HOUSEHOLD AND NATIONAL FOOD SECURITY IN SOUTHERN AFRICA

Edited by
Godfrey D. Mudimu & Richard H. Bernsten
University of Zimbabwe UZ/MSU Food Research in Southern Africa

HOUSEHOLD AND NATIONAL FOOD SECURITY IN SOUTHERN AFRICA

Edited by
Godfrey Mudimu
Richard H. Bernsten

UZ/MSU Food Security Research in Southern Africa Project
Department of Agricultural Economics and Extension
University of Zimbabwe
P.O. Box MP 167,
Harare, Zimbabwe
Telex 4152 ZW
Telephone 303211 Extension 1516

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The Fourth Annual Conference on Food Security Research in Southern Africa provided an opportunity for regional researchers, policymakers, government officials, private sector participants, and donor representatives to share research results and experiences in improving food security in Southern Africa. The studies reported in the proceedings are part of a larger cooperative agreement project on food security in Sub-Saharan Africa that is directed by Michael Weber of Michigan State University's Department of Agricultural Economics. The UZ/MSU Food Security Research Programme is being carried out in conjunction with the Department of Agricultural Economics and Extension, University of Zimbabwe.

Many individuals and institutions have contributed to making the conference a success. We extend our gratitude to the authors of the research papers for their intellectual contributions to the debate on improving food security in Southern Africa; and to the policymakers, private sector participants, government officials, and donor representatives for attending the conference and sharing their insights on the critical issues raised.

The Food Security Research Project has benefitted from the generous support of Sam Muchena and John Dhliwayo, of the Ministry of Lands, Agriculture, and Rural Resettlement (Zimbabwe). In their roles as leaders of SADCC's Food Security Administrative and Technical Unit, they have been particularly helpful in planning the annual conference and identifying relevant research themes that complement SADCC's Food Security Programme.

The Food Security Research Project is financed by the U.S. Agency for International Development, Bureau of Science and Technology; Bureau for Africa; and the Southern Africa Regional Programme; under a *Food Security in Africa* cooperative agreement (DAN-1190-A-00-4092-00) with the Department of Agricultural Economics, Michigan State University and Memorandum of Understanding with the Department of Agricultural Economics and Extension, University of Zimbabwe. We are particularly appreciative of the support we have received from USAID officials, including Allison Herrick, Eric Witt, Joshua Mushuari, Doug Pickett, and Brad Wallach of USAID/Zimbabwe; and our Washington-based project managers, Michael Yates (Science and Technology) and Patricia O'brien (Africa Bureau).

We convey our appreciation to Thembi Sibanda and Murie Hutchison for an excellent job in organizing the Fourth Annual Conference, and to the numerous individuals who helped to make the conference a success: Lovemore Nyabako, Maxwell Chiwashira, Sampson Maguhudze, George Nyamatemba, Ronald Sagwete, Pete Hopkins, and Andrew Barnes.

We are especially indebted to Corinne Smith for her patience, skill, and dedication in word processing the proceedings--and to her husband, Lionel, for his assistance in solving software problems. Their team effort has made this publication possible.

Finally, we thank Chris Wolf and Elizabeth Bartilson for providing software support.

THE IMPACT OF MARKET REFORMS ON HOUSEHOLD FOOD SECURITY IN RURAL MALAWI

Ben M. Kaluwa and Benson F. Kandoole[1]

INTRODUCTION

Malawi is a landlocked country with a land area of 94,276 sq. km and a population of 8 million in 1987. Among Sub-Saharan African countries, its population density of 59 persons/km^2 which is only surpassed by Rwanda, Burundi, Nigeria, and Uganda. Nearly 90% of the population is rural based, relying heavily on agriculture. This sector dominates the economy, producing 37% of the GDP and accounting for 90% of the export earnings. In addition to a lack of significant mineral deposits, these factors make Malawi a poor country in which access to arable land, its utilization, and convinient seaports are critical issues for smallholder production, income, and international trade. Moreover, the small tax base which has resulted in low government revenues has seriously constrained efforts to improve either the economic or social indicators of development such as life expectancy (45 years), infant mortality (153 per 1,000 population), nutritional status, primary school enrollment rate (62%), and per capita energy consumption 43 kg of oil equivalent (World Bank, 1988).

For over a decade after independence, the Malawian econony experienced rapid growth. This was largely due to the realistic policies of government which encouraged export-oriented agricultural production, the favourable economic environment which attracted foreign capital and enterprise, the confining of parastatals to a few key sectors, low tariffs, and minimal use of quantitative restrictions on imports (which discouraged uneconomic import substitution), and a policy of wage restraint which helped to keep Malawian goods competitive on the international arena. This relatively healthy economic situation was interrupted in 1979. A combination of drought, deteriorating terms of trade, disruptions of Malawi's external transport routes, a sharp decline in public sector investment and high international interest rates, radically changed the position. Investment fell sharply and estimated GDP growth averaged only 0.1% per year between 1979 and 1983. The current account deficit also widened to almost 24% of GDP during 1979 to 1988 and with declining capital inflows the bulk of this had to be covered by foreign borrowing and by running down reserves. By 1980, the debt service ratio was about 20% (Malawi Government, 1988). The key economic indicators are summarises in Table 1.

