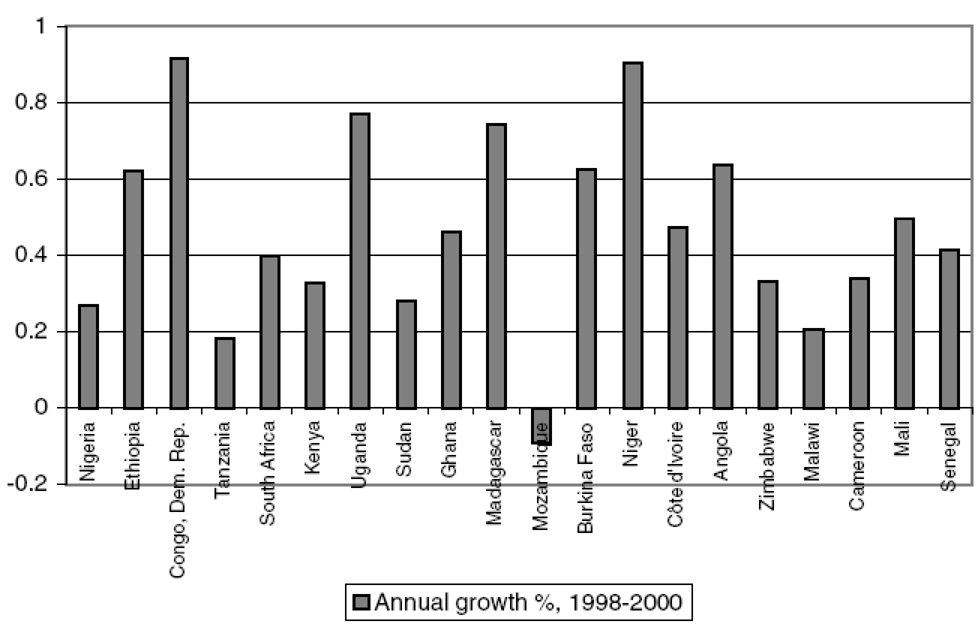
Farm size distribution: Small farm sector



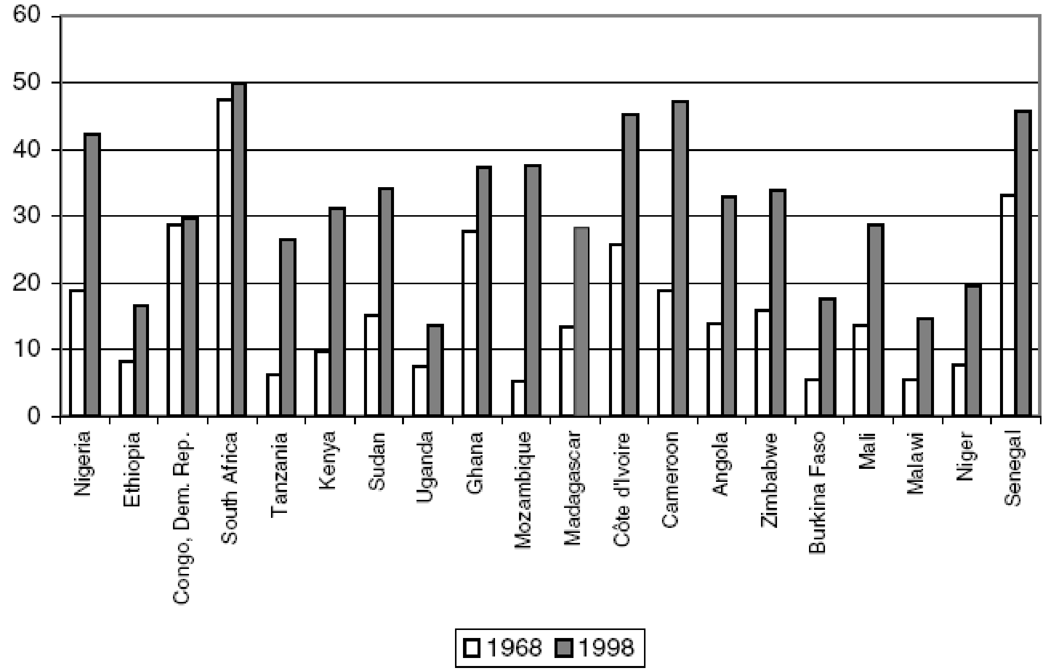
Characteristics of smallholder farmers, Zambia 1999/00

		N=	Farm size (ha)	Asset values (US$)	Gr. Rev., maize sales (US$)	Gr. Rev., crop sales (US$)	Total hh income (US$)
Top 50% of maize sales		23,680 (2%)	6.0	1,558	690	823	2,282
Rest of maize sellers		234,988 (23%)	3.9	541	74	135	514
Households not selling maize		762,566 (75%)	2.8	373	0	36	291

