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Livelihoods under Stress: Income Sources, Diversification, and Disparities

The previous two chapters examined the income from own-farm production. This chapter will first focus on the income from off-farm economic activities. This will allow us to proceed to an analysis of the overall pattern of income portfolios and economic strategies adopted by smallholder households. The observed pattern of income sources and livelihood strategies varied markedly between the study villages and between the poor and the rich. The chapter examines the factors behind the variations among the smallholder households.

6.1 Income Sources of Smallholder Households

6.1.1 Off-farm Income

Off-farm income can be classified into four categories: agricultural wage income, nonagricultural wage income, nonfarm self-employment income, and other income. The following section examines these incomes in turn.

Agricultural wage income can be earned by working on somebody's farms as a laborer. Task-contracted casual labor is the main labor contract allowing villagers to earn an agricultural wage income. Task-contracted casual laborers are remunerated according to the specific farm tasks completed. In the study villages, 44 percent of the sample households earned agricultural wage in-

TABLE 6.1 Average Daily Wage for Wage Labor by Type of Employment (six villages)

	No. of Cases	Average Wage per Day (MK)
Agricultural wage labor:		
Land preparation	63	119
Weeding/banking	85	109
Harvesting	7	194
Grading/baling of tobacco	5	178
Other	11	187
Nonagricultural wage labor (on regular basis):		
Teacher/civil servant	7	223
Night watchman, private company, waitress	5	127
Nonagricultural wage labor (on casual basis):		
Construction work	6	235
Other	6	257

Note: Total cases may not equate the number of households because household members may engage in different activities on different occasions. Average daily wage is wages paid (both cash and in kind) divided by days worked. Figures for Kachamba and Belo were converted to 2004/05 prices using the rural CPI. Exchange rate in 2005 fluctuated between 115 and 121 Malawi kwacha (MK) per US dollar.

come by engaging in the task-contracted casual labor. As shown in Table 6.1, land preparation and weeding/banking were the two main farm tasks from which the sample households earned agricultural wage income. The average daily income from agricultural wage labor was less than that from other off-farm activities. In addition, the demand for agricultural labor comes only during the peak agricultural season. Therefore, income smoothening throughout a year cannot be achieved by engaging only in agricultural wage labor. Moreover, the demand for agricultural wage labor can decrease markedly due to unfavorable weather and a resultant crop failure. As a result, the contribution of agricultural wage income to overall household income accounted for only 5 percent among the sample households.

Nonagricultural wage income can be either on a casual or regular basis. Typical nonagricultural wage income is daily wages from unskilled physical labor, such as construction work. Regular wage income can be earned from either skilled employment such as a school teacher or unskilled work such as a night watchman. As Table 6.1 shows, the number of sample cases engaged in nonagricultural wage income was far less than that in agricultural wage labor. Moreover, only 13 percent of the sample households earned nonagricultural wage income while 44 percent earned agricultural wage income. These figures indicate that the income opportunity in the nonagricultural wage labor sector is limited. On the other hand, the daily wage earned in the nonagricultural sector tends to be higher than that from agricultural wage la-

TABLE 6.2 Average Annual Income of Nonagricultural Self-employment by Type of Activities (six-village totals)

Type	No. of Cases	Average Annual Income from the Activity
Trading	37	15,302
Fish trading	9	23,047
Wood/glass selling	9	3,189
Tobacco trading	6	24,255
Shopkeeping	2	24,834
Maize trading	1	2,000
Kerosene trading	1	169
Other trading	9	11,583
Manufacturing	46	16,155
Brewing/selling local beer	29	19,711
Pot making	11	3,453
Cooked-food selling	2	40,700
Bucket/pail making	1	2,278
Basket making	1	3,645
Shoe repairing	1	2,335
Dress making	1	4,000
Construction	32	5,501
Carpentry	12	8,273
Brick making	8	4,004
Stone cutting	5	6,600
Digging toilets/wells	4	1,393
Plastering	2	2,575
Making cattle enclosures	1	1,000
Other	6	5,272
Hunting/fishing	2	1,894
Prescribing traditional medicines	2	10,089
Assisting chief on land allocations	1	2,392
Choir member	1	1,200

Note: Total number of cases may not be the same as the number of household engaged, because household members may engage in different activities on different occasions. Figures for Kachamba and Belo were converted to 2004/05 prices using rural CPI. Exchange rates in 2005 were between 115 and 121 Malawi kwacha (MK) per US dollar.

bor. Also the total nonagricultural wage income becomes much higher if one is employed on a regular basis. As a result, despite the small number of cases, the contribution of nonagricultural wage income to household income (15 percent) was much higher than that of agricultural wage income in the sample households.

Nonfarm self-employment income accounted for the largest share (34 percent) of total household income. Table 6.2 shows the average annual income from nonfarm self-employment by type of activities. It is noteworthy that in the study villages, a total of 121 cases of nonfarm self-employment was

TABLE 6.3 Income Portfolios of Tobacco-growing and Non-tobacco-growing Households

	HH Income per AEU (MK)	Total HH Income	Own-farm Income				Total Own-farm Income
			Tobacco	Maize	Other Crops	Live- stock	
Tobacco- growing (<i>n</i> = 116)	9,449	100%	17%	10%	9%	8%	44%
Non-tobacco- growing (<i>n</i> = 70)	6,494	100%	0%	9%	10%	0%	19%
Total (<i>n</i> = 186)	8,316	100%	13%	10%	9%	5%	37%

	Off-farm Income				Total Off-farm Income	Avg Farm Size per Household (ha)
	Agr. Wage Labor	Nonagr. Wage Labor	Nonfarm Self- employment	Other		
Tobacco- growing (<i>n</i> = 116)	3%	15%	31%	7%	56%	1.201
Non-tobacco- growing (<i>n</i> = 70)	10%	12%	40%	18%	81%	0.741
Total (<i>n</i> = 186)	5%	15%	34%	10%	63%	1.028

found, and more than half (53 percent) of the sample households engaged in such activities. Although types of activities varied markedly, almost all of them were small-scale businesses that required little startup or working capital (the only exception being shopkeeping). The most popular nonfarm self-employment was the brewing and selling of local beer which was mostly done by women. Relatively profitable activities included shopkeeping, tobacco trading, fish trading, cooked-food selling, and the brewing and selling of local beer. Most of these were petit trades, but the year-round engagement in the activities made a high income possible. An exception was tobacco trading from which one could earn a high income (on average MK 24,255 per year) despite it being limited to the harvest season. Given the fact that the average household income from tobacco production among the sample households was about MK 5,000, tobacco trading was much more profitable than tobacco production.