The external and internal shocks of this period had serious consequences on both the macroeconomy and on the poor who form a major segiment of the population.

---

[1]Department of Economics, Chancellor College, University of Malawi.

Table 1. Key economic indicators, Malawi, 1977-1988.

Indicator	Unit	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
GDP growth rate	%	4.3	8.3	3.3	-.4	-5.2	2.7	3.6	4.4	4.3	2.6	-.2	1.2
Trade balance/GDP	%	2.1	-8.6	-8.6	-2.9	2.5	3.9	2.8	12.8	7.2	9.6	7.4	5.7
Current account deficit/GDP	%	7.1	17.8	24.7	22.2	11.4	11.2	12.4	1.3	9.6	6.2	5.1	5.5
Overall trade deficit/GDP	%	-4.8	2.5	8.6	.7	3.3	5.6	9.0	3.4	6.3	.3	-1.2	na
Government revenue/GDP	%	15.7	16.0	18.6	21.6	19.8	19.9	19.6	19.9	20.7	21.9	16.8	15.3
Total expenditure/GDP	%	23.3	24.5	31.0	33.1	35.7	35.5	30.9	30.2	29.5	30.7	27.1	23.6
Recurrent/GDP	%	14.2	14.0	16.8	15.8	18.3	20.9	21.0	20.2	21.4	21.4	19.1	16.7
Development/GDP	%	9.1	10.5	14.2	14.8	17.4	11.2	9.9	10.0	8.1	8.1	6.5	5.7
Overall deficit/GDP	%	7.6	8.5	12.4	11.5	15.9	15.6	11.3	10.3	8.8	8.8	10.3	8.3
Domestic savings/GDP	%	20.1	20.5	12.1	16.5	12.5	15.9	16.0	16.5	10.2	13.2	9.8	8.3
Gross capital formation/GDP	%	22.2	30.7	27.9	23.8	16.0	15.4	14.4	13.1	14.2	15.1	11.3	11.0
GDP per capita	kw	124.4	130.7	131.0	126.4	116.3	116.5	116.2	117.8	119.1	118.2	114.8	113.3
Commodity terms of trade	index	na	na	na	100.0	121.6	123.4	113.2	118.1	100.8	87.8	91.2	88.0
Income terms of trade	index	na	na	na	100.0	96.4	101.7	123.7	93.7	93.7	86.8	93.1	86.0

na indicates data not available
Source: Kandoole (1988)

When it became clear that the changed economic conditions were not transitory, the government in consultation with the World Bank and IMF formulated a programme for dealing with the structural problems. The programme was supported by a series of structural adjustment loans (SALs) from the World Bank. The first SAL was introduced in June 1981 for US$45 million which was followed by another in January 1984 for US$55 million and the third SAL was approved in December 1985. The main objectives of the programme were to reduce the balance of payments deficit; reduce government's fiscal burden; improve the financial performance of public enterprises; reduce energy costs; improve efficiency and resource allocation in agriculture and industry; and ensure transport link to coastal ports. To achieve these objectives, the government implemented the programme using various instruments. Under SAL I, the government increased agricultural prices and some utility tariffs; an investment coordinating committee to oversee all the major investments was established; key planning and budgetory ministries were strengthened; price decontrol measures were undertaken; tax rates were adjusted to mobilize more revenues; efforts were also made to reduce the domestic public debt; and the ability to control external debt was strengthened.

The second phase of the programme continued the adjustment which began under SAL I, but some new areas were introduced. These include reducing subsidies in university education and agriculture; improving the efficiency in the operation of the Agricultural Marketing Board, (ADMARC); and establishing an estate credit facility. SAL III was built on policy reforms and measures initiated under the earlier two programmes. The specific sectoral policies and measures which were addressed by government were as follows. In agriculture, the policy of increased production and export diversification--as well as maintaining the goal of food self-sufficiency through the provision of smallholder producer price incentives and the establishment of a credit facility for the estate subsector--were continued. In addition, the elimination of fertilizer subsidy removal was an issue. In industry, efficiency had to be encouraged and the overall policy environment broadened with a view to enhance

growth through the completion of price decontrol programme and the review of the *Industrial Development Act*. On transport, a feasibility study on the Northern Corridor Transport Project was undertaken with a view of complementing the government's policy of diversifying access routes to the sea. The government also maintained an active exchange rate policy in concert with appropriate fiscal and monetary policies and pursued a flexible foreign exchange allocation system. To achieve the goal of export promotion and diversification, an export promotion policy package and an export credit facility were designed. These measures are summarized in Appendix I.

The adjustment programme has been successful on the macro level. The current account deficit has fallen 24.7% of GDP in 1979 to 5.5% in 1988. The trade balance has also improved due to a reduction in the volume of imports, as a result of the eight devaluations since 1982 and high tariffs which have been introduced during the decade. The volume of exports, except for the decline in 1981 and 1982 because of unfavourable weather conditions, has maintained its 1980 level. The net effect has been that commodity terms of trade have declined by 12.2% and income terms of trade by 13.2% between 1980 and 1986. (Table 1).

