REPORT

VOLUME 2

Chapter 7
Trade and Poverty

MALAWI

Diagnostic Trade Integration Study

March 28, 2003

ACRONYMS

ACRONYM	Definition
CGE	Computable General Equilibrium
IHS	Integrated Household Survey
IFPRI	International Food Policy Research Institute
ISB	Income Support Beneficiary
MPRS	Malawi Poverty Reduction Strategy
MSME	Micro, Small and Medium Scale Enterprises
NASFAM	National Association of Smallholder Farmers of Malawi
NSO	National Statistical Office
RDR	Recommended Daily Requirements
SME	Small and Medium Enterprises
TIP	Targeted Inputs Program
TNP	Targeted Nutrition Program

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TRADE AND POVERTY

7.1 CHAPTER SUMMARY

Trade and poverty have been inextricably linked in Malawi in the second half of the twentieth century. Historically, trade has been based on agricultural production. The structure of agriculture around a small number of large estates and the focus on trade in cash crops such as burley tobacco, tea and coffee did not benefit large number of Malawians, especially in rural areas. As a result, Malawi is today one of the poorest countries in the world, with per capita GNP of about US$180, and with 95 percent of people living, on average, on less than $1 per day.

Recent economic reforms, especially in the mid-1990s, have counted on structural changes in agriculture to stimulate trade in major crops such as burley tobacco. While these have initially succeeded and produced substantial surpluses, they have subsequently failed when a more comprehensive reform package was not implemented, leaving poverty as extreme as before. With high exposure to HIV/AIDS, draught and famine, Malawi has a daunting challenge to reduce poverty. Attempts to increase its trade will help meet this challenge, but these will have to be complemented by efforts to reduce food insecurity. Currently, using improvements in domestic and international trade to reduce poverty depends on providing a minimum package of basic services for over half a million household to resolve urgent challenges to survival. This policy package should allow the majority of people, especially in the rural sector, to produce enough for subsistence and eventually provide tradable surpluses.

The Malawi Poverty Reduction Strategy (MPRS) places first priority on issues of internal trade. The MPRS envisages the early introduction of (i) a series of social safety net measures impacting 1,000,000 households through free agricultural inputs, public works programs and nutrition assistance and a program of HIV/AIDS prevention, care and treatment and mitigation measures. These can provide the basis for survival and over time allow the possibility for improvements in tradable surpluses among the more vulnerable. The production of tradable goods rely heavily on the establishment of food security.

Currently, those working in the production of tradable goods fare better; improving their performance will bring pro-poor benefits to the economy. Households that grow cash crops and have better market access have higher incomes and are significantly less

likely to fall into poverty (Annex table A7.1). Improvements in trade can play a more important and direct role in poverty alleviation if:

- Regulatory and infrastructure related problems in transportation is alleviated hence leading to a substantially reduced transportation costs for consumers and producers;

- Trade is diversified and targeted at new markets such as fisheries, forestry, horticulture, wildlife and in areas which already show promise such as groundnuts and paprika;

- Manufacturing activity and the growth of urban centers is supported to generate employment and release pressure on rural land; emigration to neighborhood countries for work is encouraged; and remittances are increased;

- Risks are mitigated by enhancing trade in ways that are targeted to specific segments of the population[1]and aggressive education campaigns[2] are launched for alternative soil improvement and resource management measures;

- New attention is paid to micro, small and medium-sized enterprises (SMEs), especially in small scale mining involving quarry stone, lime, gemstones, salt aggregate, limestone, sand and clay.

Given the severity of the prevailing conditions, none of the individual measures will make a significant difference in welfare; thus, it is essential that Malawi act on all fronts simultaneously with well coordinated donor support. If this is done thoroughly, poverty and extreme poverty will decrease by 8 percent and 37 percent, consecutively . In other words, at a one time estimated cost of around $17 million, extreme poor population will go down from 2.8 million to 1.7 million. The implementation of these programs should all include a process of permanent social impact monitoring to track

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[1] These are geographical and/or producers' groups. Existing data reveal little difference between poverty patterns by region. Urban/rural differences are major. Data on key social groups, such as tribes, are not available. Major tribal groups include Yaos, Lomwes, Nkhondes, Manganjas, Tongas, Senas, Chewas, Njanjas, Tumbukas and Ngonis. In some parts of the country the communities are heterogeneous and some complex ethnic issues have been reported, for instance, among the fishing communities.

[2] More than 90 percent of Malawi's energy requirements are met from biomass supplies and national wood consumption stands at double the sustainable production. The country faces a looming fuel wood crisis as energy needs are met through the liquidation of forest capital. Recent field research indicates that neither regulation nor market liberalisation is likely to provide a solution, since ignorance remains the primary constraint to better soil management (World Bank 2002a).

the impact of trade on poverty and to provide real time information to redesign programs ("learning by doing"). This will ensure coordination with key macroeconomic and structural measures that are essential to trade development.

7.2 INTRODUCTION

This chapter examines the interrelation between poverty and trade in Malawi with a focus on the role of traditional trade patterns in the past and their impact on the current situation. It examines the potential for using internal and external trade as mechanisms for poverty alleviation in the future. The chapter relates key elements of the Malawi Poverty Reduction Strategy (MPRS), including those pertaining to trade, to the overall poverty reduction effort.

The literature on trade and poverty[3] identifies five major mechanisms through which increased trade openness affects the poor:

- Impacting the prices of goods and services the poor consume and produce[4];

- Affecting the demand for and returns to factors of production that the poor have to offer, such as unskilled labor;

- Having an impact on government revenues and the resources available for antipoverty programs;

- Influencing the potential for economic growth, which in turns affects poverty; and

- Through design of social protection mechanisms that cope with likely transition costs and the possible increased volatility of growth resulting from the opening up of markets [5].

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[3] Some notable references include Nicita et al. (2002), Reimer (2002), World Bank (2001), WTO (2001), Cagatay (2001), Dollar and Kraay (2001) and Winters (2000).

[4] Changes in policy where the products become cheaper will make the net consumers of that product better off while policies leading to an increase in the prices of a good will benefit the net producers.

[5] G-8 Genoa Summit, July 2001.

This chapter will focus on the first, second and fourth mechanisms and note but not quantify the design of social protection mechanisms outlined in the MPRS. Household profiles have been used to assess the impacts of proposed policy changes on poverty alleviation. These profiles help in predicting the potential impacts of various reforms on affected groups and allow the simulation of their short-run impacts.[6] This assessment is performed using a single household survey for Malawi, the 1997-1998 Integrated Household Survey that was carried out by the Malawi National Statistical Office. These data appear to be consistent with other sources of information including interviews conducted in Malawi since that time.

Despite extensive poverty manifested by the Integrated Household Survey[7], the situation today in Malawi is even worse. The main reasons include the decline in the world prices for tobacco, a significant cash crop in the country and of formal sector employment, an important means of rising out of poverty. Box 7.1 illustrates the impact of the decline in tobacco, using 1997-1998 data to study the present day situation in Malawi.

The rapid increase in HIV prevalence and the incidence of AIDS associated illnesses has also reduced labor availability and productivity. The prevalence of HIV among 15-49 year olds has increased between 1997 and 2001. The incidence of HIV, estimated at 16.4 percent, places Malawi among the 16 countries with the highest HIV/AIDS rates. UNDP (2001) suggests that the impact of the HIV/AIDS epidemic is leading to declining life expectancy, an increasing dependency ratio, loss of productive workforce, and increasing health care costs.

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[6] A thorough assessment of the impacts of trade policy options on Malawi would require either comparable household data sets from several years, a Computable General Equilibrium (CGE) Model, or ideally a combination of these. Due to the limited availability of data, neither the empirical approach nor the CGE approach was employed.

[7] 1997-98 Integrated Household Survey (IHS) was carried out by the National Statistical Office (NSO) between November 1997 and October 1998. IHS was initially conducted among 10,698 households. Of these only 6,586 responded to income, expenditure and related questions. Both samples were representative. Because of the emphasis on income, the chapter presents the findings of the smaller sample.

BOX 7.1 THE POOREST ARE DISPROPORTIONATELY HURT BY THE DECLINE IN TOBACCO PRICES

Welfare levels in Malawi have deteriorated since the 1997-98 Integrated Household Survey (IHS) was carried out. One important reason for this has been a sharp decline in the market price for tobacco, which constitutes about 5 percent of household incomes and about a tenth of household cash incomes. Comparing farm-gate prices for tobacco for 1997 with 2001, NASFAM data suggests that average sales prices have declined in 2001 by 30 percent from 1997 levels. The same period also witnessed a decline in input costs of about 16 percent (Figure 7.1).

FIGURE 7.1 AVERAGE SALES PRICE AND NET RETURNS FOR SMALLHOLDER BURLEY GROWERS
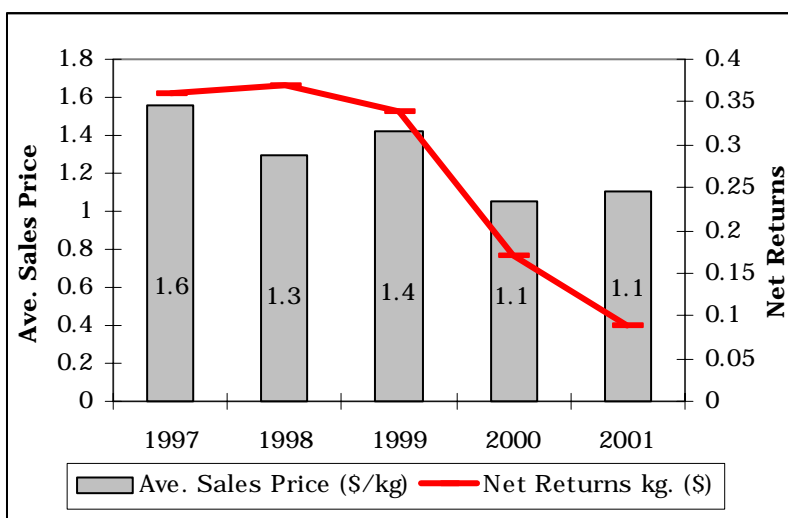
Source: NASFAM 1998 & Auction Floor Prices

The implication of changes in the prices of tobacco despite the reduction in fertilizer prices has been assessed using the IHS data. The results show that the income of all households decreases by 1.3 percent and the income of the small holder tobacco growers decreases by an average of 8 percent. The changes in market conditions affect the poor more strongly then the richer segments of society. For instance, the poorest quintile of households suffers a reduction in welfare of 1.5 percent, while the richest quintile experience a reduction in income of 1.0 percent. Among tobacco farmers, the income losses of the poorest quintile are about 13 percent, while the richest quintile experienced a 7 percent decline in income.