Other income includes income from land rent, the provision of free agricultural inputs by the government (the Starter Pack), food aid, and gifts and remittances from family member residing outside the village. Of these, the Starter Pack and gifts and remittances from family members accounted for

three-quarters. The contribution of other incomes to the total household income was 10 percent.

The availability of nonfarm income opportunities was greatly affected by the location of the villages. For example, the proximity to towns of Bongololo and Mbila increased the opportunities for employment on both a regular basis, such as a night watchman, and for nonfarm self-employment such as beer selling and brick making. Horo's proximity to a weekly market and to Mozambique, together with the existence of informal tobacco-marketing activities in the area, enabled villagers to engage in highly profitable tobacco trading. In other villages however, nonfarm income opportunities were much less. In Kachamba, for example, no household engaged in nonfarm wage employment. Thus, access to and levels of nonagricultural income varied markedly depending on village location.

The importance of off-farm income was far greater among the non-tobacco-growing households than among the tobacco-growing households. As Table 6.3 shows, off-farm income among the non-tobacco-growing households accounted for 81 percent of total income. As discussed in the previous chapter, the non-tobacco-growing households had less land, used less fertilizer, and produced less maize than the tobacco-growing households. The livelihoods of non-tobacco-growing households cannot be sustained without the income from the off-farm sector.

6.1.2 Income Sources

Table 6.4 presents the average household income per adult equivalent unit (AEU) in the surveyed villages by income source and village. Several points stand out in the table. First, the share of own-farm income (37 percent) was lower than that of off-farm income (63 percent). This proportion contrasts with another earlier study that reported a "50:50 split between own-farm income and off-farm or nonfarm income" in Dedza District in the 2000/01 season (Ellis et al. 2003, p. 1504), and a similar split reported in the Blantyre Shire Highlands in 1990 (Orr and Mwale 2001, p. 1334). The low proportion of agricultural income found in this study may be explained partly by the crop failure in Horo and Mbila in 2004/05. In any case, de-agrarianization (Bryceson and Jamal 1997) and the increasing share of nonfarm income (Reardon 1997) that has been highlighted in some of the literature can also be found in rural Malawi.

Second, the proportion of own-farm and off-farm income varied greatly across study villages. In Horo and Mbila, households experienced negative

TABLE 6.4 Household Income per Adult Equivalent Unit by Source and Village (weighted

		Total HH Income per AEU (a) + (b)	Own-farm Income			
			Tobacco	Maize	Other crops	Livestock
Kachamba (n = 31)	Average Household Income per AEU (MK)	7,611	2,629	1,586	290	1,239
	Income Share	100%	35%	21%	4%	16%
Belo (n = 30)	Average Household Income per AEU (MK)	9,194	469	1,417	2,333	548
	Income Share	100%	5%	15%	25%	6%
Horo (n = 32)	Average Household Income per AEU (MK)	3,402	-257	-1,116	72	-33
	Income Share	100%	-8%	-33%	2%	-1%
Bongololo (n = 33)	Average Household Income per AEU (MK)	13,389	1,913	1,226	200	684
	Income Share	100%	14%	9%	1%	5%
Mulawa (n = 28)	Average Household Income per AEU (MK)	8,998	2,576	1,280	1,201	900
	Income Share	100%	29%	14%	13%	10%
Mbila (n = 32)	Average Household Income per AEU (MK)	5,920	-566	353	551	-374
	Income Share	100%	-10%	6%	9%	-6%
Total (n = 186)	Average Household Income per AEU (MK)	8,208	1,027	784	779	447
	Income Share	100%	13%	10%	9%	5%

Notes: 1. Figures for Kachamba and Belo were converted to 2004/05 prices using the rural
 2. Exchange rate in 2005 fluctuated between 115 and 121 Malawi kwacha (MK) per
 3. Adult Equivalent Unit (AEU) : male 15 years or older = 1; female 15 years or older
 4. Own-farm income refers to gross revenue from products minus inputs purchased for
 5. Hired labor is treated as a purchased input, but family labor is not costed in the
 6. Subsistence consumption of crops and livestock products is valued at the average

own-farm income due to the crop failure caused by the erratic rain during the 2004/05 season. On the other hand, in Kachamba and Belo, where the survey was conducted during the normal year of 2003/04, more than half of household income was derived from own-farm production. Similarly, households in Mulawa enjoyed high income from own-farm production despite the unfavorable weather in 2004/05. The high proportion of income from own-farm production in Mulawa (66 percent) can be explained by two factors. The first is the relative remoteness of the village from any town and thus the limited opportunities for nonfarm economic activities. The second is the widely practiced cultivation of *dimba* which generated additional income for households. In contrast, households in Bongololo earned 70 percent of their income from off-farm economic activities. This can be attributed to the availability of

average)

Total Own-farm Income (a)	Off-farm Income				Total Off-farm Income (b)
	Agricultural Wage Income	Nonagr. Wage Income	Nonfarm Self-Employment	Other	
5,744	793	0	949	125	1,866
75%	10%	0%	12%	2%	25%
4,767	875	1,649	1,702	200	4,426
52%	10%	18%	19%	2%	48%
-1,334	257	40	3,651	787	4,736
-39%	8%	1%	107%	23%	139%
4,022	157	1,973	6,709	528	9,367
30%	1%	15%	50%	4%	70%
5,956	145	64	1,196	1,638	3,042
66%	2%	1%	13%	18%	34%
-36	405	2,609	1,629	1,314	5,956
-1%	7%	44%	28%	22%	101%
3,037	419	0	2,760	799	5,170
37%	5%	15%	34%	10%	63%

CPI.

US dollar.

= 0.8; male or female 14 years or under = 0.5.

production.

calculation.

farm gate prices of each village.

a wide variety of income-earning opportunities because of the village's proximity to a town. Thus, the income composition of rural households can vary considerably from village to village depending on many factors such as weather conditions, proximity to a town, the availability of off-farm income sources, and the types of economic activities engaged in by household members. An oversimplification of household income portfolios conceals these important differences and the variations in rural livelihoods in Malawi.

Third, off-farm income appears to be particularly important in the context of uncertainty and high risks associated with agricultural production in Malawi. Since the 1990s, Malawi has suffered repeated seasons of crop failure: in 1991/92, 1993/94, 1996/97, 2000/01, and 2004/05. Therefore, it is highly likely that rural households can face a sharp drop of own-farm income, such

as that experienced by the households in Horo and Mbila. Under such conditions, households whose incomes rely solely on own-farm production become more vulnerable to the risk of food insecurity. Engaging in off-farm economic activities can reduce household vulnerability by securing other sources of income when own-farm production fails. In fact, although households in Horo and Mbila experienced negative own-farm income, they avoided negative total household income because their off-farm income compensated for the negative own-farm income. Thus, securing off-farm income sources constitutes an important livelihood strategy both as an ex-ante risk management strategy and as an ex-post coping strategy.

