POLICY BRIEF

The Role of Rural Factor Markets in Reducing Poverty, Risks and Vulnerability in Rural Kenya: The Case of Kakamega and Vihiga Districts

By Joseph Karugia, Willis Oluoch-Kosura, Rose Nyikal, Michael Odumbe and Paswell Marenya

Limitations of Rural Factor Markets

Poverty reduction has remained one of the greatest challenges facing the Kenyan government since independence. Currently, an estimated 53 percent of its population lives on less than a dollar a day. Whereas poverty is prevalent in Kenya, it is typically a rural phenomenon where over 80 percent of the total population resides. With the rural sector harboring the majority of poor Kenyans, efforts to reduce poverty, risks and vulnerability should place more emphasis on problems associated with pro-poor growth in these areas.

A number of institutional factors have been identified as hindering the growth and expansion of the rural sector. Thin and inefficient rural factor markets pose one of the greatest challenges in this respect. Factor markets refer to markets for key productive assets such as land, labor and capital, all of which are crucial inputs for generating income in the various production activities available to the rural poor.

In the rural areas, land has conventionally been the most important source of livelihood as majority of the rural dwellers depend on agriculture as their main source of income and sustenance. However, rapid population growth in the recent past has increased the pressure on available arable land. This, along with inheritance customs that often requires the distribution and division of land among male children, has resulted in diminishing average plot sizes due to sub-divisions. The consequence has been an urgent need to increase land productivity which can be achieved by the adoption of appropriate technologies including high analysis fertilizers and fertilizer responsive seeds. For poor, credit-constrained farmers, such actions to improve the productive efficiency of land often require financial capital outlays beyond their reach. The difficulty they face in accessing credit is one of the key limitations of rural factor markets.

It is now widely acknowledged that lack of access to financial credit is a major impediment to alleviation of poverty. The poor, who may benefit from securing credit to invest in profitable self-employment, small enterprise projects, or to purchase inputs for agricultural production, often times do not have the collateral needed to secure a loan from the formal credit markets. Without the requisite collateral, conventional individual-liability lending arrangements become unprofitable for formal banking institutions. The institutions have to face prohibitively high monitoring and information gathering costs that encourage the twin problems of moral hazard and adverse selection. The resulting dynamic is well articulated in a burgeoning poverty-trap literature whereby structural features of the state of poverty - here their inability to secure productivity enhancing loans - induce inertial forces that serve to lock the poor in poverty.

While increasing the productive efficiency of land, and alleviating the credit-constraints faced by the poor farmers have been the central focus of many poverty reduction strategies, the combination of an

increasing rural population with diminishing average land holdings has led some to question the viability of such a strategy. Citing studies that show a positive correlation between the fraction of total income attributable to non-farm livelihood sources and total income, it is argued that development efforts should focus more on increasing the profitability and range of available non-farm opportunities. With the abundance of unemployed and underemployed labor available in the rural areas, such efforts call for increased investments in education, public health, infrastructure, and other such measures aimed at improving the productivity of labor and bringing about the conditions that will create an effective labor demand.

The current study sought to establish how the limitations of rural factor markets influence poverty, and expose the poor to risk and vulnerabilities. Developing a clear understanding of the impediments that hamper the operations of these markets would guide the formulation of policies to improve access to these markets and enable poor households to construct viable and sustainable livelihoods that can lift them out of poverty.

Relating Asset Endowments to Livelihood Strategies

To limit the scope of the study, the authors chose to focus on the interaction between rural factor market performance and poverty correlates in two neighboring districts of Kakamega and Vihiga in Western province of Kenya. The study sites were chosen to capture variations in key parameters such as land availability patterns, agro-ecological conditions, and livestock holding patterns. In Kakamega district, the survey was conducted in Shirugu location, a region with medium agricultural potential, and relatively higher per capita land availability, better market access and recent resettlement patterns. In Vihiga District, Central Maragoli was the chosen location, a region with relatively high agricultural potential and relatively small farm parcels and poor market access. Table 1 below shows the differences in key socio-economic and demographic characteristics by study location, as observed during the survey.

