Pathways into and out of Poverty:
Determinants of Rural Household Wealth Dynamics in Kenya

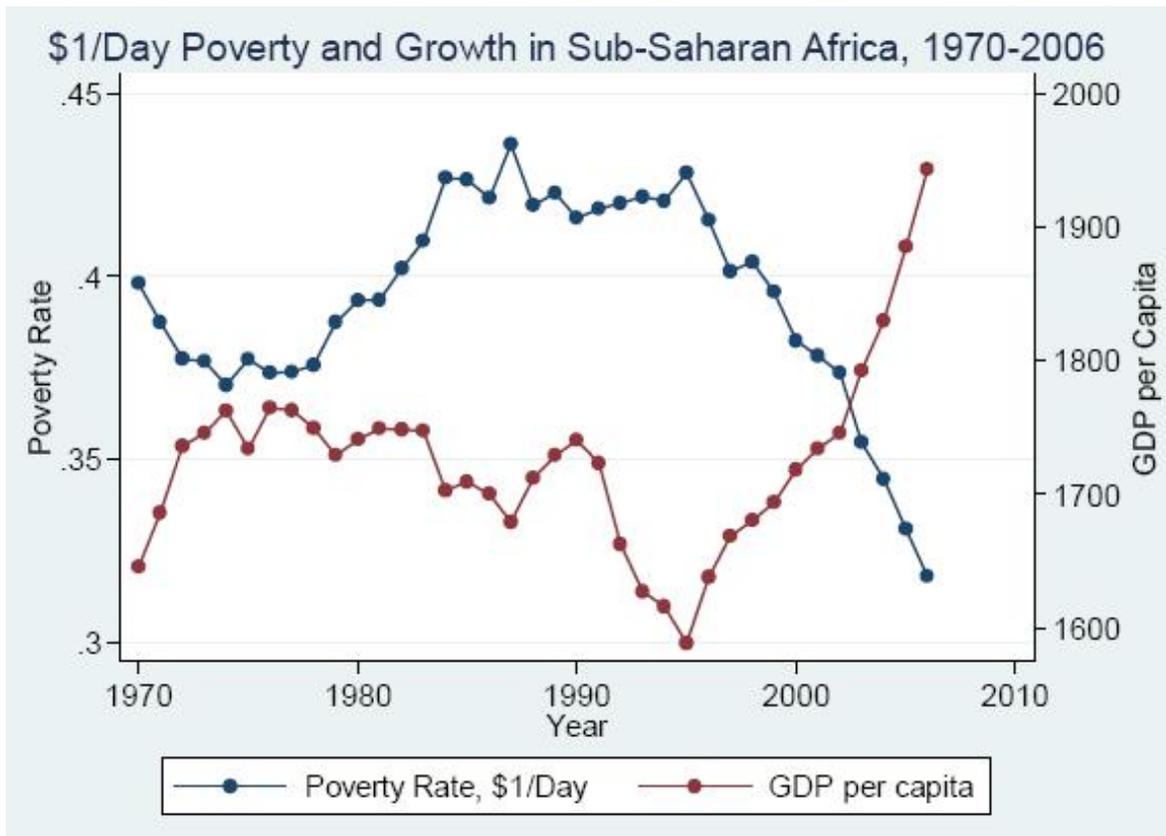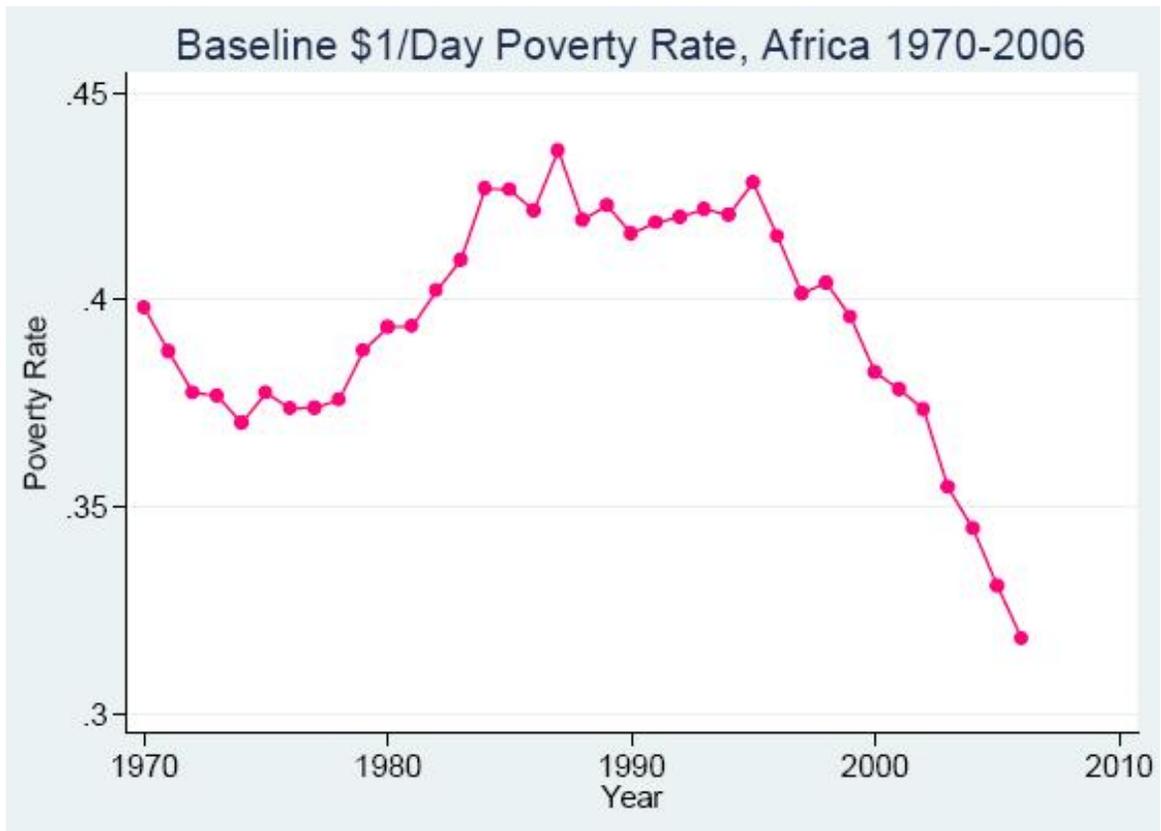Milu Muyanga, T.S. Jayne, and William J. Burke
*Michigan State University*