However, access to off-farm income is not open to every household. Moreover, the level of off-farm income may be far from enough to compensate for a drop in own-farm income. The most accessible off-farm activity for rural households is agricultural wage labor, but the wage level is low, job opportunities are restricted to the farming period, and the demand for labor is prone to covariate risk of crop failure. Some nonfarm self-employment offers relatively high income, but the opportunities are less open to households residing in remote villages. Full-time nonfarm employment (e.g., night watchman or low-ranking civil servant) is only available to those residing near towns, or those with higher education (such as teachers). With the absence of overall development in the nonagricultural sector in the national economy and the limited opportunities for remunerative income in the nonfarm sector, the strategy of diversification into off-farm activities remains only partially successful at best for securing smallholder livelihoods.

6.1.3 Determinants of Income

To identify the determinants of income per AEU, the results of a regression analysis using OLS are shown in Table 6.5. Explanatory variables are the age and education of household heads, number of male and female household members 15 years old or over, total farm area, and value of productive assets. The following points can be observed from the results.

First, contrary to expectation, better education of household heads is not significantly associated with higher own-farm or off-farm income. The only exception to this is nonagricultural wage income in Bongololo where three teachers were included in the sample. The importance of education in reducing poverty is widely acknowledged in the literature (Matsumoto et al. 2006; Otsuka and Yamano 2006). However, in the context of rural Malawi where opportunities for high-return off-farm activities are limited and the risk of

TABLE 6.5 Determinants of Income per Adult Equivalent Unit: OLS AnalysisA. Kachamba ($n = 31$)

	Crop Income	Livestock Income	Agr. Wage Income	Nonagr. Wage Income	Nonfarm Self- employment Income	Other	Total HH Income
Age of hh head	49 (-0.796)	1.3 (-0.042)	-29 (-1.674)	-	-13 (-0.687)	58 (2.738)*	65 (0.861)
Years of education of hh head	174 (-0.477)	77 (-0.424)	-111 (-1.061)	-	113 (0.976)	141 (1.124)	395 (0.879)
No. of male hh members 15 years old or older	-3,014 (-1.268)	162 (-0.136)	358 (0.525)	-	289 (0.381)	-1,599 (-1.948)	-3804 (-1.297)
No. of female hh members 15 years old or older	-627 (-0.384)	28 (-0.034)	920 (1.965)	-	-408 (-0.785)	-428 (-0.760)	-515 (-0.256)
Farm size	6,210 (2.191)*	1,337 (-0.943)	-554 (-0.681)	-	-1,335 (-1.477)	-1,179 (-1.205)	4480 (1.281)
Value of productive assets (farm tools and livestock)	0.12 (-0.868)	0.08 (1.155)	-0.01 (-0.138)	-	0.05 (1.220)	0.06 (1.272)	0.3 (1.811)
Constant	-2,933 (-0.756)	-1,698 (-0.875)	1,715 (1.540)	-	2,150 (1.738)	-124 (-0.093)	-889 (-0.186)
Adjusted R squared	0.459	0.292	0.098	-	0.042	0.161	0.462

B. Belo ($n = 30$)

	Crop Income	Livestock Income	Agr. Wage Income	Nonagr. Wage Income	Nonfarm Self- employment Income	Other	Total House- hold Income
Age of hh head	-115 (-1.143)	16 (0.740)	-6.97 (-0.318)	-84 (-0.830)	-7.11 (-0.161)	-47 (-1.733)	-243 (-1.829)
Years of education of hh head	-468 (-1.513)	32 (0.495)	-8.92 (-0.132)	651 (2.101)*	-82 (-0.603)	-68 (-0.819)	57 (0.139)
No. of male hh members 15 years old or older	-1,195 (-0.538)	-242 (-0.516)	193 (0.400)	1,633 (0.734)	-1,604 (-1.640)	-981 (-1.652)	-2,196 (-0.747)
No. of female hh members 15 years old or older	-1,690 (-0.483)	-962 (-1.298)	134 (0.176)	-4,943 (-1.409)	-168 (-0.109)	361 (0.385)	-7,269 (-1.569)
Farm size	5,565 (3.461)**	-241 (-0.709)	-306 (-0.872)	-1,600 (-0.992)	-1,376 (-1.943)	91 (0.211)	2,132 (1.001)
Value of productive assets (farm tools and livestock)	-0.62 (-3.005)**	0.17 (3.850)**	0.02 (0.384)	0.55 (2.666)*	0.26 (2.886)**	-0.02 (-0.449)	0.35 (1.297)
Constant	8,435 (1.463)	143 (0.117)	775 (0.617)	4,711 (0.815)	4,792 (1.887)	3,335 (2.162)*	22,191 (2.908)**
Adjusted R squared	0.384	0.531	-0.179	0.485	0.294	0.083	0.333

C. Horo ($n = 32$)

	Crop Income	Livestock Income	Agr. Wage Income	Nonagr. Wage Income	Nonfarm Self- employment Income	Other	Total House- hold Income
Age of hh head	33 (0.998)	-7.17 (-1.504)	-3.83 (-0.800)	-0.46 (-0.087)	-93 (-1.390)	-16 (-0.493)	-87 (-1.673)
Years of education of hh head	86 (0.675)	15 (0.804)	-26 (-1.434)	-24 (-1.228)	-321 (-1.269)	66 (0.530)	-206 (-1.044)
No. of male hh members 15 years old or older	1,397 (1.563)	125 (0.979)	-7.96 (-0.062)	-77 (-0.555)	-236 (-0.132)	-1,118 (-1.286)	83 (0.060)
No. of female hh members 15 years old or older	-231 (-0.209)	79 (0.497)	82 (0.518)	-37 (-0.212)	-936 (-0.424)	-177 (-0.164)	-1,220 (-0.709)
Farm size	-4,576 (-3.377)**	138 (0.714)	-203 (-1.047)	-96 (-0.451)	10,157 (3.758)**	157 (0.119)	5,577 (2.651)*
Value of productive assets (farm tools and livestock)	-0.04 (-1.159)	-0.01 (-0.977)	-0.01 (-1.208)	0.01 (-0.692)	0.02 (0.230)	0.01 (0.398)	-0.03 (-0.472)
Constant	-485 (-0.264)	-44 (-0.169)	573 (2.177)*	381 (1.328)	3,137 (0.855)	2,424 (1.354)	5,986 (2.096)*
Adjusted R squared	0.242	-0.005	-0.014	-0.122	0.336	-0.074	(0.199)

