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AGRICULTURAL RESTRUCTURING IN SOUTHERN AFRICA

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ACHIEVING AND MAINTAINING NATIONAL AND HOUSEHOLD FOOD SECURITY: ZIMBABWE'S EXPERIENCE AND ISSUES FOR THE 1990s

G D Mudimu

INTRODUCTION

Achieving and maintaining food security, improving income levels for small farm households and increasing foreign exchange earnings/savings were the dominant goals of Zimbabwe's agricultural policy in the 1980s. In the period 1980-1985, the government adopted strategies intended to:

- stimulate food and cash crop production among large- and small-scale farmers,
- stimulate the increased marketing of food and cash crops by small farm households in the Communal Lands,
- stabilize national food supplies in the face of recurrent droughts,
- improve household food security throughout the country, and
- improve income levels and the standard of living of households in the Communal Lands.

The purpose of this paper is to outline Zimbabwe's experience in achieving and maintaining food security at both the national and household level. The paper focuses on:

- the government's approach to improving household food security and income levels in the rural small farm sector,
- farmers' response to government incentives at national and farm level,
- the state of and factors influencing national and household food security in the 1980s, and
- emerging food and nutrition issues for the 1990s.

The paper is based on the research conducted by the UZ/MSU Food Security Research in Southern Africa Project at the Department of Agricultural Economics and Extension at the University of Zimbabwe, but does not attempt to make an exhaustive quantitative analysis of the food security problem and related factors.

The period 1980-90, which is under consideration, coincides with Zimbabwe's first ten years of independence. The first five years can be characterised as the period when policies were outlined and strategies adopted. 1985-90 was a period of re-adjustment of strategies, based on the outcome of those strategies adopted earlier and the influence of other macro-economic factors.

THE GOVERNMENT'S STRATEGIES FOR STIMULATING AGRICULTURAL PRODUCTION

Since 1980, the government has committed increased resources to the agricultural sector to enhance production of both cash and food crops by large-scale commercial farmers and the small farm subsector (also referred to as the Communal Lands farming subsector in this paper). The strategies adopted included:

- incentive producer prices for food and cash crops,
- improvement of the institutions serving farmers, particularly credit facilities, extension, agricultural research and the strengthening of farmer organizations, and

- improvement in the infrastructure servicing farmers, mainly road networks and crop collection and marketing systems.

INCENTIVE PRICES

Between 1980 and 1986, nominal producer prices for food and cash crops increased by an average of 75-110 percent. Between 1979/80 and 1980/81 the real producer price of maize increased by approximately 80 percent, while the price of cotton increased by 12,4 percent per year, in nominal terms, between 1980 and 1985.

Through its producer price policy, the government encouraged diversification of production away from high risk crops in low rainfall areas. The aim was to improve household food security and cash income. Maize, sensitive to droughts and poor rainfall seasons, is not suitable for production in low rainfall areas. To stimulate production of drought tolerant food crops (small grains) in these areas, the government instituted guaranteed producer prices (and therefore markets) for pearl and finger millets in 1984. Farmers were also encouraged to produce high value oilseed crops, such as groundnuts and sunflowers.

MARKETING INFRASTRUCTURE

The improvement of institutions and the infrastructure servicing farmers on the Communal Lands has played a major role in stimulating an increase in agricultural output, particularly in the small farm sector. Grain Marketing Board (GMB) and Cotton Marketing Board (CMB) facilities were expanded to service more areas and farmers (Table 1).

Table 1
Expansion in marketing infrastructure, 1980-1986

Item	1980	1981	1982	1983	1984	1985	1986
a) GRAIN MARKETING BOARD							
GMB depots	34	37	41	43	44	45	51
Depots in communal lands	3	6	10	12	13	14	15
Collection Points	0	10	25	56	120	135	na
b) COTTON MARKETING BOARD							
CMB depots	5	7	14	15	14	15	18

Source: Grain Marketing Board, 1986/87.
Cotton Marketing Board.