Objectives

- To briefly examine evidence of trends in African poverty rates
- To use panel survey evidence from Kenya to identify factors associated with households that have
  - Successfully risen out of poverty
  - Descended into poverty
  - Been among the consistently better-off

Baseline $1/Day Poverty Rate, Africa 1970-2006

$1/Day Poverty and Growth in Sub-Saharan Africa, 1970-2006

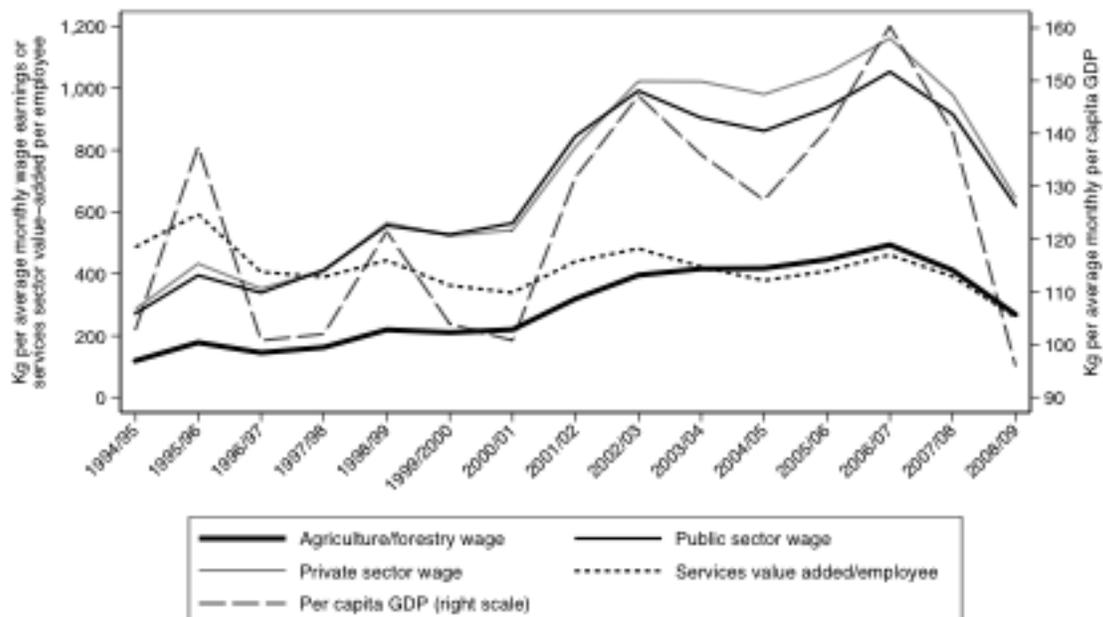# Background

- Kenya's economic performance has been mixed