7.3 POVERTY OVERVIEW

Malawi's per capita GNP places it among the six poorest countries in the world.[8] Poverty is widespread with 95.1 percent of the population living on less than one dollar a day. The ultra poor consume only 54 percent of the per capita recommended daily requirements (RDR). Regional differences in this respect are minor; in urban areas, not even the non-poor are able to meet their RDR fully (table A 7.2)[9].

TABLE 7.1 POVERTY IN MALAWI

	Weighted Population ('000)[10]	Poverty Headcount % (dollar a day)	Poverty Line [11](US$) with regionally adjusted prices	Mean Consumption (MK/person)	Poverty Headcount (%) using regionally adjusted prices	Ultra poverty Headcount (%)	Percent of Malawi's poor in area
Malawi	9,795	95.1	0.41	12.05	59.6	28.7	100.0
Southern Region	4,650	95.6	0.31	11.94	61.8	31.7	49.2
Central Region	4,079	94.5	0.36	12.35	56.5	25.3	39.5
Northern Region	1,064	95.1	0.44	11.38	61.5	28.4	11.2
Urban	1,000	66.8	1.00	18.66	50.8	23.8	8.7
Rural	8,795	98.3	0.35	11.30	60.6	29.3	91.3

Source: IHS '98

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[8] World Bank (2001b)

[9] This section draws heavily from 'The Determinants of Poverty in Malawi 1998, An analysis of the Malawi Integrated Household Survey, 1997-98' a report prepared by The National Economic Council of Malawi, The National Statistical Office of Malawi and The International Food Policy Research Institute.

[10] Estimates based on 1997/98 Household Survey. Current population is estimated to be 10.3 million.

[11] Spatial price differences are revealed by the different poverty lines in each region. The poverty lines represent the different prices across the country for a comparable basket of goods necessary to meet the daily basic needs of an individual in Malawi. The spatial price index uses the weighted average poverty line (6,586 household data set) as a base, and is calculated as: 100 * total poverty line ÷ national weighted average poverty line.

Using a different measure of poverty, based on cost-of-basic-needs method with regionally adjusted prices, 5.8 million are in absolute poverty; of these 5.3 million live in rural areas and the remaining 508.057 live in urban areas. The majority of the 9.7 million Malawians and of the absolute poor are rural residents. Given such wide spread poverty, the inequity is relatively low, especially in rural areas with Gini coefficient of 0.37 in rural and 0.52 in urban areas (figure 7.2).

FIGURE 7.2 DISTRIBUTION OF WELFARE IN RURAL AND URBAN MALAWI
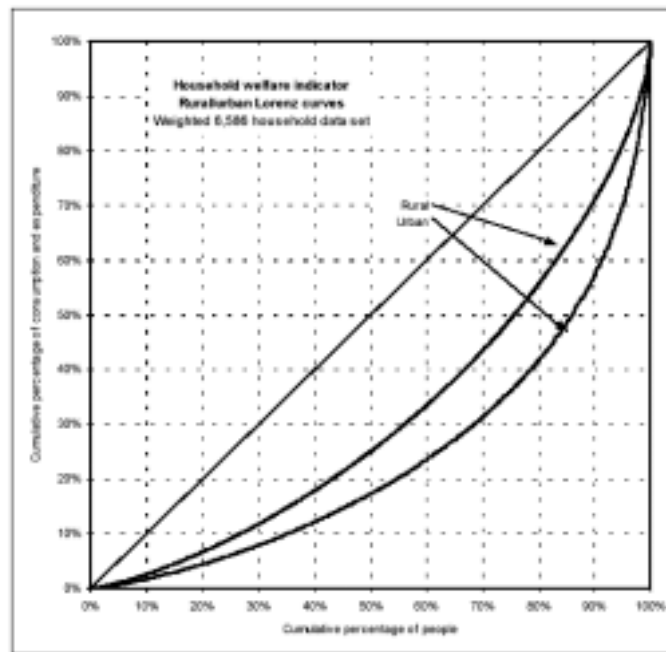
Source: The National Economic Council of Malawi, NSO and IFPRI

The urban disparity results from the presence of a hand-full of large scale manufacturers, distributors and the middle men alongside an army of unemployed. Indicators of welfare build a grim picture for all rural regions with widespread and relatively equal levels of poverty.

Social indicators are similarly low.[12] One-fourth of the people report being ill in the past two weeks and 16 percent are seriously ill enough to have to stop normal activities. A small fraction of these are able to consult a doctor regardless of the region they live; whether they live in urban or rural areas makes little difference. Given these high levels of poverty, life expectancy in 2000 was 37.6 years; a drastic decline has occurred in the last decade almost entirely because of HIV/AIDS and the life expectancy is expected to go down to 34.8 in 2010 when it could have been 56 without HIV/AIDS.

Gender ratios are distorted in both rural and urban areas with high female ratios in the countryside. The poorer the households the more crowded they are and the higher is the dependency ratio. A very high ratio of households are headed by women, especially among the poorest segments (figure 7.3). A quarter of households in Malawi are female-headed and are disproportionately poorer (table A 7.3). These households are more vulnerable because they:

- Have fewer potential adult workers than other households;

- Have more demands on them as breadwinner with responsibility for childcare and household management; and

- Are, both by custom and skill, less readily employable outside the household.[13] (table A 7.4)

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[12] In education, for example, only 11.2 percent of the population over 25 years of age complete Standard 8. A formally uneducated person heads almost a third of poor households and only 3 percent of poor household heads have a Malawi School Certificate. The average pupil challenges education quality, inter alia, to teacher ration of 114/1.

[13] Women participate less in the formal sector where in each job category there are four men employed for each woman. In addition, men earn about 18 percent more than women for the same job after controlling for all factors. Significant disparities exist between skill levels. While 21 percent of men have no educational attainment, the percent for women is 42 percent. Similarly, 9 percent of men have completed high school but only 4 percent of women.

FIGURE 7.3 GENDER OF THE HOUSEHOLD HEAD AND POVERTY IN MALAWI

Household Heads

74%   26%

☐ Female headed households   ■ Male headed households
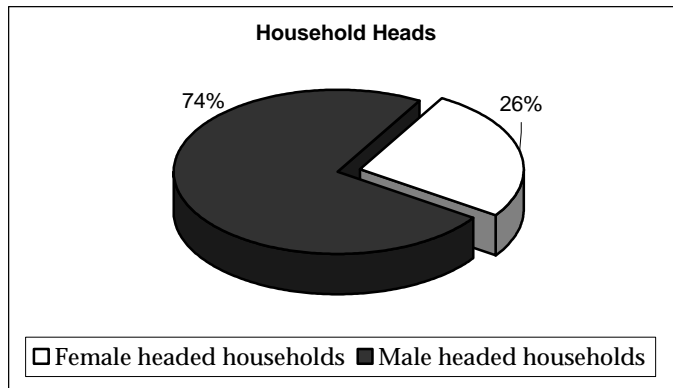
Gender of the household head and Poverty Statistics

	Female	Male
Poor	61%	56%
Ultra Poor	32%	26%
Not Poor	39%	44%

Source: IHS '98

Malawi has a series of disadvantages to overcome poverty. It is one of the most densely populated countries in the region and has a high ratio of population to arable land. It is landlocked and has high transportation costs. It suffers from natural disasters, especially drought. The key agricultural sector, which contributes about 45 percent of GDP, 85 percent of employment, and more than 90 percent of export earnings, is especially challenged:

- Almost 70 percent of agricultural produce comes from smallholder farmers who have less than one hectare of land to cultivate;

- Traditional export crops such as tobacco, tea and coffee have faced decreasing export prices;

- A weak market infrastructure and lack of access to information results in high transaction costs;

- The cost of transportation is high both within Malawi and outside the country which generally puts upward pressure on retail prices in rural areas and discourages household-to-border trade;

- Farmers are draining nutrients from the soil and yields of some crops are no longer sensitive to fertilizer; farmers are not informed of alternative methods to improve soil quality;

- Past efforts to stimulate improvement of traditional cash crops such as burley tobacco have provided benefits only in the short term which could not be

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consolidated because of poor implementation of a series of comprehensive reform measures;

- There has been insufficient attention to non-traditional agriculture, to the development of fisheries[14] and forestry[15], and horticulture.

- Programs that directly empower the rural power and provide for a minimum social safety net, especially food security, have received insufficient attention.

The difficulties inherent in agriculture and in attaining food security imply that farmers may be reasonably reluctant to engage in agricultural development with a "normal" level of risk that is often necessary to produce tradable surpluses that are the basis for internal and external trade in agricultural commodities[16]. The poor voice their concern with these issues throughout the country (Box 7.2). Malawi also suffers from a nexus of

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[14] The potential for fisheries is significant. For instance, Lake Malawi, a deep rift valley lake and the third largest in Africa, has a surface area of 2.8 million ha, and a total catchment of 10.1 million ha, of which almost two-thirds (6.5 million ha) lies within Malawi. To the riparian populations the lake represents a vital source of fresh water, food and livelihoods. It is also a tourist destination, it forms the basis of a local transport network, and through its outflow into the Shire River it provides Malawi with its main source of hydroelectric power. Lake Malawi is also home to the most diverse assemblage of freshwater fishes found anywhere on earth. Malawi's portion of the catchment comprises all of the Northern Region, most of the Central Region and a small part of the Southern Region. The Lake Malawi National Park, established at Cape Maclear in southern Malawi in order to protect a species-rich rocky shoreline, was declared a World Heritage Site by UNESCO in 1987 (World Bank 2002a).

[15] Most of the natural forest outside the protected areas in Malawi has now been removed, and what remains is mainly confined to the Northern Region. Poor land use, soil erosion and soil degradation, deforestation and seasonal bush fires all give cause for serious concern, and combine to exacerbate rural poverty and threaten food security. Most issues in the forest sector derive from a single fundamental problem: the national demand for forest products (mainly biomass for energy purposes, but also poles for building, sawn timber and non-timber forest products) exceeds the current sustainable production by a factor of (about) two. Community management of customary forests is only part of the answer to the provision of a sustainable supply of forest products. In the medium and longer term the only way in which Malawi can hope to be self-sufficient in forest products is through a rapid expansion of the plantation sector to between 0.5 and 1 million hectares.

[16] "The poor in Malawi face four distinct types of risk. Firstly, there is the seasonal shock of annual food shortages and price increases. Each year food stocks run low by about November, and for the next three or four months many households subsist on one meal a day, or on wild foods. At the same time, due to scarcity, the price of maize increases dramatically, sharply reducing their capacity to buy food from the market. Secondly, Malawi is vulnerable to the periodic droughts. Thirdly, vulnerability to external conditions (such as commodity price swings, and disruption of transport links), combined with inconsistent economic management, have resulted in large periodic macroeconomic shocks. Fourthly, there is the threat of AIDS." (Smith, 2001)

poverty and trade with HIV/AIDS which has exacerbated poverty and reduces the ability of normal trade patterns to create wealth, as explained in Box 7.3.

