

Food Security Policies In The SADCC Region

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Improving Household Food Security: Interactions Between Technology, Marketing And Trade

THE MALAWI CASE:
RECENT FINDINGS AND EMERGING
POLICY AND RESEARCH ISSUES

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INTRODUCTION

The central objectives of Malawi's agricultural policy objective are to attain food self-sufficiency and diversify its agricultural export base. This policy has been pursued since independence in 1964 and it was reiterated in the recent Statement of Development Policies (DEVPOL, 1987-1996). Malawi's agricultural sector comprises large scale or estate producers and smallholders. The latter dominate food production while the estates have concentrated on the main export crops: tobacco, tea and sugar.

Malawi's smallholder sector accounts for about 85 percent of all agricultural production and is the single largest source of income for the majority of the population. Although Malawi had previously achieved national food self-sufficiency, the overall food situation has become quite delicate over the past few years. After growing at an average annual growth rate of 3.2 percent between 1967 and 1979 smallholder food production declined in the 1980s because of numerous factors, including poor producer incentives (Christiansen and Southworth, 1988) and other factors. Kinsey (1975) argues that Malawi lost momentum in maize production between 1966 and 1975 as the nominal price for maize in Malawi fell significantly below the average price for the region.

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While the role of relative prices in changing cropping patterns has been demonstrated, nobody, including the Government is convinced that pricing policy alone can increase aggregate agricultural production. The two institutions that have played a dominant role in agricultural development are the National Rural Development Programme (NRDP) and the Agricultural Development and Marketing Corporation (ADMARC).

This paper reviews Malawi's experience with technology generation to improve household level food security, with emphasis on interactions between technology, marketing systems and trade regimes which might be exploited by policy makers.

The Food Economy at the Household Level

The results of the two National Sample Surveys of Agriculture (NSSA) in 1979 and 1980-81, the Ministry of Agriculture's Annual Survey of Agriculture (ASA), and other independent surveys have generated some conventional wisdom about smallholders. At the household level, many smallholders face severe resource constraints. For example, the 1980-81 NSSA revealed that 37 percent of all smallholders cultivated less than 0,7 ha. and an additional 36 percent cultivated between 0,7 and 1,5 ha. Moreover, farmers with smaller land areas depend more on wage labour and local petty trading for family income relative to farm sales, than do large farmers (Centre for Social Research (CSR), 1988b). Because of high population density, land shortage is a critical factor in determining rural poverty. With present technology, the threshold farm size for meeting average household calorie requirements is around one hectare. Analyses based on NSSA data (CSR, 1988; Kaluwa and Kandoole, 1988) and independent micro-surveys. *e.g.*, Peters (1989) confirm that land holding size is positively correlated with income and the ability to meet food requirements.

But even more worrying is the finding that households with large landholdings tend to be cash crop growers who are in a better position relative to the smaller farmers, in terms of access to credit and extension services. Smallholders are oriented to subsistence production because of risk aversion and the lack of technological packages (Blantyre Agricultural Development Division (BLADD), 1987). Msukwa (1984) calculates that, on average, farmers with less than 0,5 ha produce slightly over one-quarter of their annual food requirements and those with 0,5 and 1 hectare, produce about three-quarters. According to the NSSA, half of the rural households deplete their food stocks within five months after harvest.

The coping mechanisms of food insecure households include the reduction of the frequency of meals in the months before harvest with a resulting rise in the incidence of child malnutrition (Msukwa, 1989), local reciprocal labour/food exchange (Ettema, 1984; Peters, 1988; Kaluwa and Kandoole, 1988) and wage employment on larger farms, including estates. Improvement of land productivity is constrained by the agricultural extension and credit systems which are biased against the most vulnerable groups. And given variations in land and ecological constraints, the problem is more serious than one of merely balancing local food deficits from local surpluses. Some areas tend to specialise in cash crops and rely on the marketing system to secure family food supplies. For example, the low-lying areas specialise in irrigated crops such as rice, and other crops suited to semi-arid conditions (cotton,

sorghum and millet) while the highland areas are better suited to tea growing. There is a heavy dependence on maize imports in some of these areas.