D. Bongololo ($n = 33$)

	Crop Income	Livestock Income	Agr. Wage Income	Nonagr. Wage Income	Nonfarm Self- employment Income	Other	Total House- hold Income
Age of hh head	-66 (-0.801)	-9 (-0.278)	0.32 (0.031)	-40 (-0.589)	75 (0.321)	12 (0.935)	-28 (-0.130)
Years of education of hh head	-677 (-1.637)	-137 (-0.826)	-58 (-1.134)	139 (0.413)	1,510 (1.300)	-91 (-1.421)	684 (0.629)
No. of male hh members 15 years old or older	51 (0.032)	585 (0.924)	-235 (-1.197)	-869 (-0.677)	-1,671 (-0.378)	-265 (-1.082)	-2,403 (-0.581)
No. of female hh members 15 years old or older	661 (0.406)	108 (0.166)	-89 (-0.438)	194 (0.146)	-2,308 (-0.505)	-25 (-0.098)	-1,459 (-0.341)
Farm size	-5,191 (-1.504)	-2,070 (-1.491)	622 (1.445)	2,158 (0.767)	-10,039 (-1.036)	359 (0.670)	-14,161 (-1.560)
Value of productive assets (farm tools and livestock)	0.05 (1.842)	0.03 (2.742)*	0.01 (-1.245)	0.01 (-0.244)	-0.03 (-0.474)	0.01 (-0.146)	0.03 (0.470)
Constant	12,844 (2.330)*	1,861 (0.840)	735 (1.070)	1,305 (0.291)	7,546 (0.488)	839 (0.979)	25,130 (1.733)
Adjusted R squared	0.001	0.072	0.001	-0.128	0.073	0.069	0.111

E. Mulawa ($n = 28$)

	Crop Income	Livestock Income	Agr. Wage Income	Nonagr. Wage Income	Nonfarm Self- employment Income	Other	Total House- hold Income
Age of hh head	56 (0.713)	-19 (-0.737)	-3 (-0.335)	-1.88 (-0.496)	-34 (-0.896)	17 (0.409)	15 (0.144)
Years of education of hh head	694 (1.518)	111 (0.721)	17 (0.378)	-7.58 (-0.341)	17 (0.074)	166 (0.688)	997 (1.671)
No. of male hh members 15 years old or older	-1,745 (-1.665)	-57 (-0.162)	-25 (-0.244)	16 (0.319)	-57 (-0.111)	-1,012 (-1.827)	-2,878 (-2.107)*
No. of female hh members 15 years old or older	1,406 (0.876)	438 (0.814)	-36 (-0.236)	-23 (-0.292)	-135 (-0.172)	-765 (-0.902)	884 (0.422)
Farm size	2,161 (1.837)	-78 (-0.199)	-122 (-1.081)	0.11 (0.002)	-157 (-0.274)	-579 (-0.932)	1,224 (0.798)
Value of productive assets (farm tools and livestock)	-0.01 (-0.329)	0.03 (4.592)**	0.01 (-0.560)	0.01 (-0.357)	0.01 (1.417)	0.01 (-0.748)	0.03 (1.101)
Constant	-4,332 (-0.726)	-120 (-0.060)	426 (0.744)	202 (0.698)	2,825 (0.970)	3,372 (1.069)	2,373 (0.305)
Adjusted R squared	0.078	0.413	-0.102	-0.247	-0.091	0.134	0.160

F. Mbila ($n = 32$)

	Crop Income	Livestock Income	Agr. Wage Income	Nonagr. Wage Income	Nonfarm Self- employment Income	Other	Total House- hold Income
Age of hh head	-55 (-1.237)	10 (0.446)	-7.31 (-0.937)	82 (1.216)	17 (0.556)	79 (1.130)	126 (1.106)
Years of education of hh head	-291 (-1.713)	-83 (-0.991)	17 (0.564)	346 (1.350)	128 (1.068)	119 (0.446)	235 (0.543)
No. of male hh members 15 years old or older	-340 (-0.465)	-311 (-0.861)	60 (0.471)	1,725 (1.561)	-155 (-0.301)	-3,018 (-2.622)*	-2,040 (-1.092)
No. of female hh members 15 years old or older	753 (0.512)	-1,921 (-2.648)*	157 (0.612)	-825 (-0.372)	-85 (-0.082)	1,929 (0.834)	8.24 (0.002)
Farm size	1,090 (1.104)	999 (2.049)	-126 (-0.732)	-560 (-0.376)	-688 (-0.990)	6,614 (4.258)**	7,329 (2.907)**
Value of productive assets (farm tools and livestock)	-0.01 (-0.766)	-0.01 (-1.003)	0.01 (-0.171)	0.00 (0.049)	0.01 (-0.128)	-0.05 (-1.753)	-0.07 (-1.593)
Constant	2,933 (1.232)	1,819 (1.548)	399 (0.959)	-4,075 (-1.134)	1,148 (0.685)	-5,467 (-1.460)	-3,243 (-0.534)
Adjusted R squared	-0.012	0.172	-1.107	0.051	-0.120	0.421	0.174

Note: t -statistics are in parentheses.

* indicates 5% significance level; ** indicates 1% significance level.

crop failure is high, better education alone does not guarantee higher off-farm or own-farm income.

Second, the effects of farm size on crop income are not always positive. In Kachamba and Belo where the households experienced normal rain in the 2003/04 crop season, larger farm size was positively and significantly associated with better crop income. In contrast, among the four villages where the erratic rain during the 2004/05 season adversely affected agricultural production, the effects of farm size on crop income were negative in Horo and Bongololo. This means that the households with larger farms received less crop income than those with smaller farms. This seemingly paradoxical result stemmed from the fact that the households with larger farms spent more on expensive inputs such as fertilizer and hired labor than the households with smaller farms, resulting in a larger deficit when crops failed.

In Horo larger farm size is positively associated with higher nonfarm self-employment income. This is because many households with larger farms engaged in both the production and trade of tobacco. Having the advantage of market access to auction floors through tobacco clubs, they were able to earn a high income by purchasing tobacco and reselling it to the auction under their own names. The high income from tobacco trading seems to have been enough to compensate for the low (often negative) income from crop production, as larger farm size is positively associated with higher household income despite the effect of farm size on crop income being negative.