BOX 7.2 VOICES OF THE POOR

The country report for Malawi, published in July 1999, gives voice and image to poverty in the country. It shows how desperate the people are as articulated by an urban squatter: "The only way we can get out of poverty is through death because the majority of households in this community do not have reliable sources of livelihood".

While most voices of the poor in Malawi are less extreme, "there is a feeling that the poverty existing in their various communities has increased over the past few years. It also appears that most people feel they have no control over most of the causes of poverty in their communities. Poverty has become cyclic and some of the impacts of poverty have actually become causes."

"Most people are not optimistic about their future and feel their life is at risk. They are generally fatalistic and resigned such that they consider death as their best alternative destiny. The high cost of living, reduced employment opportunities, low agricultural production, high prices of farm inputs, reduced level of fish catch, HIV/AIDS, the increased crime, the segregative tendency of credit institutions through their attached membership conditions are the main factors that make most people feel uncertain about their future. The long cherished support systems from the kinship and extended family structures have gradually declined over the last decade and people feel they will eventually cease to exist in the next few years because of the ever increasing cost of living."

The Voices of the Poor show that hunger is the main source of suffering and that measures to increase food security are essential involving, inter alia, improvements in domestic trade, infrastructure and market improvements, and a package of agricultural inputs that provide farmers with a new opportunity to increase production. Diversification both within agriculture and to other sectors is an important felt need of the poor, and these efforts would involve increased trade in commodities and services. The Voices show that poverty needs to be attacked by helping the poor directly rather than programs for the general population that hope benefits will trickle down to the poor. Otherwise, "those that drink tea will continue to drink tea" - *omwa tea adzamwanso.*

BOX 7.3 TRADE, AIDS AND POVERTY

In Malawi, certain elements of trade have deepened the AIDS epidemic, while the epidemic itself has made the nation as a whole less able to engage in trade to reduce poverty. The HIV/AIDS epidemic in Malawi is one of the most severe in the region. It is estimated that 15 percent of adults aged 15-49 are infected while the national prevalence overall is more than 16 percent. The Malawi National AIDS Commission estimated that in 2001, there were about one million Malawians who were HIV positive. Malawi currently has AIDS 850,000 orphans with 70,000 being added each year, largely due to parents dying of AIDS associated diseases. HIV/AIDS affects growth in many ways. With such high incidence of the infection

- Life expectancy is reduced. By 2010, life expectancy with HIV-AIDS will be about 35 years in Malawi, versus 57 years without the epidemic.

- People often die during their most economically productive years. The greatest majority of AIDS death occurs during the working age of 15 – 49. Most studies of Malawi estimate that during 2000-2010, potential GDP growth could be reduced by 1.5-2 percent per annum due to the epidemic.

- Public and private resources have to be diverted from productive activities into expenditures related to the epidemic. Even with grant resources from donors for Malawi's AIDS programs, the impact on the economy is substantial; a modest HIV/AIDS coverage program for Malawi could amount to 6.5 percent of GDP in 2010, almost twice the total public and private sector expenditures on health currently.

- Agricultural productivity is reduced. Evidence from neighboring Zimbabwe indicate that agricultural production is reduced in families with an AIDS death, maize by 61 percent, vegetables by 49 percent, groundnuts by 37 percent and cattle by 29 percent.

Trade can facilitate the spread of HIV/AIDS if serious prevention programs are not implemented along transport corridors[1] and among migrant workers who travel abroad, both serious issues in Malawi. Other trade-related activities such as development of mining, road construction, export of labor, etc., can likewise spread the disease unless appropriate measures are designed. HIV/AIDS can also reduce the ability of trade to have a positive impact on poverty since most AIDS affected families lose the ability to generate surpluses both in rural and urban areas, as the figures above illustrate. Traditional trade promotion strategies, such as using the supply of available, low-cost labor become irrelevant as AIDS reduces the "available" labor of those who are directly infected by the disease and affected by having family members struck by the epidemic.

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[1] "Regulations on axle load, vehicle type, and allocation of traffic and payment of transit fees and a range of other formal national controls together with a growing number of pernicious informal controls on traffic movements have resulted in slower, more costly transit than should be the case. Given the significance of long distance truck and bus drivers as a group in the transmission of HIV/AIDS, this situation is seen as a contributory factor towards increasing opportunities for engaging in risky behavior. Accelerating transport flows and reducing idle time at borders due to customs and other formalities would help address this matter". World Bank Project Implementation Manual, Abidjan-Lagos Transport Corridor HIV/AIDS Project (TCAP)

7.4 MALAWI POVERTY REDUCTION STRATEGY (MPRS)

The MPRS was developed in Malawi through a highly participatory and consultative process. It highlights five main causes of poverty: (i) limited access to land[17]; (ii) low education[18]; (iii) poor health status[19]; (iv) limited off-farm employment; and (v) lack of access to credit. The MPRS includes four main pillars for reducing poverty:

- Rapid, sustainable pro-poor economic growth and structural transformation;

- Human capital development;

- Improving the quality of life of the most vulnerable; and

- Good governance.

Each of the four pillars contains elements that will provide a supporting physical, social and policy framework to enhance domestic and international trade. The most important elements concern activities that will allow Malawians to have sufficient resources for food security and sufficient incentives and capacity to produce surpluses[20] and provide a social safety net from which trade efforts can be initiated. Equally important would be to reduce the impact of HIV/AIDS. Only then can Malawi look forward to other measures, including encouraging institutions in the public sector that

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[17] People are already trying to overcome this constrains through informal coping strategies. Many are going to neighboring Mozambique and Zambia where land and water resources are abundant. They bring back food and sent remittances. This reduced the pressure on densely populated central and southern regions.

[18] Unfortunately, Malawi has an unusually high rate of HIV/AIDS prevalence among its teachers. This will severely hinder the country's capacity to improve its educational system.

[19] Malawi's economy is severely damaged by the high incidence of HIV/AIDS. Thus, war against the pandemic without burden to the budget (i.e. through grant support from the global community) should be its highest priority. In various trade/poverty scenarios presented in this paper, an assumption is made to this effect.

[20] Currently, there is a significant and high level of positive correlation between cash and food crops. In other words, the more food crops a household grows the more is its cash crop production. This and other evidence strongly point to the need for attainment of food security in order to ensure the production of tradable goods.

enhance trade opportunities rather than undermine them, as the poor performance of agricultural marketing parastatals did in the second half of the 1990s.

The MPRS states that the "key source of growth is agriculture, although efforts will be made to diversify, especially through micro, small and medium scale enterprises (MSMEs), into natural resources, manufacturing, tourism and small-scale mining. In agriculture, the focus is on the provision of necessary services and conditions to farmers for increased income. This involves interventions ranging from availability of inputs through improved production technologies and value addition to marketing."

An important element of the MPRS is to ensure that the quality of life of the most vulnerable is improved and maintained at an acceptable level by providing social safety nets. These safety nets will consist of productivity enhancing interventions for the transient poor (those within the poorest 30 percent of the population who are capable of moving out of poverty) and substantial welfare transfers to the chronically poor (the poorest 5-10 percent of the population). Four types of social safety nets have been designed. Accordingly, the Targeted Inputs Program (TIP)[21] will enhance the productivity of the capital-constrained by distributing free agricultural inputs to some 568,000 households annually. The Public Works Program (PWP) will increase the productivity of the labor abundant but land constrained poor by employing some 250,000 annually to create and maintain socio-economic infrastructure. The Targeted Nutrition Program (TNP) will assist some 150,000 malnourished children as well as lactating and pregnant mothers. And the Income Support Beneficiary (ISB) program will direct welfare transfers to about 100,000 Malawians who cannot be supported by any of the three other programs.

These social safety nets should provide a cushion on which the poorest can begin to participate in economic growth. Releasing concern with food security will also enhance incentives for growing tradable commodities. The Malawi IHS shows that there is a significant and strong relationship between cash crop output per hectare and food sufficiency of the farmer households in rural areas.

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[21] The TIP is based on the successful experience of the Starter Pack Program that provided inputs to the rural poor in 1998-2000 and led to increased agricultural production.

7.5 Sources Of Household Expenditures And Income

Breaking down household expenditures by category and by grouped deciles can provide insights into the nature of poverty. As figure 7.4 shows:

- Three quarters of household cash and non-cash expenditures go for food with the poor allocating even more, about 80 percent of total expenditures, for food. Maize is the single most important food item (Box 7.4).

- Poor households are characterized by lower non-cash food consumption due to land constraints which make them more dependent on cash food consumption. The lower-middle group has more land, thus consumes more subsistence food.

- The highest income group spends the least on food as a proportion of their total consumption.

- Malawi's fisheries sector provides employment to some 250,000 people, but its importance to the nation is far greater than these statistics would imply. Fish comprises more than half the animal protein intake of a chronically malnourished population, and fishing revenues catalyze a diversity of other economic activities at major landing sites[22]. Although the available data seem to underestimate the importance of fisheries, fish consumption constitutes 3.5 percent of total household consumption in Malawi, equally in male and female headed rural households and is especially high in the Southern region (table A 7.5).

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[22] The livelihoods of the lakeshore populations depend on lake fisheries in addition to farming, and these groups are generally less poor and better nourished than the rural average. The fishery sector is much less seasonal than agriculture, and provides a year-round impetus to other business enterprises.

FIGURE 7.4 HOUSEHOLD EXPENDITURE STRUCTURE
ACROSS HOUSEHOLD EXPENDITURE DECILES
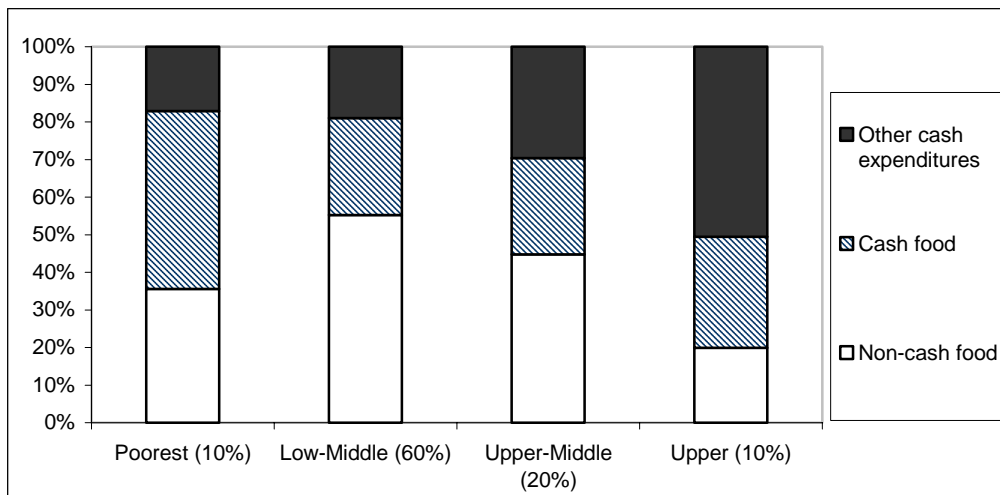
Source: IHS '98

BOX 7.4 DEPENDENCE ON MAIZE

A vast majority of Malawians regard maize as a staple food, although the lakeshore and the north of the country also consume cassava. The dependence on maize is so strong that maize consumption constitutes 36 percent of total household expenditures and 56 percent of food expenditures. (figure 7.5). Cash expenditures on maize as a proportion of total expenditures decrease as welfare of the households increase. Since more than 20 percent of household total expenditures for the poorest quintile are allocated to purchasing maize with cash, maize price increases hit the poorest especially hard.