Maize dominates smallholder decision making. The percentage of calories coming from maize, as well as past levels of *per capita* maize availability are probably higher for Malawi than for any other country where maize forms a substantial portion of the human diet (NSSA, 1979; Blackie, 1989; CIMMYT, 1987). But despite this dominance, it would be unwise to ignore other food crops and cash crops. Alternative food crops dominate the diets in certain areas.

TECHNOLOGY AND CROP MARKETING: THE INSTITUTIONAL FRAMEWORK

The major constraints on increasing smallholder production include small landholdings, low soil fertility, low wages and low income levels. Adoption of proven new technologies has been hindered by low producer prices, limited credit, and more recently, the high cost of inputs because of the removal of input subsidies and exchange rate devaluation.

The National Rural Development Programme

The approach to smallholder development has been two-pronged. On the one hand, one approach aims at a gradual improvement in extension and farmer training throughout the country supported by a number of low-cost activities such as ox-training and dairy improvement. On the other hand, during the early years after independence, the Government adopted management-intensive rural development projects to develop and supply comprehensive packages of technology, services and infrastructure in selected areas. But this approach has proven to be too expensive and it was replaced by a new concept, the National Rural Development Programme (NRDP). The objective of the NRDP is to broaden geographical coverage and focus more directly on support services for production, extension, marketing, and credit. Under the NRDP, the country has been divided into eight Agricultural Development Divisions (ADDs) each covering areas sharing similar ecological characteristics.

The Department of Agricultural Research

The Department of Agricultural Research (DAR), which is now within the NRDP, was already fairly established by 1940 with 21 experimental farms in the country. In 1954 it had 21 scientists in the main disciplines such as agronomy, soil science, entomology, pathology and ecology carrying out research on all of the crops currently grown by smallholders and others besides. The objective was to select and introduce suitable crop varieties for both local and export markets.

The technological implications of some of the consumer food preferences that exist today have been established by work during the 1950s and earlier. For example, consumer preference for "flint maize" (hard endosperm) over "dent maize" (soft endosperm) was based on its better storage and processing qualities. Flint maize also yields a higher proportion of white flour, *ufa* than does dent (DAR, 1956-57). A pounding experiment, for example, revealed that flint yields 12 percent more flour that was twice as rich in oil and 1,25 times as rich in protein as the dent varieties. But the preparation of *ufa*, as opposed to whole-meal flour *mgaiwa*, results in a loss

of 37 percent of the protein, 84 percent of the oil in flint maize, compared to 55 percent and 91 percent respectively in dent maize. *Madeya*, the waste from dehulled maize before milling into *ufa* is fed to chicken and dairy animals or steers. *Ufa* is still preferred to *mgaiwa* because of its colour, texture and taste qualities. However, *mgaiwa* is a standard ration in institutions such as schools, hospitals, and it is widely consumed in urban areas.

The diet of Malawians is presently dominated by *mgaiwa*. Better technology in the grain milling industry has resulted in an intermediate flour, Gramil, between the traditional *ufa* and *mgaiwa*. Gramil, at present, is the most common flour in urban areas. Moreover, whereas in the past dehulling used to be done through pounding, it is now done by grain mills with special equipment. The Government is also stressing the value of *mgaiwa* and legumes (pulses and groundnuts) in human nutrition (DEVPOL, 1987-1996 : 29), and proposes the monitoring and evaluation of the adoption of *mgaiwa*.

There has been a shift in the orientation of maize research from what people historically preferred, "the flint" varieties (SV37, SV17; SV28, SV Mlonda, LH7 Mthenga and LH11 Bingo) of the 1950s and 1960s, to the semi-flint and dent hybrids (SR52, R200, R201, UCA and CCA) in the late 1960s and early 1970s. The reason for the shift in research orientation was the belief that high yielding green revolution varieties could be developed for Malawi. For example, the SR52 maize variety that was imported from Zimbabwe responded to high inputs of fertilizer, pesticides and improved agricultural practices, and replaced the low-yielding synthetic and flint hybrids LH7 (Mthenga) and LH11 (Bingo).

