

CHANGE AND CONTINUITY IN A MALAWIAN VILLAGE: 2003/04 TO 2008/09

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ABSTRACT Using comparable household data collected in a Malawian village in 2003/04 and 2008/09, this paper assesses the effects of the Agricultural Input Subsidy Program on household food security and examines change and continuity in household livelihood situations. The subsidy program contributed to the increased use of fertilizer and improved maize yields and food security in both rich and poor households. These improvements, however, did not lead to changes in income portfolios or asset bases among the poor, and the disparities between rich and poor households also remained unchanged.

Key Words: Malawi; Food security; Livelihood; Subsidy; Maize.

INTRODUCTION

In this paper, we examine change and continuity in a Malawian village between 2003/04 and 2008/09. Using comparable household data and detailed qualitative information, we first assess the village-level effects of the newly introduced policy of distributing coupons for the purchase of fertilizer and improved maize seeds at subsidized prices under the Agricultural Input Subsidy Program. We then analyze the data on household farm production, income portfolios, and asset bases to explore the major differences between rich and poor households, and examine livelihood changes during the 5-year period.

The major contribution of this study to the literature is the realistic, on-the-ground depiction of the effects of policy change through a detailed village case study. Although some studies have focused on the macro-effects of the subsidy program (Chinsinga, 2006; SOAS et al., 2008; Denning et al., 2009; Dorward & Chirwa, forthcoming), the effects of the program on household-level food security are not fully understood. The present study examines changes in household-level food security in a Malawian village by analyzing data obtained before and after the introduction of the new policy.

This paper is organized as follows. The next section reviews the evolution of government policies in the maize sector and places the present situation in historical context. The section that follows examines the effects of the subsidy program on the study village. Detailed assessments of household livelihood situations in 2003/04 and 2008/09 are also provided. The final section draws conclusions from the findings.

HISTORICAL OVERVIEW OF POLICY CHANGES IN THE MAIZE SECTOR

Prior to Malawian independence, the colonial government of Nyasaland intervened in the marketing of maize through the establishment of the Maize Control Board in 1946. The government announced that, from 1947, all maize in excess of personal requirements should be sold to the Board at a fixed (low) price. The intention of this policy was to purchase surplus maize from relatively land-abundant central and northern Nyasaland and resell it to densely populated southern Nyasaland. Feeding the rural population of southern Nyasaland was important to the colonial government because most European settler estates engaging in the large-scale production of export crops were located in this region, and a sufficient food supply for a large number of African farm laborers was a prerequisite for the development of settler agriculture. Despite its intention, however, the Board was unable to purchase sufficient maize in the first 2 years of operation and did little to prevent the 1949 famine caused by insufficient rains (Ng'ong'ola, 1986; Vaughan, 1987). During the 1950s, the colonial government gradually withdrew from direct market intervention, and the Maize Control Board adopted a geographically selective strategy of purchasing maize. The Board ceased its purchasing operations in areas where surplus maize production was considered to be undesirable. In particular, it discouraged surplus maize production in areas with major European settler estates or with a high potential for export-crop production. Maize production by Africans in these areas was considered to deter the production of export crops (Vaughan, 1987). Thus, one important role assigned to the Maize Control Board was to protect European settler export agriculture by supplying enough food to Africans and, later, by discouraging surplus maize production by Africans to ensure a sufficient supply of labor to the large estates.

Political independence in 1964 did not change the Malawian government's discriminatory policies against smallholders. After independence, many expatriate-owned estates were purchased by loyal members of the ruling Malawi Congress Party (MCP) and by the Malawi Young Pioneers, the youth wing of the MCP. The post-independence government not only continued to support the production of large estates owned by politically connected Malawian elites, but also deterred the development of smallholder and subsistence livelihoods. For example, the Special Crops Act passed in 1972 forbade smallholder cultivation and production of burley tobacco, and the Agricultural Development and Marketing Corporation (ADMARC) held a monopoly on all farm inputs (including hybrid maize seeds and agrochemical fertilizers), as well as on the marketing of farm produce. In effect, such restrictions on enterprise forced a large proportion of the rural population to offer themselves as cheap labor for the estate sector (Kydd & Christiansen, 1982).

Following Malawi's adoption of structural adjustment programs in 1981, a series of policy reforms was implemented in the agricultural sector. These reforms included the deregulation of marketing activities, the reconstruction of input and output price regimes, and the restructuring of state marketing agencies (Chilowa, 1998). In the food-crop sector, ADMARC ceased to be the sole marketing agent for smallholder agricultural produce when licensed private traders were allowed

to enter the market in 1987. Although this liberalization merely formalized the previously existing informal activities of small-scale traders, it also allowed large-scale private companies to enter the market. By the mid-1990s, licensing was no longer required to handle smallholder-produced crops (Mvula et al., 2003).

