



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

A Duration Analysis of Poverty Transitions in Rural Kenya

Lilian Kirimi¹

and

Kirimi Sindi

**Department of Agricultural Economics
Michigan State University
East Lansing, MI 48824-1039, U.S.A.**

*Selected Paper prepared for presentation at the American Agricultural Economics
Association Annual Meeting, Long Beach, CA July 23-26, 2006*

*Copyright 2006 by L. Kirimi and K. Sindi. All rights reserved. Readers may make
verbatim copies of this document for non-commercial purposes by any means, provided
that this copyright notice appears on all such copies.*

¹ Lilian Kirimi (kirimili@msu.edu) and Kirimi Sindi (sindijul@msu.edu) are Ph.D. candidates in the Department of Agricultural Economics at Michigan State University, East Lansing, Michigan, USA.

Abstract

Dynamics of falling into and out of poverty are examined using a discrete time hazard approach, using a panel dataset of Kenyan rural households. Poverty incidence shows some level of decline over the panel period. However, the factors that determine whether a households slips into poverty or escapes poverty do not appear to be radically different. Access to more of financial resources and by association better quality farm inputs may be valuable policy options that will prevent rural farm households from falling into poverty while helping others escape poverty.

The importance of viewing poverty from a dynamic perspective is now accepted wisdom by researchers and policymakers since it forms a basis for relevant and successful poverty alleviation strategies. Chronic poverty typically causes more concern among policymakers and scholars than transitory poverty. Nevertheless, it is important to understand movements in and out of poverty over time, and factors associated with transitions, since they have relevance for poverty persistence. Unlike static analysis, dynamic approaches to poverty will provide insights into movement of households around a poverty line. They take into account the effect of time on households' wealth, income sources, decisions and strategies. Correlates of poverty status have been found to be distinct from the dynamic processes that cause households to fall into or escape poverty. In addition, rather than poverty being a structural long term phenomenon as described by a "culture of poverty", where the same households remain poor year in and year out, there is a tendency for households to fall into poverty due to temporary shocks like loss of a job or illness (Baulch and McCulloch, 1998). The effect of these shocks may be reversed within a short period like a year or two later. Also, households that escape poverty may do so for a short time such as two years after which they fall back into poverty. Therefore, analyzing poverty transitions may be more relevant from a policy perspective rather than focusing on correlates of poverty status alone.

The incidence of poverty in rural Kenya is very high, with the income poor constituting 67.3 % of the rural households. An even more disturbing finding from poverty studies is that poverty rates have been increasing over time. The rural income poverty incidence for 1997 was found to be 58% while that for 2000 was 61% (Gamba and Mghenyi, 2004).

While a number of studies have analyzed the status of poverty in Kenya, very few have analyzed its dynamics. The problem of distinguishing between chronic and transitory poverty, and investigating the factors that determine if a household will remain poor or move out of poverty with time has not received much attention in the poverty literature in Kenya. This is partly due to the paucity of good panel datasets that track the poverty status of households over time.

The objective of this paper is to examine the dynamics of poverty transitions among rural farm households in Kenya. The main question addressed in this study is: what factors predict the probability of a household entering into or leaving poverty over time and across regions? Equivalently, two related questions can be asked. First, among households that are currently non-poor, what are the factors associated with becoming poor next year? Second, among those who are currently poor, what factors are associated with becoming non-poor in the following period? People can be poor at a particular point in time, either because they own fewer assets, or because they face financial and other types of constraints that limit their use of the assets they own. Time provides them with an opportunity to accumulate assets and to work around their constraints so they can make effective use of the assets they own. But time can also bring negative shocks that can pull people deeper into poverty. An understanding of the factors that determine these poverty transitions have important implications for the design of effective poverty reduction strategies, particularly for rural communities in Kenya where poverty rates are disproportionately high.