6.2 Income Disparities

This section examines the income disparities within each study village. Table 6.6 presents the Gini coefficient estimates of farm size and household income per AEU in the six villages. The Gini estimates of farm size vary within a narrow range of 0.29 to 0.39 across the villages, while those of household income per AEU vary widely from 0.40 in Mulawa to 0.80 in Horo. Two reasons may explain the higher Gini estimates of household income per AEU than those of farm size. One is that differences in farm productivity contributed to the variation in household income per AEU. Another is that the different levels of off-farm income are the major source of income variation. Both of these will be discussed later.

To examine the variability of household income within the villages from a different perspective, Table 6.7 presents the levels of household income by ranking all sample households in each study village according to income per AEU and dividing them into four equal groups.¹ The table clearly shows the

TABLE 6.6 Gini Coefficients of Farm Size and Household Income per Adult Equivalent Unit

	Kachamba (<i>n</i> = 31)	Belo (<i>n</i> = 30)	Horo (<i>n</i> = 32)	Bongololo (<i>n</i> = 33)	Mulawa (<i>n</i> = 28)	Mbila (<i>n</i> = 32)
Gini coefficient of farm size	0.34	0.36	0.38	0.29	0.39	0.32
Gini coefficient of household income per AEU	0.65	0.49	0.80	0.52	0.40	0.65

wide disparities between the mean per AEU income of the top quartile and that of the bottom quartile in each study village.

An examination of the sources of income in each quartile in each village highlights some factors contributing to the income disparities. In Kachamba the variability of household income originated mainly from the level of own-farm income. The households in the top quartile derived 95 percent of their household income from own-farm income, and their own-farm income was far greater than that in the other quartiles. In addition, they had larger farms and achieved better land productivity (measured by own-farm income per hectare) than the households in the other quartiles (Table 6.8). In contrast, households in the bottom quartile experienced negative own-farm income and earned insufficient off-farm income to compensate. Due to the limited opportunities of off-farm income in the village, the contribution of off-farm income to total income was the lowest (25 percent) among the study villages. Under these circumstances, household income levels were largely determined by farm size and land productivity.

In Belo households in the top quartile achieved higher income from both own-farm and off-farm sources. Unlike Kachamba, however, the average farm size and land productivity of the top quartile was not the highest among the quartiles, and off-farm income appears to be more important than own-farm income in determining the level of total household income. Households in the top quartile derived 68 percent of their income from off-farm sources. The level of off-farm income in the top quartile, particularly that of nonagricultural wage income, was far greater than that in the other quartiles. This was because the three households who received regular income from teaching jobs at a primary school were included. Therefore, employment in regular salaried work, a rare opportunity in the study villages, determined the income level of the top quartile in Belo.

In the drought-hit village of Horo, income from own-farm production hardly contributed to household income. Own-farm income of the households in each quartile was either negative or very little. As a result, the variation in total household income among the households was largely determined by the level of off-farm income. With the absence of regular salaried jobs in the

TABLE 6.7 Income Portfolios by Income Quartile (household income per adult equivalent unit)

A. Six-village Totals

Income Quartile		Total Household Income per AEU (a) + (b)	Own-farm Income			
			Tobacco	Maize	Other Crops	Livestock
Quartile 1 MK (n = 45)	Share	20,851 100%	3,341 16%	783 4%	1,729 8%	1,631 8%
Quartile 2 MK (n = 46)	Share	8,561 100%	943 11%	1,158 14%	979 11%	402 5%
Quartile 3 MK (n = 47)	Share	4,228 100%	793 19%	893 21%	288 7%	301 7%
Quartile 4 MK (n = 48)	Share	331 100%	-248 -75%	124 37%	107 32%	-150 -45%
Total (n = 186)	MK Share	8,316 100%	1,082 13%	796 10%	786 9%	472 6%

B. Kachamba

Income Quartile		Total Household Income per AEU (a) + (b)	Own-farm Income			
			Tobacco	Maize	Other Crops	Livestock
Quartile 1 MK (n = 7)	Share	21,064 100%	11,136 53%	3,304 16%	835 4%	4,777 23%
Quartile 2 MK (n = 8)	Share	8,690 100%	1,453 17%	1,326 15%	237 3%	-8 0%
Quartile 3 MK (n = 8)	Share	4,263 100%	424 10%	2,192 51%	273 6%	188 4%
Quartile 4 MK (n = 8)	Share	-1,891 -100%	-2,595 -137%	-59 -3%	-131 -7%	-110 -6%
Total (n = 31)	MK Share	7,611 100%	2,633 35%	1,577 21%	291 4%	1,241 16%

Total Own-farm Income (a)	Off-farm Income				Total Off-farm Income (b)	Farm Size (ha/household)
	Agric. Wage	Nonagric. Wage	Nonfarm Self-employment	Other		
7,484 36%	178 1%	3,442 17%	7,959 38%	1,788 9%	13,368 64%	1.351
3,481 41%	855 10%	1,319 15%	2,252 26%	654 8%	5,079 59%	0.989
2,275 54%	271 6%	306 7%	911 22%	465 11%	1,953 46%	0.793
-167 -50%	128 39%	17 5%	198 60%	155 47%	498 150%	0.992
3,136 38%	407 5%	1,217 15%	2,761 33%	795 10%	5,180 62%	1.028

Total Own-farm Income (a)	Off-farm Income				Total Off-farm Income (b)	Farm Size (ha/household)
	Agric. Wage	Nonagric. Wage	Nonfarm Self-employment	Other		
20,053 95%	397 2%	0 0%	569 3%	45 0%	1,011 5%	1.948
3,008 35%	2,683 31%	0 0%	2,421 28%	578 7%	5,682 65%	0.708
3,076 72%	468 11%	0 0%	719 17%	0 0%	1,186 28%	0.801
-2,895 -153%	271 14%	0 0%	732 39%	0 0%	1,003 53%	0.586
5,742 75%	794 10%	0 0%	950 12%	125 2%	1,869 25%	0.98

TABLE 6.7 (Continued)

C. Belo

Income Quartile		Total Household Income per AEU (a) + (b)	Own-farm Income			
			Tobacco	Maize	Other Crops	Livestock
Quartile 1	MK	26,300	-3,350	1,463	8,437	1,784
(n = 7)	Share	100%	-13%	6%	32%	7%
Quartile 2	MK	10,927	700	1,858	2,733	997
(n = 7)	Share	100%	6%	17%	25%	9%
Quartile 3	MK	5,607	2,819	699	566	153
(n = 8)	Share	100%	50%	12%	10%	3%
Quartile 4	MK	1,908	0	897	746	-133
(n = 8)	Share	100%	0%	47%	39%	-7%
Total	MK	10,690	657	1,387	2,779	648
(n = 30)	Share	100%	6%	13%	26%	6%