The liberalization of produce marketing was followed by another deregulation of agricultural inputs in the 1990s. The marketing of hybrid maize seeds was liberalized in 1993 and the subsidy on them was removed in the following year. Similarly, private companies were allowed to market fertilizers after 1994, and the fertilizer subsidy was removed in 1995 (Smale & Phiri, 1998). In combination with the depreciation of the Malawi kwacha (MK) in the 1990s, these subsidy withdrawals resulted in sharp increases in seed and fertilizer prices that adversely affected smallholders' access to agricultural inputs. Credit institutions for smallholder maize production also changed. Until the early 1990s, most farmers received improved seeds and fertilizers on low-interest credit at a subsidized price from the government's Smallholder Agricultural Credit Administration (SACA). Farmers received the inputs through ADMARC and made payments in the same manner when they delivered their outputs. After the collapse of SACA credit institutions in 1994 due to a low rate of credit repayment, SACA was converted into the limited-liability Malawi Rural Finance Company (MRFC). The MRFC used market-determined interest rates and shifted its loan target to tobacco farmers. As a result, most smallholders found it difficult to obtain credit for maize production.

Against this background, the Malawian government launched the Starter Pack Program in 1998 (Levy, 2005; Harrigan, 2008). This program offered smallholder farmers free packages that contained sufficient legume and hybrid maize seeds and fertilizers to cultivate 0.1 ha. The goal of the program was to improve household food security and boost sales of maize over several years, pushing smallholder farmers over an economic threshold so that they could afford to purchase modern varieties of seeds and fertilizers (Levy, 2005; Peters, 2006). The program distributed 2.8 million packages annually in 1998 and 1999, but distribution was reduced to 1.5 million packages with the program's reconfiguration as the Targeted Input Program in 2000 and declined further to 0.9 million packages in 2001. After the famine of 2002 (Devereux & Tiba, 2007), the scale of free distribution was expanded again and the program continued until 2004. However, despite the Starter Pack and Targeted Input Programs, the national maize production level fluctuated widely throughout the 1990s and the first half of the 2000s, depending on annual weather conditions (Fig. 1), and Malawi experienced occasional food shortages.

The Malawian government ceased the free distribution of inputs in 2005 and introduced the large-scale Agricultural Input Subsidy Program. The program objective has been to achieve food self-sufficiency and increase income in poor households through increased food- and cash-crop production. A core element of the program has been the use of coupons to target more than half of the nation's smallholder households; these coupons may be redeemed for maize and tobacco fertilizers and improved varieties of maize seeds at subsidized prices. Under this program, a farmer with a coupon could purchase a bag of fertilizer (50 kg) at a price 64–91% below the market price. Approximately 54% of households in

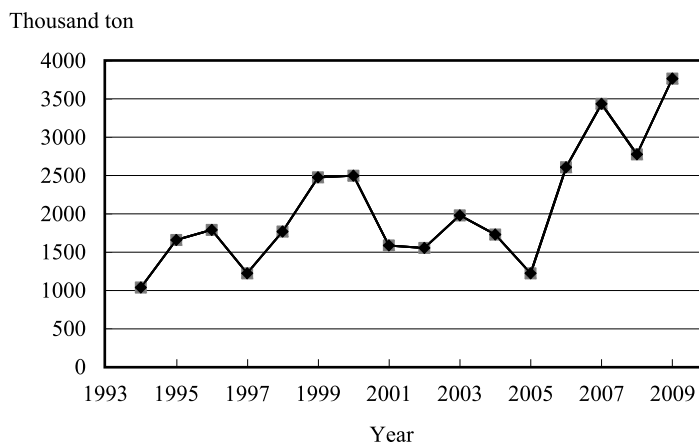


Fig. 1. Maize Production in Malawi, 1994–2009.
Source: FAOSTAT.

Malawi received one or more fertilizer coupons in the 2006/07 agricultural season, and this percentage increased to 65% (more than 1.5 million households) in the 2008/09 season. A total of 202,278 tons of fertilizer were sold under the program in the 2008/09 season, of which 182,309 tons were for maize production (Dorward & Chirwa, forthcoming). The implementation of the program coincided with favorable weather conditions, and national maize production increased for 4 consecutive years beginning in the 2005/06 season. However, several concerns have also been expressed, including the high cost⁽¹⁾ and long-term sustainability of the program, adverse effects on the private-sector fertilizer trade, resale of coupons by poor beneficiaries who could not afford to purchase fertilizers even at subsidized prices, and various fraudulent activities during implementation, such as coupon allocation to ineligible or ghost beneficiaries.

RURAL LIVELIHOODS IN 2003/04 AND 2008/09: A VILLAGE CASE STUDY

I. The Study Village

Fieldwork for this study was conducted in August 2004⁽²⁾ and August 2009 in Kachamba, a matrilineal Chewa village under the Traditional Authority (TA) Mavwere in the Mchinji District, Central Region (Fig. 2). Data were obtained from all households in the village for the 2003/04 and 2008/09 agricultural seasons⁽³⁾.