FIGURE 7.5 COMPOSITION OF FOOD EXPENDITURES
IN POOREST AND UPPER INCOME GROUPS
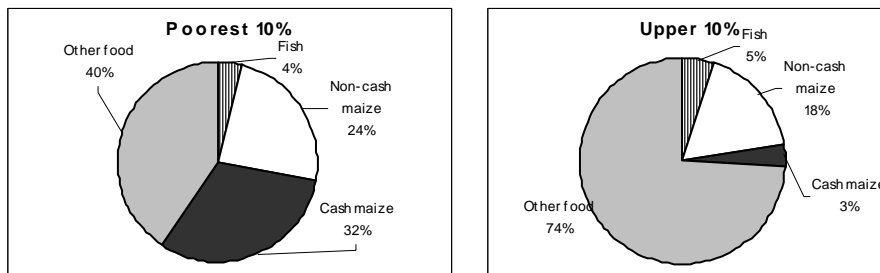
The widespread poverty is also manifested by the means through which households earn cash and non-cash income. The review of the sources of income[23] indicates that (figure 7.6):

FIGURE 7.6 HOUSEHOLD INCOME STRUCTURE ACROSS HOUSEHOLD EXPENDITURE DECILES
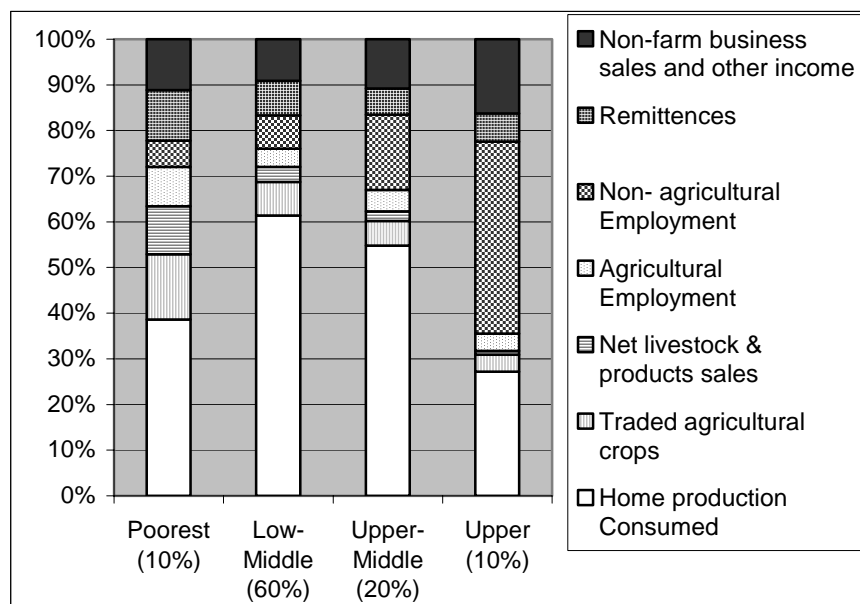
- Imputed values of own production that is consumed, subsistence, makes up half of all household income in Malawi, ranging from 27 percent in the richest decile to 39 percent in the poorest decile. Land ownership of the middle quintiles allows them to meet more of their food needs through home production.

- Formal sector employment is the most significant source of household cash income overall, representing 17 percent of total household income but with sharp

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[23] It should be noted that incomes are under reported in Malawi. In order to account for this problem, we made the assumption that cash incomes and cash expenditures are the same for all households

distinctions between urban and areas. In urban areas, 65 percent[24] comes from wages; this is only 12 percent in rural areas. The determinants of wage rates in the formal sector are discussed in Box 7.5;

- Remittances represent 7 percent of household income, an especially important source of income in poorer households. In rural areas, for example, 11 percent of household income of the poorest households comes from remittances, versus only 6 percent for the richest households. Remittances coming into rural areas is evenly split between that coming from rural and urban areas. Whereas, 80 percent of remittances to urban households are sent from other urban areas.

There are significant differences in the sources of income between poorest and upper income households. These consist of:

- The largest disparity between rich and poor households is that the former derive a much larger share of income from formal sector employment.[25]

- Poor households derive 9 percent of total household income from agricultural employment whereas rich households obtain 3.5 percent of income from the same source.

- The proportion of income from food crop production decreases with household wealth – 5.9 percent for the poor and 1.3 percent for the rich, a pattern which is repeated for cash crop cultivation.

- Livestock products are an importance source of income for poor households (10 percent) but not for rich households (1 percent).

Only the richest of all households, the top 1 percent, rely on a more diverse welfare strategy. The comparison of the wealthiest 1 percent of the population with the rest shows rather dramatic differences (figure 7.7). The wealthiest clearly rely on trade related non-farm businesses as well as wages from employment. They are far less involved in agricultural trade. Surprisingly, even the wealthiest derive a significant

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[24] The public administration and other service sector is the largest formal sector employer, representing 26 percent of total urban income.

[25] Within this category it is interesting to note that government sector wages represent almost 10 percentof income for the richest households but less than 1 percent for the poorest.

percentage of income from subsistence agriculture. The wealthiest mostly live in the Central and Southern regions and all of them are male headed households.

**FIGURE 7.7 INCOME STRUCTURE OF THE WEALTHIEST 1 PERCENT
AND THE REST OF THE POPULATION IN MALAWI**
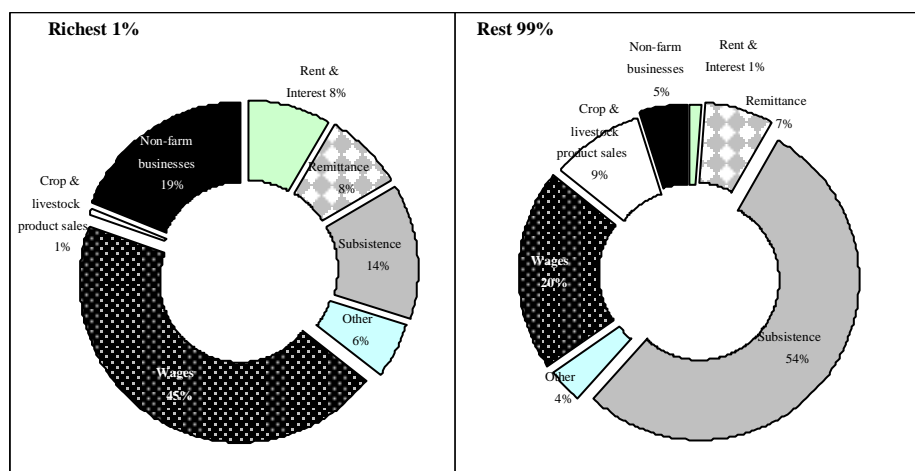
Source: IHS '98

The overwhelming impact of poverty and lack of food security in Malawi means that most people have to spend most of their efforts on survival. Subsistence economic activities have become essential for three main reasons.

First, households attempt to create their own safety nets. In the short run, Malawians cope with food shortages by reducing the frequency of maize meals and by including the cob with the corn in the preparation of **nsima**, the staple dish. In the longer term, giving greater priority to food crops over cash crops is an understandable hedging mechanism for households.[26] The proportion of household expenditures for "own production" is substantial but significantly lower for households in the richest quintile

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[26] Maize cultivate already covers about 60 percent of agricultural land, with a large part of the production consumed within households. Low profit margins associated with maize have limited the number of commercial farmers growing the crop and contributing to crop improvement practices.

(30 percent) relative to the bottom four deciles (42 percent). Households with access to land choose not to cultivate cash crops with the enthusiasm that they might because of the high priority for food security from household production.

BOX 7.5 DETERMINANTS OF WAGE RATES IN THE FORMAL SECTOR

Table A-7.6 presents the determinants of the natural log of the wage rates among formal sector employees. The formal sector is defined as all wage earners. Controlling for other factors, the wage rate for men is about 18 percent more than the rate for women.

Education and age are used to capture the human capital capacity of the employees in the formal sector. First, experience, measured by age, has a positive impact on wage rates. Each year of experience appears to increase wage rates by a percentage point. A number of variables, designed to capture the educational background of the worker, have a positive impact on wage rates. However, workers completing standards 1 through 4 do not earn a high wage rate compared to workers with no education at all. All other levels of education have a significantly positive impact on wage rates.

Employment in the various industries is an important determinant of wage rates. Relative to employment in agriculture, not including in self-employed farmers, employment in all other industries has a positive impact on wage rates. Controlling for other observed characteristics, the financial and business services industry has the highest associated wage rates, with the utilities industry also showing a high wage rate. Among the sectors of employment, the government and statute are the highest paying sectors.

Geographic characteristics play an important role in the determination of wage rates. For instance, controlling for other factors, urban households earn about 53 percent more than rural households.

Among the other variables determining wage rates, it appears that married people earn more than unmarried, widowed and divorces persons.

Second, households turn to subsistence farming because of the weak market infrastructure in most of the country. In rural areas, commuting to markets takes more than an hour. The nearest representative of the Agriculture Development Marketing Corporation (ADMARC)[27], the largest purchaser of non-perishables from small holders,

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[27] ADMARC depots provide a number of other services, including fertilizer and seed distribution, storage, transportation etc. ADMARC, which has had operational challenges, is facing competition from new entrants such as the National Association of Smallholder Farmers of Malawi (NASFAM). ADMARC has lost its importance as a agriculture service establishment after the Malawi Integrated Household survey has been completed.

is on average more than two hours away to the farmer households. This is, in part, due to weak transportation – three quarters of all transportation between households and the nearest ADMARC is by foot and 90 percent of all transportation between the farm land ADMARC is by foot or bicycle.