  - But agriculture and the overall economy registered impressive growth in the 2004-2007 period
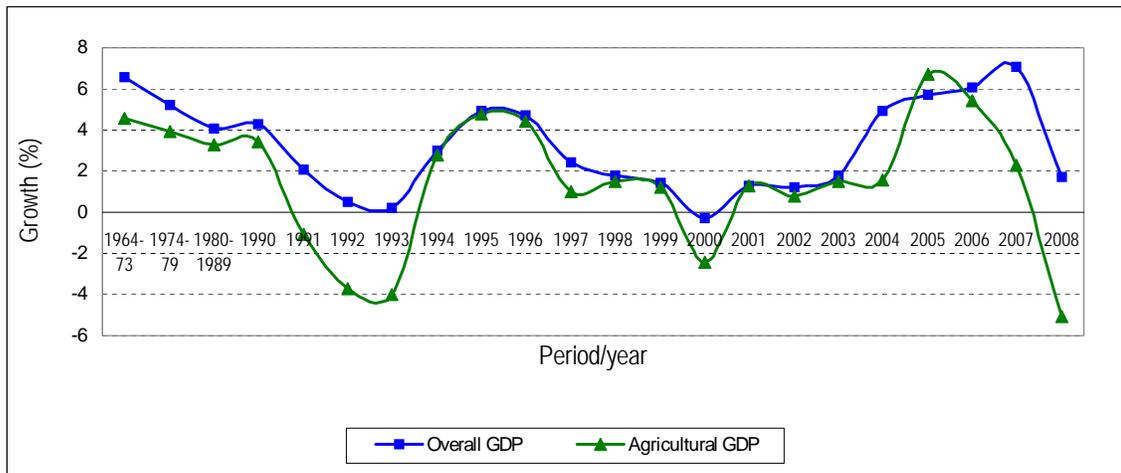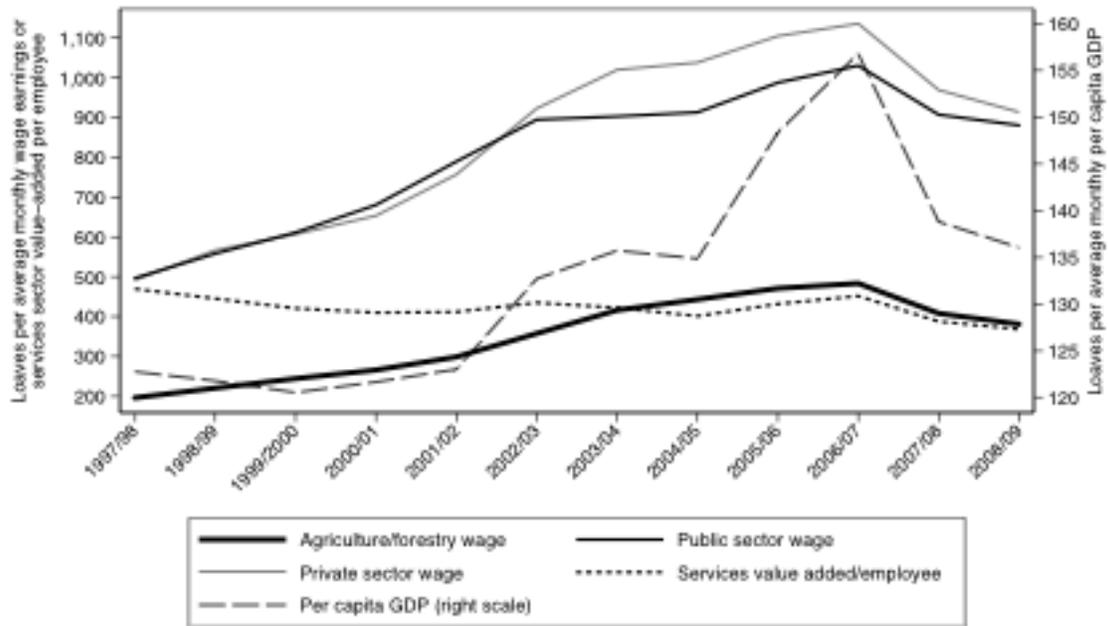

Kilograms of maize meal affordable per average monthly wage earnings, services sector value-added per employee, and per capita GDP – Nairobi, Kenya

Loaves of bread affordable per average monthly wage earnings, services sector value-added per employee, and per capita GDP – urban Kenya

