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## The profile of agricultural protection in Zimbabwe

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# Kiel Working Papers

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Working Paper No. 457

The Profile of Agricultural Protection  
in Zimbabwe\*

by

Andrew Rukovo\*\*  
Tobias Takavarasha\*\*  
Rainer Thiele\*\*\*  
Manfred Wiebelt\*\*\*

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## 1. Introduction

There has been a growing concern about the impact of economic policies on agriculture, especially among developing countries. This is primarily because these policies - including agricultural pricing policies, trade policies and macroeconomic policies - directly and indirectly affect the domestic terms of trade between agriculture and the rest of the economy [Krueger et al. (1988)] and therefore the composition of agricultural output, the adoption of new technology and the migration of labour from farms to urban areas.

It is with this in mind that the Kiel Institute of World Economics has embarked on a Research Project to evaluate how policies in developing countries affect their agricultural sectors. Zimbabwe has been selected to represent one of three developing countries which are to be analyzed in greater detail.

Zimbabwe is an interesting case since its agricultural sector performs better than in most other Sub-Saharan African countries. Zimbabwe is one of the few countries in Africa which have regularly produced food surpluses and realized substantial agricultural exports. It seems that government policy after independence has been rather favourable for agriculture and, hence, Zimbabwe is often seen as a model for agricultural policy in other African countries. Another aspect of farm policy in Zimbabwe might have positively influenced the performance of the agricultural sector: After independence, a "Growth-with-Equity" strategy was promoted for agriculture. Agricultural research, extension and credits were redirected from the large-scale commercial subsector towards the small-scale communal areas where the subsistence-oriented agricultural sector has been traditionally located.

This paper presents parts of the findings of the Subproject on "Structure and Development of Incentives for Agriculture in Zimbabwe".<sup>1</sup> The main objectives of this paper are:

- (a) to identify tax and subsidy transfers between the agricultural sector and the rest of the economy, with particular reference to:
- direct commodity taxes;
  - direct subsidies and grants;
  - implicit taxes and subsidies arising from administered prices, import and export controls and the policies of marketing boards and statutory agencies;
  - indirect taxes, duties and subsidies operating on inputs and other costs of production;
- (b) to assess the impact of the taxes and subsidies in terms of incentives and disincentives on a number of major agricultural commodities produced in Zimbabwe; and
- (c) to assess the magnitude, structure and trends in these incentives and disincentives.

The study contains four chapters. Chapter two provides an overview on the Zimbabwean economy with emphasis on the role of agriculture. Chapter three presents the results on output and input pricing policies. In chapter four other measures to support agriculture are described. Finally, chapter five outlines the summary and conclusions drawn from this study.

## 2. The Economy of Zimbabwe

### 2.1 Recent Economic Trends

When Zimbabwe achieved independence in April 1980, the country had a diversified economy not only by African standards, with a well-developed physical and administrative infrastructure. The diversification of the economy ironically was attributable in large part to the civil war, since the economic isolation imposed during the period of sanctions necessitated the production of a wide range of agricultural and manufactured products for the domestic market. At the same time, even with sanctions, the

country was able to continue to export agricultural and mining products. Despite the relative soundness of the Zimbabwean economy at independence, the new government faced a number of difficult challenges. Leading priorities in the development agenda included the rehabilitation of a severely depleted capital stock, the restructuring of a strongly dualized economy, and the redressing of glaring inequalities between racial groups in income, ownership of land and capital and access to basic social services such as health care and education. The "Growth-with-Equity" program introduced at independence achieved important early successes in helping the country to recover from the war. During 1980 and 1981, the economy experienced a rapid burst of growth in response to expansionary monetary and fiscal policies, the lifting of sanctions, increases in global prices of Zimbabwe's major agricultural and mining exports, and accelerated foreign borrowing. After five years of negative or zero growth, real GDP increased dramatically in 1980 and 1981 [see Table 1].

The ambitious goals of the "Growth-with-Equity" program were tempered by the realization among policymakers that the dualized nature of the economy could not be eliminated overnight without hurting the country's agricultural and industrial base. Therefore, the government moved swiftly to redress a number of obvious inequities (for example, by providing increased job training to blacks and by initiating land redistribution schemes designed to place more land in the hands of communal farmers). But at the same time, it was careful to protect the mining, manufacturing, and commercial agricultural sectors that comprised the backbone of the economy. Agricultural producer prices were raised to stimulate increased output by commercial farmers, and resources were invested in the road and rail systems to repair damage sustained during the war. In 1982, the fortunes of the Zimbabwean economy reversed dramatically as a result of a combination of adverse external and internal factors. The global recession reduced the demand for Zimbabwe's exports, depressing foreign exchange earnings and increasing the balance-of-payments deficit. Expected capital inflows from overseas failed to materialize, and



Table 1: Macroeconomic Indicators, 1965-88

Year	Population (million)	CPI (1980=100)	Real GDP (Z\$ million)	Real GDP/C (Z\$)
1965	4.49	44.20	1755	390.87
1966	4.63	45.60	1785	385.53
1967	4.79	46.60	1930	402.92
1968	4.96	47.30	1969	396.98
1969	5.13	47.50	2250	438.60
1970	5.31	48.40	2336	439.92
1971	5.50	49.90	2616	475.64
1972	5.69	51.30	2867	503.87
1973	5.89	52.90	2959	502.38
1974	6.08	56.40	3136	515.76
1975	6.14	62.10	3132	510.10
1976	6.33	68.90	3106	490.68
1977	6.52	76.00	2884	442.33
1978	6.72	80.30	2858	425.30
1979	6.93	94.90	2913	420.35
1980	7.14	100.00	3224	451.54
1981	7.36	113.10	3537	480.57
1982	7.55	125.20	3589	475.36
1983	7.74	154.10	3461	447.16
1984	7.98	185.20	3540	443.61
1985	8.17	200.90	3798	464.87
1986	8.41	229.63	3882	461.59
1987	8.64	258.36	3838	444.21
1988	8.88	277.44	4089	460.47

Source: Central Statistics Office (various issues); IMF (various issues).

the deficit had to be financed through high-cost commercial borrowing and drawdowns in foreign reserves. Meanwhile a severe drought cut into the country's ability to export agricultural commodities and necessitated imports of staple foodstuffs. Finally, increased wages, rapid expansion of government spending, and increased domestic credit fueled a burst of inflation. As a result of these convergent forces, real GDP growth slowed dramatically [Table 2].

Table 2: Annual Growth Rates, 1965-88

	1966-70	1971-75	1976-80	1981-85	1986-88
Population	2.9	2.3	2.6	2.6	2.8
Real GDP	6.2	3.9	0.6	-0.4	1.8
Real GDP/C	2.8	1.4	-1.7	-2.6	-0.1

Source: Table 1.

During the mid-1980s, the performance of the economy was mixed. Although significant progress was achieved in expanding education and health services to the majority of the population, in raising wage levels, and in redistributing land, many macroeconomic performance indicators continued to give rise to concern among policymakers. In spite of the fact that the current account deficit was decreased, strict foreign exchange controls restricted imports and added increased impetus to domestic inflation. Rising wage levels reduced the competitiveness of Zimbabwe's traditional exports, which coupled with the continuing stagnation of global commodities and mineral markets depressed exports.

## 2.2 Economic Structure

Zimbabwe is unique in the African region for the size and diversity of its manufacturing sector. Equally important, however, is the fact that this is accompanied by strong agriculture and mining sectors. The result is that Zimbabwe is a lower-middle income country whose GNP per capita, at US\$ 650, is well above the average for Sub-Saharan Africa.