This study uses a three-wave panel dataset. The Tegemeo Institute of Agricultural Policy and Development rural household surveys collected information on individual,

household and community characteristics for rural households in Kenya over a seven-year period, with surveys in 1997, 2000, and 2004. One of the few existing studies of poverty transitions in rural Kenya is by Gamba and Mghenyi (2004). They employ descriptive analysis to determine factors associated with transitions into and out of poverty, using a subset (the 1997 and 2000 waves) of dataset used in this study. Unlike Gamba and Mghenyi (2004), our analysis of poverty transitions in this study is based on a discrete-time hazard model that examines the dynamic processes that determine movements into and out of poverty. The definition of poverty in this study follows that established by the Welfare Monitoring Survey (WMS), which measures absolute household-level poverty as the total amount expended on food plus a minimum allowance for non-food items.

As far as we know, no study has used the Tegemeo Institute rural household dataset to analyze poverty dynamics in Kenya using the hazard model. Burke et .al (2007) are using the same data in a transition matrix format to identify four poverty mobility groups of households, and further analyzing with probit and fixed effect models to identify factors associated with poverty movements. Thus, this study contributes to the larger empirical literature on poverty dynamics, and makes a novel contribution to our knowledge and understanding on poverty dynamics in rural Kenya. Knowledge of the role and impact of household and community factors that determine the movement of households into and out of poverty is pivotal for the design of effective poverty reduction strategies by both the Kenyan government and other donor agencies, particularly in terms of determining the priority areas on which to focus. The government of Kenya has taken steps towards compiling information that is relevant for monitoring the nature and extent

of poverty over time. This task has been undertaken by the Ministry of Finance through the Central Bureau of Statistics and the Poverty Reduction Strategy Papers (PRSP) secretariat. They have developed monitoring and evaluation procedures and poverty mapping tools. Findings from this study can complement the poverty monitoring and evaluation exercise and the poverty mapping process. In addition, findings can inform consultations on a proposed Joint Kenya Poverty Assessment which will focus on analysis of the role of growth in promoting poverty reduction and the use of evidence-based economic research to assess the impact of targeted poverty interventions.

In order to understand dynamics of poverty, there has been a distinction in literature among drivers, interrupters, and maintainers of poverty, which are deemed to influence respectively, movements into poverty, escapes from poverty and inability to emerge from poverty (Hulme and Shepard, 2001). Over time and space, individuals and households differ in the duration and number of poverty spells that they experience. Transitory poverty may result from households' inability to smooth consumption while chronic poverty may occur because households don't accumulate sufficient physical or human capital (Ulimwengu and Kraybill, 2004). Ravallion and Wodon (1999) find that poor areas are not just poor because households with readily observable attributes which foster poverty are geographically concentrated. Rather, disparities in poverty levels across geographical locations are due to differences in natural resources, density of economic activity, industrial structure, public goods, government policies and programs. Where credit and insurance markets do not function well, poverty may be heightened.

Many households while not currently in poverty are vulnerable to events like a bad harvest, job loss, illness, death, and unexpected expense or even an economic downturn that could easily push them into poverty (Pritchett, Suryadi et al. 2000).

Data and Descriptive Statistics

Data

Data used is from a three-wave rural household panel collected by the Tegemeo Institute of Agricultural Policy and Development, Egerton University, Kenya. The household surveys collected information from rural households in Kenya over a seven-year period, with surveys carried out in 1997, 2000, and 2004. There are 1,500, 1,446 and 1,397 households in each of these years, respectively. The data contains information on household farm production and off-farm activities as well as individual, household and community characteristics.

Poverty lines

There is now recognition in literature that poverty is multi-faceted in nature and that consumption-based poverty measures are usually more stable than those of income (Lipton and Ravallion, 1995). However, in this paper, we have adopted an income-based definition of poverty.

Poverty categories were established using poverty lines for each of the years as in Gamba and Mghenyi (2004). Incomes from farm and non-farm sources were computed from the 1997, 2000 and 2004 rural household survey data. The 1997 poverty line was then inflated to 2000 and 2004 levels to compute respective new poverty lines for 2000

and 2004. The WMS poverty line for 1997 and the 2000 and 2004 computed poverty lines were utilized to establish rural households below and above the poverty line for each year.