Third, households lack other options with respect to feeding their families. Income from wages benefits a relatively small number of families in Malawi and profits from cash crops are low and uncertain. Box 7.6 presents data on the determinants of income for self-employed farmers. It reinforces the finding that Malawian farmers are too risk adverse to spend more effort on cash crops even though that has a positive impact on income. It also underlines the importance of farm to market transportation.

BOX 7.6 DETERMINANTS OF INCOME RATES FOR SELF EMPLOYED FARMERS

The determinants of hourly incomes of self-employed farmers in Malawi include education, the crop choices, market access, cultivated land size, and the geographic location of the plot (table A7.7). Completion of secondary school by the household head has a positive impact on income rates relative to the household head not completing primary school. The experience of the farmer appears not to significantly determine income rates.

The crop cultivated generally has a significant impact on the income rates earned by the farmer. For instance, among food crops, cassava and maize have a negative impact on income rates, while rice and sorghum have a positive impact on income rates. Among cash crops, tobacco has the biggest positive impact on income rates, although tea and cotton also have a positive impact on income rates.

Market access, as measured by the commute time to the nearest ADMARC, has a positive impact on income rates. Relative to farmers who are less than 30 minutes away from the ADMARC, farmers who are 30 to 60 minutes away are paid about 0.24 Kwacha less per hour, while farmers who are between an hour and two hours from the ADMARC make 0.38 Kwacha less per hour. Thus, it appears that households that are more connected to markets earn more than other households.

The amount of land cultivated is a positive determinant of income rates for self-employed farmers. Finally, households in the Southern region earn lower income rates than households in the Northern region.

A more detailed analyses of cropping patterns and poverty reveals other significant findings (table a7.8). It clearly shows that production of tradable goods provides greater welfare to families.

- Farmers that grow tobacco are substantially better off than those who grow no tobacco at all;

- Farm sizes are larger for tobacco and other cash crop growers . For instance, tobacco growers cultivate an average of 3.4 acres of land and other cash crop growers have 3.2 acres. Subsistence farmers, on the other hand, cultivate only 2 hectares. Clearly, cash cropping is done when farmers have access to more land. This is also shown by the fact that more than a third of the land is put to maize cultivation among all growers of tradable goods;

- Almost no one generates cash crop maize sales. Indeed, much of the informal border trade of Malawians consists of buying maize and selling some manufactured goods;

- Cash crop producers generate a substantial portion of their income from sales of agricultural crops. For instance, in the Southern region, nearly a fifth of the income of small holder tobacco growers come from tobacco sales. Growers of other cash crops generate 15 percent of their income from their trade. Nevertheless, both groups derive 70 percent of their income from subsistence production;

- Cash crop producers rely less on agricultural wage income;

- Cash crop producers have larger households, heavier dependency ratios. Yet, their per capita income is substantially higher than incomes on other farmers and those who grow no tobacco at all.

There are other important activities that people in Malawi already engage in that offer important potential for poverty reduction and trade. First, a large number of people work in the fisheries; improving the technology together with an emphasis on sustainability would provide food security, and offer an opportunity to trade (even if only within the local market). Expanding forestry and horticulture, particularly through the estates, would create high levels of wage employment in the short term and tradable goods in the medium term; this would also contribute to soil improvements. Urgent emphases on alternative methods of soil quality improvement will not only enhance food security but will also maximize the returns to the social safety measures that include farm inputs. As more Malawians emigrate to neighboring countries for farming and for wage employment, more remittances will flow back and the population pressure will be reduced.

7.6 THE IMPACT OF TRADE POLICY CHANGES ON POVERTY

The MPRS lays the basis for providing both short-term mitigation and long-term solutions to poverty within a comprehensive framework of policy reform, structural changes, and program implementation. This comprehensive approach is necessary if trade is to have an important role, as it should, in poverty reduction. This is because many of the problems are deep-seeded, especially areas as diverse as education and health status, the lack of physical infrastructure, gender inequality, the natural importance given to food security over tradable commodities, etc. It is also evident that programs such as those dealing with various social safety net activities and with HIV/AIDS are necessary conditions for any improvement in trade opportunities. The poverty problems of Malawi are so broad and deep that many factors have to be addressed simultaneously and no single policy change is sufficient of itself. And because of the structure of household income, and the clearly felt need for food security, a series of overall policy changes are needed and improvements in trade may be just as effective in a number of areas through small, targeted programs. Although many of the calculations are made based on income deciles and how policy changes would affect these, the impacts on target groups such as producers groups, type of households, geographic regions, etc., are also identified[28].

As mentioned a number of policy changes and specific actions are needed to inject cash into the economy and to modify the vicious circle of poverty. The limitations in baseline data do not allow the direct and satisfactory testing of these, but provide sufficient evidence to suggest that robust and simultaneous actions can free Malawians from this circle;

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[28] "Deciles of consumption expenditure are rarely a relevant group for policy purposes; rather policymakers tend to be interested in what the effects of a reform are for functional or geographical groupings e.g. rice farmers versus informal urban workers or Western province versus Eastern Province. Indeed there are an infinite variety of possible groupings e.g. ethnicity, location, principle activity, land ownership etc. The particular combinations of grouping which are relevant will depend on the precise context, but if the analysis is conducted at the household level, then it is possible to put together any grouping for which the relevant variables are available from the survey data." (McCulloch, 2002).

A series of simulations[29] has been performed to illustrate the impact of policy changes on poverty, including (i) a reduction in transportation costs; (ii) an increase in soil quality and thus improvements in yields through the provision of fertilizer; (iii) an expansion in employment in forestry and construction industry with the implementation of the public works program and expansion in manufacturing industry with capacity-building and reforms; and (iv) increase in income from cash crops through diversification and higher level of food security.

7.6.1 Reducing Transportation Costs

As stated earlier, transport prices are prohibitive in Malawi, largely because of the monopolistic structure of the transport services. Using the assumption that transport margins[30] could be reduced by 25 percent, thus benefiting both the producers and consumers (table A7.9), household welfare increases by 2.2 percent in Malawi. (table 7.2).

Significantly, within each decile female headed households fare far worse than others because of their relative inability to engage in production of tradable goods. At the same time, the poorest male and female households alike enjoy disproportionately higher benefits than those better off.

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[29] An important caveat of the simulations is that price changes do not lead to households altering either the quantity consumed or produced. (In reality, after changes in prices, producers would switch to producing the more valuable crops, consumers would in general switch to cheaper goods and away from the now relatively more expensive ones, land the household would adjust its labor supply to changes in wages. Because the simulation assumes that the quantities remain fixed, this formulation provides a lower bound for any estimated gain and an upper bound for any estimated loss.) Following common practice in the literature on poverty, the analysis is anchored in household expenditures. Results are expressed as a percent of these expenditures ordered by decile of per capita adult equivalent total household consumption. The interpretation in terms of poverty is that a policy change is "pro-poor" if its provides extra income for the first deciles. The size of the impact is measured as a percent of household expenditures. For example, a reduction in fertilizer costs will have a savings impact on households. In addition, yields will improve and hence households will derive higher revenue, farmers will gradually leave subsistence farming and enter into more market-oriented activities, among other impacts.

[30] Transport margins are taken from van der Mensbrugghe (2002) and from Steve Jaffee (personal communication)..

TABLE 7.2 IMPACT OF 25 PERCENT REDUCTION IN TRANSPORT MARGINS FOR PRODUCERS AND CONSUMERS ACROSS EXPENDITURE DECILES FOR DIFFERENT GROUPS (PERCENT)

	Poorest (10%)	Lower - Middle (60%)	Upper Middle (20%)	Upper (10%)	Overall
Southern Region	3.0	2.1	2.0	2.3	2.1
Central Region	2.7	2.3	2.1	2.7	2.3
Northern Region	2.0	2.2	2.1	2.2	2.1
Malawi	2.9	2.1	2.1	2.5	2.2
Rural	3.8	2.6	2.1	2.5	2.6
Urban	2.9	2.6	2.1	2.4	2.5
Male headed households	3.2	2.3	1.9	2.6	2.4
Female headed households	2.3	1.5	1.5	2.0	1.6

Households in the lower and middle expenditure deciles capture a greater percentage of income gains when transport margins for purchase of consumption items, inputs for crops and for the marketing of their produce is reduced. In addition, there may be additional benefits such as the greater use of markets by households which, in turn, will encourage the use of more efficient production techniques and also induce farmers to break out of the cycle of subsistence farming if their risk adversity decreases. More dramatic transport price declines would bring yet greater benefits to both the consumers and the producers. The decline in transport costs will also enhance the competitiveness of Malawi's exports more generally. Figure 7.8 illustrates how sales price of groundnuts faced by groundnut farmers dramatically decrease as internal market access deteriorates.

FIGURE 7.8 MARKET ACCESS AND PRICE FACED BY GROUNDNUT FARMERS
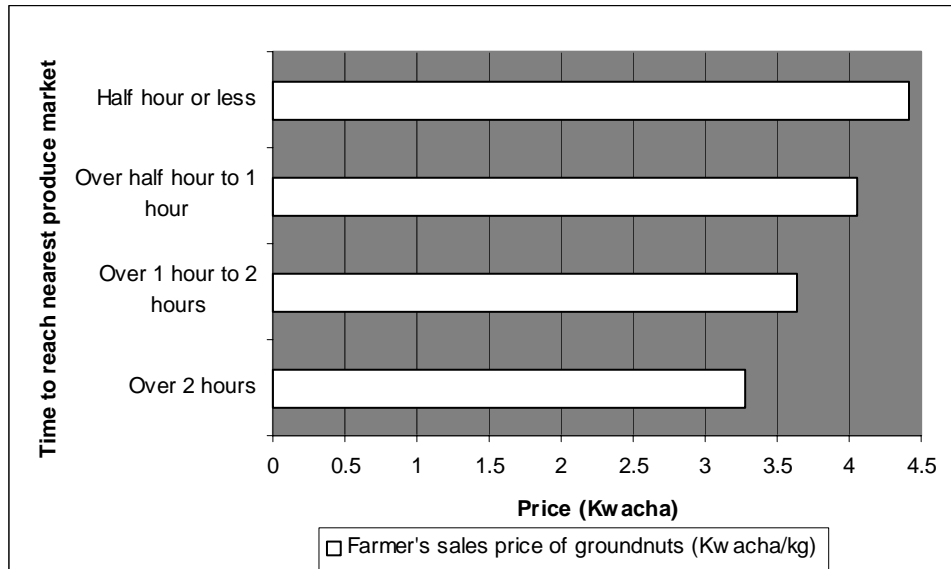
Source: IHS '98

BOX 7.7 TRANSPORT MARGINS AND TOBACCO GROWERS

Reducing transportation costs for inputs bound to farms and transport costs for crops destined to the marketplace shows that self-employed tobacco farmers' income increases household income by 3 percent (table 7.3). The benefits are lowest in the Southern Region (2.2%) while the tobacco growing households in the Central Region benefit the most and improve their household income by 3%. The greatest benefit of transport cost reductions are enjoyed by the poorest; indeed while the lowest decile average benefit by over 4%, the highest decile derives only as much benefit (2.6%).