The Ministry of Agriculture encouraged the use of the high-yielding hybrid maize varieties starting in the 1960s in order to increase production and maintain self-sufficiency through the provision of credit for improved seed, fertilizer and the establishment of ADMARC markets within walking distance of smallholder farmers. At the same time the DAR dropped its flint maize breeding programme and embarked on maize population improvement programmes and the development of semi-flint and dent maize hybrids, e.g., UCA, CCA, MH12, MH13, MH14, MH15.

The shift in maize research strategy was pursued in other programmes, e.g., in vegetables, bigger cabbage varieties were selected and recommended -- drum-head vs the smaller variety Golden Acre; the groundnut variety, Mwitunde, was replaced with Chalimbana and Chitembana for the confectionery trade; and in the case of cattle, Malawi Zebu were replaced by Jersey and Friesland dairy breeds and Malawi Zebu were crossed with Friesland for milk production.

With the recent dramatic rise in the cost of transport, fertilizer and other inputs, farmers are reverting to low-input agriculture, including the lower-yield flint maize types. Now there is an outcry, particularly among donors who had previously supported development projects through the green revolution technologies, that the DAR should use on-farm research methods to bring a farming systems perspective to bear on technology generation. As a starting point, the Adaptive Research Programme was initiated in 1980 to gain an understanding of farming systems, and technical constraints, and to identify research opportunities likely to give a substantial pay-off in the near future. Adaptive Research was fully institutionalised by the DAR in 1985.

Parallel research is underway on crop storage and food processing technologies. In 1973 several Overseas Development Agency-funded projects carried out research on the reduction of post-harvest losses of maize, sorghum, pulses, and oilseeds; and pest control and storage practices. Insects are the major cause of weight and quality losses of stored grains in Malawi. The strategy for controlling post-harvest insect pests involves:

- o screening of new promising insecticides;
- o evaluating inherent susceptibilities of new and recommended maize/crop varieties;
- o testing for insecticidal activity in stored grain;
- o monitoring the outbreak of the Larger Grain Borer (*Prostephanus truncatus*) on the border with Tanzania; and
- o enforcement of strict quarantine regulation and inspection.

Most smallholders process their own food. The use of improved processing technologies would improve the availability of food at the household level, minimise waste and save women and children from time-consuming and energy-demanding activities. But many of the post-harvest processing technologies have not been adopted by smallholders because of the lack of information on available technologies, lack of credit, and the lack of funds for the researchers to import and assess the technologies.

ADMARC and New Developments in Smallholder Crop Marketing

ADMARC was established in 1973 to replace the Farmers' Marketing Board as the official marketing channel for all smallholder food and export crops, the distribution of inputs (some of which have been subsidised, such as fertilizer) and starting from 1981, the management of Malawi's strategic grain reserve. ADMARC has been the major vehicle carrying out the Government's smallholder pricing policy which incorporates two basic elements: (1) pan-territorial pricing and (2) price stability through guaranteed floor prices. This policy has been supported by ADMARC's extensive network of some 1 200 marketing points throughout the country.

Under ADMARC's scheme, farmers organise themselves into credit groups of between 10-30 members. High repayment rates of about 90 percent have been achieved in most areas. The major factors believed to have influenced this success are the single purpose of the groups, their honorary management and the joint liability arrangement, and the credit recovery scheme which used ADMARC buying points for loan recovery at the time farmers sold their crops (Schaefer-Kehnert, 1980).

During the 1970s, price stabilisation played a subservient role to ADMARC's profitability (Christiansen and Southworth, 1988). But ADMARC modified its approach starting in 1982 and set prices for export crops (tobacco, cotton, and groundnuts) at export parity levels. At the same time, domestically traded crops,

mainly the food crops including maize, were priced according to the domestic food supply/demand situation. The result has been higher relative prices for maize which have led to reallocation of land away from groundnuts, a reversal of the trend during the early 1980s.