Rural population growth rates



Share of Urban population in total population, 1968 and 1998

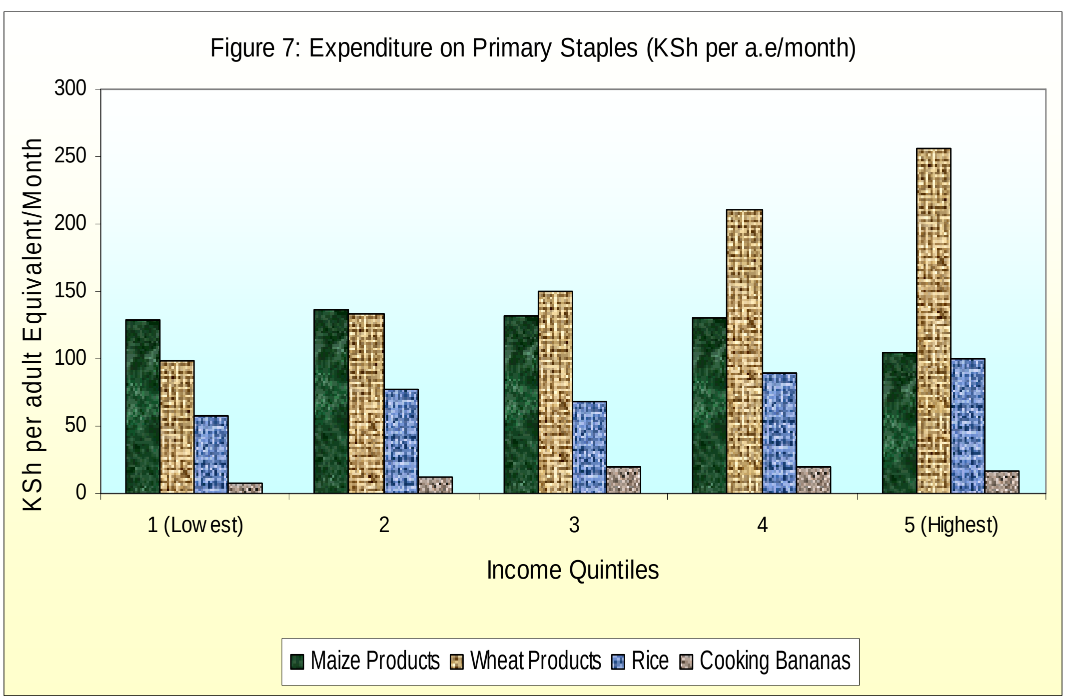


- More than 50% of Africa's population will be urban by 2015.
  - 2000: 10 farm households feed 7 non-farm households
  - 2020: 10 farm households feed 16 non-farm households
- Upshot: urban demand for food is rising rapidly

Are imported wheat and rice crowding out domestically-produced grain?

- 3.6% annual growth in cereal imports
- Of total grain imports by African countries, only 5% is produced by African farmers
- Growth in urban demand is being met mainly by imported rice and wheat

Importance of Imported Staples in Nairobi Expenditure Patterns



Fact #2

- Increasing diversification of smallholder crop income

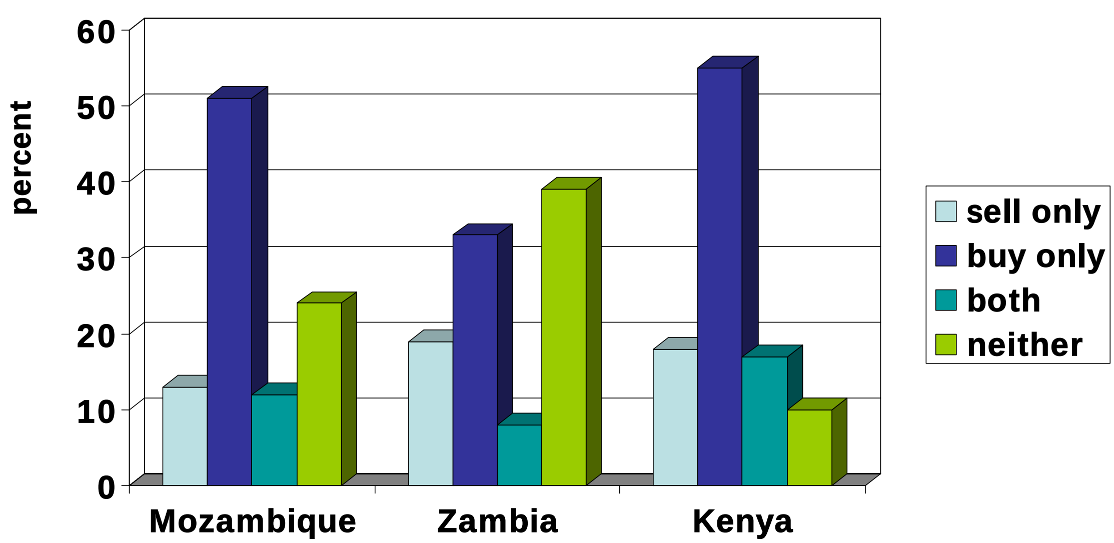
Role of maize in farm cash income is declining (share of gross sales revenue)