Prior to 1980, the crop marketing system was oriented towards servicing large-scale commercial farmers. It was deemed necessary to provide marketing facilities in those areas that were inadequately serviced, to stimulate increased crop marketing by the small farmers. The expansion of marketing facilities was intended to:

- reduce the distance farmers had to transport their produce to a maximum of 20 kilometres,
- make crop markets more accessible to the farmers to encourage them to market their crops, and

- reduce transport costs, thereby effectively increasing on-farm prices.

The availability of marketing points within an accessible distance stimulated more households to market even small quantities of their crops (e.g. number of bags).

AGRICULTURAL FINANCE

Prior to 1980, farmers on the Communal Lands did not have access to formal agricultural credit. The Agricultural Finance Corporation (AFC) did not lend to this subsector, as its basis for lending was security based on land title. Two government-funded and government-guaranteed schemes were instituted in 1981 to enable the AFC to extend credit to farmers on the Communal Lands through the Small Farm Credit Scheme, and to resettlement farmers through the Resettlements Credit Scheme.

Over the period 1980-1986, the value of agricultural credit extended to farmers on the Communal Lands increased from Z\$1,6 million (4 400 farmers) to Z\$43 million (77 000 farmers). This stimulated the use of purchased inputs such as fertilizers and improved seed. The quantity of fertilizer purchased increased from 25-30 thousand tonnes in 1978/79 to 90 thousand tonnes in 1980/81 and 130 thousand tonnes in 1985/86. Over this period, fertilizer consumption by farmers on the Communal Lands increased from 9 percent of total fertilizer consumption in 1979/80 to 25 percent in 1985/86. Delivery of improved seed to the small farm sector rose from 4 250 tonnes in 1978/79 to 9 566 tonnes in 1980/81 and 22 000 tonnes in 1985/86. Thus, the expansion in credit facilities gave more farmers on the Communal Lands access to yield-augmenting resources and also stimulated the expansion of production area, particularly for maize and cotton.

AGRICULTURAL RESEARCH AND EXTENSION

The institutions involved in technology generation and transfer have also been improved. Agricultural research was re-oriented to address the technology needs of farmers on the Communal Lands. The objective was to develop sustainable crop and livestock production systems more suited for low rainfall areas. For crops, the focus was on yield stability to eliminate the food and cash income risks associated with fluctuations in crop output due to low and unreliable rainfall. Research on crops that had not received much attention prior to 1980, namely finger and pearl millets as well as white sorghum, was undertaken.

Delivery of technology to the small farmer sector was improved by strengthening the extension system and redirecting it to focus on the needs of farmers on the Communal Lands. Extension services to large-scale commercial farmers were reduced in order to meet the needs of the small farmers. Alternative extension strategies emphasising farmer groups and increased mobility of extension workers, were adopted. The intention was to reduce the extension officer:farmer ratio from 1:2 000 to 1:500-800. In this regard, extension workers were stationed in district wards and provided with motor-cycles.

FOREIGN EXCHANGE FARMING/SAVING STRATEGIES

Agriculture is a major foreign exchange earner for Zimbabwe through the export of tobacco, cotton, beef, coffee and tea. The government's strategy for improving foreign exchange earnings or savings from agriculture has included:

- promoting cotton production by both large- and small-scale farmers,
- supporting tobacco production and export by arranging barter trade and market

diversification,

- giving incentive prices to promote oilseed production to save on foreign exchange for imported edible vegetable oils, and
- setting up an Irrigation Fund for (primarily large-scale) farmers to invest in irrigation for wheat production, so as to reduce wheat imports.

FARMERS' RESPONSE TO GOVERNMENT INCENTIVES

The above strategies paid dividends for Zimbabwe. The country was able to:

- sustain increased agricultural production by large-scale commercial farmers,
- stimulate increased production and marketed output from farmers on the Communal Lands, and
- enhance national and household food security.

Food and cash crop production by both large-scale commercial farmers and farmers on the Communal Lands has increased. Maize production and marketing by both large- and small-scale farmers more than doubled over the period 1980-1986 compared with the 1970-80 period. The maize area in the Communal Lands increased from 600 thousand hectares in 1979/80 to 1,2 million hectares in 1980/81. Maize output rose from 0,8 million tonnes in 1979/80 to 1,1 million tonnes in 1980/81 and 1,8 million tonnes in 1985/86. In 1985/86 farmers on the Communal Lands supplied 47 percent of all marketed maize compared to 4,7 percent prior to 1980 (Stanning, 1985). In 1989, farmers on the Communal Lands were marketing 63 percent of the total maize delivered to the Grain Marketing Board.