As the latest World Bank's Development Report [World Bank (1990)] shows, Zimbabwe is equally strong in other indicators of general socio-economic development, with life expectancy higher and infant mortality lower than for the other countries in the region. Population growth is very rapid. At an annual average growth rate of 2.7 percent during 1980-1988 it is one of the highest in the world (although the rate is expected to fall), and such a rate of increase places heavy demand on the economic system. The population is still predominantly rural-based, with only 27 percent living in the towns and cities. However, this share is increasing steadily; the urban population growth rate was 6.2 percent per annum for the period 1980 to 1988.

Table 3 shows the breakdown of GDP into the value-added arising in each of the main sectors distinguished in national accounts. It can be seen, that the structure of GDP is a remarkable one. The share of manufacturing in the GDP (1988) is no less than 26.5 percent (at current prices), which is about three times the average for Sub-Saharan Africa. As the Table shows this share has risen since 1975 from an already high value of 23.5 percent. The increase has been mainly at the expense of agriculture and mining, whose decline has also been accompanied by an expansion of the share of the service sector.

Measured in constant prices, the changes have not been so great. Indeed, as Table 4 shows, the share of manufacturing in GDP, measured in 1980 prices, reached a peak of 24.9 percent in 1980 but declined thereafter to 24.4 percent in 1988.

Table 3: Distribution of GDP by Sector of Origin, 1975-88 (percentage shares based on current prices)

Sectors	1975	1980	1985	1986	1987	1988
Agriculture	17.0	14.2	16.7	15.3	12.0	12.7
Mining and Quarrying	6.9	8.8	5.4	6.1	6.7	7.1
Manufacturing	23.5	24.9	23.9	24.9	26.5	26.5
Utilities	2.6	2.2	2.3	3.1	3.8	3.5
Construction	4.9	2.7	2.5	2.3	2.2	1.7
Services	45.1	47.2	49.2	48.3	48.8	48.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from Central Statistics Office (various issues).

Agriculture remains a strong sector characterized by two components: commercial agriculture and the communal lands [see Section 2.3]. As can be seen, the contribution of mining to the overall economy is the next most important, ranging from 7.2 percent in 1988 to 8.8 percent in 1980. The sector has been depressed for some years, and output has shown little growth since its share peak in 1980, until the recent upturn in the economy as a whole which began in 1984. But it remains a strong sector. Both mining and agriculture have important linkages to manufacturing. The figures, therefore, show a significant difference from typical trends in developing countries: the manufacturing sector already has a share in the economy as a whole that is higher than that found in some developed countries.

Table 4: Distribution of GDP by Sector of Origin, 1975-88 (percentage shares based on constant 1980 prices)

Sectors	1975	1980	1985	1986	1987	1988
Agriculture	14.7	14.2	16.2	14.8	12.3	14.5
Mining and Quarrying	9.6	8.8	7.6	7.6	7.8	7.2
Manufacturing	23.2	24.9	23.8	24.0	24.7	24.4
Utilities	3.0	2.2	2.1	2.4	3.2	3.1
Construction	5.0	2.7	1.7	1.8	1.7	1.6
Services	44.5	47.2	49.6	49.4	50.3	49.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated from Central Statistics Office (various issues).

Turning to the demand side of the economy, the figures in Table 5 show the shares of the main components of final demand in GDP. Notable are the development of the shares of gross fixed capital formation and government consumption. While at a reasonable level in 1975, the share of gross fixed capital formation declined steadily until 1979. A recovery took place with the country's independence, but the increasingly difficult economic conditions and a widening trade gap forced a decline in 1983. In fact, the level of investment in 1983 in constant (1980) prices was US\$ 649 million, hardly more than two-thirds the value in 1975.

The figures in Table 5 show the change over time in the role of foreign trade. Both the exports and imports of goods and services have declined as a share of GDP in the first half of the 1980s. At first sight this suggests that Zimbabwe was a less open economy in 1983 than it was in 1975. In fact, however, the opposite is true. In 1975 the UDI regime was subject to international sanctions and boycotts, with trade being thus constrained, to some degree at least, by the need to deal through intermediaries. Since 1984 both the share of exports and imports of GDP have increased substantially.

Table 5: Distribution of GDP by Sector of Destination, 1975-88 (percentage shares based on current prices)

	1975	1980	1981	1982	1983	1984	1985	1986	1987
Private Consumption	62.1	67.7	67.0	65.0	68.8	59.2	55.5	54.5	49.1
Government Consumption	12.8	19.7	17.2	19.8	18.4	21.3	22.2	21.8	27.6
Gross Fixed Capital Formation	23.4	15.3	18.7	20.0	19.6	18.5	16.1	15.9	15.5
Changes in Stocks	2.9	0.3	4.4	1.2	-3.7	0.4	4.9	3.6	3.6
Exports in Goods and Services	29.5	30.3	25.2	22.0	21.3	26.7	29.9	30.9	32.1
Imports of Goods and Services	-30.7	-33.3	-32.5	-27.9	-24.5	-18.5	-28.7	-26.6	-27.1

Source: Calculated from Central Statistics Office (various issues).

While exports and imports have declined from 29.5 percent and 30.7 percent of GDP in 1975 to 21.3 percent and 24.5 percent in 1983, this has been mirrored by increases in both public and private consumption shares. Since independence, the economic focus has been directed towards improving the quality of life of the broad mass of the population. Private consumption did not rise at all in real terms between 1975 and 1979, and then has risen by 9 percent until 1983. However, in 1988 total real private consumption reached the level of 1977.

### 2.3 The Agricultural Sector<sup>2</sup>

Even though the Zimbabwean economy is well-diversified, with the agricultural sector contributing less than one-fifth of total GDP, the strategic contribution of agriculture should not be underestimated. It contributes 40 percent to foreign exchange earnings, 35 percent to formal employment and 36 percent to industrial raw materials. Furthermore, 75 percent of the population derive their livelihood directly from farming. Maize is the main food crop; commercial crops include coffee, tobacco, tea, sugar, cotton, soyabeans, groundnuts and wheat. Total production of the principal crops since 1965 is shown in Table 6.

The Zimbabwean agricultural sector is extremely dualistic. There are essentially two sectors: the modern, technologically advanced sector, comprising about 4,200 large-scale commercial farmers plus labourers and their families totalling about 1.7 million people, which accounts for about 12.8 million hectares or approximately 39 percent of the available agricultural land in the country; and the traditional smallholders' sector or communal areas, comprising over 800,000 small-scale farm families totalling some 4 million people, which accounts for about 16.4 million hectares or just about half of the available agricultural land. The small-scale commercial areas and the relatively new resettlement areas account for the remaining relatively small shares of 1.4 million hectares and 2.6 million hectares, respectively. The communal areas have high population densities and are situated in