Kachamba is located about 6 km from the Lilongwe–Mchinji road and 82 km from Lilongwe, the national capital. A dirt road links the study village to the main road but is not serviced by regular transport. Although small-scale weekly markets take place along the main road, farmers must travel about 38 km by bicycle or hired car to Namitete to purchase fertilizers. The main crops cultivated in Kachamba during the study period were maize, groundnuts, and tobacco. Maize is a staple food and by far the most important crop; every household in Kachamba

cultivated it in the 2003/04 and 2008/09 agricultural seasons. The villagers also kept chickens and goats, and the wealthier households kept cattle. Ownership of cattle and of ox carts generated multiple advantages, such as income from ox-cart rental, production of good manure, income from cattle sales, and production cost reduction in input and produce transport.

The Kachamba area was first inhabited in 1953 by a group of Chewa matrilineal kin members who migrated from a village in the adjacent TA Mlonyeni. The group was led by a senior brother who had obtained vacant land in the area from a local chief, and who distributed this land among his kin. Most residents of Kachamba are descendants of the original settlers who inherited their land or obtained it as a gift. In the past, when land was abundant, villagers sought permission from the village headman to open farms in uncultivated areas. At the time of the survey, however, no extra land was available, and acquisition through gifting and inheritance was the most important means of obtaining access to land.

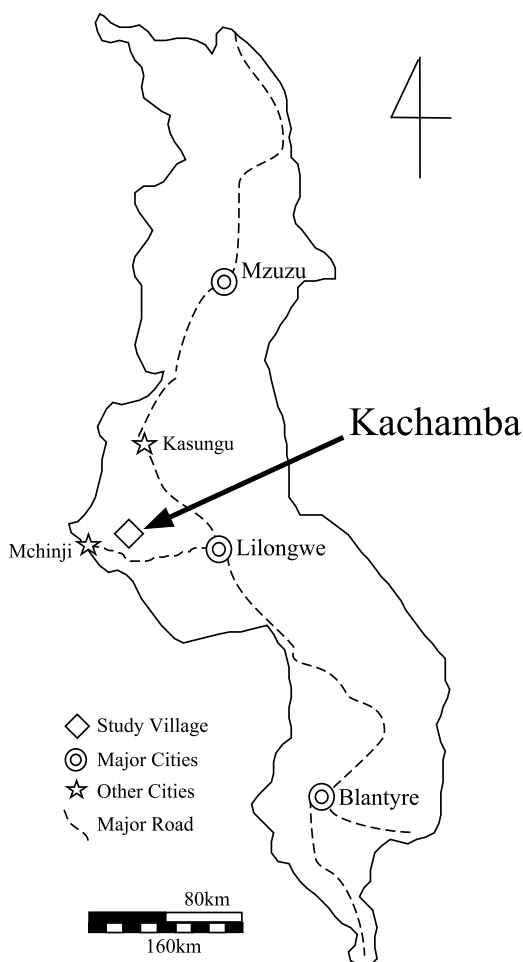


Fig. 2. Study Village.

The total number of households in Kachamba was 31 in 2004 and 28 in 2009. During the 5-year period, some households dissolved with the death or migration of household heads, and other households were newly established in the village. As a result, comparable data for the 2003/04 and 2008/09 agricultural seasons were obtained from only 23 households (five of which were female-headed). The following discussion focuses primarily on the change and continuity observed in the livelihoods of these 23 households.

II. Effects of the Agricultural Input Subsidy Program

In 2003/04, no household in Kachamba received a free input package distributed under the Targeted Input Program. In 2008/09, all households (including wealthier households) received at least one coupon⁽⁴⁾ for purchasing fertilizer at the subsidized price of MK 800⁽⁵⁾ under the Agricultural Input Subsidy Program. The difference between the subsidized and market prices per bag of fertilizer ranged from MK 7,200–9,200, reflecting fluctuation in fertilizer price due to the unstable market situation caused by increased oil prices in the world market in 2008. Given the average income of MK 37,677 per adult equivalent unit⁽⁶⁾ (AEU) among the 23 surveyed households, this difference was significant and especially affected poor households.

Not all of the coupons received by Kachamba villagers were used to purchase fertilizer. The survey identified at least two cases of resale by poorer households and one case of coupon purchase⁽⁷⁾. For example, a female-headed household whose income per AEU was ranked 21st among the 23 households received two coupons; the household members sold one coupon at MK 3,000 and used the other to purchase fertilizer. In this case, the Agricultural Input Subsidy Program provided the poor farmer with the choice of using the coupons to subsidize input or as an immediate direct cash transfer (SOAS et al., 2008). The effect of the direct income from coupon resale may have been significant because the income enabled the farmer (who would otherwise not have the necessary MK 800) to purchase subsidized fertilizer or to buy maize to supplement the diminishing household food stock⁽⁸⁾. On the other hand, a wealthier farmer in Kachamba (whose income per AEU was ranked 3rd) bought three coupons from others at MK 5,000 each and used them to purchase subsidized fertilizer. This suggests that the subsidy program provided wealthier farmers with opportunities to further reduce production costs through unofficial coupon purchases.