The huge deficits in the public sector created a need to mobilise domestic revenue and control public expenditure. On the revenue side, this was attempted through broadening the tax base, especially for the sales taxes; increases in tax rates; elimination of family allowances on personal income; changing from per unit to an *ad varelom* tax base and combining the levy, duty, and surcharge in case of tariffs. When these measures were taken, revenue increased rapidly but receipts and revenue declined from 21.6% of GDP in 1980 to 19.6% in 1983. In response to the economic recovery, revenue went up to 21.4% in 1986 but the estimate for 1987 and the forecast for 1988 show a major drop (Table 1).

One of the conditions of the structural adjustment loan was for the government to reduce expenditure, especially on the development account. This has been done; and total expenditures, after reaching its peak in 1981, have been declining ever since. This decline is primarily due to major cuts in development expenditures which have decreased from 17.4% of GDP in 1981 to 5.7% in 1988; while the change in recurrent expenditure has not been as dramatic (Table 1).

The fiscal problems were further aggrevated by the financial deterioration in the parastatals. The companies have not been able to service their debts; and the government, which guaranteed their foreign debts, has incurred substantial expenses to meet the interest and amortization charges for the statutory bodies. The restructuring of these companies has been rewarding in that some of them are now financially self-sufficient. All these factors led to the decline in the fiscal budget deficit from 15.9% of GDP in 1981 to 8.3% in 1988 (Table 1).

After enjoying favourable rates of economic growth in the 1970s, the economy had some problems in the early 1980s for reasons already cited. GDP at constant prices fell in both 1980 and 1981 before recovering to a 2.7% growth in 1982 and 4.4% in 1984 before the slight decline in 1987. Domestic demand contracted and while consumption took up some of the contraction, investment bore the major portion. Gross fixed capital formation has averaged about 14% in the 1980s

compared to 24% in the 1970s. Savings rates have been lower than before, ranging from 20.5% in 1978 to 11% in 1988. This probably is due to the increases in tax rates (Table 1).

During the 1970s virtually all sectors expanded rapidly. The leading sectors were services and estate agriculture. There was a general decline in 1981 and 1982, but most sectors experienced improvements since 1983 (Table 2). Despite this recovery, the growth has not kept pace with population since real per capita income has been falling during the period. This popular indicator of a country's welfare suggests that the programme has a negative short-run effect on the well being of the society because of the declining per capita income.

THE AGRICULTURAL SECTOR

The agriculture sector comprises two subsectors with distinct characteristics: smallholder agriculture which contributed 78.9% of total agricultural production in 1986 and the estate subsector which produced the balance. The two subsectors differ with respect to all important aspects of agricultural production; namely land tenure, average holding size, crop mix, technology, marketing, and the delivery of economic services. It is useful to understand these distinctions in order to appreciate the reasons for some of the policy responses. Smallholder production is on customary land which amounted to 7.4 million ha in 1985. The power of allocation is vested in the village headman and the right to occupy depends on acceptance in the community. The transfer of land, under this tenure system, is guided by the customary rules of inheritance. The estate agriculture, by contrast, is titled land which is either freehold or leasehold (with leases ranging from 22 to 99 years). In 1985, these categories accounted for 52,016 and 308,413 ha respectively. This represents a fall from 232,557 ha for freehold in 1975 and a rise for the leasehold from 10,189 ha in the same year. The net rise under the two categories shows the rapid expansion of the estate sector which was encouraged by government. For

Table 2. Growth in rural sectoral output (%), Malawi, 1977-1988[a]

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Agriculture	11.2	2.9	3.1	6.5	-8.2	6.4	4.4	5.4	1.1	0.1	1.9	0.8
Small-scale	9.5	3.1	2.6	-8.5	-8.9	2.5	3.7	7.2	1.2	0.4	0.5	-.4
Large-scale	20.6	2.3	5.6	3.3	4.9	22.4	7.1	0.8	0.6	-1.1	7.2	5.0
Manufacturing	2.9	5.3	4.4	0.3	3.6	-0.3	7.1	2.5	0.5	5.3	-0.8	1.9
Electricity & water	5.0	17.8	0.3	5.0	-11.0	-2.1	2.5	5.6	9.4	3.4	1.7	0.5
Construction	10.4	28.0	-7.6	1.9	-17.5	0.6	-8.6	-10.3	32.8	4.6	-26.1	3.6
Transport & communications	-12.3	11.5	15.2	1.6	-7.3	-2.7	-2.5	2.2	4.9	3.7	-4.0	0.6
Financial & professional services	11.8	14.6	16.9	2.8	-7.9	2.3	2.9	1.6	7.2	2.4	-2.9	2.0
Ownership of dwellings	8.4	8.5	7.5	2.9	-1.5	2.8	3.0	2.4	4.6	3.0	0.5	2.6
Government services	4.6	5.0	7.6	8.4	6.3	5.5	4.9	10.3	3.2	8.5	4.1	-.3
Private, social, community services	-2.3	3.5	4.5	3.6	5.2	1.3	6.8	3.6	3.8	2.0	3.0	3.5
GDP (factor cost)	4.3	8.3	3.3	-0.4	-5.2	2.7	3.6	4.4	4.3	2.6	-.2	1.2

[a]Year end, 31st March.