TABLE 7.3 EFFECT OF 25 PERCENT DECREASE
ON TRANSPORTATION MARGINS ON INCOME OF TOBACCO FARMERS

	Poorest (10%)	Lower - Middle (60%)	Upper Middle (20%)	Upper (10%)	Overall
Southern Region	4.2	2.1	1.9	1.7	2.2
Central Region	4.5	3.0	1.8	2.7	2.9
Northern Region	3.3	2.4	1.8	2.0	2.3
All Malawi	4.2	2.9	2.0	2.6	2.8
Male Headed Households	4.3	3.0	2.1	2.7	2.9
Female Headed Households	2.6	1.6	0.9	0.8	1.5

7.6.2 Providing Social Safety And Improving Soil Quality[31] And Crop Yields

It is estimated that harvested crops remove about 160,000 metric tons of nutrients annually while mineral fertilizers and organic sources replace only about 70,000 tons and 15,000 tons annually respectively, an unsustainable situation in the medium term and adding to lower yields immediately. The type of degradation that has taken place has severely reduced responsiveness of crop yields to increased use of fertilizer; an aggressive extension package is needed to change production patterns so as to restore soil quality.

Assuming that the MPRS is implemented and 568,000 households of the poorest deciles receive free farm inputs, including fertilizers, pro-poor welfare outcomes will be achieved. Simulation of the impacts of free inputs (social safety farm input packages) to about a quarter of the total population show that incomes would increase by 10.95 percent for the lowest income groups and 4.3 percent for all households[32]. As also seen in all other simulations, the impacts on the female headed households will be somewhat more modest. Impacts on the poorest deciles will be largest in the Central region (Table A7.10)

The data do not allow estimation of relationship between farm inputs and yields for cash crops. However, it is safe to assume that if fertilizer prices were reduced substantially for all farmers regardless of what they produce overall welfare impacts

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[31] Land pressure caused by a rapid increase in the rural population has resulted in the continuous cropping of agricultural land in much of Malawi. Little or no replenishment of nutrients takes place, neither is there significant incorporation of organic matter into the soil to improve structure and nutrient status. Recent field evidence reveals that the practice of ridging, undertaken by most Malawian farmers, may have created an impermeable horizon in clay soils which have been cultivated over many years. These factors, together with poor standards of crop and land husbandry, the increasing use of marginal land and a decline in vegetative cover due to deforestation and uncontrolled burning, have all contributed to a decline in soil fertility that has accelerated over the last two to three decades. Evidence for the decline in soil fertility is provided by a pronounced fall in unfertilized maize yields, and a parallel decline in the response of crops to fertilizer. During the 1960s unfertilized local maize typically yielded 1,700 kg/ha, but now yields have fallen to a national average of less than 1,000 kg/ha, with performance lowest in the more densely populated South (yields had fallen to 600 to 800 kgs/ha in Chiradzulu and Phalombe by the early 1980s). Across the country the maize response to fertilizer has declined. Nationwide, agricultural technology is inadequate to prevent soil erosion and conserve fertility.

[32] It has been assumed that with free farm inputs (fertilizer, seed as well as a food package) food crop yields would increase by 30 percent. In this simulation, it is assumed that the input packages provided for social safety are for food crop production. If other types of fertilizers are provided to enhance cash crop production, the impacts would be larger.

would be substantial. It is also obvious that if the donors made free fertilizer available for one year to give a push to agricultural production while providing a safety net for the most vulnerable households, progress can be made. In so doing, however, it is critically important to note that fertilizer response of some crops has already declined and farmer education to improve soil quality through alternative approaches is urgently needed.

7.6.3 Increasing Non-Farm Employment

Currently about 100,000 Malawians are employed in manufacturing, mining and construction, mostly in the southern cities of Blantyre and Zomba. A 30 percent increase[33] in employment in these industries shows the household welfare increases by 1.6 percent with almost all the benefits going to the Southern region where the jobs would mostly be located. The biggest beneficiaries, at least in the short term, are the richer households since they have the characteristics of those who are more like be employed (table A-7.11). It is important to note that the benefits of expanded manufacturing employment will be exclusively enjoyed by the male headed households which is captured with the probit selection process.

When the impacts of the creation of large scale public works and forestry sector temporary (part-time) jobs at minimum hourly wages are investigated, greater pro-poor benefits are obtained. The overall impact of the creation of 125,000 temporary jobs would be 4 percent. Smith (2001), reviewed cost effectiveness of various safety net measures and alternative targeting mechanisms. His recommendation includes a strong emphasis on public works programs, aimed at employing around 300,000 – 400,000 people per year. (table A 7.12)

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[33] The 30,000 people who would benefit are chosen in a three-step process. First, the characteristics of those already employed in the sector are identified. Secondly, people who best fit these characteristics but are not currently employed in the industries are identified. Thirdly, wage levels are identified for all employed persons to help identify those who might switch into the three sectors because of higher wages.

7.6.4 Diversifying Production Of Tradable Crops

In Malawi, there are opportunities to diversify cash crops while continuing to improve tobacco yields. The household data do not allow estimates on cash crops such as paprika. Nevertheless making several assumptions[34], the impacts of production of tradable crops improves the household welfare by about 2.2 percent The Central region will benefit the most given the existing productive infrastructure. Benefits of diversification, based on the assumption that the households that currently produce cash crops will be agents of change, will largely go to households headed by men.

TABLE 7.4 TOTAL IMPACT OF ALL SIMULATIONS ON HOUSEHOLD INCOMES(%)

	Poorest (10%)	Low-Middle (60%)	Upper-Middle (20%)	Upper (10%)	Overall
Southern Region	25.4	16.8	7.2	10.6	15.1
Central Region	42.9	15.0	5.9	6.1	15.0
Northern Region	40.0	9.5	3.2	3.5	10.6
Malawi	36.7	14.2	6.8	7.0	14.2
Rural	38.3	18.4	4.4	3.9	16.1
Urban	22.8	15.9	7.0	3.7	13.5
Male headed households	38.1	15.0	7.6	7.9	15.2
Female headed households	33.8	11.5	2.6	2.2	11.0

The simulations presented above are based on modest targets. Malawi could achieve significantly better results if we assume that:

a) transportation costs are reduced by 50 percent[35];

b) food crop yields are increased by 60 percent as a result of free input packages[36];

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[34] IHS does not contain information on paprika and many other important cash crops. Thus, a simplistic assumption is made in the diversification scenario. The scenario excludes the tobacco growers and assumes that current cash crop growers will double their income from this activity through diversification.

[35] This reduction has already been achieved by ADMARC for farm to auction floor tobacco transportation costs.

[36] Starter pack impacts on maize yields have been estimated to increase around 90 percent. (Smith,2001).

c) 250,000 jobs in public works is created as proposed by MPRS;

d) income impacts of diversification are significant through indirect impacts of enhanced food crop production.

The poverty impact of the discussed high and low scenarios are presented in table 7.5. In both the modest and higher trade impact scenarios, partial equilibrium models are used. As a result, the important secondary, spill-over impacts of individual policy measures are not observed. These are expected to be significant, thus, providing yet another reason for Malawian policy to act on all proposed measures simultaneously.

TABLE 7.5 POVERTY IMPACTS OF THE SELECTED ACTIONS, REFORMS, AND MARKET-STRENGTHENING MEASURES

	Poverty Headcounts			Food Poverty Headcount (Ultra Poverty)		
	Before Simulations	After Low Impact Scenario	High Impact Scenario	Before Simulations	After Low Impact Scenario	High Impact Scenario
Southern Region	61.8	57.5	50.0	31.8	22.2	18.6
Central Region	56.6	50.9	44.1	25.3	12.4	8.2
Northern Region	61.5	59.1	57.9	28.4	23.3	17.5
Malawi	59.6	54.9	48.4	28.7	18.2	14.1
Rural	60.6	56.1	49.2	29.3	18.1	13.6
Urban	50.8	44.6	41.2	23.8	19.8	18.8
Male headed households	57.9	53.0	46.3	26.8	16.7	12.9
Female headed households	65.6	62.1	55.9	35.5	23.7	18.5

7.7 CONCLUSIONS

With high exposure to HIV/AIDS, draught and famine, Malawi has a daunting challenge to reduce poverty. Attempts to increase its trade will help meet this challenge, but these will have to be complemented by efforts to reduce food insecurity. Specifically, agricultural input packages should be provided to over half a million households and employment should be increased substantially through public works programs.

The problems facing Malawi are many and intertwined. Furthermore, some of the constraints to economic growth are gradually taking root in society. Given the household income structure, any single policy or development strategy has limited initial impacts. It is also difficult to predict whether these impacts could be sustained. Even pro-poor and generous incentives and policy adjustments produce limited impact for Malawi in the short-run. An overall increase[37] of 14.3 percent in household welfare could be expected if:

- current cash crops continue to be produced,

- tradable goods production is diversified,

- large-scale temporary employment through public works programs is created,

- transport costs are reduced,

- free starter packages are provided to the poorest, and

- costs of war against HIV/AIDS are met through grants and,

- all these are done simultaneously.

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[37] This figure would have been 19.5 percent if indeed 250,000 temporary jobs are created in public works (table A7.11)

The problems are so broad and deep that many factors have to be addressed simultaneously to achieve results. Conversely, implementing a single policy has only a marginal impact on the economy. The measures based on actions listed below have visibly pro-poor and pro-rural impacts; some also produce positive impacts on households headed by women. If these actions are not jointly implemented the returns to individual interventions will be modest. For instance, if public works programs create no new jobs, all other measures would all together produce less than 9 percent improvement in the household sector. The key mechanisms of the much needed changes require political will as well as well coordinated donor support to protect the poorest.

TABLE A-7.1 PROBIT ESTIMATES FOR POOR FARMER HOUSEHOLDS

	Coefficient		Std. Err.
Share of cash crops in agricultural output	-0.14	***	0.05
Education of the household head (after secondary)	-0.70	***	0.08
Education of the household head (Primary and secondary)	-0.26	***	0.05
Central Region	-0.12	*	0.07
Southern Region	0.03		0.07
Age of the household head	0.04	***	0.00
Age squared	0.00	***	0.00
Access to produce market (30 mins or less)	-0.23	***	0.06
Access to produce market (over 30 mins to 1 hour)	-0.22	***	0.07
Access to produce market (over 1 hour to 2 hours)	-0.07		0.07
(Constant)	-0.25	***	0.07
Number of observations			3357
Percent of poor households in the sample			56.4
LR chi2(10)			151.65
Prob > chi2			0
Pseudo R2			0.04

Source: Authors' calculations using IHS '98.
*Significant at 10 percent or better. **Significant at 5% or better. ***Significant at 1 percent or better.