Table 6: Production of Principal Commercial Crops, 1965-88

Year	Maize (1000t)	Wheat (1000t)	Cotton (1000t)	Tobacco (1000t)	Soyabeans (100t)	Ground- nuts (1000t)	White & Red Sorghum (1000t)
1965	822.0	3.8	-	-	0.2	-	-
1966	900.0	8.9	-	-	0.2	-	-
1967	1,517.6	14.1	-	-	0.4	-	-
1968	975.4	26.2	-	-	2.3	-	-
1969	1,571.5	38.9	-	-	7.6	-	-
1970	980.0	56.2	85.8	54.5	8.6	36.5	-
1971	1,809.1	87.7	139.3	64.6	8.9	28.8	-
1972	2,266.5	82.2	165.3	67.1	10.2	34.7	-
1973	967.4	86.1	129.5	68.6	8.8	34.2	-
1974	2,124.8	89.9	190.1	74.6	21.8	205.5	160.6
1975	1,746.7	130.2	170.1	85.5	31.6	127.3	109.4
1976	1,786.1	147.2	142.1	109.0	44.9	192.4	135.3
1977	1,655.2	175.4	143.9	84.2	49.9	140.9	50.5
1978	1,618.4	203.9	166.1	83.4	78.5	113.6	72.6
1979	1,149.8	162.0	145.2	107.5	86.6	107.5	48.9
1980	2,813.2	191.2	157.6	120.0	97.4	77.7	82.3
1981	2,728.6	201.2	170.6	69.4	72.9	118.8	125.1
1982	1,785.8	213.0	134.9	89.2	91.6	111.4	67.4
1983	844.0	124.3	146.5	94.0	80.6	32.8	51.5
1984	1,283.0	98.5	221.7	116.9	98.7	25.9	54.1
1985	2,952.0	210.0	274.2	107.7	87.2	66.7	127.0
1986	2,486.0	231.9	247.2	n.a.	72.4	73.2	131.0
1987	958.0	198.0	237.0	n.a.	94.8	75.7	48.7
1988	2,034.3	241.5	279.0	n.a.	120.4	139.5	169.0

Source: Central Statistics Office (various issues); Agricultural Marketing Authority (various issues) and Morris (1988).



less favourable lands. Less than 10 percent of the communal areas fall in the relatively high rainfall zones of Natural Regions I and II, while the corresponding proportion of the commercial areas is about 30 percent. Also irrigation development is far less in the communal areas than in the commercial areas (Table 7). The tackling of these inequalities, while maintaining overall agricultural growth, is one of the major challenges facing Zimbabwe.

Throughout the period 1976-1986 there was a continuing significant emigration of commercial farmers from Zimbabwe. Given the dual nature of the agricultural sector, the decline in the number of large-scale commercial farmers and the decline in the acreage under crops in the large-scale sector can be expected to have affected the mix of agricultural output. The manufacturing sector, which absorbs a significant share of agricultural output as its own inputs, has thus also been affected. Agricultural employment has decreased partly because of this decline in acreage under crops, and the volume of agricultural exports (particularly beef) is lower than might have been expected.

Income data indicate that the number of large-scale commercial farmers, the majority of whom are white, declined from 6,370 in 1976 to about 4,200 by March 1988. About 1,000 farmers left the sector between 1976 and 1980 during the peak of the civil war, and an equal number departed after 1980. The area under crops in the large-scale sector in 1988 was 20 percent below the level in 1975.

The distribution of agricultural output is such that most of it originates from the commercial sector. The data for 1986 indicate that 82 percent of the value of total output was from the commercial sector which includes the small-scale and large-scale commercial farmers. When specific crops are considered, the large-scale commercial sector dominates the production of wheat (86 percent of output in 1985), flue-cured tobacco (98 percent), beef (97.5 percent of recorded sales), coffee, tea and horticultural

Table 7: Land Classification, Main Agricultural Uses, and Distribution of Agricultural Land

Natural Region	Area	Rainfall	Main Agricultural Uses	Distribution of Agricultural Land (percent)	
				Commercial Farming	Communal Areas
I	7,034	900-1200	Production of fruit, tea, coffee; intensive live-stock production	3	1
II	58,614	750-1000	Production of fieldcrops; intensive livestock production	27	8
III	72,877	650-800	Production of fodder crops, cash crops, live-stock; marginal production of maize, tobacco, cotton	22	17
IV	147,823	450-650	Production of drought-resistant crops; live-stock production	26	45
V	104,411	< 450	Extensive livestock production; game ranching	22	29

Source: World Bank (1985) and Morris (1988).

products in addition to producing about half of the maize and cotton crops. Agricultural exports comprised 51 percent of the value of total exports in 1985. The most important agricultural exports were flue-cured tobacco, cotton and cotton lint, beef, tea and horticultural products.

Data since 1976 indicate that the long-term levels of output and exports of these commodities is a function of the amount of land under crops, but also producer prices play a significant role. Commercial farmers are very sensitive to profitability considerations, and this has implications for policy. Since many of the major commercial crops are close substitutes in production, commercial farmers are able to shift from one crop to another, with the result that official producer price policies tend to be very influential in shaping the production pattern. Indeed, recent experience suggests that relatively minor adjustments to the structure of producer prices have been highly effective in bringing about extensive changes in cropping patterns on large-scale commercial farms. This feature of the commercial farming sector makes it especially important that Zimbabwean policymakers "get prices right" in establishing agricultural production priorities.

The importance of large-scale commercial farming in Zimbabwe, apart from the larger share in output, also stems from the fact that there are lower seasonal variations in output in times of drought, compared with the small-scale sector. This is an important consideration for national food security and export earnings. Moreover, the large-scale sector, by virtue of its information base and technological superiority, has been able to respond much more rapidly to external market opportunities by switching from low value to high value crops. The growth of the coffee and horticultural exports and the development of game farming by these are indications of this adaptability.

This, however, does not mean to underplay the importance of the small-farm sector which seems to have a relative comparative advantage in the production of cotton, sunflower seed, poultry and other dryland crops. Despite resource constraints the sector has been highly responsive to policy incentives like producer prices, extension, credit and access to marketing facilities. The share of total maize production accounted for by the communal areas has risen from 6 percent in 1980 to approximately 60 percent in 1988/89, when total deliveries to the Grain Marketing Board (GMB) amounted to 1.1 million tonnes. The cotton subsector has also been marked by a rapid growth during the past eight years, with total production of seed cotton rising from about 173,000 tonnes in 1980 to over 300,000 tonnes in 1988; and by a major shift from production by large-scale commercial farmers to smallholders, with the share of the latter increasing from 7 percent in 1980 to 53 percent in 1987.

The rate of growth in Zimbabwe is very much dependent on the agricultural sector. The growth of GDP is strongly correlated with that of agriculture and the level of capital imports which in turn are financed partly by agricultural export earnings. There are a number of reasons which explain this correlation between agriculture and economic growth. First, business optimism has been shown to be strongly associated with increases in agricultural production [World Bank (1987)]. Second, a large share of manufacturing activity involves the downstream processing of agricultural commodities. Most prominent are the textile and food processing industries (including the production of edible oils, stockfeeds, beef and grain milling), ethanol production and tobacco processing. About 44.3 percent of the total output of the manufacturing sector originates from agriculture related industries. Third, the high share of agricultural commodities in exports makes them an important factor in the short-term development prospects for the economy given the dependence on imports of capital goods.

### 3. Agricultural Price Incentives

The aim of this chapter is to measure the extent of government intervention in agriculture<sup>3</sup>. Agricultural pricing policies are considered by means of the Nominal Rates of Protection (Subsection 3.1) and the Effective Rates of Protection (Subsection 3.2) for several major agricultural commodities of Zimbabwe. Section 4 then introduces other agricultural policy instruments that are used in Zimbabwe, namely agricultural research, extension, government expenditures on agriculture and agricultural credit policy.

#### 3.1 Output Pricing Policy

Government control of agricultural prices and marketing and hence the departure from market determined prices started during the 1930 depression. The state-controlled pricing system of guaranteed producer prices and subsidized consumer prices began in 1949. It became more relevant during the period of sanctions following the Unilateral Declaration of Independence (UDI) in 1965 and has survived through the eighties under the new majority government. A detailed description of the price formulation mechanism is presented in Appendix 1.

