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

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Background

- Poverty, disease and ignorance identified as major challenges at independence
- Most policy documents address these problems
- However, country's economic performance has been mixed

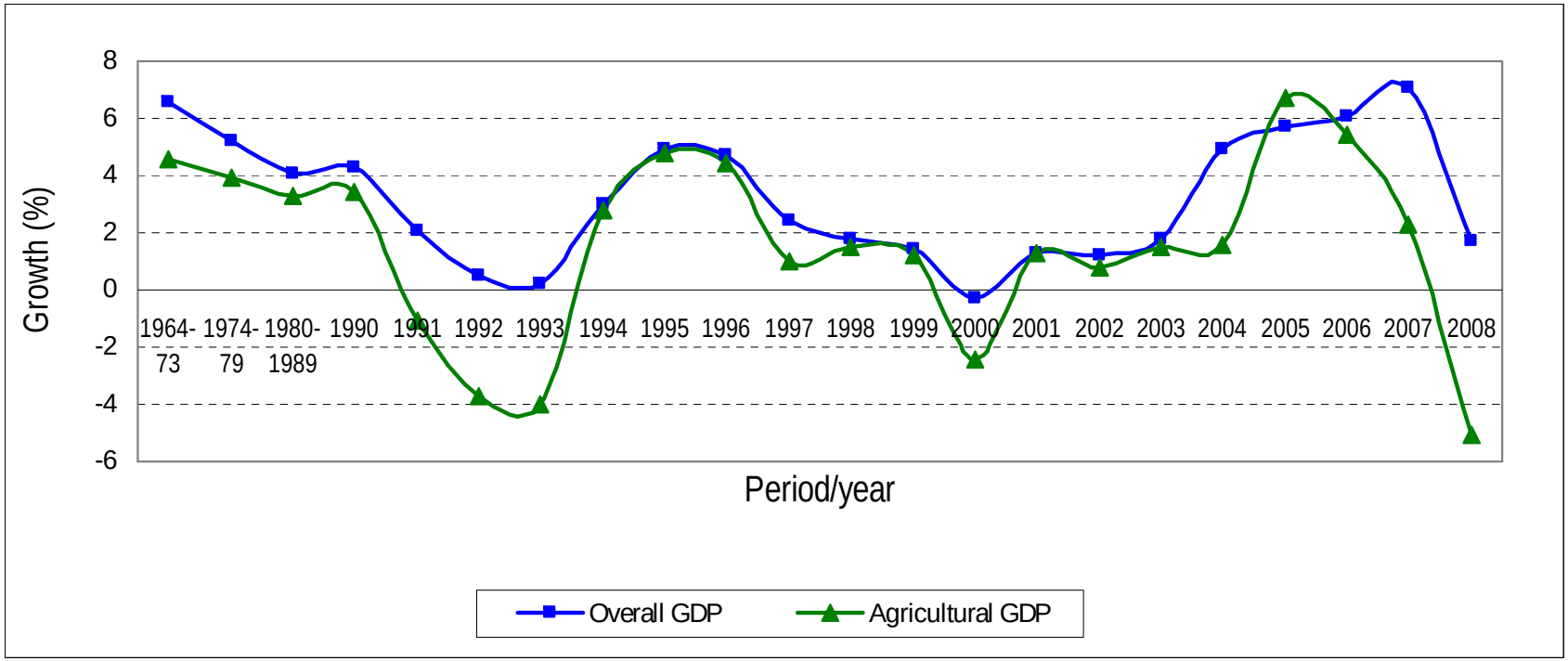

Table 1: National poverty rates

	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

Table 2: Rural food poverty by region

Province	Headcount ($p_{\alpha=0}$)	Contribution (%)
Central	31.4	9.6
Coast	63.5	9.6
Eastern	45.2	18.8
North	66.0	4.3
Nyanza	46.0	14.8
Rift Valley	49.5	28.0
Western	51.1	15.0
Total-Rural	47.2	100

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

Objective and data sources

- We examine the factors associated with changes in farm household wealth over a 10-year period in Kenya.
- The study draws from two sources of data longitudinal and retrospective survey data sets.
  - Use household panel survey data 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
  - more accurately measures wealth than income or consumption
  - less susceptible to random shocks, and is likely to be a more stable indicator of household welfare
  - 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, and
  - 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

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

Key findings: Demographic

1. Age of the household head: Ascending households more likely to be headed by young heads; descending households more likely to be headed by aged heads
2. Gender of household head: Descending group often experienced a switch from male to female headship – due to death or divorce
3. Education attainment: Descending group had high proportion with members with no formal education; ascending households had higher proportion of members with post-secondary education

Key Results: Characteristics pertaining to the initial household head

- Number of wives: descenders initial household head had two wives while their ascending counterpart had one wife (median values)
- Education: descenders more likely to be headed by persons with no formal education
- Father's education: ascending households' initial heads' father had more years of education

Key Results: Characteristics pertaining to the initial household head

- Land acreage: ascenders' father to the initial household head had 35% larger landholdings than descenders
- Land inheritance: ascenders' initial household head inherited 38% more land from parents than descenders
- Inheritance value: value of inheritance was over 40% higher for non-poor and ascenders

Shocks experienced in the last 10 years before the panel period

- Deaths: descenders lost more members through death in the 10 years period prior to the initial survey
- Illness: descenders had more chronically ill members in the 10 year period prior to the initial survey
- Health expenditure: descenders spent relatively more on chronic sickness
- Other shocks: non-poor and ascenders experienced greater financial losses from accidents, acts of nature, etc.