Table 1: National poverty rates

	Poverty Measure	WMS III (1997)	KIHBS (2005/06)
		Adult Equivalent	Adult Equivalent
Rural	Absolute	52.9	49.1
	Hardcore	34.8	21.9
Urban	Absolute	49.2	33.7
	Hardcore	7.6	8.3
National	Absolute	52.3	45.9
	Hardcore	29.6	19.1

Observations

- Some smallholder farm households have successfully climbed out of poverty

- Some households that were once well above the poverty line have now descended into poverty

- If factors causing these dynamics were known, it might be possible to replicate these factors more broadly through poverty reduction strategies

- Availability of longitudinal survey data has made such studies possible

Data sources

- We examine the factors associated with changes in farm household wealth over a 10-year period

- The study draws from two sources of data longitudinal and retrospective survey data sets.

  - panel survey data on 1,254 households collected in 1997, 2000, 2004 and 2007

  - We identify three types of smallholder farm households:

    1. those experiencing a major improvement in wealth- ascenders
    2. those experiencing a major decline in wealth - descenders
    3. consistently relatively well-off households - non-poor.

  - In-depth retrospective and life history surveys conducted in 2008 on 30 households in each of these 3 groups

Measure of household welfare

- Household asset wealth is the measure of household welfare
  - Asset wealth is contended to more accurately reflect welfare than income or consumption
  - less susceptible to random shocks, and is likely to be a more stable indicator
  - productive assets consistently collected and valued in each of the four surveys
  - deflated to a common base year

Conceptual framework

- Household's asset holding dynamics is a function of
  - household demographic factors,
  - household's socio-economic environment, including spatial factors such as agro-ecological conditions and access to markets,
  - Household shocks, e.g., chronic illness, death
  - intergenerational factors

Data Analysis

- Descriptive: bivariate relationships
- Econometric model

$$y_{it} = \alpha_i + X_{it}\beta + \mu_{it}$$

  - With panel data, there are 2 popular methods for estimating this model, fixed and random effects
  - However, both approaches have shortcomings
  - Mundlak (1978) and Chamberlain (1984) propose a framework known as the correlated random effects estimator (CRE) or the Mundlak-Chamberlain device
  - The unobserved, time-constant heterogeneity is modeled

$$\alpha_i = \delta + \overline{X}_i + \varsigma_i \quad \varsigma_i \mid X_i \sim N(0, \sigma_\varsigma^2)$$

Key findings

1. Slight increase in mean household asset wealth among the nationwide sample between 1997-2007

2. Roughly 75% of sample experienced little change in asset wealth over the decade

3. 16% of sample accumulated assets / wealth

4. 11% of sample experienced a decline in asset wealth

5. Consistent with GoK estimates of decline in national headcount poverty: 52% in 1997 to 46% in 2005

no clear spatial differentiation between non-poor, ascenders and descenders
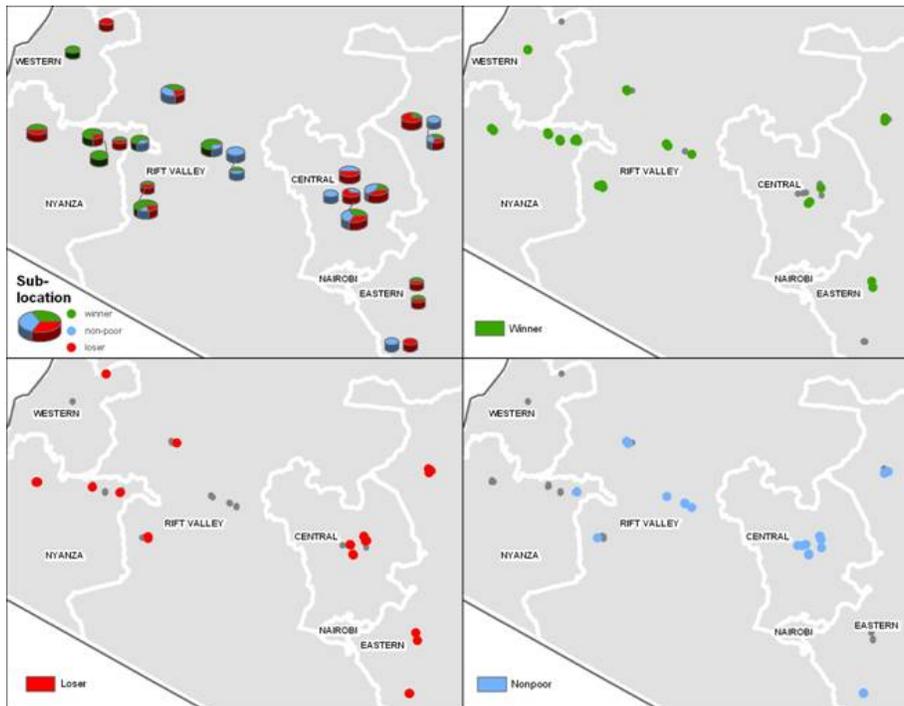
Key findings: Ascenders

1. more likely to have remained healthy and suffer no unexpected deaths during the decade prior to the start of the initial survey in 1997

2. were not adversely affected by mortality that did occur during the panel period

3. were consistently headed by a male

4. received relatively more land from their parents at the time the household was formed

Key findings: Ascenders

5. had parents who were relatively well-off and educated.