Source: Kandoole (1988).

example, the number of leases for tobacco were increased from 111 in 1967 to 1,190 in 1986.

The implication of the expansion of the estate sector, relative to the smallholder sector, is that it has been associated with a decline in the land available under the customary land tenure system from 8.8 million ha in 1964 to 7.4 million ha in 1985. Although the government has acquired some of the freehold land, a small part of it has been allocated to smallholders and the balance to forest reserves or national parks (1.1 million ha) and statutory bodies such as ADMARC. The Southern Region has been the worst affected since it suffered the worst alienation of land during the colonial period where, due to accessibility and good climatic conditions, a number of European acquired large tracks of land early in the century. This trend in land acquisition is also being experienced in the Central Region where there has been a rapid rise in leases for tobacco estates, thereby increasing the pressure for land.

The estate sector is oriented towards the major export crops (flue-cured and burley tobacco, tea, and sugar). This sector accounts for two-thirds of all exports. Smallholders meet the country's food requirements of maize, beans, groundnuts, root crops, and rice. They also produce the bulk of cotton and sun- and fire-cured tobacco varieties which are for both the domestic industry and for export. Technologically, the dualism between the estates and the smallholders is also evident. There is much higher level of mechanisation in the estate sector, as the small holder sector is constrained by holding size and access to capital. For example, in the 1984-85 growing season, only 7% of smallholders used work oxen for land preparation and 70% of them were concentrated in only two of the eight Agricultural Development Divisions (Karonga and Mzuzu). Despite this labour intensity, smallholder agriculture could still be productive if high levels of appropriate seasonal inputs were used. But here again, usage is very low. For example, only about 22% of the farm operators apply fertilizer. Lack of credit is only one of the factors to blame for this as in 1984-85 only 42% of those using fertilizer obtained it through credit.

Estate farmers make their own marketing arrangements. Since they produce the export crops, they are therefore in a position to benefit from the eight currency devaluations instituted under the structural adjustment programme. Smallholders, on the other hand, market their crops through ADMARC which has the discretion of determining the difference between its earnings from the crop sales and its payouts to farmers. For example, for the two varieties of tobacco, Northern Division Dark Fired and Southern Division Dark Fired, farmers recieved the highest shares of the auction floor prices in the 1984-85; 68 and 87%, respectively. Before and after that year, the shares were much lower. For example, in 1981-82 they were 15 and 17%, respectively, while in 1986-87 they were 19 and 30%. These high margins ADMARC realized from the marketing of smallholder tobacco have enabled it to finance its operations in the loss-making marketing activities such as its dealings in maize. For the food crops, however, the smallholder farmers can exercise some discretion about the marketing channel they use. Private traders and district and local parallel markets often offer higher prices than ADMARC, particularly for high-valued crops like beans, peas, and rice. But for farmers located in remote areas

in which private traders are unwilling to operate, ADMARC may be the only liable choice.

The only form of direct economic service that government has provided the estate sector has been the policy which has actively supported commercial bank loans to the sector, particularly for tobacco farming. For the smallholder, government has supplied or supported economic services by providing free seed, subsidized seed and fertilizer, and some credit at concessional rates of interest. ADMARC has provided free tobacco and cotton seed to maintain product quality.

THE CHARACTERISTICS OF THE VULNERABLE GROUPS

The foregoing discussion described the customary land tenure system and has also given an indication of the pressure for land brought about by population increases and by the alienation of land for estate expansion. It is not surprising that government has alredy identified the land constraint as the major determinant of poverty with its associated socioeconomic indicators--early food stock depletion child malnutrition, and low levels of income (Malawi Government, 1988).

The government classifies the smallholders according to holding size as follows. Those with less than 0.7 ha, 35% of the smallholders, who are unable to satify their subsistence requirements and are dependent on off-farm income; a further 40% with holding sizes between 0.7 ha and 1.5 ha who are able to satisfy subsistence requirements and have modest marketable surpluses; and the remaining 25% who have larger holdings and grow cash crops in addition to the food crops. However, our own calculations show that the percentage of households who are unable to satisfy their subsistence requirements from own production is much higher (55.3%). Table 3 indicates that the most vulnerable group (holding size of less than 1 ha) account for 55% of all households, but own just over a quarter of the total cultivated area; while the large farmers, who own over 3 ha and account for 4.2% of households, controls 15% of the cultivated land. The mean holding sizes range from 0.31 ha to 4.00 ha and the mean family size increases with the size of the landholding. The positive correlation between holding size and family size may be attributed to the fact that the most vulnerable households have food insecurity with its associated poverty and hunger and, hence, are unable to protect their children from malnutrition and diseases.

Despite the small average family size, households with a small land base tend to have more surplus labour than the larger households because of the land constraint. Therefore, these households must depend to a large extent on off-farm activities. If this group is to remain on their holdings, it is clear that off-farm income must be generated in rural areas. In fact, the amount of hired labour increases with the size of holding, implying that the unused labour balances are hired by the bigger farmers, usually on a seasonal basis.