Due to the guaranteed price and market for small grains, marketed output of finger millet rose from 386 tonnes in 1983/84 to 12 500 tonnes in the 1985/86 marketing year. Marketed output of pearl millet increased from 4 200 tonnes in 1983/84 to 40 000 tonnes in 1985/86. This level of output far exceeds effective demand and stocks of small grains have been accumulating since 1985. Zimbabwe has, as at March 1990, an equivalent of five years supply of small grains in national silos.

Cash crop production by both large-scale farmers and farmers on the Communal Lands has increased dramatically since 1980. Total cotton production increased from 160 thousand tonnes in 1980 to 321 thousand tonnes in 1985 and currently stands at 350 thousand tonnes for 1990. In 1987-89 farmers on the Communal Lands contributed 50 to 55 percent of marketed cotton compared to 7 percent in 1980.

NATIONAL AND HOUSEHOLD FOOD SECURITY IN ZIMBABWE

Zimbabwe's agricultural policies over the period 1980-85 enabled the country to achieve some stability in food supply. The production of maize, the "food security cereal" for Zimbabwe, grew at the rate of 20 percent per annum between 1980 and 1985. The area under maize production was expanded by an average of 12 percent per annum over the same period. With such growth rates, stocks of maize accumulated in the national silos managed by the GMB. In 1986, Zimbabwe had accumulated about two million tonnes of maize. This was equivalent to two years' supply. These stock levels carried the country through devastating droughts in the 1983/84 and 1986/87 seasons. The government was able to institute food-for-work and straight food aid programmes in drought stricken areas.

Zimbabwe has been able to maintain a growth rate in agricultural and food output sufficient to sustain national food security. Over the period 1980-1986 the per capita cereal production increased by 80 percent. The annual growth rate in aggregate food production

averaged 2,5 percent while total agricultural output grew at an average rate of 3,5 percent per annum. Over the period under consideration Zimbabwe was able to maintain a reasonable balance between population growth rate (around 3,2 percent per annum) and agricultural and food production growth rates.

Zimbabwe supplies at least 98 percent of the daily per capita dietary energy and protein requirements of its population. The supply of dietary energy is estimated at 2050-2500 kcal while that of protein is estimated at 55-60 g per capita per day. These are slightly above the minimum levels of dietary energy and protein required to sustain food security.

LESSONS, CHALLENGES AND EMERGING ISSUES

The single most important lesson one can learn from Zimbabwe's achievement of stimulating agricultural growth and improved food security is that a balanced package of incentives is critical. The farmers' response can be attributed to incentive prices, the availability of agricultural credit and inputs, improvement in the marketing system and farmer support services (and obviously good rainfall seasons).

Despite substantially improving the state of agriculture and food security, there are a number of challenges facing Zimbabwe. Although the general food security situation has improved, some pockets of the population remain vulnerable. The challenge for food security is at the household level. The vulnerable sections of the population are:

- households in the Communal Lands in the low rainfall areas,
- households whose members are employed as workers in the large-scale commercial farming sector, and
- low-income and poor households in the urban sector.

Approximately 75 percent of Communal Lands are located in agro-ecological regions IV and V. These regions are characterised by low annual rainfall, averaging 500 mm and 450 mm respectively, severe dry spells during the rainy season, periodic droughts and low soil fertility. Food and cash crop production is very risky. Crop productivity is generally low due to the lack of appropriate crop varieties and production technologies. This is made worse by the fact that a significant proportion of the households are not well endowed with productive resources such as land, animal draft power and working capital for purchasing inputs such as fertilizers, improved seed, draft power, transport services, etc. Up to 40 percent of the households do not have adequate access to animal draft power (Rukuni, 1985).