The purchase of fertilizer with coupons led either to the incremental use of fertilizer, in which a household increased the amount of fertilizer application, or to displacement, in which a household reduced nonsubsidized commercial input purchases (Doward & Chirwa, forthcoming). Comparing fertilizer use in 2003/04 and 2008/09 among the 18 households that used coupons to purchase subsidized fertilizer for maize production, 15 households (83%) practiced incremental use. The incremental users included relatively wealthy and poor households. Wealthier households purchased subsidized fertilizers in addition to unsubsidized fertilizers, whereas poor households (who purchased little or no fertilizer in 2003/04) purchased only subsidized fertilizers in 2008/09. The three displacement users each

Table 1. Farm and Income Data of Sample Households (n=23) in 2003/04 and 2008/09

	2003/04	2008/09
Average crop income (MK/ha)	19,878	31,751
Number of maize growers	23	23
Number of tobacco growers	19	18
Average area of maize farming (ha/household)	0.638	0.574
Average area of tobacco farming (ha/household, average of growers)	0.274	0.342
Average area of farming (total, ha/household)	1.053	1.027
Fertilizer application on maize farm (kg/ha)	75	161
Fertilizer application on tobacco farm (kg/ha)	330	390
Maize yield (kg/ha)	1,062	2,243
Maize production per household (kg)	677	1,287
Maize production per AEU (kg)	260	457

Note: Figures in 2003/04 were converted to 2008/09 prices using the rural CPI. Exchange rates at the time of survey in 2009 was 142 Malawi Kwacha (MK) per US dollar.

Adult Equivalent Unit (AEU): male 15 years or older=1; female 15 years or older= 0.8; male or female 14 years or under=0.5.

Source: Author's fieldwork in 2004 and 2009.

bought a single bag of fertilizer in 2003/04 and replaced it with subsidized fertilizer in 2008/09.

Incremental use of coupons by poor households to increase the amount of fertilizer application and to adopt improved varieties of maize seeds can improve household food security. One poor female-headed household in Kachamba, for example, used neither fertilizer nor improved seeds in 2003/04 and harvested only 250 kg of maize from its 0.68-ha farm. In 2008/09, the same household purchased an improved variety of maize seeds and 100 kg of fertilizer at subsidized prices, and harvested 1,600 kg of maize (well beyond household consumption needs) from its 0.73-ha farm. Among the 15 incremental users, 13 (87%) achieved higher maize production levels in 2008/09 than in 2003/04.

Table 1 summarizes the crop income and farm data in Kachamba for the 2003/04 and 2008/09 seasons. The major similarities between the two seasons are farm size and crop allocation patterns. Average farm size among the 23 households was about 1 ha in both seasons. All households grew maize in both seasons, and the number of tobacco growers was 19 in 2003/04 and 18 in 2008/09. The average size of maize farms in both seasons was about 0.6 ha, and that of tobacco farms was 0.3 ha. The households in Kachamba thus operated farms of about the same scale using similar patterns in both seasons.

Despite similar farm sizes, total crop income increased from MK 19,878 in 2003/04 to MK 31,751 in 2008/09⁽⁹⁾. This increase was due primarily to the improvement of maize yield per ha from 1,062 kg to 2,243 kg, resulting from the increased use of fertilizer per ha⁽¹⁰⁾ from 75 kg to 161 kg. This increased use was facilitated by access to cheap fertilizer in 2008/09 under the Agricultural Input Subsidy Program. Increased maize yields contributed positively to household food security, reflected in increased per-household and per-AEU maize production in 2008/09. These data indicate that the Agricultural Input Subsidy Program, through

Table 2. Production Cost Structure of Maize in 2003/04 and 2008/09 (n=23)

	2003/04		2008/09	
Maize yield (kg/ha)	1,062		2,243	
	%	MK/ha	%	MK/ha
Gross revenue from maize (1)		20,768		56,039
Input cost (2)	100	10,873	100	27,046
Seeds	13	1,359	9	2,504
Fertilizer	36	3,940	58	15,716
Manure	1	100	0	0
Hired labor	33	3,619	18	4,965
Hired transport/machinery	5	532	3	801
Land rent	1	119	1	227
Interest payment	0	0	0	0
Annual depreciation and maintenance of tools, oxcarts, and oxen	11	1,204	10	2,833
Net maize income, (1) minus (2)		9,896		28,993

Note: Figures in 2003/04 were converted to 2008/09 prices using the rural CPI. Exchange rates at the time of the survey in 2009 was 142 Malawi Kwacha (MK) per US dollar.