Poverty Transition Matrix and Probabilities

A frequently used approach to map movements into and out of poverty is the poverty transition matrix. It depicts the number of households that have moved into and out of poverty in a certain period, stratified by poverty status in the previous period.

From the transition matrix, simple probabilities of entering into and exiting poverty between two periods can be computed as:

$$\text{Probability (entering into poverty)} = \frac{EP_t}{NNP_{t-1}}$$

$$\text{Probability (leaving poverty)} = \frac{LP_t}{NP_{t-1}}$$

where EP_t is the number of households entering poverty in period t , which is given by number of households that were not in poverty in period $t-1$ but become poor in period t ; NNP_{t-1} is the number of households not in poverty in period $t-1$; LP_t is number of households leaving poverty in time t , and is given by number of households in poverty in period $t-1$ but who escape poverty in period t and; NP_{t-1} is number of households in poverty in period $t-1$. In this study, the transition matrix and probabilities of entry into and exit from poverty are computed for each pair of sequential periods and between the first and the last periods of the panel.

The rural income poverty incidence was found to be 53.6 percent, 74.2 percent and 58.9 percent for 1997, 2000 and 2004 respectively (table 1). These results are consistent with the findings of Gamba and Mghenyi (2004) for the period 1997-2000. However, for the longer period between 1997 and 2004, the poverty incidences appear to be somewhat inconsistent with the widely held perception that poverty levels in the country have been increasing during the study period. According to Gamba and Mghenyi, (2004), poverty incidence may have been on the rise between 1997 and 2000, as a result of the loss of non-farm income from retrenchment programmes in the civil service and parastatals. In addition, they argue that the private sector also shrunk during this period due to capital flight, reduced capital inflows and relocation of investors attributed to the unfavorable economic and political climate. However, there may now be gains from a marginally improved economic climate that is leading to lower poverty incidence. It may be the case that rural households are on an upward trajectory out of poverty.

Table 1. Poverty Incidence, Transition Matrix (Number and Percentage) and Probabilities of Poverty Entry and Exit

Poverty Incidence			
	1997	2000	2004
Poor	710 (53.6)	983 (74.2)	780 (58.9)
Non-poor	614 (46.4)	341 (25.8)	544 (41.1)

Transition matrix by year and poverty status		
2000		
1997	Poor	Non-poor
Poor	596 (83.9)	114 (16.1)
Non-poor	387 (63.0)	227 (37.0)

2004		
2000	Poor	Non-poor
Poor	662 (67.3)	321 (32.7)
Non-poor	118 (34.6)	223 (65.4)

2004		
1997	Poor	Non-poor
Poor	514 (72.4)	196 (27.6)
Non-poor	266 (43.3)	348 (56.7)

Probability of entering into or leaving poverty		
Period	Entering	Leaving
1997-2000	0.63	0.16
2000-2004	0.35	0.33
1997-2004	0.43	0.28

Analysis in this paper is based on 1,324 households that were surveyed consistently in the three waves. There is evidence that poverty dynamics exist for this sample as shown by the movements into and out of poverty across the panel years. Overall, 8.6 (29.2) percent of the 1,324 households moved out of (into) poverty between 1997 and 2000 while 24.2 (8.9) percent of all households moved out of (into) poverty between 2000 and 2004. This result is encouraging since it shows that poverty incidence is decreasing, with almost an equal proportion of households that fell into poverty in 2000, escaping from poverty in 2004.

Table 1 shows the transition matrix by year and poverty status as well as probabilities of leaving and entering into poverty. Over the 1997-2000 period, the number of households that fell into poverty was over three times as large as the number of households that climbed out of poverty. However, between 2000 and 2004, households that climbed out of poverty were 2.7 times more than those that fell into poverty. Over the 7-year period (1997-2004) households that fell into poverty were 1.3 times more than those that climbed out of poverty.