Thus, households in the low rainfall areas are vulnerable to transitory food and cash income insecurity because of the inter- and intra-seasonal variability in food and cash crop production due to undependable rainfall. The incidence of malnutrition and related health problems are also fairly high. Malnutrition in all the Communal Lands is reported to affect 10-15 percent of all children between the ages of one year and five years. In the low rainfall Communal Lands, the number of those suffering from malnutrition rises to around 20-25 percent. It is as high as 30-40 percent in the Communal Lands of Nyanga, Binga and several areas in the Matebele provinces. In some of these districts malnutrition is chronic. Research findings by the Food Security Research project indicates that up to 40 percent of households in the Communal Lands may be faced with chronic food insecurity. This arises from the fact that a good number of households do not have adequate resources (land, animal draft power, working capital, etc.) to produce enough food, nor do they have adequate cash to purchase food available in the market.

According to Rohrbach (1989), the response to government incentives was more marked in the high rainfall zones where available technologies and infrastructure were more suited to the changes initiated by the government. This is illustrated by the pattern of maize deliveries by agro-ecological region in the period 1984-1988 (Table 2).

Table 2
Communal area maize delivery by agro-ecological region, 1984-1988

Natural region	1984		1985		1986		1987		1988	
	Tonnes (1000)	%	Tonnes (1000)	%	Tonnes (1000)	%	Tonnes (1000)	%	Tonnes (1000)	%
II	145	96	310	85	506	61	479	72	130	84
III	5	3	58	14	205	25	148	22	22	15
IV/V	1	1	6	1	113	14	36	6	2	1
Total	151		364		824		663		154	

Source: Grain Marketing Board

Substantial disparities and skewness exist within given areas. On average, 25 percent of the households accounted for 75-85 percent of the cereals marketed. Up to 40 percent of households did not market any cereals. Stanning (1985) reports that households with inadequate resources of land, labour and livestock remain food-insecure, as measured by the low per capita availability of maize, small areas used in the production of maize and low marketed maize output.

Another issue of concern is that income levels have not changed significantly over time for the majority of the farm households. Even in the high rainfall district of Hurungwe, Stanning (1988) found that the top 25 percent of the households earned up to 60 percent of the total income generated from agricultural production. Similar findings of low and highly-skewed patterns of income distribution are reported by Jackson & Collier (1988), Chopak (1989) and Chigume & Shaffer (1989). Jackson & Collier reported in their study of farmers in the Communal Lands in all the agro-ecological zones of Zimbabwe, that the total per capita income from all sources in the 1984/85 marketing season ranged from Z\$28 to Z\$771. In two low rainfall Communal Lands, Mutoko and Buhera, Chopak found that the mean annual household per capita income ranged from Z\$140 - Z\$153.

This suggests that a sizeable proportion of small farm households is dependent on the market for their food security. This would debunk the notion that farmers in the Communal Lands meet their subsistence requirements from their own production. The ability of these households to maintain their food security therefore depends on their access to the means with which to purchase food. Access to alternative sources of income, the price of food in the market and the efficiency of the food markets therefore become paramount determinants of food security. This implies that these households will be hurt by increases in producer prices for food crops, which are ultimately reflected in higher prices in the local market.

Increases in the output of food and cash crops together with substantial quantities of maize and small grains in stock, do not in themselves necessarily solve the food security problem. While hunger is not a serious problem in all parts of the country, malnutrition is

prevalent in some urban areas and a number of Communal Lands, even those in high rainfall areas. It persists on a permanent basis in the Communal Lands in the low rainfall areas. Some households do not have access to food because they cannot afford it. Furthermore, food produced in the high rainfall zones ends up in GMB storage where the individual farm households cannot access it when the need arises. Households in the food crop production deficit areas are unable to acquire food on a regular basis (in periods of need) due to:

- inadequate purchasing power because of low income levels, and
- the absence of food to purchase because official food markets do not exist.

A permanent programme to make food available to households in the low rainfall Communal Lands is needed. This could take the form of permanent food-for-work programmes or incentive programs to facilitate the development of local food markets. Alternative income-generating activities need to be developed and strengthened in order to give households more purchasing power to acquire food which may be available in local markets.