There have been two fundamental changes in smallholder marketing/pricing policy. The first was the phased removal of subsidies on fertilizer, which was to be implemented as part of the structural adjustment programme embarked on in 1981. The second was the liberalisation of private trade in food crops in 1987, whereby private traders were allowed to compete with ADMARC. Both these changes have been marred by poor timing.

The fertilizer subsidy removal programme, which was designed to reduce the Government deficit coincided with a period of unprecedented rise in transport costs and the negative effects of devaluation. The Government has understandably resisted this measure and suspended fertilizer subsidies in 1987. But the move has nevertheless left fertilizer prices open to the other exogenous forces.

The market liberalisation move was implemented too hastily due to donor pressure, which left the Government no room for resistance or for planning and implementing a phased approach. But more than this, it was pushed through within a few months of what turned out to be a particularly bad harvest year. Since one of the underlying motives was to improve ADMARC's operating efficiency and its financial position, it was able to withdraw services from some of the remote and costly marketing points. Marketing points were closed that were unable to attain an annual throughput of 60 tonnes. Although only 125 (15 percent) of the markets were actually closed, the closures have far-reaching consequences for households in food deficit areas.

Although food marketing liberalisation is still quite recent, some evidence, though limited, is available on both the private trader response and the consequent behaviour of prices. Table 1 shows the number of licensed traders operating in each of the ADDs during the first and second years after liberalisation. Although the figures do not include the vast number of unlicensed traders who are known to be in operation, they may still be taken as fairly representative of the largest of the private traders.

The total number of designated markets open to private traders, 1 200, is quite close to that of the original number of ADMARC markets. This is not surprising, considering that private traders were supposed to compete with ADMARC in the first instance. The next thing to note is that the pattern of entry by private traders into the various ADDs is influenced more by remoteness than by the number of designated markets. For example, the highest number of designated markets was in Mzuzu in the Northern Region and yet the number of licensed traders is among the smallest in both years. In sharp contrast, Blantyre, Lilongwe and Liwonde, have the largest urban concentrations and the highest numbers of traders.

Table 1
Number of private traders by ADD

	Marketing Season 1987-88	Marketing Season 1988-89	Number of Designated Markets
Blantyre	99	417	134
Mzuzu	22	35	278
Lilongwe	113	128	189
Liwonde	109	224	139
Karonga	-	7	96
Salima	20	28	85
N'gabu	14	51	67
Kasungu	10	27	182
Total	387	917	1 120

Source: Mkwenzalamba, 1989

Most licensed traders deal in more than one type of crop and typically buy and trade domestically, although some supply other persons who are licensed to handle export crops. The latter numbered 605 in 1987-88 but fell to 490 in 1988-89, partly because of a decline in the production of major crops in the 1987-88 cropping season. Private traders have been most active in the exportation of pulses and this activity has preceded liberalisation. For example, between 1982 and 1984 private traders handled nearly all the exports of pulses which averaged 11 tonnes per annum. In 1987, private traders exported 59 percent of the much higher level of the exports (48,5 tonnes).

The outcome of licensed private trader activity in maize generally conforms to the inter-seasonal price trends observed in 1982 due to the activity of small unlicensed traders (Ministry of Agriculture, 1983). Soon after harvest, maize prices fall below ADMARC prices because private traders are more flexible than ADMARC in terms of their ability to start buying immediately after harvest, at prices considerably below ADMARC prices. When ADMARC purchases maize, prices move towards ADMARC prices. But due to relatively low agricultural production during the past two seasons, private trader prices have tended to exceed official prices. In 1978-79, for example, private trader prices for maize varied between 102 percent and 132 percent of ADMARC prices while in 1988-89 the range was between 109 percent and 120 percent (Mkwenzalamba, 1989). Private traders are able to exercise this flexibility because they are better able to respond to scarcity and competing demand such as that from agro-processors in the food industry. There have been a number of consequences of this. First, earlier buying and higher prices later in the season have led to preference for selling to private traders. This in turn has led to a dramatic reduction in ADMARC purchases. For example, Blantyre ADD (1987) reports that ADMARC purchases were lower than seven-year averages in many markets.