The probability of entering poverty decreases from 0.63 in the 1997-2000 period to 0.35 in the 2000-2004 period, while the probability of leaving poverty increases between these two periods. The probability of leaving poverty is much lower than the probability of entering poverty in the 1997-2000. However, in the 2000-2004, the two probabilities are nearly equal.

Approaches to poverty transitions and persistence

Econometric analysis of determinants of poverty transitions

In the literature, poverty has been modeled either as a discrete dependent variable measuring dynamic poverty status or as a continuous variable measuring the standard of living. The former approach has been strongly criticized by Ravallion (1996) for the loss of information it implies, among other factors; but if the poverty line is set at a meaningful absolute level, it is still valuable to consider modeling transitions across the poverty line (Lawson et al, 2003).

Stevens (1999) observes that different approaches have been used in previous research on poverty dynamics. Using longitudinal data, researchers have counted number

of years individuals spend in poverty out of a fixed sample period. This approach fails to recognize that individuals entering poverty may be beginning a long period in poverty while those exiting may be just starting a non-poverty episode, despite the fact that they appear to be poor or non-poor in one or two time-periods. Another approach has been the components-of-variance model which distinguishes between “permanent” and “transitory” poverty, rather than estimating distributions of time spent below or above the poverty line. Stevens (1999) uses and outlines advantages of the hazard rate approach used by Bane and Ellwood (1986). She extends their model by accounting for multiple spells of poverty.

Estimation using hazard approach produces estimated distributions of time spent in poverty for households just beginning a spell of poverty, with a variety of individual household and community characteristics. This approach is based on the fact that the probability of exiting or entering poverty may be influenced by the length of time a household has already been poor or non-poor. Therefore, simple entry and exit probabilities can't be regressed on a set of explanatory variables without introducing biases into the results (Baulch and McCulloch, 1998). Instead, duration analysis is an appropriate estimation approach that can be used to examine characteristics associated with poverty entries and exits.

Duration analysis

In duration or hazard analysis, we model the conditional probabilities of entry and exit. This method has been used to model transitions into and out of unemployment, strike lengths, intervals between purchases, biomedical histories, time to failure of electronic

components and other event histories as summarized by Baulch and McCulloch (1998). A number of studies have used these models to study poverty spells in developed and developing countries (Bane and Ellwood, 1986). Duration or hazard models examine the probability of a spell having a certain duration or equivalently, the probability of a spell ending given that it has not done so already. In this paper, we model the conditional probability of a household exiting (entering into) a spell of poverty given that it has not yet exited (entered) up to now.

We employ econometric techniques appropriate for right-censored observations. The hazard model is estimated controlling for both unobserved heterogeneity and unobservable time-invariant community characteristics. The unit of analysis is the hazard rate, defined as the probability of experiencing an event at time t , conditional on not having done so up until that point in time. Therefore, we examine what determines the probability of a household falling into (exiting) poverty at time t , conditional on having been non-poor (poor) until time t . Two hazard functions are estimated; one for leaving poverty, and another for entering into poverty. These are estimated allowing for duration dependence in the hazard rates. It is important to consider duration dependence in poverty dynamics since *a priori* the longer the poverty spell, the lower the prospect that a household will move out of poverty. This means that poverty dynamics are likely to produce monotonic (increasing or decreasing) hazards. However, the nature of duration dependence is tested for in this paper.

The dependent variable is an indicator variable for whether an entry/exit happened in a certain time interval for a given household. We allow the key explanatory variables, such as household endowments or characteristics, to change over time. This is

important, because the change of household structure, such as increase in dependency burden, is likely to cause a household to slip into poverty. Also we include a measure of idiosyncratic shocks, i.e., deaths of female and male working-age adults.

Econometric Results

Table 2 presents results from hazard analysis of entry into and exit from poverty. Two models of entry and exit are estimated. The first set (Entry and Exit) in columns (1) and (2) do not account for duration dependence or unobserved heterogeneity while the models in columns (3) and (4) account for both dependence and duration. The first two models are based on a complementary log-log regression while the other two are estimated using a random effects complementary log-log, assuming a normal or Gaussian distribution for the heterogeneity term. We ran another model assuming that the unobserved heterogeneity has a Gamma distribution, but convergence was not achieved.