Shocks experienced by the households during the panel period

- Deaths: descenders experienced more deaths of household heads
- No clear patterns as far as chronic illnesses and loses incurred as a result of shocks is concerned

Evolution of distances to input markets and infrastructural facilities over the panel period

- There has been a slight decrease in distance to
  - fertilizer retailers
  - electricity
  - motorable roads
  - telephone services
- Non-poor group has the best access to infrastructure and services while the descenders are somewhat farther away
- Direction of causality between household wealth and access to infrastructure and services cannot be established except through the dynamic multivariate approach in the following section.

Sub-sample households: no clear spatial differentiation between non-poor, ascenders and descenders

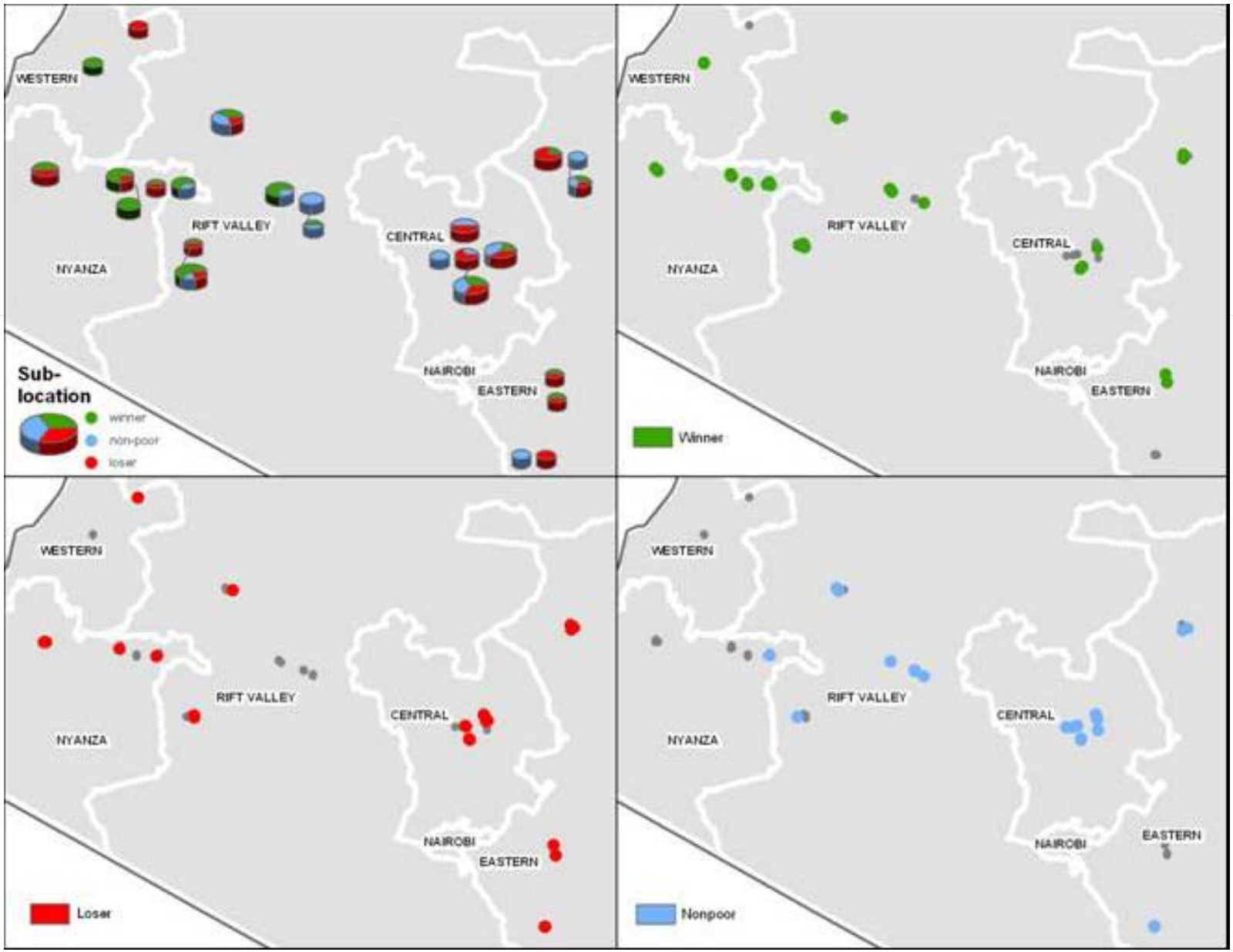

Table 12: Source of finance for asset acquisition and reasons for asset disposal

	Descenders (%)	Ascenders (%)	Non-poor (%)
Source of finance			
_farm output	48	50	70
_off-farm earning	12	33	30
_other	40	17	0
Reasons of asset disposal			
_school fees	44	30	22
_medical bills	24	10	9
_buy food	16	0	0
_other	16	60	69

Findings from Correlated Random Effects Model [1]

1. A change from female to male headship more than doubles household asset within 3 years
2. Number of wives of the household head negatively associated with subsequent asset accumulation trajectory
3. Public investments that reduce distance to infrastructural facilities increase households assets accumulation: distance to health care and clean water are especially significant

Findings from Correlated Random Effects Model [2]

4. Unexpected health setbacks matter
   - Deaths and chronic illness had significant negative impacts on changes in households' asset wealth.
5. Demographic/economic characteristics of prior generation influence asset accumulation
   - Number of brothers
   - Economic position of the father of the current household head
   - Land inheritance of the initial household head
   - birth order among male siblings of the hh head
   - Social capital and connections

Conclusion

- Persistence of poverty across generations: The previous generation's inability to transfer assets required by the younger generation to prepare it to effectively meet challenges faced during adulthood contributes to the persistence of poverty
- Access to land at time household was formed has major influence of subsequent wealth accumulation – influenced by parental decisions like number of children, marrying second wife, etc.
- Staying healthy appears to have major influence on household wealth accumulation – stand to reason in economic systems in which physical labor is dominant