Second, early buying (at low prices) and subsequent purchase at higher prices have also led to a rise in the incidence of "distress selling" by poor households in need of cash. Definitive evidence of this has come from Blantyre ADD (1987). If this generally holds, the adverse timing of selling and buying is increasing market

dependence for a portion of households. Third, because private trader activity typically removes food from the producing areas, this can reduce local food availability. Even where ADMARC markets still exist, ADMARC will be constrained in redressing the situation by its own low stocks. Blantyre ADD, which has the worst land constraint problems and where 57 ADMARC markets have been closed, has felt the unfavourable impact of private trader activity. Whereas some of the Rural Development Project areas within the ADD, e.g., the Mwanza and Phalombe areas, are surplus producers of maize, others like Thyolo are deficit producers and have been the worst affected (Blantyre ADD, 1987).

TECHNOLOGICAL ISSUES

Policy Options Related to Food Production Technology

The features of the Malawian food economy described above suggest that although pricing policy may play a large role in meeting national objectives such as aggregate maize supply, increased food production at the household level can be stimulated through a variety of instruments, including pricing, institutional development and improved technology. For maize, two technological options are now thought to be paramount. First is the development of high-yielding maize varieties that are acceptable to consumers. This is a key agricultural research issue, although there are a host of related factors, both of a research and institutional nature. Second, is the improvement of soil fertility. Again, this has institutional and research components. Some of the suggestions relate to improved delivery of inorganic fertilizer to small farmers, through innovative credit programmes (e.g., fertilizer for work, fertilizer/commodity exchanges), or through the expansion of cash cropping opportunities, perhaps through the relaxation of constraints on the types of tobacco smallholders can grow and market. The underlying assumption of this latter strategy is that the marginal propensity to invest in food crop production out of cash crop income is relatively high. An alternative suggestion has been the improvement of food legume technology, particularly in the context of the traditional practice of intercropping, to enhance soil fertility and human nutrition.

The marketing/pricing features of various crops should be factored into policy approaches. For example, in the face of high input costs, producer margins are likely to be more positively affected by higher private trader prices than by the slower moving ADMARC price, which would effectively define minimum margins for most producers, barring the distress sellers. While this will be of benefit to both producers of the local maize and the hybrids, the latter would be encouraged to exploit the higher yields associated with the hybrids. The maize preference factor is not a serious constraint particularly for hybrid maize producers sufficiently close to urban areas with non-discriminating users (direct consumers and the milling firms). If hybrid maize production can rise to cater for much of the urban consumption, then local maize production would be freed to satisfy rural needs, at least until processing technology has diffused to the rural areas to satisfy the discerning tastes there.

The recent high prices of maize and the related withdrawal by private traders from deficit areas could likely have some effects on the land constraint. Proposed improvements in access to fertilizer by smallholders through smaller packages and improved access to credit are also likely to encourage hybrid maize adoption.

Farmers may conceivably even grow hybrids to fulfil much the same role as that played by the food reserve crops such as cassava. Due to the fact that some smallholders deplete their stocks early, the poorer storage qualities of hybrids may not pose as serious a constraint as would otherwise be the case. Still, the role of technology in reducing losses is as much a part of the food security problem as improvements in production.

Processing and Trade Policies

We turn now to an issue which is of importance to smallholders who face ecological constraints in their areas, particularly in the low-rainfall area of the Lower Shire River Valley. Considerable attention has recently focussed on the need for SADCC countries to reduce their trade dependency on wheat imports. The solution lies in countries adopting appropriate trade policies for wheat imports, e.g., import subsidy removal or some other way of raising import prices, in order to force the baking industry to adopt wheat/sorghum composite flour in baking. In Malawi the Government estimates that it is feasible to replace 25 percent of wheat with sorghum in bread without seriously compromising taste. The implementation of such a move will undoubtedly have a considerable impact on the people in the Lower Shire area where sorghum is grown for its drought-resistance qualities. At present sorghum is grown purely as a subsistence crop despite the fact that high yields are obtained, partly because ADMARC is not interested in buying the crop and therefore it offers a very low price (4t/kg).