The p-value for likelihood ratio test for a choice between a model that accounts for heterogeneity and one that does not indicates that there is negligible unobserved heterogeneity. Duration dependence is positive but is not statistically significant. We discuss results based on models accounting for duration dependence and unobserved heterogeneity. Results from table 2, that factors determining whether a households slips into poverty or escapes poverty, may not be radically different.

Table 2. Discrete Time Hazard Analysis of Entry Into and Exit from Poverty

	(1)	(2)	(3)	(4)
	Entry	Exit	Entry I	Exit I
Age of household head	0.019** (1.96)	0.005 (0.93)	0.011 (0.96)	-0.011* (1.67)
Male head (dummy)	0.140 (0.46)	0.175 (0.88)	0.211 (0.71)	0.168 (0.88)
Education of head	-0.031 (1.19)	-0.029* (1.90)	-0.030 (1.13)	-0.041** (2.55)
No. of children less than 6 years	0.133* (1.69)	0.062 (1.20)	0.131* (1.66)	0.063 (1.19)
No. of children 6-14 years	-0.039 (0.62)	0.063* (1.80)	-0.052 (0.81)	0.049 (1.39)
No. of seniors 60 and older	-0.109 (0.61)	0.121 (1.26)	-0.128 (0.71)	0.126 (1.30)
Land per capita	-0.505** (2.43)	-0.235** (2.40)	-0.324 (1.58)	-0.069 (0.77)
Land tenure (dummy)	-0.119 (0.44)	-0.094 (0.59)	-0.103 (0.38)	-0.025 (0.16)
Polygamous household (dummy)	-0.286 (0.50)	0.239 (0.86)	-0.560 (1.02)	-0.008 (0.03)
No. of people with a formal job	0.263** (2.45)	0.234*** (3.94)	0.086 (0.71)	0.025 (0.36)
Village mean remittances	-1.5 e-04*** (5.15)	-4.7 e-05*** (3.68)	-7.6 e-05** (2.45)	4.6 e-05*** (3.12)
Maize stocks, lagged	-0.018 (0.46)	0.017 (1.00)	-0.053 (1.10)	-0.008 (0.35)
No. of people with informal activity	0.252*** (3.01)	0.111** (1.99)	0.179** (2.07)	0.000 (0.00)
Applied for credit	-0.139 (0.72)	0.012 (0.10)	-0.328* (1.69)	-0.183 (1.56)
HIV prevalence rate for 1996-1998	0.064** (2.42)		0.078*** (2.91)	
Working age adult death	-0.075 (0.21)	0.852*** (4.88)	-0.597* (1.68)	0.213 (1.24)
Distance to extension services	0.027** (2.03)	0.010 (1.11)	0.023* (1.69)	0.001 (0.13)
Provincial road dummy	-0.254 (0.69)	0.283 (0.96)	-0.164 (0.45)	0.297 (1.00)
District road dummy	-0.711** (2.45)	0.141 (0.64)	-0.556* (1.96)	0.300 (1.36)
Local road dummy	-1.038*** (3.71)	0.489** (2.54)	-0.930*** (3.32)	0.489** (2.49)
Precipitation/evapotranspiration ratio	-4.000*** (4.71)	1.159*** (2.79)	-3.501*** (4.14)	2.300*** (5.52)
Duration dependence			26.578 (0.02)	30.228 (0.01)
Constant	-0.729 (0.81)	-3.825*** (6.91)	-18.852 (0.02)	-24.172 (0.02)
Observations	2640	2640	2640	2640

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Determinants of entry into and out of poverty

The number of children younger than 6 years is positively associated with entry into poverty. Having younger children involves more time in care-giving and away from productive activities. As a result, households generate lower household incomes and are likely to become poor. Also, younger families are likely to have fewer resources than old ones. Hence, the former are more likely to move into poverty.