##### 3.1.1 The Calculation of Nominal Rates of Protection

In order to quantify the price distortions caused by government actions, Nominal Rates of Protection (NRPs) were calculated for maize, wheat, groundnuts, soyabeans, red and white sorghum and beef covering the period from 1966/67 (where data were available) to 1988/89. The NRP measures the deviation of the producer price from the border price, the latter being regarded as the opportunity costs facing domestic farmers. In percentage terms, it is calculated as follows:

$$(1) \text{ NRP} = \frac{(\text{Producer Price} - \text{Border Price}) * 100}{\text{Border Price}}$$

A positive NRP indicates price protection, a negative NRP price discrimination of domestic farmers.

In the calculation of NRPs producer prices were taken at the depot gate. Farmgate prices were not used because producers are paid at the depot and it appears to be difficult to account for the transportation costs between farms and depots. Since domestic and world market prices should be brought to a single marketing point in order to be comparable [Westlake (1987)], the border price has to be worked back to the depot gate. For export commodities (all except wheat) this is done by subtracting the freight charges between Harare and the South African or Mozambiquan ports from the f.o.b. price received at the respective ports. In order to obtain the final export parity price which can be compared with the producer price, it is also necessary to subtract the marketing boards' operating costs. One further correction has to be made in the case of cotton: Since farmers are paid according to the seed cotton that is produced, cotton lint realizations must be converted to their seed cotton equivalents. As approximately 35 percent of seed cotton is cotton lint, the conversion factor 0.35 is used to obtain the depot price of cotton lint expressed in seed units. The export parity price is then the sum of lint and seed revenues. For wheat, the only imported commodity considered here, the c.i.f. Harare price is taken as the depot price. Addition of the marketing board's operating costs provides the import parity price of wheat.

### 3.1.2 Incentives for Major Agricultural Commodities

As the basic data sources served the marketing boards' Annual Trading Accounts (i.e. the Cotton Marketing Board (CMB) for cotton, the Cold Storage Commission (CSC) for beef and the Grain Marketing Board (GMB) for maize, wheat, groundnuts, white and red sorghum). Additional information was available from the Agricul-

tural Marketing Authority's (AMA) Annual Economic Reviews and the Ministry of Lands, Agriculture and Rural Resettlement's (MLA&RR) Statistics File.

Table 8 provides a survey of the NRPs for the individual commodities. Only groundnuts and soyabeans were taxed on average throughout the sample period. Seed cotton received a very high level of protection from 1966 to 1971 and was slightly dis-protected afterwards. For maize, NRPs were negative in the 1970s and positive in the 1980s. In the case of wheat (the only import commodity considered) domestic prices exceeded world market prices, but to a rather low extent. Beef as well as red and white sorghum were subject to protection with increasing trends, the NRPs being on average 100 percent and more since 1980.

Table 8: Average Nominal Rates of Protection (percentages)<sup>a</sup>

Commodity	1966-1971	1972-1979	1980-1989	Average
Seed Cotton	+120	-9	-4	+27
Maize	n.a.	-22	+30	+6
Wheat	n.a.	+11	+6	+8
Groundnuts	n.a.	-22	-15	-18
Soyabeans	n.a.	-7	-24	-13
Beef	+13	+53	+100	+61
Red Sorghum	n.a.	+18	+111	+58
White Sorghum	n.a.	+18	+169	+83

<sup>a</sup> "+" implies protection, "-" taxation of domestic producers. n.a. indicates that data are not available.

Source: Own calculations based on data from Appendix 2.

This general outline is now extended by a detailed description of each commodity.

### Seed Cotton

Immediately after the UDI the government followed a deliberate policy of import substitution. Seed cotton was one of the agricultural commodities which were affected. In order to encourage production, the government set the producer price substantially above the world market price (see Table 9). In nominal terms, seed cotton producers were heavily protected with an average NRP amounting to 120 percent.

From 1971/72 onwards the government took into account the need to remain competitive on international markets, as about 70 percent of the cotton lint produced in Zimbabwe was exported. This led to a reduction in the level of protection to a point where seed cotton producers were taxed over the years with the exception of 1974/75, 1976/77, 1982/83, 1986/87 and 1987/88. Falling real producer prices resulted in a decreasing seed production in the 1989/90 season. This forced the government to announce a pre-planting producer price for the 1990/91 growing season, thus deviating from its general policy of announcing producer prices after the planting season.<sup>4</sup> Such a price formulation method facilitates the planning for farmers by reducing price uncertainty.

Prices to local spinners should be based on export parities [Jansen (1982)]. Prior to 1972/73, local spinners paid more for the lint than could be fetched on the international market (i.e. they were taxed). From 1973/74 to 1983/84, domestic selling prices of lint reflected more or less its export parity price equivalents. After this period, the selling price to spinners remained roughly constant, whereas the export parity price increased. This state of affairs has been caused by a lack of an agreed formula, which would satisfy both the CMB and the spinners and actually means a subsidization of the spinners, who mainly form large corporations.



Table 9: Seed Cotton: Producer Prices (Real and Nominal), Export Parity Prices, Selling Prices and NRPs, 1966-90

Year	Production (MT)	Producer Price (c/Kg)		Export Parity (c/Kg)	Selling Price <sup>b</sup> (c/Kg)	NRP (percent)
		Real <sup>a</sup>	Nominal			
1966/67	n.a.	n.a.	14.70	8.98	n.a.	64
1967/68	n.a.	n.a.	15.61	9.86	n.a.	58
1968/69	n.a.	n.a.	15.61	5.43	14.97	187
1969/70	n.a.	n.a.	15.17	3.77	15.36	302
1970/71	85,803	30.71	15.17	6.84	15.96	122
1971/72	139,338	32.20	16.34	19.11	19.54	-14
1972/73	165,347	34.82	18.30	23.03	126.13	-21
1973/74	129,456	48.92	26.59	33.07	33.51	-20
1974/75	190,065	48.11	28.00	25.26	24.12	11
1975/76	170,111	41.44	26.25	33.97	29.93	-23
1976/77	142,116	51.51	35.88	35.58	34.77	1
1977/78	143,948	43.11	33.00	33.73	31.28	-2
1978/79	166,101	39.83	33.00	35.02	35.78	-6
1979/80	145,218	39.14	36.50	39.88	38.73	-8
1980/81	157,553	37.50	37.50	45.25	41.78	-17
1981/82	170,594	35.13	40.00	44.96	41.19	-11
1982/83	134,886	39.48	51.50	39.39	41.19	31
1983/84	146,521	33.00	51.50	52.69	45.91	-2
1984/85	221,746	31.41	57.00	84.94	55.84	-33
1985/86	274,181	33.82	67.00	81.01	58.39	-17
1986/87	247,200	33.15	75.00	61.07	57.65	23
1987/88	237,000	31.61	80.00	74.86	57.38	7
1988/89	279,000	31.35	85.00	97.27	57.34	-13
1989/90	235,000	n.a.	92.50	n.a.	n.a.	n.a.

<sup>a</sup> Real prices at 1980/81 prices deflated by average of CPI's between lower and higher income groups. <sup>b</sup> Equivalent of the domestic lint price worked back to seed cotton price.

Source: Cotton Marketing Board Trading Account (various issues); AMA Annual Economic Reviews; export parity prices - own calculations based on data from Appendix 2; real producer prices - own calculations based on data from Appendix 3.