The landholding distribution pattern is associated with four other important factors; namely, the gender of the household head, regional setting, cropping

Table 3. Distribution of smallholder farm size and related indicators, Malawi, 1984-85.

Holding size category	Basic data					Labour					Extension participation rate			
	% of all holdings	Cum (%)	Total cult. area (%)	Mean holding size (ha)	Mean H/H size	HH[a] labour capacity (mandays) Hired	HH[a] labour capacity (mandays) Total	Off-farm[b]	Unused labour (% of total)	Gross HH income (kw)	Operators (%)	Average participation per operators (days)	Fertilizer use (kg/HH)	Calorie balance (%)
< 0.50	23.0	23	6.2	0.3	3.6	8	389	106	58	91	13	2.7	6	-66
0.50-0.99	32.3	55	20.9	0.7	4.4	12	492	105	53	165	18	3.1	12	-28
1.00-1.49	19.9	75	21.3	1.2	4.9	20	589	99	47	263	28	4.6	33	12
1.50-1.99	10.9	86	16.3	1.7	5.1	25	618	105	32	343	41	5.1	59	55
2.00-2.49	6.3	92	12.2	2.2	5.7	42	754	100	32	460	39	4.8	87	95
2.50-2.99	3.5	96	8.3	2.7	6.1	58	821	97	24	549	52	5.5	114	120
>3.00	4.2	100	14.8	4.0	6.4	94	915	93	0	805	47	5.9	146	232

[a]Family labour is positively correlated with mean household size which rises with holding size category.
[b]Mainly a result of agricultural labour balance computed as total available mandays less total required mandays.
Source: Ministry of Agriculture (1984-85).

patterns, income levels and their sources, and food balances from own production. Information from a 1981-82 survey indicates that 47% of male-headed households have holdings of less than 1 ha, compared to 69% of the female-headed households. Regionally, the distribution of those with holding sizes of less than 1 ha reflects the relative population pressure in the three regions of the country. For example, in 1984-85 growing season, this subgroup represented as much as 65% of smallholder farmers in the Southern Region, 44% in the Central Region, and only 12% in the Northern Region. The respective population densities of the three regions, according to the 1987 population census, are 125, 88, and 34 persons/km^2, respectively. Clearly, the incidence of land constraint or near landless is most critical in the Southern Region and to a lesser extent in the Central Region.

As implied in the above categorization of household economic characteristics by holding size, there are bound to be differences in cropping patterns determined by the extent of the land constraint. The most prominent feature of these differences relate to the relative importance attached to various food and cash crops. The proportion of land area devoted to the maize crop is over 60% for the bottom two categories, falling to 43% for the largest holding-size category (Table 4). The same pattern is observed for the other important food crops, such as root crops and pulses. When it comes to cash crops (cotton and tobacco), the pattern is reversed with higher percentages accounted for by the larger holdings. The same trend applies to hybrid maize varieties and groundnuts, which are also regarded as cash crops. These patterns are explained mainly by the fact that since households with small holdings are risk averse, they tend to emphasize measures that contribute to their food security. Apart from this, they also have access to fewer resources, including land, to devote to cash crops. This implies that it is unlikely that the land constrained are going to be a good target for that crop diversification. Also, not only is the range of relative prices relevant to them as producers, but furthermore it is

Table 4. Percentage cropping pattern by holding size category, Malawi, 1984-85.

Holding size category (hectares)	Maize				Rice	Millet	Sorg hum	Roots	G/nuts	Pulses	Sugar	Cotton	Coffee /tea	Tobacco[b]
	Local	Gom- posite	Hy- brid	(Total)[a]										
< 0.50	61.6	1.2	0.6	(81.5)	2.4	2.3	2.9	10.5	4.3	10.6	0.7	2.3	0.1	0.3
0.50-0.99	61.3	0.8	1.3	(83.7)	1.8	3.6	4.1	2.1	4.9	11.0	0.3	2.4	0.2	1.1
1.00-1.49	59.7	1.7	3.4	(82.3)	1.4	3.5	3.4	5.2	8.1	8.3	0.1	3.0	0.1	2.3
1.50-1.99	56.8	0.6	5.3	(74.7)	1.1	2.8	3.3	5.3	8.0	8.7	0.3	4.0	na	3.7
2.00-2.49	51.8	2.5	8.4	(77.3)	1.7	3.3	3.0	3.8	8.9	9.2	0.2	2.4	na	4.1
2.50-2.99	46.6	2.1	10.3	(69.8)	1.0	3.4	2.8	5.1	9.8	9.6	0.3	3.8	na	5.2
> 3.00	43.5	3.0	15.5	(70.6)	0.8	3.8	1.1	3.7	11.8	7.7	na	3.9	na	5.2
Total	52.2	1.6	5.1	(77.9)	1.4	3.3	3.1	5.5	8.0	9.2	0.2	3.2	0.1	3.1

[a] Includes groundnuts, pulses, roots, and other on mixed stands.
[b] The most important variety is dark-fired which accounts for 2.5 of the 3.1%, followed by sun-aired accounting for 0.5, and oriental/other accounting for the remaining 0.1%.
na indicates data not avaliable
Source: Ministry of Agriculture (1984-85).

unlikely they are going to be very responsive to changes.