High and persistent levels of malnutrition suggest that improvement in satisfying the dietary needs of the population should be one of the objectives of agricultural policies. The issue of nutrition has never been addressed directly in Zimbabwe's agricultural policies beyond the expressed need to produce an adequate quantity of food.

Food and nutrition policy should explicitly take into account:

- the determinants and levels of nutritional status for the various socio-economic groups in order to identify the most vulnerable sections of the population and the extent and nature of the malnutrition problem, and
- the most effective and cost-efficient instruments for meeting the nutritional needs of the affected sections of the population.

In Zimbabwe, malnutrition may be due partially to poor dietary habits and lack of nutrition education. There is also the possibility that households do not have access to reliable and adequate supplies of vegetables and protein sources. Thus an abundance of maize or small grains without the needed relish will not improve food security. In addition, households need cash flow to meet their daily requirements of vegetables and meat. Access to a patch of wetland to grow vegetables would be an alternative. Agricultural research and policies have not as yet addressed these issues.

The challenges for Zimbabwe with respect to food security in the 1990s are:

- to improve the income of farm households for purchasing food not only through agricultural production but via rural enterprises and other income-generating activities;
- to generate technologies to stimulate reliable/stable crop production systems in the low rainfall areas; and
- to enhance food security with improved nutrition for households in Communal Lands, particularly those in low rainfall areas.

Low crop output in the Communal Lands can be attributed to low productivity arising from inappropriate technologies, low-yielding crop varieties and low input use. The technologies that are currently available are expensive and often not appropriate for low rainfall areas. They were developed for high input production systems in the large-scale commercial farming areas, mostly located in the agro-ecological zones with high and stable rainfall. These technologies have to be modified to match the conditions that exist in the Communal Lands. The cost of fertilizers, improved seed and pesticides should be minimized. Chemical inputs need to be formulated to suit local conditions. Less expensive

and small-scale mechanical technologies should be developed. Technologies for small grains, sunflowers and groundnuts need to be improved to increase yields and offer farmers opportunities for crop diversification.

Poverty arising from low income levels and inadequate access to productive resources is a central cause of reduced access to food. Accordingly, two inter-related strategies are needed to reduce the incidence of hunger and malnutrition in some of the Communal Lands in the low rainfall areas. The first involves increasing household access to food through the improvement in income levels. This can be achieved by improving the income-generating capacity of communities and households through regular and semi-permanent public work programmes, i.e. food-for-work projects. These programmes should be geared at creating a social infrastructure (i.e. feeder roads, conservation works, small dams, etc.) aimed at upgrading the agricultural production base. The second strategy involves fostering the development of markets to improve food and input supply to Communal Lands. Currently product and input markets in these areas are poorly developed and restricted by, among other things:

- a lack of working capital by rural entrepreneurs to stock the needed inputs and food supplies,
- high transportation costs due to long distances from major supply centres (mainly Harare) and poor feeder road networks servicing the Communal Lands.

Strategies should be devised to foster the development of entrepreneurial activities among rural and other emergent entrepreneurs to provide agricultural services, e.g. grain marketing, transportation, mechanization contractor services, input-stocking, etc. There is also a need to facilitate the involvement of the established private sector to supply agricultural support services such as input supply, training and extension.

CONCLUSION

Zimbabwe has been able to improve national and household food security and the income of farm households by creating an environment conducive to increased agricultural production by both the large- and small-scale farmers. Overall, agricultural performance has been positive since 1979/80. Increase in agricultural output, particularly food, has kept pace with the increase in population. The challenge for Zimbabwe is to maintain the existing momentum to ensure that food and nutrition security is improved for resource-poor households and those in the low rainfall areas.

Incentive prices coupled with improved infrastructure and institutional services have created an environment conducive to increased agricultural production by both large- and small-scale farmers. In order to maintain the momentum, there is a need to invest in the alternative utilization of maize and small grains.

Persistently low income levels in the Communal Lands suggest that growth in agricultural production alone is not enough to raise the standard of living of the rural population. Agricultural production and price policies need to be supported by policies that foster the development of alternative income-generating activities, create employment opportunities and absorb surplus labour.

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