## Groundnuts

Before 1980, groundnut production was dominated by communal farmers. During this period the large-scale commercial farmers played a minor role, their share in output being less than 10 percent. In the 1980s, commercial farmers' share increased steadily.

Until 1980 (the independence year), groundnut producers were taxed by pricing policies with the exception of the 1972/73 marketing year (see Table 10). However, producer prices increased between 1970 and 1980 by 198 percent in nominal terms and 47 percent in real terms. After 1980, the real producer price declined and groundnut producers continued to be taxed except for 1985/86, 1987/88 and 1988/89. Since groundnuts are a quite important crop for communal farmers, the pricing policy appears to be inconsistent with the government's concern of reducing rural poverty. The lack of protection for groundnuts is reflected in decreasing production figures, particularly in the first half of the 1980s. Since 1985/86 the production shows a recovery, which may be due to more favourable pricing policies.

The selling price of groundnuts contains an element of subsidy for domestic consumers. Apart from 1985/86, 1987/88 and 1988/89 it has been below the export parity price. The selling price has also been below the producer price most of the time. As a result, the groundnut trading account has continued to be in deficit.

## Soyabeans

Over 95 percent of the soyabean production comes from large-scale commercial farmers.

While prior to 1980 soyabeans were exported, the present government tries to meet the rapidly growing domestic demand for soyabeans by the local oil extraction industry. In the case of any surplus, the oil and soyameal rather than the beans are

Table 10: Groundnuts: Producer Prices (Real and Nominal), Export Parity Prices, Selling Prices and NRPs, 1966-89

Year	Production (MT)	Producer Price (\$/MT)		Export Parity (\$/MT)	Selling Price (weighted average) (\$/MT)	NRP (percent)
		Real	Nominal			
1966/67	n.a.	n.a.	105.59	n.a.	75.83	n.a.
1967/68	n.a.	n.a.	n.a.	n.a.	75.56	n.a.
1968/69	n.a.	n.a.	131.40	n.a.	77.50	n.a.
1969/70	n.a.	n.a.	130.89	n.a.	76.94	n.a.
1970/71	36,468	265.14	130.98	n.a.	77.00	n.a.
1971/72	28,792	257.69	130.78	n.a.	76.67	n.a.
1972/73	34,693	294.25	154.63	131.65	91.17	17
1973/74	34,177	340.06	184.82	217.58	115.75	-15
1974/75	205,463	429.55	250.00	319.16	203.00	-22
1975/76	127,347	327.70	207.60	356.97	203.00	-42
1976/77	192,430	350.32	244.00	337.93	203.00	-28
1977/78	140,909	385.37	295.00	474.58	203.00	-38
1978/79	113,599	398.31	330.00	424.43	270.00	-22
1979/80	107,535	415.18	387.16	495.15	350.00	-22
1980/81	77,675	390.00	390.00	714.09	350.00	-45
1981/82	118,797	368.91	420.00	514.50	350.00	-18
1982/83	111,377	344.86	450.00	511.06	350.00	-12
1983/84	31,652	288.37	450.00	687.21	460.00	-35
1984/85	25,800	275.56	500.00	760.13	460.00	-34
1985/86	66,709	378.60	750.00	607.46	720.00	23
1986/87	73,200	331.49	750.00	1042.16	720.00	-28
1987/88	75,700	355.58	900.00	864.36	900.00	4
1988/89	139,500	368.87	1000.00	911.31	949.90	10

Source: Grain Marketing Board Trading Account (various issues); AMA Annual Economic Reviews; Ministry of Lands, Agriculture and Rural Resettlement, Statistics File; parity prices and real producer prices - own calculations based on data from Appendices 2 and 3.

exported. If any export of beans has occurred since 1982, it is made by individuals rather than by government.

The statistics indicate that soyabean producers were taxed by pricing policies in most years. Producer prices of soyabeans slightly declined in real terms between 1970/71 and 1988/89. Despite the adverse pricing policy the soyabean production has steadily increased (see Table 11).

The comparison of export parities and selling prices reveals that domestic buyers were more often subsidized than taxed (i.e. export parities exceeded selling prices). On the other hand, selling prices were above producer prices in many instances, particularly since 1983/84. This worked in favour of the GMB trading account.

#### Maize

Maize is a very important commodity for the Zimbabwean economy and thus its price is greatly influenced by political considerations. Both, the large-scale commercial and the small-scale sector have continued to grow this commodity. The small-scale sector requires it as human food, whereas the large-scale commercial sector uses a certain minimum as animal feed.

Prior to 1980, maize producers were taxed heavily, whereas the consumers received subsidies. With the beginning of the first Mugabe government, the need to guarantee self-sufficiency in maize grain production (maize is the main staple food crop in Zimbabwe) was emphasized. Consequently, maize producers have been protected since 1980 with the exception of the 1984/85 and 1988/89 marketing years (see Table 12). This new attitude towards maize was also reflected in substantially increased real prices during the 1980/81 and 1981/82 seasons. At the same time, the government progressively reduced consumer subsidies.

Table 11: Soyabeans: Producer Prices (Real and Nominal), Export Parity Prices, Selling Prices and NRPs, 1966-89

Year	Production (MT)	Producer Price (\$/MT)		Export Parity (\$/MT)	Selling Price (\$/MT)	NRP (percent)
		Real	Nominal			
1966/67	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1967/68	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1968/69	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1969/70	n.a.	n.a.	83.88	n.a.	90.20	n.a.
1970/71	8,598	169.96	83.96	n.a.	65.60	n.a.
1971/72	8,878	166.19	84.34	n.a.	58.79	n.a.
1972/73	10,231	139.07	73.08	50.19	58.52	46
1973/74	8,801	50.52	81.81	123.70	91.43	-34
1974/75	21,819	187.30	109.01	138.24	123.57	-21
1975/76	31,558	162.43	102.90	116.44	101.00	-12
1976/77	44,905	147.74	102.90	94.12	101.00	9
1977/78	49,884	168.84	129.25	160.91	101.00	-20
1978/79	78,535	169.28	140.25	159.80	121.75	-12
1979/80	86,556	155.50	145.00	161.27	130.00	-10
1980/81	97,403	160.00	160.00	241.23	168.00	-34
1981/82	72,881	149.32	170.00	139.81	168.00	22
1982/83	91,596	153.32	200.00	n.a.	168.00	n.a.
1983/84	80,626	166.61	260.00	n.a.	314.00	n.a.
1984/85	89,733	158.17	287.00	n.a.	332.00	n.a.
1985/86	87,217	161.53	320.00	n.a.	361.50	n.a.
1986/87	72,400	150.28	340.00	n.a.	405.00	n.a.
1987/88	94,800	152.11	385.00	695.04	449.22	-45
1988/89	120,400	154.92	420.00	701.91	516.64	-40

Source: Grain Marketing Board Trading Account (various issues); AMA Annual Economic Reviews; parity prices and real producer prices - own calculations based on data from Appendices 2 and 3.