When it comes to average household income, the major source for all groupings is agriculture. But the near landless rely more on other sources than the other farmers. This shows the importance of holding size in alleviating poverty. It also shows how important the off-farm activities are to the very poor with little land and more surplus labour which the larger farmers and the estates could easily exploit. But, with appropriate policies, off-farm activities could be used as a means of improving the living standards of the very poor. Those with larger landholdings rely heavily on agriculture as the main source of income, with emphasis on cash crops such as hybrid maize, groundnuts, cotton and tobacco. Low mean holding size, low income, inadequate use of inputs such as fertilizer, and surplus labour make the land-constrained and near-landless smallholder food insecure. As Table 3 shows, the farmers with less than 1.0 ha cannot satisfy their subsistence requirements from their own food production.

THE EFFECTS OF MARKET REFORMS ON SMALLHOLDER FARMER

The previous section identified land-constrained or near-landless smallholder farmers as the most valnerable groups; and that female-headed household and those in the Southern Region have high percentages of households within the at-risk group. The vulnerable groups are also associated with low income levels; high concentration of production in food crops; high labour surpluses; little access to capital, credit, and extension services; and high levels of food deficiencies. The first section discussed market reforms implemented in Malawi since the early 1980s; including price incentives, fertilizer subsidy removal, enhancement of the role of private traders, and

a review of the country's land tenure system. This section analyses the affects of some of these reforms on smallholder farmers.

Relative prices

Because of the stagnation in smallholder production, increasing food insecurity, and the need to diversify exports, the government increased the prices of agricultural produce in 1981-82 as an incentive for smallholders to produce more. For maize, the increase was about 68%. Table 5 shows that with that increase in the price, production did not change but the proportion of maize sold to ADMARC increased from 11 to 20% in one year. Between 1976-77 and 1986-87, maize production declined by 9% despite the 14.4% increase in the price of maize. The decline in per capita output, while sales to ADMARC have been rising, implies that the output left for home consumption has been falling. The falling production of maize is a result of a change in the relative producer price structure which was in favour of other crops and against maize.

The declining relative price of maize before 1987-88 has reduced margins from the crop, which is also the most fertilizer intensive and therefore was the most affected by fertilizer subsidy reductions. This induced farmers to allocate land to other crops such as groundnuts, which compete for land with maize. In the five years before 1986-87, the hectarage planted to maize had been fluctuating while groundnuts increased from 143,000 ha to 203,700 ha over the same period in response to increasing prices, relative to maize (Table 6). Because smallholders tend

Table 5. Smallholder maize production and sales to ADMARC, Malawi, 1976-77 to 1987-88.

Crop year	Output (mt)	ADMARC purchases ('000 mt)	Sales as % of output	Index of per capita output	Producer price (Kw/mt)
1976-77	1.32	89.9	6.8	100.0	50
1977-78	1.43	120.6	8.4	104.7	50
1978-79	1.39	82.2	5.9	99.0	50
1979-80	1.20	91.9	7.7	82.5	66
1980-81	1.24	136.6	11.0	82.6	66
1981-82	1.24	246.1	19.8	80.5	111
1982-83	1.37	244.9	17.9	85.8	111
1983-84	1.40	296.6	21.2	84.9	122
1984-85	1.36	272.7	20.0	79.7	122
1985-86	1.30	111.3	8.6	73.8	122
1986-87	1.20	60.0	5.0	66.4	122
1987-88	1.42	110.0	7.0	76.2	166

Source: ADMARC (various years).

Table 6. Smallholder groundnuts production and sales to ADMARC, Malawi, 1981-82 to 1987-88.

Croping year	Output ('000 mt)	ADMARC purchases ('000 mt)	Percent sold to ADMARC	Producer price (t/kg)
1981-82	na	19.49	na	33.84
1982-83	50.99	10.68	21	51.85
1983-84	50.72	10.22	20	59.46
1984-85	59.48	9.98	20	69.28
1985-86	82.81	17.51	21	73.76
1986-87	87.91	51.34	58	73.76
1987-88	70.67	42.87	61	73.76

na indicates data not available.
Source: Ministry of Agriculture

to be risk averse, the majority are unlikely to have benefitted directly from the official relative producer prices that favoured cash crops. However, there are a number of other ways in which they could have benefitted.

First, apart from keeping ADMARC's purchasing costs low, the stagnation of maize producer prices had also arisen from a desire to keep maize consumer prices low for deficit producers and other low-income consumers.

Second, both maize surplus and deficit households using ADMARC are subsidized by cash crop-growing households, particularly those growing tobacco. This is because ADMARC's trading in the bulky crops such as maize incurs high costs and subsequent losses, which are at least partly offset by the rather high proportion of auction floor tobacco prices that it retains (Table 7).

The land-constrained households favour the local maize variety for its qualities, which include little dependence on fertilizers--unlike the hybrid varieties which tend to be grown as a cash crops by those with larger holdings.