Source: Author's fieldwork in 2004 and 2009.

the incremental use of fertilizer and improved seeds, contributed to greater food security in many households in the study village.

The production cost structure of maize (Table 2) shows that the superior yield in 2008/09 increased the net crop income from maize⁽¹¹⁾. The total cost of maize production increased significantly from 2003/04 to 2008/09, due primarily to the increased use and cost of fertilizer. However, the higher cost was well compensated by the higher gross revenue from maize provided by the increased yield. As the result, the net maize income in 2008/09 was more than double that of 2003/04. Note, however, that 53% of fertilizer used on maize farms in 2008/09 was purchased at a heavily subsidized price under the Agricultural Input Subsidy Program. If we assume that all fertilizers were purchased at market prices⁽¹²⁾, the net maize income per ha in 2008/09 remains higher than that in 2003/04 but is reduced to about MK 15,727⁽¹³⁾.

In contrast to the increased maize income, net tobacco income decreased in 2008/09 despite the slight increase in gross tobacco income for the year (Table 3). This was primarily because increased oil prices significantly raised the market price of fertilizer in 2008/09. In the case of maize, the adverse effects of high fertilizer prices were alleviated somewhat by farmers' use of cheap subsidized fertilizers. The scale of the tobacco subsidy program was limited, however, and only 29% of fertilizer used for tobacco production was purchased at a subsidized price. Tobacco farmers thus purchased most tobacco fertilizer at high market prices, resulting in a large increase in production cost and decreased net tobacco income in 2008/09.

Table 3. Production Cost Structure of Tobacco in 2003/04 and 2008/09 (n=23)

	2003/04		2008/09	
	%	MK/ha	%	MK/ha
Gross revenue from tobacco (1)		124,234		142,711
Input cost (2)	100	70,753	100	100,108
Seeds	1	1,023	1	743
Fertilizer	22	15,502	50	49,717
Other chemicals	1	591	1	1,212
Manure	6	4,387	4	4,356
Materials for barn and sacks	26	18,241	16	16,403
Hired labor	33	23,209	15	14,978
Hired transport/machinery	7	5,150	8	7,549
Land rent	0	10	0	0
Interest payment	1	457	0	0
Annual depreciation and maintenance of tools, oxcarts, and oxen	2	1,495	5	4,598
Other costs	1	689	1	553
Net tobacco income, (1) minus (2)		53,481		42,603

Note: Figures in 2003/04 were converted to 2008/09 prices using the rural CPI. Exchange rates at the time of survey in 2009 was 142 Malawi Kwacha (MK) per US dollar.

Source: Author's fieldwork in 2004 and 2009.

III. Livelihood Portfolios and Income Disparity

Tables 4 & 5 present the Kachamba household income levels by ranking the 23 sample households according to income per AEU and dividing them into four groups. An examination of income sources in each quartile highlights some factors that contributed to income disparity among households.

First, variability in household income originated primarily from disparate own-farm income levels. The households in the top quartile derived 95% or more of their total income from their farms in both seasons, and their own-farm incomes were far higher than those in the other quartiles. Income from maize and livestock increased in the top quartile from 2003/04 to 2008/09, with a particularly notable increase in livestock income. Ownership of high-value livestock (i.e., cattle) was concentrated in the wealthier farmers, and the total livestock asset index⁽¹⁴⁾ among the sample households increased from 23.5 in 2003/04 to 34.0 in 2008/09. Some wealthier farmers sold part of their high-value livestock to achieve high income. In some cases, income from livestock sales was reinvested in crop production through the purchase of production-enhancing inputs, such as fertilizer. In other cases, high income from crop production was reinvested in livestock, which further strengthened the asset base of these households and generated more income. The following cases illustrate such reinvestment between crop and livestock production.

Mr. K and his wife operated the second-largest farm (2.54 ha) in the village, and the per-AEU income of their household was the highest in 2003/04 and

Table 4. Household Income per Adult Equivalent Unit by Source in 2003/04

	Total HH Income per AEU	Own-farm Income					Off-farm Income			Total Off-farm Income (b)		
		Total HH Income (a)+(b)	Tobacco	Maize	Other Crops	Livestock	Own-farm Income (a)	Agricultural Wage Income	Nonagri-cultural Wage Income		Nonfarm Self-Employment	
Quartile 1 (n=5)	MK 21,472	71,995	34,711	9,986	2,557	20,846	68,100	1,600	0	2,295	0	3,895
	Share	100%	48%	14%	4%	29%	95%	2%	0%	3%	0%	5%
Quartile 2 (n=6)	MK 8,114	19,530	3,881	4,617	948	19	9,465	3,702	0	6,213	150	10,065
	Share	100%	20%	24%	5%	0%	48%	19%	0%	32%	1%	52%
Quartile 3 (n=6)	MK 3,659	8,230	553	2,816	298	181	3,848	2,673	0	1,708	0	4,381
	Share	100%	7%	34%	4%	2%	47%	32%	0%	21%	0%	53%
Quartile 4 (n=6)	MK -2,059	-5,436	-4,913	-918	86	-334	-6,078	276	0	367	0	643
	Share	-100%	-90%	-17%	2%	-6%	-112%	5%	0%	7%	0%	12%

Note: Figures in 2003/04 were converted to 2008/09 prices using the rural CPI. Exchange rates at the time of survey in 2009 was 142 Malawi Kwacha (MK) per US dollar.