6. able to:

   - acquire more land,

   - cultivate 70% more land,

   - increase their use of fertilizer over the 2000-07 period, consistent with overall agricultural growth in Kenya during the 2004-2007 period.

Key findings: Descenders

1. roughly half experienced unexpected shocks, such as premature death and chronic illness.

   - These households reported spending 22% of their annual incomes and 47% of their assets on medicines and care giving.

2. more likely to have turned from male to female headed due to male mortality

3. more likely to have two or more wives in the household

Key findings: Descenders

4. more likely to have poorly educated hh heads, and fathers of hh heads who were also poorly educated

5. relatively little land and other assets inherited from parents. Small inheritances among the "descenders" can be traced to a smaller amount of land per number of sons of the household head's father.

6. tended to lose land and animal assets over the panel period (in some cases due to adult member illness and consequent need to pay for medical expenses)

Key findings: Descenders

7. Perhaps surprisingly, the descenders were more likely to use fertilizer, had higher fertilizer application rates per acre cultivated, and were more likely to receive agricultural credit than the ascender households.

Key findings: Consistently non-poor

1. more likely to have members with secondary and/or post-secondary educations

2. not be polygamous

3. received significantly more land and other assets at the time the household was formed

4. less affected by mortality in the family

5. owned more land and applied more organic and inorganic fertilizer than the ascenders or descenders.

All three groups enjoyed improved access to markets and services
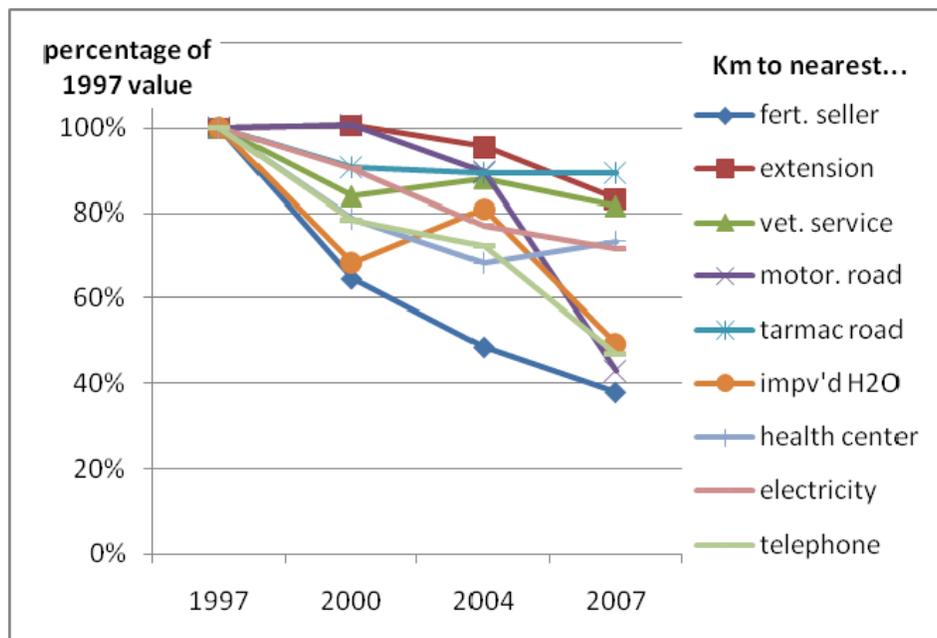
Discussion

1. Importance of staying healthy in households' ability to produce agricultural surpluses, accumulate assets, and exit from poverty

   - Households' agricultural performance and earnings over time is in many cases related to their lagged health status

2. The study also highlights the role of intergenerational wealth transfers. Poor households are able to transfer little to the next generation, which then makes it difficult for them to climb out of poverty

Discussion

3. Ascension out of poverty associated with increased acquisition of land

4. Overall increase in fertilizer use among all 3 groups

5. Overall improvement in access to infrastructure and agricultural services

Thank you…..