There are other indications that the past gains of the food deficit households are likely to be reversed, due to policy changes associated with the market reforms and national food security considerations. The 1987-88 maize producer prices increases are only the beginning of a trend to ensure enough maize production for sufficient current consumption and for replenishing the strategic reserve stocks, which have been near zero for several years. For those relying on purchases from ADMARC (because of accessibility of ADMARC markets and lower prices), higher producer prices will be matched by higher consumer prices.

Table 7. Smallholder tobacco production and its prices, Malawi, 1981-82 to 1987-88.

Crop year	Output ('000 mt)	Producer price (t/kg)	Auction price (t/kg)	Producer price % share
1981-82	6.52	52.08	343.69	15.15
1982-83	7.62	75.64	287.54	26.31
1983-84	15.50	83.74	215.37	38.88
1984-85	16.18	102.03	150.73	67.69
1985-86	13.18	101.52	224.87	45.15
1986-87	11.87	105.52	344.67	29.45
1987-88	7.68	109.64	344.67	29.45

Source: Ministry of Agriculture

Institutional changes

Net operating losses by ADMARC have amounted to Kw 31 million between 1980-81 and 1986-87. The resulting pressure on the central government deficit has led to measures to institute structural changes, including the licencing of private traders to share the burden. But there are two reasons why these measures are unlikely to benefit the target group of smallholders.

First, the target group has little to sell--either to ADMARC or to the private traders. Second, private traders are highly sensitive to costs and are unlikely to penetrate into the remote areas or deal in bulky low-value produce. For example, figures compiled by Quinten and Sterkenburg (1975) on major markets throughout the country indicate that private traders who have always operated in the country, even before the marketing liberalisation, had completely ignored the Northern Region and remote districts in other regions. This means that any attempt to withdraw ADMARC's operations from remote areas to reduce the persistent losses will not only adversely affect agricultural production, but will also affect the access to basic needs by food deficit households in deficit areas.

Exchange rate devaluations

The effect of the series of exchange rate devaluation on agriculture has been to reduce the negative effects of the deteriorating external terms of trade which is currently the general experience for African countries. For example, for smallholder tobacco producers the average price to growers has been rising steadily from 1981 to 1985 for the major variety grown (Northern Division Dark Fired), despite ADMARC's marketing intervention. Prices for flue-cured and burley tobacco grown on the estates also trended upwards. These developments had two effects on the target groups.

First, pressure has been increasing on customary land from the expansion of estates with government encouragement for balance of payments considerations. The pressure of such expansion in an already land-constrained country has resulted in the reallocation of land among different land ownership arrangements. Land under the customary land tenure system declined from 7.6 million ha in 1974 to 7.4 million ha in 1985 (National Statistical Office, 1987).

Second, rising producer prices for export crops has resulted in an increase in hectarage under these crops. For tobacco, total area went up from 66,900 ha in 1982, to 101,800 ha in 1985. Much of this increase was in the smallholder sector where the hectarage under the fire-cured varieties doubled from 22,700 ha to 45,900 ha. (National Statistical Office, 1987).

Paid employment in private sector agriculture went up from 135,000 in 1982 to 165,000 in 1985. Much of the increase (17,000) was in tobacco growing and the rest accounted for by tea growing and other. Much of the labour provided by rural-rural migrants rather than urban-rural migrants, which is an uncommon phenomenon. Apart from formal employment, there is also evidence that the smallholder sector itself absorbs a considerable amount of its own surplus labour, but much of this occurs during peak labour demand periods (Chipeta, 1983). The arrangements range from reciprocal labour to formal employment, particularly by those with larger holdings who tend to be the cash crop growers.

Nonagricultural price liberalisation

With the liberalisation of prices in the manufacturing sector, these prices have responded to the escalating costs of imports due to devaluations. This has resulted in declines in both real incomes and real consumption. For those in the target group who take up paid employment in the agricultural sector, the decline in real wages may have contributed to the expansion of employment there (Table 8).

Table 8. Real wages in private sector agriculture, Malawi, 1979 to 1985.

	1979	1980	1981	1982	1983	1984	1985
Aver. annual earn. (nominal)	144	163	199	229	214	236	265
GDP deflator (1980=100)	85.0	100.0	116.3	127.2	141.8	161.4	172.8
Real earnings to employers[a]	171	163	171	180	151	146	153
CPI (food costs)	80.1	100.0	109.8	114.6	132.3	153.1	167.1
Real earning to employees[b]	181	163	181	200	162	154	1599

[a]Average annual earnings deflated by the GDP deflation

[b]Average annual earnings deflated by the consumer price index. The food costs index was used on the assumption that low income wage earners spend a high proportion of their incomes on food.

Source: National Statistical Office (various years) and IMF (1986).

Both the real wages faced by employers and employees declined in the two years after 1982. In 1985 both real wages rose, but not high enough to match those of pre-1982. Thus, employers were still better off while the employees were still worse off, compared to the pre-1982 period. Although the latter include some of those who had sought paid employment to escape from the food constraints associated with small land holdings, the inflationary tendencies (partly due to rising crop prices) has, to some extent, ensured the persistence of the problem. The extent to which their real earnings fail to cover their food requirements is not known and is an area that needs further investigation.