D. Horo

Income Quartile		Total Household Income per AEU (a) + (b)	Own-farm Income			
			Tobacco	Maize	Other Crops	Livestock
Quartile 1	MK	9,721	-1,027	-2,529	165	27
(n = 8)	Share	100%	-11%	-26%	2%	0%
Quartile 2	MK	2,401	527	-11	85	-106
(n = 8)	Share	100%	22%	0%	4%	-4%
Quartile 3	MK	745	5	-206	-116	73
(n = 8)	Share	100%	1%	-28%	-16%	10%
Quartile 4	MK	-966	-292	-1,710	32	-165
(n = 8)	Share	-100%	-30%	-177%	3%	-17%
Total	MK	2,975	-183	-994	35	-29
(n = 32)	Share	100%	-6%	-33%	1%	-1%

Total Own-farm Income (a)	Off-farm Income				Total Off-farm Income (b)	Farm Size (ha/household)
	Agric. Wage	Nonagric. Wage	Nonfarm Self-employment	Other		
8,334 32%	135 1%	13,451 51%	3,726 14%	655 2%	17,966 68%	1.927
6,288 58%	1,463 13%	0 0%	2,990 27%	187 2%	4,639 42%	2.591
4,237 76%	190 3%	0 0%	1,180 21%	0 0%	1,371 24%	1.273
1,510 79%	293 15%	0 0%	105 6%	0 0%	398 21%	1.381
5,470 51%	663 6%	2,307 22%	2,076 19%	174 2%	5,220 49%	1.762

Total Own-farm Income (a)	Off-farm Income				Total Off-farm Income (b)	Farm Size (ha/household)
	Agric. Wage	Nonagric. Wage	Nonfarm Self-employment	Other		
-3,364 -35%	129 1%	115 1%	11,216 115%	1,625 17%	13,086 135%	0.912
496 21%	426 18%	0 0%	823 34%	656 27%	1,905 79%	0.492
-244 -33%	257 35%	0 0%	97 13%	634 85%	989 133%	0.376
-2,134 -221%	126 13%	0 0%	470 49%	572 59%	1,168 121%	0.541
-1,171 -39%	221 7%	28 1%	3,053 103%	824 28%	4,126 139%	0.58

TABLE 6.7 (Continued)

E. Bongololo

Income Quartile		Total Household Income per AEU (a) + (b)	Own-farm Income			
			Tobacco	Maize	Other Crops	Livestock
Quartile 1	MK	33,952	5,327	-22	161	332
(n = 8)	Share	100%	16%	0%	0%	1%
Quartile 2	MK	14,313	43	1,274	713	984
(n = 8)	Share	100%	0%	9%	5%	7%
Quartile 3	MK	7,132	2,387	2,106	33	1,011
(n = 8)	Share	100%	33%	30%	0%	14%
Quartile 4	MK	1,669	-908	589	50	28
(n = 9)	Share	100%	-54%	35%	3%	2%
Total	MK	13,885	1,679	1,093	235	621
(n = 33)	Share	100%	12%	8%	2%	4%

F. Mulawa

Income Quartile		Total Household Income per AEU (a) + (b)	Own-farm Income			
			Tobacco	Maize	Other Crops	Livestock
Quartile 1	MK	18,214	5,519	1,024	2,673	2,954
(n = 7)	Share	100%	30%	6%	15%	16%
Quartile 2	MK	9,828	4,060	2,036	1,291	-35
(n = 7)	Share	100%	41%	21%	13%	0%
Quartile 3	MK	5,370	119	920	619	414
(n = 7)	Share	100%	2%	17%	12%	8%
Quartile 4	MK	2,203	409	702	274	252
(n = 7)	Share	100%	19%	32%	12%	11%
Total	MK	8,904	2,478	1,254	1,209	900
(n = 28)	Share	100%	28%	14%	14%	10%

Total Own-farm Income (a)	Off-farm Income				Total Off-farm Income (b)	Farm Size (ha/household)
	Agric. Wage	Nonagric. Wage	Nonfarm Self-employment	Other		
5,799 17%	49 0%	531 2%	27,370 81%	204 1%	28,153 83%	0.558
3,015 21%	339 2%	6,989 49%	3,254 23%	716 5%	11,299 79%	0.834
5,537 78%	127 2%	56 1%	926 13%	487 7%	1,596 22%	0.749
-240 -14%	402 24%	43 3%	632 38%	832 50%	1,909 114%	1.024
3,628 26%	246 2%	1,853 13%	7,554 54%	603 4%	10,256 74%	0.798

Total Own-farm Income (a)	Off-farm Income				Total Off-farm Income (b)	Farm Size (ha/household)
	Agric. Wage	Nonagric. Wage	Nonfarm Self-employment	Other		
12,170 67%	0 0%	0 0%	3,167 17%	2,877 16%	6,044 33%	1.607
7,353 75%	80 1%	0 0%	943 10%	1,452 15%	2,475 25%	0.784
2,072 39%	491 9%	260 5%	684 13%	1,863 35%	3,299 61%	0.756
1,638 74%	24 1%	0 0%	144 7%	397 18%	566 26%	1.570
5,840 66%	149 2%	63 1%	1,202 14%	1,650 19%	3,064 34%	1.179

TABLE 6.7 (Continued)

G. Mbila

Income Quartile		Total Household Income per AEU (a) + (b)	Own-farm Income			
			Tobacco	Maize	Other Crops	Livestock
Quartile 1	MK	16,233	-670	923	929	-7
(n = 8)	Share	100%	-4%	6%	6%	0%
Quartile 2	MK	5,661	-276	581	602	326
(n = 8)	Share	100%	-5%	10%	11%	6%
Quartile 3	MK	2,392	-995	-55	353	-35
(n = 8)	Share	100%	-42%	-2%	15%	-1%
Quartile 4	MK	-870	-470	-45	372	-2,553
(n = 8)	Share	-100%	-54%	-5%	43%	-293%
Total	MK	5,854	-606	341	541	-373
(n = 32)	Share	100%	-10%	6%	9%	-6%