An increase in the demand for sorghum in the agro-processing industries would raise producer prices and encourage production of marketed output. For Lower Shire farmers, this would diversify their sources of cash income beyond cotton, and in a few areas, irrigated rice. This new possibility will have an important impact on food security because maize is still the dominant staple despite the presence of millet and sorghum, and because the area is a maize deficit area. Any rise in the level of cash incomes will therefore also raise the ability of smallholders in the area to effectively compete in the market for the increasingly high-priced maize.

Storage Technology, Marketing and Trade

Given the existing marketing and trade regimes, a number of technological issues emerge with respect to storage. At present, smallholders and ADMARC staff are aware of the recommended storage technologies. But private traders who can now trade in fairly large quantities of food grain have had no tradition of crop storage to minimise losses. They require exposure to recommended crop storage practices and, if need be, efforts must not be spared to establish intermediate technologies, which should soon be "on the shelf".

As long as storage problems prevent private traders from settling into their designated role of providing an alternative to ADMARC storage in some areas, the grain marketing system that will emerge and persist could undermine local and household food security. For example, in the case of private traders operating in an area where ADMARC has withdrawn, the attractive prices they offer could result in overselling as far as the local households are concerned. Now, if due to lack of available storage technology, traders remove crops for fast disposal elsewhere, food deficit households will not find local suppliers.

Serious problems like this are being experienced in a number of areas characterised by "distress sellers", i.e., food deficit producers who sell food crops soon after harvest to alleviate immediate cash needs even if they will need to buy back some of the food at higher prices later on. But sometimes the food may simply not be available (Blantyre ADD, 1987, the example of Thyolo District).

Storage problems, like other constraints, can compromise the operations and success of the private sector by leading to uncompetitive marketing structures (Reusse, 1987). Displaced persons and natural disasters have opened the country to large inflows of food from different parts of the world. This has called for more resources for inspection, treatment and proper storage of food imports. Although problems with the traditional export/import routes through Mozambique led to the opening of the Northern Corridor, it also opened the country to the Larger Grain Borer in Tanzania. There is a need for stricter quarantine and produce inspection along the border in order to monitor the movement of the pest. Recent experience with the mealybug devastation of the cassava crop, which is a staple in some parts of the country, has resulted in such areas being treated as natural disaster areas, particularly the Lakeshore area in Nkhata-Bay District. Apart from the immediate impact on the food balance, such infestations have long-term consequences, which often requires reorienting the smallholders towards new cropping patterns, which may not be suited to the particular areas (Centre for Social Research, 1987).

There is need to maintain an active search for and screening of insecticides for crop storage and to identify the natural enemies of the important storage pests. Multi-national chemical firms are an important source of "world technologies" for Malawi. The availability of the widest range of cost-effective and safe options would lead to the reduction of input costs as well as crop losses.

CONCLUSION

Although there has recently been much discussion of household food security, most of the technological issues have received limited or no attention. The present study has sought to air some of these issues. We have highlighted some of the most important emerging issues which directly or indirectly influence household food security:

- o The shift in biological research away from flint maize varieties with desirable consumer, storage and processing qualities towards dent green revolution varieties has overlooked the now greater need for improved storage and processing technology.
- o The slow adoption of improved technology raises a number of policy options, including the use of innovative approaches to improve accessibility by poorer farmers, the new role of the marketing structure in providing incentive prices and the possibilities offered by relative maize/maize flour pricing.
- o The concern with improved production technology has tended to overshadow needed research on improved storage technology as a way to reduce crop losses at the household level. Storage technology can

also contribute to the evolution of marketing systems that would not create a pattern of household grain sales after harvest only to be followed by grain purchases by the same households later in the season.