Notes: Dependent variable is a dummy for poor households. The sample consists of farmer households only. Omitted variables are :Household heads with no education, Northern Region and access to produce market with over 2 hours.

TABLE A-7.2 PROPORTION OF MEAN PER CAPITA RECOMMENDED DAILY REQUIREMENT (RDR) FOR CALORIES, BY WEALTH GROUP AND REGION

	Ultra Poor	Poor	Non-Poor	All	Ultra Poor	Poor	Non-Poor	All
	Malawi				Southern region			
All daily calories reported consumed as percent of RDR of households	54.4	66.0	107.1	82.9	51.4	63.3	106.2	80.1
Percent of households reporting sufficient calories consumed to meet their RDR	5.8	15.9	55.7	34.4	4.3	14.4	54.5	31.9
Percent of calorie RDR of households provided by own production	23.0	32.7	59.1	43.6	12.1	22.0	48.7	32.4
Percent of households meeting all of their calorie needs by own production	2.2	5.4	26.1	15.0	0.3	3.3	21.7	11.3
Mean calorie MDR	2,142	2,163	2,233	2,191	2,140	2,163	2,241	2,192
Median calorie MDR	2,125	2,143	2,217	2,170	2,130	2,150	2,229	2,183
IHS sample households	1,616	3,580	3,006	6,586	877	1,763	1,283	3,046
IHS sample individuals	8,503	17,509	11,437	28,946	4,436	8,363	4,837	13,200
	Central region				Northern region			
All daily calories reported consumed as percent of RDR of households	59.1	69.6	107.0	86.1	52.6	65.3	110.9	83.2
Percent of households reporting sufficient calories consumed to meet their RDR	9.0	18.1	56.1	36.7	2.3	14.7	59.3	36.4
Percent of calorie RDR of households provided by own production	35.5	43.0	68.1	54.1	33.2	43.6	65.5	52.2
Percent of households meeting all of their calorie needs by own production	5.7	8.0	30.2	18.8	-	5.7	28.2	16.7
Mean calorie MDR	2,134	2,156	2,221	2,184	2,179	2,188	2,254	2,213
Median calorie MDR	2,117	2,140	2,200	2,150	2,140	2,150	2,250	2,190
IHS sample HHs	549	1,333	1,275	2,608	190	484	448	932
IHS individuals	2,937	6,706	5,105	11,811	1,130	2,440	1,495	3,935

	Ultra Poor	Poor	Non-Poor	All	Ultra Poor	Poor	Non-Poor	All
		Rural				**Urban**		
All daily calories reported consumed as percent of RDR of households	54.3	66.2	110.9	84.1	55.4	64.3	81.5	73.0
Percent of households reporting sufficient calories consumed to meet their RDR	5.4	16.0	58.9	35.4	10.1	14.7	34.5	25.7
Percent of calorie RDR of households provided by own production	24.6	35.4	67.1	48.1	5.5	5.6	6.0	5.8
Percent of households meeting all of their calorie needs by own production	2.3	5.8	30.0	16.7	0.8	0.7	-	0.3
Mean calorie MDR	2,136	2,157	2,217	2,181	2,204	2,223	2,347	2,284
Median calorie MDR	2,124	2,140	2,200	2,158	2,178	2,214	2,388	2,290
IHS sample HHs	1,373	3,099	2,558	5,657	243	481	448	929
IHS individuals	7,237	15,177	9,767	24,944	1,266	2,332	1,670	4,002

Source: The National Economic Council of Malawi, NSO and IFPRI

TABLE A-7.3 DETERMINANTS OF WELFARE (FOR ALL HOUSEHOLDS)

	Coefficient		Std. Error
(Constant)	2.20	***	0.02
Dummy for households with SME ownership	1.09	***	0.09
Log (total cultivated land size)	0.07	***	0.02
Dummy Female headed households	-0.04	**	0.02
Education of the household head (years)	0.27	***	0.01
North	0.21	***	0.03
Central	0.15	***	0.02
Household size	-0.09	***	0.00

Source: Authors' calculations using IHS '98.

*Significant at 10% or better. **Significant at 5 percent or better. ***Significant at 1percent or better.

Notes: Dependent variable is logged adult equivalent adjusted daily consumption. The sample size is 6,586. Omitted variable is Southern Region.

TABLE A-7.4 WAGE EARNERS BY GENDER

	Malawi	Malawi		Rural		Urban	
	Total	Male	Female	Male	Female	Male	Female
Agriculture, forestry and fishing	341,598	280,272	61,326	273,614	58,549	6,658	2,777
Mining and quarrying	6,922	5,828	1,094	4,733	-	1,094	1,094
Manufacturing	62,326	53,415	8,911	30,658	6,211	22,757	2,700
Electricity and water	14,213	11,251	2,962	4,472	475	6,779	2,488
Construction	38,083	37,281	802	25,021	522	12,260	280
Wholesale/retail trade and hotels/restaurants	46,070	36,808	9,262	24,350	5,752	12,458	3,510
Transport	18,995	18,588	407	8,763		9,825	407
Business and financial services	58,282	43,973	14,309	17,520	2,736	26,454	11,573
Personal and community services	175,341	129,163	46,178	77,063	22,772	52,100	23,407
Total	761,830	616,579	145,251	466,194	97,017	150,385	48,236

Source: Authors' calculations using IHS '98.

TABLE A-7.5 TOTAL FISH CONSUMPTION (PERCENT OF TOTAL CONSUMPTION)

	Poorest (10%)	Lower - Middle (60%)	Upper Middle (20%)	Upper (10%)	Overall (100%)
Southern Region	3.7	4.0	4.1	3.6	3.9
Central Region	2.4	2.5	3.0	1.9	2.5
Northern Region	1.3	1.6	1.8	2.4	1.7
Malawi	3.5	3.1	3.3	2.4	3.1
Rural	3.5	3.1	3.2	2.4	3.1
Urban	0.6	4.9	3.5	2.4	3.9
Male headed households	3.5	3.2	3.3	2.5	3.2
Female headed households	3.4	3.0	3.1	1.9	2.9

Source: Authors' calculations using IHS '98.

TABLE A-7.6 THE DETERMINANTS OF LOG WAGES

Category		Coefficient	
	Intercept	4.99	***
Gender	Male	0.18	***
Experience	Age	0.01	***
Family	Household Size	0.02	***
Schooling	Standard 1-4	-0.04	
(Omit: no education)	Standard 5-8	0.29	***
	Junior	0.77	***
	High school	1.06	***
	University	2.17	***
	Other school	1.47	***
Industry	Mining	0.27	*
(Omit: agriculture)	Manufacturing	0.24	***
	Utilities	0.37	***
	Construction	0.32	***
	Retail	0.26	***
	Transportation	0.32	***
	Financial and Bus. Serv.	0.46	***
	Personal and Community Serv.	0.26	***
Sector	Government	0.38	***
(Omit: self-employed)	Statute	0.40	***
	Private	0.23	***
	Other	0.10	
Region	Dummy Urban	0.53	***
(Omit: Southern)	North	-0.12	***
	Central	-0.11	***
Marital Status	Divorced	-0.17	***
(Omit: married)	Widowed	-0.21	***
	Never Married	-0.21	***

Source: Authors' calculations using IHS '98.

**TABLE A-7.7 THE DETERMINANTS OF HOURLY WAGES IMPUTED
FROM CASH PROFITS FROM OWN PRODUCTION
(QUANTILE REGRESSION AT THE 50 PERCENT QUANTILE)**

Category	Variable	Coefficient	
Education	Completed primary	0.009	
(Omit: below primary)	Completed secondary	0.124	**
	Completed higher education	0.122	
Experience	Age	0.006	
	Age squared	0.000	
Food Crops	Beans	0.037	
	Cassava	-0.822	***
	Maize	-0.193	***
	Millet	0.045	
	Nut	0.082	
	Rice	0.614	***
	Sorghum	1.012	**
Cash Crops	Cotton	0.262	**
	Tobacco	1.301	***
	Tea	1.230	***
	Sugar	-0.025	
	Sunflower	0.157	
Time to reach ADMARC	30 - 60 mins	-0.240	***
(Omit: 0-30 mins)	60 - 120 mins	-0.144	*
	More than 120 mins	-0.359	***
	No response	-0.566	
Land	Area cultivated	0.084	***
	Owner	-0.013	
Geographic	Central	-0.030	
(Omit: Northern)	Southern	-0.447	***
	Intercept	0.403	*

Source: Authors' calculations using IHS '98.

TABLE A-7.8 SELECTED DESCRIPTIVE STATISTICS IN THE RURAL SECTOR

Tobacco growers

REGION		Total cultivated land	Land allocated to maize	Hybrid maize yield (kg/acre)	Local maize yield	% Income from cash crop sales	% Income from home production consumed	% Non-agricultural Income	Time to ADMARC	Per capita total expense	HH Size	Poverty Headcount (%)
South	Mean	2.18	1.32	427.02	312.60	0.19	0.67	0.06	166.14	7.69	5.41	61
	N	36,515	36,515	12,061	24,008	36,515	36,515	36,515	36,075	36,515	36,515	22,133
Center	Mean	3.69	1.98	575.66	433.40	0.17	0.72	0.04	128.55	11.41	5.14	48
	N	289,725	289,725	149,776	162,037	289,725	289,725	289,725	289,725	289,725	289,725	138,933
North	Mean	2.33	1.82	536.60	329.59	0.15	0.63	0.08	197.91	12.57	4.72	59
	N	38,805	38,805	19,981	26,253	38,805	38,805	38,805	38,437	38,805	38,805	22,729
Total	Mean	3.40	1.89	561.51	406.90	0.17	0.70	0.05	139.60	11.17	5.12	50
	N	365,046	365,046	181,819	212,298	365,046	365,046	365,046	364,238	365,046	365,046	183,795

Source: Authors' calculations using IHS '98.