The variable *mean village remittances* captures the nature of existing village norm that influences the motives for migrants to remit money to their households. This norm may be indicative of the peer pressure to remit based on what one's peers are accomplishing in their rural homes. Where the norm is strong, migrants are likely to remit more money and as a result households receiving remittances are less likely to fall into poverty. For households that are already poor, more remittances enable them to overcome constraints that face them (e.g. capital and risk constraints), and thus move out of poverty.

The number of people in a household that are engaged in informal activities increases the likelihood of a household falling into poverty. This is because returns from such activities are very low and therefore, allocating household members' time to such activities may increase the chances of becoming poor. As expected wealthier households, as proxied by the decision of a household to apply for credit, reduces the possibility of entering into poverty.

A household that experiences a working-age adult death is less likely to enter into poverty. This may be because when a death occurs, time in care-giving and capital outlay in terms of health expenses stop. This implies that these households are either able to

weather a big shock or they are able to recover from a big shock like death within the 3-4 years period.

Areas in which households and individuals live greatly influence the likelihood of falling into poverty. For instance, households in areas of high HIV prevalence are likely to become poor. This is because HIV/AIDS is associated with large expenses in medical care as well as a lot of time in care-giving and thus lost productive labor in the period preceding death. In addition, areas of high HIV prevalence experience more deaths which may be associated with increased financial expenses even for non-afflicted households if there exist reciprocity arrangements across households (Beegle, 1997). Such arrangements and extended family ties imply that non-afflicted households may be required to provide gifts in cash or kind toward medical and funeral expenses through informal social means or organized welfare groups. Therefore, both afflicted and non-afflicted households experience large financial outlays. It has been noted in literature that the increasing deaths and illness due to HIV/AIDS may result in a breakdown of social capital and local institutions that affect the whole community (both afflicted and non-afflicted households).

There are significant negative effects of district and/or local road variables and the precipitation/evapotranspiration ratio, on entry into poverty. However, these variables are positively related to exit from poverty. The road variables are dummies, the reference being an international road that is of a much higher quality and is closer to cities and large towns. The district and local road variables indicate remoteness of a given area and the nature of risks that households face. Livelihoods of households residing in remote rural areas depend to a larger extent on farming. This is supported by the finding that

households that are far away from extension services, and are less likely to receive information that will promote agricultural production and productivity, are more likely to enter into poverty. In contrast, livelihoods of households that live in pockets of small towns and trading centers are probably riskier—being based more on petty trading, low-paying jobs and wage work that is not permanent and which may be highly seasonal (e.g. in construction sites). It appears that the income or yield risk faced by the households dependent on farming is not as large as the uncertainty faced by those that depend on highly seasonal wage employment. As a result, households in rural areas that rely on farming for their livelihood are less likely to get into poverty. For the same reason, households that were previously poor, are likely to escape poverty if they move from trading centers and back to farming activities.

Potential evapotranspiration is a representation of the environmental demand for evapotranspiration while the precipitation/evapotranspiration ratio is an aridity index. It is a numerical indicator of the degree of dryness (harshness) of the climate at a given location. As expected, households from areas with a higher ratio have better climatic conditions favorable for production, and are therefore less likely to fall into poverty. Also rural households residing in such areas with favorable climatic conditions are more likely to escape from poverty.

The age of the household decreases the likelihood of escaping poverty. In an alternative specification (results not shown here) the age effect is non-linear. The coefficient on age is -0.05 and is significant at 5% while that on age squared is 0.0004 and is significant at 10%. This result is consistent with the expected relationship between generation of wealth and the family life-cycle. For young and small families who are

already poor, additional children (poor households have a tendency to have more children than rich ones) imply more financial obligations. This adversely affects the ability of a household to accumulate resources. However, as the household head grows older, some of the major financial obligations cease and a household is able to accumulate wealth and escape from poverty. Also, a household with an older head is likely to be receiving some remittances from younger members who have been employed.