Notes: 1. The table shows unweighted average. Figures for Kachamba and Belo were converted to
 2. Exchange rates in 2005 fluctuated between 115 and 121 Malawi kwacha (MK) per US dollar.
 3. Adult Equivalent Unit (AEU): male 15 years or older = 1; female 15 years or older = 0.8; male
 4. Own-farm income refers to gross revenue from products minus inputs purchased for produc-
 5. Hired labor is treated as a purchased input, but family labor is not costed in the calculation.
 6. Subsistence consumption of crops and livestock products is valued at average farm gate prices
 7. Income quartiles were obtained by ranking all sample households in each study village
 8. MK = Malawi Kwacha.

village, it was the households engaging in high-return nonfarm self-employment activities, such as tobacco trading and prescribing traditional medicines, that managed to achieve relatively high household income. The income levels of households without such income opportunities remained very low.²

The importance of off-farm income in determining total household income per AEU can also be seen in Bongololo. Households in the top quartile in the village had the smallest farm size, and their own-farm income was not high. In contrast, these households derived 81 percent of their income from nonfarm self-employment activities and earned much higher off-farm income than other households. At the same time, households in quartiles 3 and 4 earned similar low off-farm income. The major difference between quartile 3 and 4 was the level of own-farm income. The difference in own-farm income stemmed not from farm size (because farm size of quartile 4 was larger than that of quartile 3), but from the difference in land productivity (Table 6.8). Thus the key determinants of household income were engagement in high-return nonfarm self-employment for the top quartile, and land productivity for the lower quartiles.

In Mulawa households in the top quartile achieved their high income from

Total Own-farm Income (a)	Off-farm Income				Total Off-farm Income (b)	Farm Size (ha/household)
	Agric. Wage	Nonagric. Wage	Nonfarm Self-employment	Other		
1,175 7%	288 2%	8,842 54%	1,503 9%	4,425 27%	15,058 93%	1.336
1,233 22%	583 10%	420 7%	2,838 50%	587 10%	4,428 78%	0.700
-731 -31%	249 10%	1,182 49%	1,512 63%	180 8%	3,123 131%	0.800
-2,696 -310%	704 81%	217 25%	764 88%	142 16%	1,826 210%	0.920
-97 -2%	409 -7%	2,612 45%	1,645 28%	1,284 22%	5,951 102%	0.939

2004/05 prices using the rural CPI.

or female 14 years or under = 0.5.
tion.

of each village.

according to income per adult equivalent unit (AEU), and dividing them into four equal groups.

both own-farm production and off-farm activities. However, own-farm income was more important as it constituted 67 percent of total income. Farm size and land productivity appear to be the two major determinants of income level. Households in the top quartile enjoyed both large farm size and high land productivity. Households in quartile 2 achieved higher land productivity than those in the top quartile, but their farm size was less than half the size of the top quartile. This reduced the total own-farm income of quartile 2. In the bottom quartile, household farm size was as large as that in the top quartile, but own-farm income was the lowest among the quartiles due to low land productivity.

Income portfolios in Mbila show similar patterns to those in Horo. Due to the drought in 2004/05, the own-farm income of households in every quartile in Mbila was either negative or very low. As a result, household economic status was largely determined by the level of off-farm income. Unlike Horo, where households derived high income from nonfarm self-employment activities, the main income source for households in the top quartile in Mbila was nonagricultural wage employment. The top quartile included four households that earned relatively high income from regular salaried work such as

TABLE 6.8 Own-farm Income per Hectare by Income Quartile (MK/ha)

	Kachamba (n = 31)	Belo (n = 30)	Horo (n = 32)	Bongololo (n = 33)	Mulawa (n = 28)	Mbila (n = 32)	Total (n = 186)
Quartile 1 (richest)	33,760	7,847	-7,941	29,353	22,010	2,956	15,101
Quartile 2	9,312	8,467	2,050	10,786	27,429	6,114	10,355
Quartile 3	9,437	10,938	-1,503	26,596	8,165	-3,809	9,268
Quartile 4	-12,861	3,110	-6,445	-731	5,531	-7,102	-1,093

Note: MK = Malawi kwacha.

night watchman and low-ranking civil servant. The proximity of the village to the district capital enabled some households to engage in such work. Households in the other quartile also obtained some nonfarm income from low-return activities such as construction work and petit trading, but the income from these activities only partially improved overall income levels. Again, only a few households with highly remunerative nonfarm income were able to withstand the adverse effects of the drought.

6.3 Pattern of Livelihood Strategies

The previous section suggested that distinct livelihood strategies affected the levels of household income. This section identifies the distinct livelihood strategies pursued by smallholder households. These strategies are classified into four types according to the combination of economic activities, and each type is illustrated with specific examples. The primary objective of this section is to explore the sources of income disparities by comparing the types of strategies adopted and by examining the factors contributing to the higher income of some households and the constraints faced by other poorer households.

The first type of livelihood strategy in the study villages that achieved high income was concentration on own-farm production. Households adopting this strategy included those in the upper quartiles in Kachamba, Belo, and Mulawa. As discussed in the previous section, these households derived the majority of their income from their own farming, and the size of their farms was larger than that in the other quartiles. In addition, those in the upper quartile in Kachamba and Mulawa enjoyed high land productivity. In Mulawa income from *dimba* contributed greatly to the high income from own-farm production. By not taking the pathway of “de-agrarianization,” these households succeeded in advancing their economic status through own-farming with high productivity and large farm size. The following two cases illustrate this first type of livelihood strategy.

Cases of the first type of livelihood strategy: MK, 46 years old, and his wife in Kachamba managed 2.05 ha of farm plots which was twice as much as the average farm size of the village. They produced 633 kg of tobacco and 2 tons of maize from the farm. As their children were mature and had formed independent households, the 2 tons of maize was far more than the consumption requirement for the couple. Therefore they used about one-third of the maize harvest as in-kind payment for the task-contracted casual labor employed on their tobacco and maize farms. They also kept six heads of cattle and owned ox carts. They earned all their income from own-farm production, and the household's per AEU income of MK 37,668 was the highest in the village.

Thirty-nine-year-old UZ in Mulawa earned a total income of MK 30,694 per AEU, the highest in the village. He derived 87 percent of his income from own-farm production. In addition to his 1.8 ha of farm plots producing tobacco, maize, and groundnuts, he also produced vegetables for sale in his 0.3 ha *dimba* garden. He used 200 kg per hectare of fertilizer on his maize farm which was a much higher amount than the village average of 123 kg per hectare. He produced 3 tons of maize (which was again much higher than the village average of 1.3 tons) from which he sold 500 kg because the harvest was more than the amount required for his household consumption.