- o There are special cases where agro-processing can be influenced by trade policy. Also, domestic marketing responses can have positive trickle-down effects on sub-groups of farmers such as sorghum production for bread made with wheat (75 percent) and sorghum (25 percent).
- o Despite the fairly closed trade regime in grain, recent international developments have opened up Malawi to grain inflows which have increased the possibilities of crop infestations from new pests. There is a need for more active screening of pest control technologies.

REFERENCES

- Blantyre ADD. 1987. *Preliminary Assessment of the Food Situation and the Impact of the Agricultural (General Purposes) Act (No.11 of 1987)*. Evaluation Working Paper 5/87.
- Centre for Social Research (CSR). 1988. Report of the Workshop on Household Food Security and Nutrition, Zomba, 28 August to 31 August 1988 Vol. 1. Summary of Presentations, Discussions and Recommendations.
- Centre for Social Research. Vol II Papers Presented. Centre for Social Research, 1988. *The Characteristics of Nutritionally Vulnerable Sub-Groups within the Smallholder Sector of Malawi: A Report from the 1980-81 NSSA*. University of Malawi.
- Centre for Social Research. 1987. *Cropping Patterns in Lakeshore Areas of Nkhata-Bay District in 1986-87 and the Potentials and Requirements for Diversification*.
- Christiansen, R.E. and V.R. Southworth. 1988. *Agricultural Pricing and Marketing Policy in Malawi: Implications for a Development Strategy*. Presented at the Symposium on Agricultural Policies for Growth and Development 31 October-4 November. Mangochi. Malawi.
- Ettema, W. 1984. *Food Availability in Malawi*. Centre for Social Research.
- Ettema, W. and L. Msukwa. 1988. *Food Production and Nutrition in Malawi*. University of Malawi. Centre for Social Research.
- Hiwa, S.S. 1988. *Agricultural Development Policy and Food Production*. Presented at Workshop on Household Food Security and Nutrition 28-31 August. Zomba.
- Kinsey, B.H. 1975. *Overcoming Impediments to the Effective Marketing of Staples*. Development Studies (University of East Anglia) Discussion Paper.
- Lelc, U. and R.E. Christiansen. 1988. *Markets, Marketing Boards and Cooperatives: Issues in Adjustment Policy*.
- Lelc, U. and A.A. Goldsmith. 1989. *The Development of National Agricultural Research Capacity: Indian Experience with the Rockefeller Foundation and its Significance for Africa*. Economic Development and Cultural Change Vol. 37. No. 2.
- Livingstone, I. 1983. *Agricultural Development Strategy and Agricultural Price Policy in Malawi*. Presented at International Seminar on Marketing Boards in Tropical Africa. 19-23 September, Leiden, The Netherlands.
- Malawi Government. Statement of Development Policies 1987-1996.

- Mzwezalamba, M.M. 1989. *The Impact of the Liberalisation of Smallholder Agricultural Produce Pricing and Marketing in Malawi*. Ministry of Agriculture.
- Msukwa, L.A.H. 1989. *Household Food Security and Nutrition: The Case of Malawi*. Presented at the UNICEF Regional Network Meeting on "Household Food Security and Nutrition" 6-6 April 1989.
- Nankumba, J.S. 1989. *Food Requirement and Agricultural Production, Cropping Pattern and Land Ownership*. National Seminar on Population and Development in Malawi. 5-9 June. Chancellor College. Zomba.
- Nankumba, J.S., B. Kaluwa and P. Kishindo. 1989. *Contract Farming and Outgrower Schemes in Malawi: The Case of Tea and Sugar Smallholder Authorities*. Centre for Social Research.
- Reusse, E. 1987. Liberalization and Agricultural Marketing: Recent Cause and Effects in Third World Economies. *Food Policy* : 299-317.
- Schaefer-Kehnert, W. 1980. Success with Group Lending in Malawi. *Quarterly Journal of International Agriculture* Vol.19 No.4. : 331-337.