Source: Author's fieldwork in 2004 and 2009.

Table 5. Household Income per Adult Equivalent Unit by Source in 2008/09

	Total HH Income per AEU	Own-farm Income					Off-farm Income			Total Off-farm Income (b)		
		Total HH Income (a)+(b)	Tobacco	Maize	Other Crops	Livestock	Own-farm Income (a)	Agricultural Wage Income	Nonagri-cultural Wage Income		Nonfarm Self-Employment	
Quartile 1 (n=5)	MK 104,605	351,449	24,983	28,331	7,545	275,640	336,499	0	0	0	14,950	14,950
	Share	100%	7%	8%	2%	78%	96%	0%	0%	0%	4%	4%
Quartile 2 (n=6)	MK 32,983	103,248	16,141	19,360	-350	24,472	59,623	667	14,000	11,167	17,792	43,625
	Share	100%	16%	19%	0%	24%	58%	1%	14%	11%	17%	42%
Quartile 3 (n=6)	MK 17,436	35,434	1,506	13,613	3,084	-462	17,742	792	1,083	2,100	13,717	17,692
	Share	100%	4%	38%	9%	-1%	50%	2%	3%	6%	39%	50%
Quartile 4 (n=6)	MK 6,838	27,103	5,223	7,192	5,225	-8,153	9,486	5,858	0	1,317	10,442	17,617
	Share	100%	19%	27%	19%	-30%	35%	22%	0%	5%	39%	65%

Source: Author's fieldwork in 2004 and 2009.

the second-highest in 2008/09. They used 14 bags (700 kg) of fertilizer in 2008/09, of which two bags were purchased at the subsidized price. The high cost of fertilizer in 2008/09 (total MK 68,000) was met by the income from the sale of three cattle (MK 155,000). They retained ownership of 15 cattle after this sale, representing the largest number of cattle owned by a household in the village. This household owned only six cattle in 2003/04 and thus more than doubled their herd during the 5-year period.

Mr. K's 29-year-old son also operated a relatively large farm and his per-AEU income in 2003/04 (derived mostly from crop income) was among the top five in the village. The son owned no livestock in 2003/04, but used his crop income to purchase two cattle and five pigs by 2008/09. In 2008/09, he purchased 10 bags of fertilizer at market prices and used them on his 1.87-ha farm. This farm was the third-largest in the village. He also received two coupons and used them to buy additional fertilizer at subsidized prices, but stored these bags for the following season because he was not sure if the subsidy program would continue. His crop income in 2008/09 was negative due to the high fertilizer cost, but was compensated by his livestock income.

Households in the other quartiles relied more on off-farm income than did those in the top quartile, but deagrarianization (Bryceson & Jamal, 1997) was not taking place in the study village. Off-farm income opportunities in the village were limited, and those who engaged in such activities (e.g., agricultural wage labor, small-scale trading) earned low incomes in both seasons. In 2008/09, the majority of off-farm income in the lower quartiles came from the subsidy program⁽¹⁵⁾, and income from other off-farm activities was insignificant. Under these circumstances, household income levels were determined largely by farm size and land productivity⁽¹⁶⁾. Productivity improved in 2008/09 as more fertilizers were applied due to the subsidy program, and households in the lower quartiles realized higher incomes than in 2003/04. However, this increase did not generate sufficient surplus that could be reinvested in high-value livestock, as practiced among households in the top quartile. Most of the poorer households did not own livestock and thus had little or no livestock income. Others had negative livestock income resulting from the loss of small livestock (e.g., chickens) due to disease. Thus, the poorer households were locked in a vicious circle of small landholding, low land productivity, and limited opportunities and poor pay for off-farm activities. Income diversification was observed among the poorer households, but this diversification represented a temporary survival strategy rather than a pathway out of poverty.

IV. Household Income Status

Table 6 ranks household income per AEU in both seasons. Positive and negative changes in relative household income status are apparent during the 5-year period. However, a closer and more context-sensitive examination reveals that the overall livelihood situations among the households, particularly the disparity between rich and poor, remained unchanged.