A surprising result is that the more educated a household head, the less likely a household is to exit poverty. A possible explanation could be similar to what Assaad, R et al (1999) found in Egypt. Their findings indicate that for men, the employment returns are highest for basic education in rural areas and for university education in urban areas.

Conclusion

The major factors influencing the likelihood that a household enters into poverty are: less wealth and fewer financial resources, engaging in low-return informal activities, high HIV prevalence rates, and participating in low-pay wage employment as opposed to farming. On the other hand, factors that greatly influence escape from poverty include: more wealth and financial resources and participating in farming as opposed to low-pay wage employment in small trading centers in the rural areas.

It appears that human capital variables are not as important as financial resources and wealth in preventing households from falling into poverty. There is also evidence that households in areas dominated by agricultural activities and where climate is favorable are less likely to fall into poverty. Hence, provision of financial resources in form of credit (cash or in-kind or inter-linked) will prevent households from experiencing

poverty. Also, provision of better quality and cheaper inputs like fertilizer and hybrid seeds may improve farm production, and thus enable households to meet their various financial needs.

Movements out of poverty are also primarily a function of access to more financial resources and assets. Just like entry into poverty, providing households with the ability to make more money will help most of them escape poverty. In particular, improving agricultural production and improving returns to other income-generating activities will play a key role in enabling households to move out of poverty.

Insights from this study indicate that poverty-alleviation programs in the rural areas should be directed at policies that encourage asset accumulation and that improve returns from farming as well as other household income-generating activities.

References

- Assaad, R., F. El-Hamidi, and A. U. Ahmed (1999). The Determinants of Employment Status in Egypt. Revised Draft. Washington, D.C., International Food Policy Research Institute.
- Bane, M. J. and D. Ellwood (1986). "Slipping Into and Out of poverty: The Dynamics of Spells." The Journal of Human Resources **21**(1): 1-23.
- Baulch, M. and N. McCulloch (1998). Being Poor and Becoming Poor: Poverty status and poverty and transitions in Rural Pakistan, IDS Working Paper 79.
- Burke, W., J., T. S. Jayne, et al. (2007). Factors Associated with Rural Farm Households' Movement Into and Out of Poverty in Kenya - The Rising Importance of Livestock, International Development Working Paper 90, Department of Agricultural Economics, Michigan State University.
- Gamba, P., Mghenyi, E. (2004). Rural Poverty Dynamics, Agricultural Productivity and Access to Resources, Working Paper 21, Tegemeo Institute of Agricultural Policy and Development, Kenya
- Hulme D., M. K., Shepherd A. (2001). Chronic Poverty: Meanings and Analytic Frameworks, Chronic Poverty Research Centre.
- Lawson, D., McKay, A., Okidi, J. (2003). Poverty Persistence and Transitions in Uganda: A Combined Qualitative and Quantitative Analysis, University of Manchester.
- Lipton, M. and M. Ravallion (1995). Poverty and Policy: in Handbook of Development Economics. Handbook of Development Economics. J. Behrman and T. N. Srinivasan. Amsterdam, North-Holland.
- Pritchett, L., A. Suryadi, et al. (2000). Quantifying Vulnerability to Poverty: A Proposed Measure, With Application to Indonesia, A working paper from the Social Monitoring and Early Response Unit (SMERU).
- Ravallion, M. (1996). "Issues in Measuring and Modeling Poverty." The economic Journal **106**(438): 1328-1343.
- Ravallion, M. and Q. Wodon, T (1999). Poor Areas, or Poor People? Washington, D.C., World Bank Policy Research Working Paper No. 178, World Bank.
- Stevens, A. H. (1999). "Climbing out of Poverty, Falling Back in: Measuring the Persistence of Poverty Over Multiple Spells." The Journal of Human Resources **34**(3): 557-588.

Ulimwengu, J. M., Kraybill, D.S. (2004). "Poverty Over Time and Location: An Examination of Metro-NonMetro Differences." American Journal of Agricultural Economics **86**(5): 1283-1288.