Table 1 Households' Socio-economic and Demographic Characteristics

Variable	Shirugu	Maragoli
Age of household head (years)	47.63	48.26
Gender of household head (%)	69	68
% Hheads with no formal education	8.7	11.6
% Hheads completed primary	29.8	22.3
% Hheads completed secondary	9.6	18.2
% Hheads with tertiary education	3.8	1.8
Household size	6.57	5.94
Size of land owned (acres)	4.88	0.926
Livestock ownership (cattle equivalent units)[1]	3.24	1.51
Value of household assets (Kshs.)	67, 117	36, 272
Annual Per Capita Income (Kshs)[2]	11,275	9,419

Habitants of Shirugu appear to fair far better than their Maragoli counterparts. Notably, the mean landholding in Shirugu is more than four times that of Maragoli. Despite the relatively more productive land of Maragoli, this wide disparity likely explains much of the differences in livestock ownership, per capita income, and asset value - all of which favor Shirugu. Comparisons of human capital between the two sites are not as clear-cut. However, though Maragoli has slightly more household heads with no formal education and slightly less with post-secondary schooling, they also have almost twice as many household heads that have completed secondary school. This can partly also be explained by the relatively small mean land sizes in Maragoli location which do not require high labor inputs and can thus free household children to attain an education. In addition, such small land sizes limit the expected returns to agriculture based livelihoods and consequently increases the relative returns to investments in human capital that can increase the space of non-farm livelihood opportunities.

An examination of differences in the share of household income accruing to various sources can give an indication of how variations in asset endowments affect the livelihood strategies households engage in. Tables 2 and 3 below show the composition of household incomes by study location and income quintiles.

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[1] Livestock ownership aggregated in one measure, Cattle Equivalent Units (CEUs).
[2] All income figures in Kenya shillings, 80 Kshs = 1 US Dollar.

Table 2. Share of Income Sources by Income Quintiles for Shirugu

Per capita incomes (Kshs)	Salary income	Business income	Transfers	Informal income	Total off farm income	Crop income	Livestock incomes
34, 885	36	17	7	0	60	35	5
10, 951	8.4	18	7.6	12	46	46	8
5, 825	0	14	8	13	35	47	18
4, 584	0	10	8	13	31	61	8
1, 640	0	5	12	14	31	53	16
11, 275	**23**	**15**	**7**	**7**	**50**	**43**	**7**

Table 3. Share of Income Sources by Income Quintiles for Maragoli

Per capita incomes (Kshs)	Salary income	Business income	Transfers	Informal income	Total off farm income	Crop income	Livestock incomes
24, 455	34	9	20	9	72	16	12
9, 207	22	10	12	14	58	20	22
5, 895	4.4	2.1	9.34	14	30	50	20
3, 659	0	2.9	4.8	21	29	58	13
1, 883	2	1	9	11	23	71	6
9, 419	**23**	**8**	**15**	**14**	**60**	**26**	**14**

As the tables 2 and 3 above show, the share of total off-farm income is highest in the high-income groups in both locations. Furthermore, the largest share of off-farm income for the top income quintiles accrues from salaried wages whereas low-income groups receive their off-farm income predominantly from informal wage opportunities. Together these results suggests that the poorer households in these regions rely mainly on farming and seasonal labor activities as their main source of livelihood leaving them particularly vulnerable to shocks due to crop failures and without a consistent source of off-farm income to rely on. The additional implication that off-farm incomes, and particularly salaried income, offer higher returns underscores the need for interventions that equip poor households with the skills and capacity necessary to tap into off-farm opportunities. But limited formal employment in the rural areas also means that government policies should also focus on creation of remunerative employment.