Three households (H3, H9, H25) showed significant upward movement in

Table 6. Change in Relative Income Ranking of Sample Households between 2003/04 and 2008/09

2003/04					2008/09						
Household No.	AEU*	Income per AEU	Livestock Asset Index**	Other Asset Index***	Female-headed Household (FHH)	Household No.	AEU*	Income per AEU	Livestock Asset Index**	Other Asset Index***	Female-headed Household (FHH)
2	1.8	61.398	6.0	1		15	6.3	189,169	3.5	1	+
28	4.6	40.954	8.3	2		2	1.8	176,984	15.3	1	+
15	5.3	31,994	7.3	1		9	1.8	67,218	0.1		
1	2.3	24,120				21	1.8	45,329			++
29	3.8	16,529	0.3			3	1	44,325			
21	1.8	15,850				1	3.8	44,128	2.5	1	+
14	1.8	15,652	0.2			14	1.8	35,522	0.5		--
18	2.8	13,063				28	4.6	34,763	11.8	2	
9	3.3	12,062	1.4	1		22	1	31,890			-
12	2.3	11,435				6	3.8	27,184	0.1		+
6	2.8	11,292				29	3.8	24,412	1.1		+
24	2.4	11,098			FHH	24	0.8	20,000			FHH
20	2.3	9,144				31	3.3	19,191			FHH
22	1	5,097				25	1	18,850			
3	1	4,054				20	2.8	16,941			-
23	3.8	3,293				7	1.8	15,990			FHH
31	3.6	3,099			FHH	18	2.8	13,645	0.1		-
7	2.1	1,692			FHH	10	2.8	13,556			++
11	2.3	1,077			FHH	12	3.3	13,445			+
8	3.3	593			FHH	23	5.3	11,173			
10	1.8	-1,422				11	5.8	9,124			++
25	1	-1,793				8	4.8	260			FHH
4	2.8	-20,285				4	3.8	-2,392			+

Note: Households whose income rankings changed by more than five ranks are indicated with arrows. Figures in 2003/04 were converted to 2008/09 prices using the rural CPI. Exchange rates at the time of survey in 2009 was 142 Malawi Kwacha (MK) per US dollar.

* Adult Equivalent Unit (AEU): male 15 years or older=1; female 15 years or older=0.8; male or female 14 years or under= 0.5.

*** The livestock asset indices are based on the market value of livestock and are as follows. Cattle: 1, pig: 0.1, goat: 0.1.

**** Ownership of ox-cart, motorcycle or tobacco presser is counted as one.

***** Increase by less than 0.2 ha: +, increase by less than 0.5 ha: ++, increase 1 ha or more: +++, decrease by less than 0.2 ha: -, decrease by less than 0.5 ha: --, and decrease 1ha or more: ----.

Source: Author's fieldwork in 2004 and 2009.

income ranking between 2003/04 and 2008/09. Of these, H3 and H25 were single-member households (AEU=1); the distribution of coupons under the subsidy program thus significantly increased their per-AEU income in 2008/09. The upward movement of these two households in income ranking was not caused by any change in economic activities or asset base. In contrast, two factors explain the upward movement of household H9. The AEU of this household was decreased by divorce, while the sale of an ox cart in 2008/09 provided a temporary income increase that accounted for 41% of the total household income. Despite the high income in 2008/09, the asset base of this household deteriorated with the sale of the ox cart and one cow during the 5-year period. Overall, the upward movements in income ranking of these three cases show no fundamental changes in economic situation, but only temporary and unsustainable improvement.

Similarly, examination of four households (H12, H18, H28, H29) whose income rankings showed significant downward movement between 2003/04 and 2008/09 reveals that these changes were also temporary. In the case of H12, a large negative livestock income caused by the disease-related deaths of five pigs and three goats resulted in low household income in 2008/09. However, the crop income of this household increased markedly from 2003/04 to 2008/09, and the household asset base also improved when farm size was augmented with inherited land. In another case (H28), downward movement in income ranking, from second in 2003/04 to eighth in 2008/09, was caused primarily by the increased cost of fertilizer in 2008/09. This household operated the largest farm (3.1 ha) in the village and used 600 kg of fertilizer in 2008/09 (village average=197 kg); thus the increased price of fertilizer in 2008 contributed substantially to the production costs of this household in 2008/09, reducing its net income and relative income ranking. Despite the temporary reduction of income in the 2008/09 season, the strong economic position and asset base of the household remained unchanged: it was the largest maize producer and second-largest tobacco producer, it operated the largest farm, and its ownership of cattle increased from eight in 2003/04 to eleven in 2008/09⁽¹⁷⁾. These cases demonstrate that a temporary change in relative income ranking did not necessarily mean a substantial change in livelihood situation among households in the study village.

Disparities in asset ownership between rich and poor also remained unchanged. Ownership of high-value livestock (cattle, goats) and capital goods (ox-carts, motorcycles, tobacco pressers) was concentrated in wealthier households in both seasons. Some wealthy households strengthened their asset base by increasing the number of high-value livestock or buying capital goods. Because no land was sold or purchased during the 5-year period, no substantial change in landholding occurred. Although farm size increased or decreased in some households through gifting and inheritance of land from relatives, the small area of such land did not change the overall landholding pattern. Female-headed households, most of whom were poor in 2003/04 (Takane, 2009), remained in the lower income quartiles in 2008/09. Despite the temporary income fluctuation of some households, the rich clearly remained rich and the poor remained poor after 5 years.