Table 12: Maize: Producer Prices (Real and Nominal), Export Parity Prices, Selling Prices and NRPs, 1966-89

Year	Production (MT)	Producer Price (\$/MT )		Export Parity (\$/MT)	Selling Price (\$/MT)	NRP (percent)
		Real	Nominal			
1966/67	n.a.	n.a.	28.76	n.a.	43.02	n.a.
1967/68	n.a.	n.a.	29.13	n.a.	43.02	n.a.
1968/69	n.a.	n.a.	32.53	n.a.	43.02	n.a.
1969/70	n.a.	n.a.	30.97	n.a.	43.02	n.a.
1970/71	980,000	66.74	32.97	n.a.	43.02	n.a.
1971/72	1,809,000	59.21	30.05	n.a.	43.24	n.a.
1972/73	2,266,523	49.25	25.88	33.60	43.24	-23
1973/74	967,395	66.92	36.37	55.32	43.24	-34
1974/75	2,124,774	68.92	40.11	69.17	43.24	-42
1975/76	1,746,683	58.41	37.00	55.80	51.54	-34
1976/77	1,786,123	63.17	44.00	50.14	51.54	-12
1977/78	1,655,222	67.93	52.00	56.50	51.54	-8
1978/79	1,618,392	63.97	53.00	68.04	57.07	-22
1979/80	1,149,842	64.88	60.50	58.98	63.89	3
1980/81	2,813,150	85.00	85.00	116.83	89.00	-27
1981/82	2,728,640	105.40	120.00	102.03	137.00	18
1982/83	1,785,800	91.99	120.00	65.09	137.00	84
1983/84	844,000	76.90	120.00	75.35	157.00	59
1984/85	1,283,000	77.16	140.00	254.92 <sup>a</sup>	177.00	-45
1985/86	2,952,000	90.86	180.00	132.59	222.00	36
1986/87	2,486,000	79.56	180.00	80.85	222.00	123
1987/88	958,000	71.12	180.00	118.14	222.00	52
1988/89	2,034,300	71.93	195.00	264.11	245.00	-26

<sup>a</sup> Import parity price.

Source: Grain Marketing Board Trading Account (various issues); AMA Annual Economic Reviews; parity prices and real producer prices - own calculations based on data from Appendices 2 and 3.

In many periods, the selling price of maize grain was above the export parity price, thus indicating no element of subsidy for domestic buyers. The consumer subsidy in the 1970s was reflected in a low price for maize meal rather than in the grain price.

#### Wheat

The post-UDI period forced the government to implement policies which would enable the country to achieve self-sufficiency in a number of commodities, particularly food crops. One objective was to reduce wheat imports. Indeed, wheat production figures increased steadily over the last two decades except in drought years (see Table 13). This upward trend in production is not fully reflected in the NRPs, which do not indicate a systematic protection of domestic wheat producers, the average rate of protection being only slightly above zero. The same is true for real producer prices, which even declined somewhat between 1970/71 and 1988/89. Nevertheless, Zimbabwe became a net exporter of wheat from 1977/78 to 1980/81. This period coincided with relatively high protection levels in 1976/77 and 1977/78. Since 1981/82, Zimbabwe has imported wheat again.

Selling prices to local millers were above import parity prices in most instances. Millers in turn received subsidies in order to guarantee low bread prices for consumers [Jansen (1982)].

#### Red and White Sorghum

The levels of protection for the sorghum producers enormously increased after independence (see Table 14). This led to very high stocks of sorghum (particularly red sorghum), which were not absorbed by the market at prices comparable to the prices paid to domestic farmers. The GMB had to sell the surplus at large discounts, thus exacerbating its trading deficit. In an attempt to reduce the high stocks, the government introduced two producer prices in the 1987/88 marketing year. Red sorghum had to be bought by the GMB at a much lower price than before, while the

Table 13: Wheat: Producer Prices (Real and Nominal), Export Parity Prices, Selling Prices and NRPs, 1966-89

Year	Production (MT)	Producer Price (\$/MT)		Import Parity <sup>a</sup> (\$/MT)	Selling Price (\$/MT)	NRP (percent)
		Real	Nominal			
1966/67	n.a.	n.a.	65.90	n.a.	n.a.	n.a.
1967/68	n.a.	n.a.	74.10	n.a.	n.a.	n.a.
1968/69	n.a.	n.a.	74.10	n.a.	n.a.	n.a.
1969/70	n.a.	n.a.	69.10	n.a.	n.a.	n.a.
1970/71	56,235	146.46	72.35	n.a.	79.23	n.a.
1971/72	87,731	142.56	72.35	n.a.	78.02	n.a.
1972/73	82,241	135.70	71.31	61.42	77.75	16
1973/74	86,122	127.29	69.10	59.76	75.49	16
1974/75	89,926	137.27	79.89	100.22	79.51	-20
1975/76	130,168	173.64	110.00	112.82	79.51	-2
1976/77	147,165	173.73	121.00	84.91	100.07	43
1977/78	175,401	160.68	123.00	93.79	113.36	31
1978/79	203,903	132.77	110.00	108.30	113.36	2
1979/80	161,963	123.32	115.00	117.64	120.67	-2
1980/81	191,234	135.00	135.00	119.61	134.00	13
1981/82	201,171	144.93	165.00	163.34	157.00	1
1982/83	213,000	145.65	190.00	177.51	169.00	7
1983/84	124,250	140.98	220.00	246.78	239.00	-11
1984/85	98,505	137.78	250.00	268.28	285.00	-7
1985/86	210,000	143.87	285.00	259.28	323.50	10
1986/87	231,900	132.60	300.00	301.29	358.25	0
1987/88	198,300	130.38	330.00	268.48	425.53	23
1988/89	241,500	134.64	365.00	307.21	425.53	19

<sup>a</sup> For 1977/78 to 1980/81 figures are export parity prices (Zimbabwe exported wheat in those years).

Source: Grain Marketing Board Trading Account (various issues); AMA Annual Economic Reviews; parity prices and real producer prices - own calculations based on data from Appendices 2 and 3.



Table 14: Red and White Sorghum: Producer Prices (Real and Nominal), Export Parity Prices, Selling Prices and NRPs, 1966-89

Year	Production (MT)	Producer Price (\$/MT)		Import Parity (\$/MT)	Selling Price (\$/MT)	NRP (percent)
		Real	Nominal			
1966/67	n.a.	n.a.	28.66	n.a.	n.a.	n.a.
1967/68	n.a.	n.a.	32.88	n.a.	n.a.	n.a.
1968/69	n.a.	n.a.	35.16	n.a.	n.a.	n.a.
1969/70	n.a.	n.a.	35.53	n.a.	n.a.	n.a.
1970/71	n.a.	75.40	37.25	n.a.	55.60	n.a.
1971/72	n.a.	76.14	38.64	n.a.	54.95	n.a.
1972/73	n.a.	79.26	41.65	27.43	54.67	52
1973/74	n.a.	76.93	41.81	70.95	54.84	-41
1974/75	160.0	71.89	41.84	44.51	54.56	-6
1975/76	109.4	65.57	41.54	17.70	54.56	135
1976/77	135.3	86.15	60.00	64.40	71.75	-7
1977/78	50.5	97.98	75.00	60.77	71.75	23
1978/79	72.6	90.53	75.00	76.89	90.00	-2
1979/80	48.9	85.79	80.00	87.33	98.00	-8
1980/81	82.3	105.00	105.00	97.40	117.00	8
1981/82	125.1	101.01	115.00	n.a.	117.00	n.a.
1982/83	67.4	88.16	115.00	88.32	117.00	30
1983/84	51.5	76.90	120.00	n.a.	147.00	n.a.
1984/85	54.1	77.16	140.00	n.a.	165.00	n.a.
1985/86	127.0	90.86	180.00	145.10	239.00	24
1986/87	131.0	79.56 <sup>a</sup>	180.00	47.85	239.00	276 <sup>a</sup>
1987/88	48.7	71.12 <sup>a</sup>	180.00	36.49	256.00	393 <sup>a</sup>
		39.51 <sup>b</sup>	100.00			174 <sup>b</sup>
1988/89	169.0	71.93 <sup>a</sup>	195.00	50.73	256.47	284 <sup>a</sup>
		47.95 <sup>b</sup>	130.00			156 <sup>b</sup>

<sup>a</sup> 1987/88 and 1988/89: white sorghum producer prices and NRPs. In all other years the prices are the same for both commodities. <sup>b</sup> 1987/88 and 1988/89: red sorghum producer prices and NRPs. In all other years the prices are the same for both commodities.