Exploring the Correlates of Income and Credit Access

For a more rigorous examination of the structural relationship between assets and household incomes, the study conducted several empirical tests to determine the relative importance of the various factors. To investigate the determinants of income, the authors used an Ordinary Least Squares regression of per capita income on various covariates. As expected, the coefficients on land size, the value of livestock holdings, the educational attainment of the household head and the value of non-land based assets were all positively and significantly related to incomes. This is contrasted with the results of a similar test in which off-farm income is the dependent variable. Here we find that human capital, as defined by education, is the only asset that is significantly related to off-farm income. Each marginal class level completed results in an expected increase in income of approximately 14 percent.

These results imply that efforts to increase off-farm opportunities for the poor should focus on improving educational outcomes, or on putting in place mechanisms to improve the set of skills most conducive to securing off-farm opportunities with relatively high returns. While increasing land size is associated with higher incomes, a land redistribution scheme would require significant financial resources and widespread political commitment to carry out.

As lack of access to affordable financial capital features prominently as one of the major constraints to poverty alleviation efforts, this study analyzed the determinants to said access. Using observed borrowing from a formal institution as a proxy to access, a logit model was used to test the determinants of the likelihood that a household has been able to access credit. In both Maragoli and Shirugu, the education level of the household head positively influences household's access to formal credit. This can be attributed to the likelihood that better educated households are more aware and can take better advantage of existing credit resources, and because credit-suppliers probably expect educated individuals to be more credit-worthy.

In Maragoli, where the average land size is under one acre, the acreage of land owned by a farmer is also significant in influencing households' participation in formal credit markets. As such, households with small land holdings for whom increases in land productivity is likely to be most crucial, cannot access the credit needed to purchase the requisite inputs. This has serious implications for credit policy especially since a majority of formal credit received was used for farm inputs. In this regard, promotion of group-based micro finance institutions that target households owning a given acre of land and below may be a way forward.

Summary and Policy Implications

This study sought to investigate the relationship between the accessibility of rural factor markets to the poor, the extent of their participation in these markets, and the degree of poverty and vulnerability they face. The results show that access to productive land continues to be the key source of livelihoods in rural areas, even where farm sizes are relatively small. Moreover, the poor tend to depend more heavily on agriculture and informal, seasonal labor activities for their incomes and are therefore more likely to be vulnerable in the face of personal shocks such as illnesses and covariate shocks such as droughts and floods. On the other hand, the relatively

well off households had better access to productive resources such as land, human capital and farm inputs and were able to use their superior asset endowments to engage in livelihood strategies that offered both relatively higher expected returns and lower risk.

Since the rural poor depend mainly on agriculture, the immediate course of action must lie in increasing the productivity of the natural resource base via targeted efforts to facilitate the use of mineral fertilizers and high yielding seed varieties among poor households. Nevertheless, a burgeoning population and diminishing land sizes imply that growth in farm productivity alone may not guarantee households sufficient incomes to escape poverty. The study finds evidence to suggest that promoting growth in the non-farm sector should be equally emphasized if households in such regions are to escape poverty. The authors therefore advocate for a more integrated approach to rural development that targets the limitations to productive enterprise resulting from a meager asset base, as well as the deficiencies inherent in rural factor markets.

About the Authors

Joseph Karugia is an Agricultural Economist at the Department of Agricultural Economics, University of Nairobi. Currently, he is on sabbatical leave and working with AERC-Africa as the Research Manager. W. Oluoch-Kosura is Associate Professor of Agricultural Economics at the University of Nairobi and Coordinator of the Regional Collaborative MSc Program in Agricultural and Applied Economics. Rose Nyikal is an Agricultural Economist with the same Department and also the Chairman of the Department. Michael Odumbe is an M.Sc student and a Research Assistant at the Department. Paswel Marenya is an Agricultural Economist at the same Department but is currently undertaking his PhD at Cornell University. This brief is based on their paper "The Role of Rural Factor Markets Access in Reducing Poverty, Risks and Vulnerability in Rural Kenya".

Further Readings

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