	Maize	Other grains/ beans/ oilseeds	Non-food cash crops	Fruits - veges	Animal products
Kenya	13.3	7.9	34.0	14.7	26.7
Malawi	32.3	11.8	44.9	na	na
Mozam	13.8	9.3	16.9	30.4	23.4
Zambia	28.2	7.7	16.7	27.5	14.7

Fact #3

- Most rural farm households are buyers of maize (or net buyers)

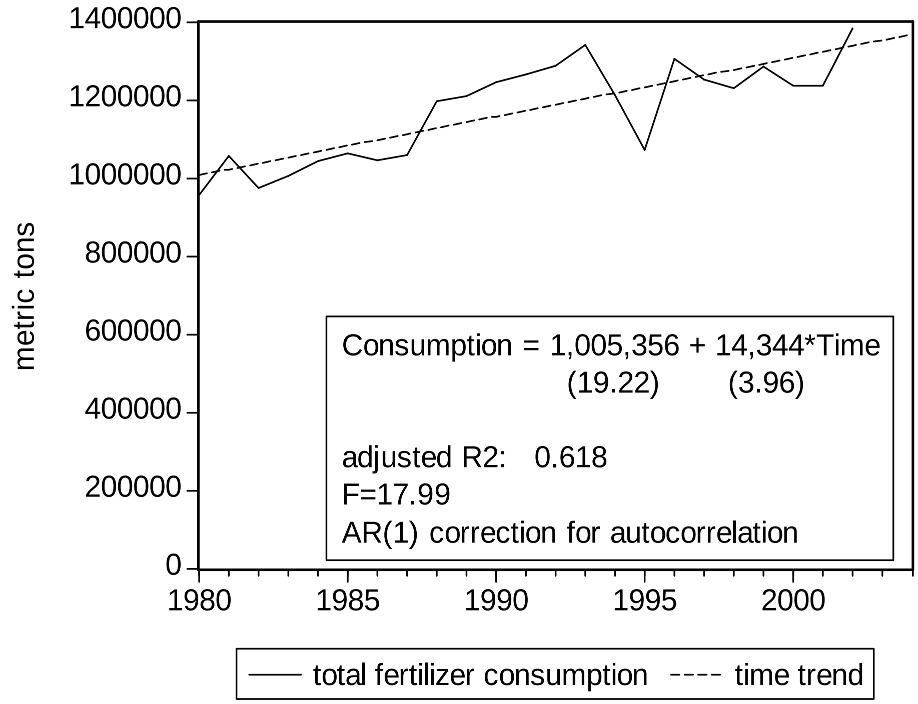
Smallholder Households' Position in the Maize Market



Fact #4

- Smallholder fertilizer use is going up

Fertilizer use in SSA: +16% growth between 1990 and 2004



use intensity	% growth in fertilizer use intensity (kg/ha cultivated) (mean 1996-2002 / mean 1990-95)	
	< +30%	> +30%
<25 kg/ha	DRC (0.5, -47%) Angola (0.7, -69%) Niger (0.9, +5%) Guinea (2.0, -4%) Burundi (2.3, -6%) Madagascar (2.9, -8%) Mauritania (4.0, -64%) Tanzania (4.8, -47%) Gambia (5.2, +15%) **Nigeria (5.6, -73%)** Burkina Faso (5.9, -28%) Zambia (8.4, -34%) Mali (9.0, +7%)	Uganda (0.6, +237%) Rwanda (1.8, +89%) Mozambique (3.2, +142%) Ghana (3.6, +68%) Chad (4.3, +93%) Cameroon (5.9, +77%) Togo (7.0, +30%) Cote d'Ivoire (11.8, +53%) Botswana (11.8, +294%) Senegal (13.2, +67%) Ethiopia (14.4, +71%) Benin (17.6, +76%) Lesotho (23.2, +35%)
>25 kg/ha	Swaziland (30.5, -40%) Malawi (30.8, +9%) Zimbabwe (48.3, +9%)	**Kenya (31.8, +33%)**

Implications

- The main "knowledge gaps" about smallholder agriculture are *systemic challenges*
  - Access to land
  - Access to markets
  - Changing urban consumption patterns
- Overcoming these knowledge gaps are needed to develop policies and programs that can help smallholder farmers
- Hence, need to engage those with the means to address these systemic challenges:
  - Policy makers
  - International donors and lenders
  - NGOs

thank you