Source: Grain Marketing Board Trading Account (various issues); AMA Annual Economic Reviews; parity prices and real producer prices - own calculations based on data from Appendices 2 and 3.

producer price of white sorghum had to be pegged at the same level as maize grain. For the 1990/91 marketing year a deregulation of the market for red sorghum is planned. The brewers who normally utilize red sorghum will be encouraged to enter into contracts with local farmers (both large-scale commercial and small-scale farmers), while the GMB will only act as a residual buyer.

## Beef

Beef producers were heavily protected during the whole period under review. Only in the 1986/87 and 1987/88 seasons NRPs were negative. On average, the level of protection was significantly higher after independence than before. It is important to note that during the 1986/87 and 1987/88 marketing years, when NRPs appeared to be negative, Zimbabwe started exporting beef into the EEC on a quota basis.<sup>5</sup> The protection rate reported in Table 15 is based on the average realizations of the quota into the heavily protected EEC market, which is indicated by the extraordinarily high export parity prices in that years. World market trends in turn indicate that beef producers in Zimbabwe are still protected. Despite the strong protection of farmers the production of beef declined in the 1980s, which is mainly a result of the War of Liberation and four years of drought during the decade.

Until 1975/76, the local selling price was roughly based on the export parity price. Afterwards, the selling price significantly exceeded its border price equivalent.

Altogether, the results of this subsection show that pricing policies in Zimbabwe do not discriminate against agricultural commodities. Out of seven products considered only groundnuts and soyabeans were slightly taxed on average. This contrasts with earlier findings for developing countries [e.g. Schultz (1978) and Peterson (1979)]. The fact that only wheat has to be imported indicates a high degree of self-sufficiency for Zimbabwe, which

Table 15: Beef: Producer Prices (Real and Nominal), Export Parity Prices, Selling Prices and NRPs, 1966-89

Year	Production (MT)	Producer Price (\$/MT)		Import Parity (\$/MT)	Selling Price (\$/MT)	NRP (percent)
		Real	Nominal			
1966/67	65,100	n.a.	33.99	n.a.	30.80	n.a.
1967/68	54,800	n.a.	35.49	30.58	32.14	16
1968/69	56,100	n.a.	36.22	33.57	33.84	8
1969/70	61,200	n.a.	35.94	33.61	33.57	7
1970/71	73,400	74.39	35.76	31.53	33.92	13
1971/72	87,600	72.43	36.76	30.08	33.97	22
1972/73	112,400	76.84	40.38	33.02	34.97	22
1973/74	124,000	89.81	48.81	42.76	37.41	14
1974/75	96,700	97.63	56.82	58.88	41.47	3
1975/76	95,700	93.07	58.96	47.28	44.82	25
1976/77	117,300	81.84	57.00	37.15	47.22	53
1977/78	137,900	75.65	57.91	28.57	47.66	103
1978/79	133,900	69.11	57.26	24.48	51.42	134
1979/80	116,700	75.56	70.46	39.43	59.39	79
1980/81	95,700	81.11	81.11	26.85	63.01	202
1981/82	76,200	90.29	102.80	49.96	79.28	106
1982/83	99,700	99.03	129.19	46.68	105.06	177
1983/84	100,200	83.70	130.62	38.65	122.55	238
1984/85	94,200	81.55	142.98	57.26	149.82	158
1985/86	86,500	77.39	153.30	109.10	159.42	41
1986/87	67,400	79.48	179.83	574.75	172.78	-69
1987/88	85,400	93.39	236.39	526.35	208.29	-55
1988/89	71,700	93.76	n.a.	n.a.	n.a.	n.a.

Source: Grain Marketing Board Trading Account (various issues); AMA Annual Economic Reviews; parity prices and real producer prices - own calculations based on data from Appendices 2 and 3.

is partly due to favourable pricing policies. A sharp increase in protection levels is observable for some commodities (i.e. beef, maize and sorghum) since independence. Since low consumer prices are also given priority, this leads to severe budgetary problems.

### 3.2 The Extent of Effective Protection

While nominal rates of protection (NRP) show the percentage increase of domestic producers' prices, effective rates of protection (ERP) show the increase of value added [Balassa et al. (1971), Corden (1966)]. This concept covers protection effects on the output side as well as taxation and subsidization effects on the input side of a protective system. Since value added represents production costs of a single step of production it can be said that the concept of effective protection focusses on the production costs in a variety of industries involved in the production of a certain commodity.

The effects of a protective system on social production costs in terms of profits, wages and depreciation are most important for questions concerning the allocation of productive factors, the costs of protection and the efficiency of domestic industries. High ERPs mean that the promoted industries are able to earn higher profits or to produce at higher production costs than other industries. Therefore scarce factors of production are attracted into these industries and their gross production will be higher than without protection.

But protection has its price. An ERP of for example 50 percent expresses that production costs (including profits) are 50 percent higher than they were in the free trade situation. In such a situation the industry maybe could not exist and the respective products would be imported, thereby not using raw materials and primary factors. Under the assumption that the released primary factors could be allocated to a more productive industry (with a lower ERP) the economy would be better off because it could take full advantage of the benefits of international trade.

### 3.2.1 The Calculation of Effective Rates of Protection

The concept of effective protection rests on certain assumptions. Most important of these are constant physical intermediate input-coefficients and infinite foreign elasticities of supply and demand of traded goods (small country assumption). If these assumptions are fulfilled, value added in the free trade situation - the latter characterized by the non-existence of any trade distortive measures - can be calculated by the actual and free trade prices and the input cost structure of the actual situation. Empirically, the former assumption seems not to be too restrictive since a lot of products are quite constant in their composition of material inputs. Hence, a change in relative prices is not likely to induce major changes of physical intermediate input coefficients. The latter assumption requires that world market prices do not vary in case of abolition of the domestic protective measures. This assumption seems to be no severe restriction with Zimbabwean agricultural commodities and manufactures.

The following formula was used for the calculation of effective rates of protection:

$$ERP^O = \frac{NRP^O - a_{IO} NRP^I}{(1 - a_{IO})}$$

where  $ERP^O$ : Effective rate of protection of product O;  
 $NRP^O$ : Nominal rate of protection of product O;  
 $NRP^I$ : Nominal rate of protection of Input I;  
 $a_{IO}$ : Input-output ratio expressed in unassisted terms

Because of a lack of adequate data, the analysis of effective protection is based on the "Trade Liberalization Study of 1988" undertaken by Cuthbertson/Wilson (1988) as well as information obtained from chapter 3.2 on nominal rates of protection of agricultural commodities.

On the issue of price comparisons the Trade Liberalization Study has recognized that products should be homogeneous or at least very close substitutes and that prices used in the comparison should refer to the same point of sale. This principle has been applied in calculating the nominal rates of protection for the agricultural commodities. The principle can be applied adequately if there are reliable data. In Zimbabwe there are many gaps in information particularly during the pre-independence era. The Trade Liberalization Study based its prices for import competing products on domestic manufacturers' ex-factory price and the c.i.f. price of the import products.