All cash crop growers in Rural

REGION		Total cultivated land	Land allocated to maize	Hybrid maize yield (kg/acre)	Local maize yield	% Income from cash crop sales	% Income from home production consumed	% Non-agricultural Income	Time to ADMARC	Per capita total expense	HH Size	Poverty Headcount (%)
South	Mean	2.15	1.27	316.89	242.03	0.14	0.60	0.13	143.92	8.38	4.86	60
	N	99,351	99,351	36,718	47,709	99,351	99,351	99,351	97,392	99,351	99,351	59,256
Center	Mean	3.56	1.91	551.52	399.66	0.15	0.72	0.06	127.37	11.03	5.10	51
	N	358,439	358,439	177,426	208,564	358,439	358,439	358,439	357,396	358,439	358,439	182,899
North	Mean	2.30	1.77	531.78	332.50	0.14	0.65	0.08	190.56	12.91	4.73	57
	N	42,029	42,029	22,545	27,351	42,029	42,029	42,029	41,661	42,029	42,029	23,756
Total	Mean	3.17	1.77	513.24	366.67	0.15	0.69	0.07	135.92	10.67	5.02	53
	N	499,819	499,819	236,690	283,624	499,819	499,819	499,819	496,449	499,819	499,819	265,911

Source: Authors' calculations using IHS '98.

All farmers

REGION		Total cultivated land	Land allocated to maize	Hybrid maize yield (kg/acre)	Local maize yield	% Income from cash crop sales	% Income from home production consumed	% Non-agricultural Income	Time to ADMARC	Per capita total expense	HH Size	Poverty Headcount (%)
South	Mean	1.78	1.28	357.07	293.85	0.02	0.65	0.12	147.65	8.24	4.35	61
	N	593,753	593,753	229,165	335,004	593,753	593,753	593,753	587,616	593,753	593,753	360,979
Center	Mean	2.84	1.66	508.52	355.06	0.07	0.72	0.11	127.90	10.26	4.64	57
	N	778,044	778,044	335,353	464,429	778,044	778,044	778,044	776,381	778,044	778,044	443,665
North	Mean	2.42	1.58	535.18	365.06	0.03	0.67	0.16	180.37	13.16	4.43	54
	N	184,357	184,357	93,472	112,306	184,357	184,357	184,357	183,621	184,357	184,357	99,577
Total	Mean	2.38	1.50	459.56	333.80	0.05	0.69	0.12	141.62	9.83	4.51	58
	N	1,556,155	1,556,155	657,989	911,740	1,556,155	1,556,155	1,556,155	1,547,618	1,556,155	1,556,155	904,221

Source: Authors' calculations using IHS '98.

All farmers excluding tobacco growers

REGION		Total cultivated land	Land allocated to maize	Hybrid maize yield (kg/acre)	Local maize yield	% Income from cash crop sales	% Income from home production consumed	% Non-agricultural Income	Time to ADMARC	Per capita total expense	HH Size	Poverty Headcount (%)
South	Mean	1.75	1.28	353.19	292.40	0.01	0.65	0.12	146.44	8.27	4.28	61
	N	557,238	557,238	217,103	310,996	557,238	557,238	557,238	551,540	557,238	557,238	338,846
Center	Mean	2.33	1.47	454.33	313.08	0.01	0.73	0.14	127.51	9.57	4.35	62
	N	488,319	488,319	185,576	302,392	488,319	488,319	488,319	486,656	488,319	488,319	304,732
North	Mean	2.44	1.51	534.80	375.88	0.00	0.68	0.18	175.72	13.32	4.35	53
	N	145,552	145,552	73,491	86,053	145,552	145,552	145,552	145,184	145,552	145,552	76,848
Total	Mean	2.07	1.39	420.64	311.61	0.01	0.68	0.14	142.S25	9.42	4.32	60
	N	1,191,108	1,191,108	476,171	699,441	1,191,108	1,191,108	1,191,108	1,183,380	1,191,108	1,191,108	720,426

Source: Authors' calculations using IHS '98.

Effects of 25 Percent Reduction in Transport Margins Faced by Consumers

	Poorest (10%)	Lower - Middle (60%)	Upper Middle (20%)	Upper (10%)	Overall (100%)
Southern Region	2.6	1.7	1.6	2.2	1.8
Central Region	1.3	1.0	1.3	2.2	1.2
Northern Region	1.1	1.4	1.5	1.7	1.4
Malawi	2.1	1.3	1.5	2.2	1.5
Rural	2.4	1.3	1.2	1.4	1.4
Urban	2.7	2.3	2.3	2.1	2.3
Male headed households	2.1	1.4	1.6	2.2	1.6
Female headed households	2.1	1.2	1.3	2.0	1.4

Source: Authors' calculations using IHS '98.

Effects of 25 Percent Reduction in Transport Margins Faced by Crop Producers

	Poorest (10%)	Lower - Middle (60%)	Upper Middle (20%)	Upper (10%)	Overall (100%)
Southern Region	0.4	0.4	0.2	0.1	0.3
Central Region	1.4	1.2	0.8	0.6	1.1
Northern Region	0.8	0.8	0.6	0.4	0.7
Malawi	0.8	0.7	0.6	0.4	0.7
Rural	1.5	1.3	0.9	1.1	1.2
Urban	0.1	0.2	0.2	0.3	0.2
Male headed households	1.1	0.9	0.7	0.4	0.8
Female headed households	0.2	0.3	0.2	0.1	0.2

Source: Authors' calculations using IHS '98.

TABLE A-7.10 IMPACT OF 20 PERCENT INCREASE IN YIELDS DUE TO IMPROVEMENT IN SOIL FERTILITY THROUGH TARGETED INPUTS PROGRAM FOR POOR FARMERS (NET % EFFECTS ON LANDOWNERS AND WAGE FARMERS)

	Poorest (10%)	Lower - Middle (60%)	Upper Middle (20%)	Upper (10%)	Overall (100%)
Southern Region	6.4	7.2	0.0	0.0	5.0
Central Region	17.0	6.0	0.0	0.0	5.3
Northern Region	18.7	3.3	0.0	0.0	3.8
Malawi	10.9	5.4	0.0	0.0	4.3
Rural	10.0	7.7	0.0	0.0	5.6
Urban	0.7	0.0	0.0	0.0	0.0
Male headed households	11.2	5.2	0.0	0.0	4.3
Female headed households	10.2	5.7	0.0	0.0	4.4

Source: Authors' calculations using IHS '98.

TABLE A-7.11 IMPACTS OF 30 PERCENT INCREASE IN MANUFACTURING JOBS

	Poorest (10%)	Lower - Middle (60%)	Upper Middle (20%)	Upper (10%)	Overall (100%)
Southern Region	0.0	2.0	4.9	8.0	3.0
Central Region	0.0	0.0	0.5	0.3	0.1
Northern Region	0.0	0.0	0.0	0.0	0.0
Malawi	0.0	1.3	2.8	3.1	1.6
Rural	0.0	0.7	0.4	0.0	0.5
Urban	19.2	13.3	4.9	1.3	11.0
Male headed households	0.0	1.6	3.5	3.7	2.0
Female headed households	0.0	0.3	0.4	0.0	0.3

Source: Authors' calculations using IHS '98.

TABLE A-7.12 IMPACTS OF JOBS CREATION WITH PUBLIC WORKS PROGRAM

	Poorest (10%)	Lower - Middle (60%)	Upper Middle (20%)	Upper (10%)	Overall (100%)
Southern Region	15.1	4.6	0.0	0.0	4.3
Central Region	17.5	2.0	0.0	0.0	2.9
Northern Region	16.8	2.5	0.0	0.0	3.2
Malawi	20.1	3.0	0.0	0.0	3.8
Rural	21.7	5.0	0.0	0.0	5.2
Urban	0.0	0.0	0.0	0.0	0.0
Male headed households	19.8	3.0	0.0	0.0	3.8
Female headed households	20.6	3.1	0.0	0.0	3.9

Source: Authors' calculations using IHS '98.

The *poverty line* - that level of welfare which distinguishes poor households from non-poor households -is also expressed in the same unit as the consumption-based measure of household welfare. The method used to determine the poverty line for the poverty analysis of the Malawi IHS is the cost-of-basic-needs method. In brief, the following steps were taken:

- The objective core of the poverty line is the per capita recommended daily calorie requirement for the households in the IHS data set used here. These requirements have been established by nutrition researchers.

- This recommended calorie requirement is used to establish the food component of the poverty line by determining what it costs for *poorer* households in Malawi to acquire sufficient calories to meet their recommended calorie requirements. The cost for each calorie is determined by calculating the value of each calorie reported consumed by these poorer households.

- More than simply food is needed to meet the basic needs of a household. There is a non-food component to the poverty line as well. Unfortunately, no independent objective criteria exists by which one can establish what should make up the non-food component of the poverty line. The method adopted here is to examine the non-food consumption of those households for whom the value of their total consumption and expenditure is in the neighborhood of the value of the food component of the poverty line. Since these households are sacrificing nutritionally necessary food consumption to consume these non-food items, the items can be considered basic necessities for household welfare. The value of these items makes up the non-food component of the poverty line.

- Summing the food and non-food components results in the poverty line. The poverty status of each household can then be assessed by comparing the level of its welfare indicator to the poverty line.

Poverty lines were constructed for four separate areas of the country – Southern rural, Central rural, Northern rural, and Urban. The three rural poverty line areas correspond to the administrative regions of the country, but do not include the four urban centers of Blantyre, Zomba, Lilongwe, and Mzuzu. These four cities make up the Urban

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[38] Source: The National Economic Council of Malawi, NSO and IFPRI.

poverty line area. District administrative centers, *boma*s, are included in the rural poverty line areas, rather than in the Urban.

The different poverty lines areas were established so that the poverty lines in each would reflect any differences in the tastes or consumption preferences of the poorer households in their populations, any possible differences in the demographic make-up of their poorer households, and price differences between the areas. The differences between the three rural poverty line areas are not that great, whereas there are strong differences on these criteria between the Urban poverty line area and the others.

Using April 1998 Malawi Kwacha, Table 8 presents the poverty lines, together with their component food and non-food poverty lines. The poverty line is simply the sum of the food and non-food components of the line. The proportion of the poverty line made up by food consumption is also presented, showing that a large proportion of rural consumption is on food, whereas, as might be expected, urban dwellers have significantly higher levels of non-food consumption.

On any given day, most rural Malawians spend far less Kwacha than is indicated by the poverty line. However, this does not necessarily mean that they are poor. It is important to remember how the welfare indicator - total per capita daily consumption and expenditure - was derived. It includes four separate components, several of which are not monetized - non-cash food consumption, non-cash non-food consumption, the use value of durable items, and the imputed house rental value for household living in houses they own. For rural households, close to 60 percent of daily consumption does not involve a cash transaction. Production for home consumption remains a very important aspect of the household economy in rural Malawi.

Once the poverty line is established, households in each region are categorized as poor and non-poor depending on whether their per capita total daily consumption and expenditure, their welfare indicator, is below or above the poverty line. The poverty headcount can then be computed, indicating the proportion of individuals below the poverty line.

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