Other effects

As part of the structural adjustment programe, government has sought to reduce, if not completely eliminate, the central government deficit. But it appears that the Malawi government, with support from foreign donors, is committed to both expanding agricultural services (including credit and physical infrastructure) and safeguarding human capital (Malawi Government, 1988). However, central government has reduced personnel in health and education, and agriculture from the record levels of 1981--16,332 and 31,819 in 1981 to 15,626 and 11,861 in 1985, respectively) (NSO, 1987).

POLICY IMPLICATIONS

The severely land-constrained smallholders are associated with low income levels, high dependence on food crop production, high labour surpluses, disadvantaged access to credit and extension services, and food deficiency. As producers, these characteristics have restricted the participation of the vulnerable subgroup in the market reform measures by restricting their ability to respond fully to changes in relative prices. As consumers, particularly to supplement their food requirements, the marketing structure (especially the role of ADMARC as a residual trader in food crops with lower producer and consumer prices) has benefited them. But this has been greatly facilitated by ADMARC's implicit taxes on those with larger holdings and who are the main cash crop growers, plus increasing subventions by the central government. However, these policies will have fundamental negative effects on the welfare of the target groups.

While the liberalised exchange rate policy has contributed to the expansion of paid employment opportunities in the rural areas, given the land constraint these effects can only be sustained through intensive cultivation on existing estates and a greater effort to induce export crop diversification to spread the impact of adverse external terms of trade. Also, the expansion of paid employment--notwithstanding other measures that have been part of the market reforms, *e.g.*, general liberalisation of prices--have led to reductions in real wages to the paid workers.

With these effects, the government faces hard choices in identifying policy measures that will be sympathetic to the sizeable group of deprived persons and, at the same time, be consistent with the general thrust of market liberalisation, particularly reducing the size of the government sector. Three areas stand out for

consideration, assuming that the chosen direction in the economic system is irreversible. These are in land reform, agricultural marketing structure, and economic support services.

In land reform, the government has already taken the initiative by recommending a freeze on the expansion of the estates sector in densely-populated areas (Malawi Government, 1988). But given rising population pressure in those areas, this measure is inadequate. Urgent steps should be made to facilitate resettlement, particularly in those areas of the Northern Region and Central Region which are presently less densely populated. A start could be made by resettling those unemployed but who have ventured away from their home districts in search of agricultural wage employment. A complementary measure would be to ensure stability of tenure and provide land for subsistence agriculture as necessary conditions for paid agricultural employment.

The government should be more assertive in not only promoting private traders in the remote areas, but also by providing strong incentives and technical assistance. The base of international/interregional trade could usefully be decentralised to allow traders in remote areas near bordering countries to exercise greater discretion about the direction of their operations.

Economic support services, which the government intends to strengthen, might usefully diversify from the current agricultural extension services which tend to concentrate on cash crops and the farmers with larger landholdings. Livestock development, especially for small ruminants for densely populated areas, could receive more attention as cash-generating activities. Apart from this, business/craft extension should also be tried, with the better-off farmers as a target group of potential investors and entrepreneurs. Lastly, concerted effort should be directed towards faster diversification in smallholder crops.

CONCLUSION

The present study has identified the land constraint as being at the root of much of the deprivation that exists among Malawi's smallholder farmers, but the problem is being compounded by the effects of market reform, especially price liberalisation (including agricultural and nonagricultural prices). Although the choices for reforms sympathetic to the target group seem to be limited, given the measures already being implemented, further worthwhile steps could still be taken. These include more serious consideration of resettlement schemes, support for private traders to operate in rural remote areas, and a more comprehensive approach to rural extension to include nontraditional areas such as livestock development, business/craft development, and crop diversification.

REFERENCES

ADMARC. various years. *Annual report.* Blantyre Print, Blantyre.

Chipeta, C. 1982. *Economics of indigenous labour.* Vintage Press, New York.

International Monetary Fund (IMF). 1986. *International financial statistics: 1986.* Washington, D.C.

Kandoole, B.F. 1988. *Structural adjustment programme in Malawi: short run grains and long run losses.* Paper presented at the SAUSSC Conference at the University of Swaziland.

Malawi Government. 1988. *Statement of development policies, 1987-1996.* Government Printer, Zomba.

----------. 1987. *SAL IV - Adjustment with growth and development,* Special Studies Document 1986/2. Government Printer, Zomba.

----------. undated. Ministry of Agriculture. Annual survey of agriculture, 1984-85 (unpublished).

National Statistical Office. 1987. *Malawi statistical yearbook 1985.* Government Printer, Zomba.

----------. 1984. National sample survey of agriculture 1980-81. Government Printer, Zomba.

----------. various years. *Monthly statistical bulletin.* Government Printer, Zomba.

Quinten, K. and J. Sterkenburg. 1975. *Marketing of smallholder agricultural produce in Malawi.* Ministry of Agriculture, Agro-Economic Survey No. 6.

World Bank. 1988. *World development report.* Oxford University Press, London.