CONCLUSION

This paper has examined the effects of the Agricultural Input Subsidy Program on livelihood situations among the households in a Malawian village. The findings reveal that the Agricultural Input Subsidy Program contributed to increased fertilizer use and improved maize yields and household food security among rich and poor households in the study village. The subsidy program also provided poorer farmers with the choice of using coupons to subsidize input or as an immediate direct cash transfer through unofficial resale; both options increased total household income.

Despite the improvements in household food security and income by 2008/09, the study found little prospect among the poor households of climbing the ladder out of poverty. Comparison of livelihood situations in 2003/04 and 2008/09 showed no significant change in income portfolios or asset bases among the poor. While wealthier households reinvested their income in production and further strengthened their economic status, the livelihoods of poorer households (characterized by small farms, low productivity, and supplementation of low income with poorly paid off-farm activities) remained unchanged. Although the subsidy program improved household food self-sufficiency, such temporary improvement may not guarantee the sustainability of household food security or provide poorer households with ways out of poverty. A long-term effort that aims to improve incomes from farm production and off-farm activities is necessary to achieve sustainable improvement.

NOTES

- (1) For example, the subsidy program accounted for 16% of the total national budget in 2008/09 (Dorward & Chirwa, forthcoming).
- (2) Fieldwork in 2004 was conducted as part of a wider study on rural livelihoods in Malawi. For details, see Takane (2008a, 2008b, 2008c).
- (3) Interviews were conducted with the assistance of a village resident and a research assistant who was fluent in the local language and were attended, recorded, and reviewed by the author. The same structured questionnaire was used to interview farmers in each season, and free discussion was encouraged to elaborate on important issues and changes that had occurred during the 5-year period. Household farms were also measured using global positioning systems to obtain accurate data on the size of the plots.
- (4) A package of coupons for maize production contained one coupon for a 50-kg bag of 23:21:0+4S basal fertilizer and one coupon for a bag of urea. A package of coupons for tobacco production contained one coupon for a bag of compound D and one coupon for a bag of calcium ammonium nitrate (CAN). In Kachamba in 2008/09, the total number of packages allocated for the village did not meet the needs of all households, and the village committee determined the type and number of coupons to be received by each household. Many households received only one coupon, but some received two. The criteria used to decide the number of coupons to be received by each household were unclear, but poorer households (e.g., female-headed households) tended to receive two coupons.
- (5) The exchange rate of the Malawi kwacha (MK) at the time of the survey was MK 142 : US \$1.
- (6) Adult equivalent unit (AEU): male 15 years or older=1; female 15 years or older=0.8;

- male or female 14 years or under=0.5.
- (7) The actual number of resales may be more than this, as some villagers reported “lost” or “stolen” coupons. Officially, the resale or purchase of coupons is prohibited.
 - (8) The timing of coupon distribution coincided with the beginning of the “hungry season,” in which poor households exhaust the household food stock of the previous harvest. In the study village, the income from coupon resale (MK 3,000–5,000) could be used to purchase 65–110 kg of maize.
 - (9) Prices quoted in this paper have been converted to the 2008/09 prices using the rural consumer price index.
 - (10) Other factors that influence yield include weather conditions and farm practices, such as timing and frequency of weeding and fertilizer application. It was not possible to precisely disaggregate these effects on yield.
 - (11) This analysis of maize income uses the market price of maize at the time of harvest for the unsold maize harvests to calculate gross revenue.
 - (12) This estimate uses the median market price of fertilizer (MK 9,000) in the study area.
 - (13) Note that a low net maize income does not necessarily mean low household food security. Maize production in the study village was primarily for household consumption, and the majority of households did not sell harvested maize. The major concern of households (especially of poor households) was not whether their maize production was profitable, but whether their harvested maize was sufficient for consumption until the next harvest. If it was insufficient, households had to buy maize later, usually at a much higher price than that at the time of harvest. Thus, even if the net income from maize (calculated using the price at the time of harvest) is low, household food security may improve when households achieve a better harvest.
 - (14) The livestock asset indices are based on the market value of livestock: cattle=1, pig=0.1, goat=0.1.
 - (15) The values of coupons are included in the “other income” category in Tables 4 & 5.
 - (16) The limited reliance on off-farm income in Kachamba contrasts with more diversified income portfolios in southern Malawi highlighted by other studies (Orr & Mwale, 2001; Ellis et al., 2003).
 - (17) The H18 and H29 households also showed no substantial change in household economic activities or asset base between the two seasons.

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——— Accepted *January 10, 2011*.

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