The second type of strategy that achieved high income levels was the combination of regular salaried job and own-farm production. This type included seven households in the top quartiles in Belo and Mbila whose household members were school teachers, night watchmen, and low-ranking civil servants. In these households, male heads earned regular salaries while other household members engaged in own-farm production. Because the households had regular income, they were able to purchase productivity-enhancing inputs such as fertilizer for own-farm production. When agricultural production failed due to unfavorable weather, the regular salaried income compensated for the lost own-farm income. Thus the household's regular salaried income contributed to improving its food security and reducing its vulnerability to shocks.

This type of livelihood strategy could only be adopted by a fortunate few. The share of households engaged in regular salaried work was only 6 percent (12 cases) of the total study sample, and other than three teachers in Belo, all of the households that adopted this strategy were found in the two villages (Bongololo and Mbila) that are in the proximity of towns. Thus this strategy was not open to the majority of rural households.

Case of the second type of livelihood strategy: NN in Mbila was a 65-year-old night watchman who worked at the government hospital in the district capital, Kasungu, 5 km from his village. He had a 0.87 ha farm on which he grew tobacco, maize, and groundnuts. Due to the erratic rain during the 2004/05 season, income from his maize and tobacco crop was negative, and his total own-farm income (including groundnut and livestock) was only MK 5,721. This low own-farm income was compensated by the regular salaried income from his work at the hospital which accounted for 91 percent of the total household income.

The third type of livelihood strategy was the combination of own-farm production and high-return nonfarm self-employment activities. This strategy was adopted by the households in the top quartiles in Horo and Bongololo. In these households, engagement in high-return nonfarm self-employment activities, such as tobacco trading in Horo and beer brewing in Bongololo, improved overall household income. The high-return income opportunities were made possible by the unique situation of each village. Horo's proximity to Mozambique and the existence of informal tobacco trading in the weekly local market enabled some households to engage in this profitable trading. Bongololo's proximity to a town created a year-round demand for local beer, making beer brewing a semi-regular income earning source.³ Again, these opportunities were village-specific and not readily duplicable in other rural areas.

Case of the third type of livelihood strategy: Twenty-five-year-old MC and his wife in Horo had 0.78 ha of farm plots. They grew maize, groundnuts, and sunflower, but suffered from negative own-farm income due to the drought in 2004/05. However, during the tobacco harvesting period in 2005, MC engaged in trading by purchasing tobacco from Mozambique using his bicycle (which could carry about 50 kg of tobacco) and reselling it at the local market twice a week. This trading enabled him to earn a net income of MK 33,000, placing his household in the top income quartile.

The three types of livelihood strategies discussed above contributed to increasing total household income. These strategies were adopted by a minority of households in the study villages who had enough assets (of land or education) or had access to high-return nonfarm activities. The majority of households who did not have such assets and access had no choice but to combine available, low-return income opportunities. This is the fourth strategy adopted by many rural Malawi households, which usually ended up giving the house-

hold a low total income. The poorer households in the study villages typically combined own-farm production, agricultural wage labor, and nonfarm self-employment. However, the land productivity of the households in the lower quartiles was much lower than that in the upper quartiles (Table 6.8), which resulted in a low (often negative) own-farm income (Table 6.7). To compensate for the low own-farm income, they engaged in low-return agricultural wage labor and nonfarm self-employment such as petit trading. However, the income from these activities only marginally increased total household income. The income-diversification strategy adopted by the poorer households did provide the means of survival, but did little to enable them to climb the ladder of upward mobility to improve their overall economic situation.

Case of the fourth type of livelihood strategy: KL, 30 years old, and his wife in Belo grew maize and chili pepper on their 1.2 ha of farm plots. They did not use fertilizer on their maize farm because of the lack of money, and the maize yield was only 250 kg. The net income from their chili farming was negative. As a result, their own-farm income per AEU was only MK 114. They worked as agricultural wage laborers five separate times during the period of this study, but the income was low, from 100 to MK 600 per time of work. KL also engaged in fish trading and his wife in brewing beer. In the six study villages, these activities were relatively profitable (Table 6.2). However, in KL's case, the remoteness of his village adversely affected the profitability of these activities because of the low demand for the product and the increased cost of transport. Consequently, their nonfarm self-employment activities did not contribute much to an increase in the household income. With a total per-AEU household income of MK 2,087, they were ranked 25th among the 30 sample households in the village.

Conclusion

This chapter examined the income portfolios of the sample households, the inter-household disparities of income levels, and the heterogeneity of household livelihood strategies. Two points stand out from the analyses. First, although all the sample households engaged in own-farming, the level of income from own-farm production remained lower than that from off-farm activities. Behind this lies the fact that, due to the high risk of crop failure caused by unfavorable weather, relying totally on own-farm income may result in increased household vulnerability. As a result, rather than investing capital and

labor solely on own-farm production, many households adopted a strategy of diversifying economic activities to maintain multiple income sources in order to make it through the lean season and to cope with crop failure. Similarly, even the better-off households with enough assets to enter into tobacco production did not adopt strategies of production maximization by concentrating resources on tobacco. Instead, they allocated some area to maize production to secure self-sufficiency of the staple food, and at the same time engaged in off-farm economic activities. Because of the high risk of crop failure and uncertainty in the price and marketing of produce, income-diversification strategies play an important role in reducing household vulnerability.

Second, income-diversification strategies do not always contribute to a substantial increase in household income. Although diversification was observed across all income strata, the number of households that achieved high income from income-diversification strategies was limited. This suggests that diversification *per se* may not be sufficient in improving household economic status. More important are the contents of diversification, such as whether the activities are high- or low-return, or whether the income is on a regular or ad-hoc basis. The availability of high-return economic activities on a regular basis can greatly increase the household income. However, chances of engagement in such high-return activities are subject to both household assets ownership, such as skills and education of household members, and wider regional and national factors such as rural road networks, accessibility to larger markets, and the overall development of the nonagricultural sector in the country. If these conditions are not substantially improved, the role of diversification in achieving increased household income in rural Malawi will remain limited.

Notes

- 1 In some villages the number of households in the top quartile is less than those in other quartiles due to variations in sample sizes.
- 2 This situation parallels the one reported by Reardon and Taylor (1996) in Burkina Faso where the poorer households had less opportunity to gain nonfarm income and thus were more severely affected by drought than their richer counterparts when crops failed.
- 3 Based on the data from Kenya, Rwanda, and Cote d'Ivoire, Barrett et al. (2005) found that wealthy households tended to select strategies that relied entirely on farming or that combined farming and skilled nonfarm work. The present study found that unskilled nonfarm self-employment can also produce high income as in the cases here described.