For export competing industries the comparison was made between the f.o.r. (free on rail) prices of exports and the ex-factory or farm gate local prices including selling and distribution costs. However, in calculating the nominal rates of protection for agricultural commodities we compared f.o.r. prices of agricultural exports and depot gate prices rather than farm gate prices used in the Trade Liberalization Study. In Zimbabwe the producer price is at the depot and not farm gate. The fact that farmers are scattered all over the country side makes a calculation of farm gate prices difficult or almost impossible. The study team's major source of price comparisons were responses from questionnaires distributed to different industries. Additional sources of information on price comparisons were used when available.

The estimates of input-output relationships and the production basis of average nominal rates of assistance are based on 1984 input-output data. Estimates of the levels of assistance were, however, based on observed prices and current assistance measures in 1988.

### 3.2.2 Effective Protection Rates for Manufactures and Major Agricultural Commodities

The Trade Liberalization Study revealed that high assistance was concentrated in the manufacturing sector. On the other hand, agriculture - comprising the large-scale commercial sector and the small-scale sector - was only slightly assisted (Table 16). According to the study, the ERP was only 5 percent for the agricultural sector as a whole while the ERP for manufactures ranged from -21 percent for manufactured food products to 317 percent for basic metals. The study team further established that food products are heavily discriminated against. They, however, admit that this is the area where the lack of price comparisons was most felt. ERPs could only be measured for 3 of the 14 industries in this group.

The ERP for the textile industry is -8 percent which means that this sector is taxed. One would have expected the local production of cotton textiles to be highly assisted due to the fact that the main input, cotton lint, is sold by the Cotton Marketing Board to the local spinners at prices below export parity prices. However, the study states that the negative effective rate estimated for wearing apparel is a result of a high tax on inputs derived from the large price disadvantage for textile fabrics. Thus the spinning industry is assisted at the expense of both cotton farmers and the weaving and garment industry.

The study established that the most highly assisted industries are in the sectors of the more elaborately transformed manufactured products. The only exception was motor vehicles with an assistance level of -56 percent. The high ERP for iron and steel industries (317 percent) is due to the high subsidies paid to cover losses of the Zimbabwe Iron and Steel Company (ZISCO) and the discrimination of domestic coal production which delivers a major input into iron and steel products.

Table 16: Average Nominal and Effective Rates of Protection for Agriculture and Industry, Zimbabwe 1988

Sector	Nominal Rates (%)		Input/Output Ratio	Effective Rates (%)
	Output	Input		
Commercial Farms	4	1	0.415	6
Small Scale Farms	4	1	0.204	7
Agriculture	4	1	0.372	5
Manufacturing				
Food Products	-4	7	0.593	-21
Textiles	-4	-1	0.563	-8
Wood and Wood Products	223	19	0.597	30
Paper and Paper Products	5	17	0.479	-7
Chemical, Rubber and Plastic Products	-12	5	0.350	-22
Basic Metals	28	-16	0.868	317
Fabricated Metal Products, Machinery and Equipment	32	10	0.655	72
Electricity and Water	95	77	0.773	158

Source: Cuthbertson/Wilson (1988).



With regard to the manufacturing sector high protective barriers were created after UDI for import substituting activities with primary production providing the foreign exchange needed for imports. This has remained in place even after independence although more manufactured commodities are now being exported. This policy which has resulted in foreign currency allocation and import licensing has maintained a high level of assistance to the manufacturing sector as supported by the Trade Liberalization Study.

According to the Trade Liberalization Study effective protection of agricultural industries is higher than nominal protection. However, this study neglected fertilizers which are the single largest input into agriculture. The World Bank's 1987 Industrial Sector Memorandum [World Bank (1987)] estimated that local fertilizer prices were some 20 percent higher than the import parity price of substitutes. When the effective rates were recalculated using a NRP of 20 percent on the input of fertilizer, the average nominal rates on inputs increased to 5 percent and 15 percent, respectively, for commercial and communal farming and the ERP for the two sectors would have been 3 percent and 1 percent, respectively.

Using the World Bank estimates together with the NRPs calculated above and the input-output-ratios as provided by the 1984 Input-Output-Table approximative ERPs for the most important agricultural commodities in the commercial and communal sectors have been calculated. The results of this exercise are given in Tables 17 and 18. The major results can be summarized as follows:

- The level of effective assistance offered to communal farmers is less than that offered to commercial farmers for both periods, before and after independence, because they have to pay higher prices for inputs. The higher the share of fertilizers in the price index of inputs, the higher is the NRP for inputs and hence the lower will be the ERP on agricultural activities.

Table 17: Effective Rates of Protection for the Commercial Agricultural Sector, 1966-89<sup>a</sup> (percentages)

Commodity	1966-71	1972-79	1980-89	Average
Seed Cotton	+202	-19	-10	+43
Maize	n.a.	-41	+48	+7
Wheat	n.a.	+15	+7	+10
Groundnut	n.a.	-41	-29	-34
Soyabeans	n.a.	-16	-45	-26
Beef	+19	+87	+157	+101
Red Sorghum	n.a.	+27	+186	+96
White Sorghum	n.a.	+27	+285	+138

<sup>a</sup> Calculated at a NRP for inputs of 5% and an input/output ratio of 0.415.

Source: Own calculations based on Appendix 3 and World Bank (1987).

Table 18: Effective Rates of Protection for the Communal Agricultural Sector, 1966-89<sup>a</sup> (percentages)

Commodity	1966-71	1972-79	1980-89	Average
Seed Cotton	+147	-15	-9	+30
Maize	n.a.	-31	+34	+4
Wheat	n.a.	+10	+4	+6
Groundnut	n.a.	-31	-23	-26
Soyabeans	n.a.	-13	-34	-20
Beef	+12	+63	+122	+73
Red Sorghum	n.a.	+19	+136	+69
White Sorghum	n.a.	+19	+208	+100

<sup>a</sup> Calculated at a NRP for inputs of 15% and an input/output ratio of 0.206.

Source: Own calculations based on Appendix 3 and World Bank (1987).

- Where the NRP of outputs is positive and higher (lower) than the NRP for inputs, effective protection is higher (lower) than nominal protection. Thus, effective protection for communal producers of maize and wheat is lower than nominal protection.
- Crops which are nominally disprotected are also effectively disprotected with negative effective protection being higher than negative nominal protection. Both, commercial and communal producers of groundnuts and soyabeans are effectively discriminated against.

Any policies which aim only at assisting the manufacturing sector, particularly agricultural inputs, implies a reduction in the level of assistance to the agricultural sector or an increase in indirect taxation. From the two studies, it can be concluded that the agricultural sector is not supported to the same extent as the manufacturing sector.

#### 4. Other Measures to Support Agriculture

##### 4.1 Government Expenditure on Agriculture

It is important to note that prior to independence government expenditure was mostly geared towards the needs of the large-scale commercial farmers (particularly on extension, research and marketing services). The scenario somewhat changed after independence with emphasis now being placed on the needs of the small-scale farmers. However, in percentage terms the allocation to agriculture has dropped from the high pre-independence figures (Table 19).

Expenditure on agriculture as a proportion of total government expenditure dropped from 24 percent in 1969/70 to 4.6 percent in 1976/77. The reasons behind this fall in allocation to agriculture included the war, the growing internal refugee problem and the oil price shocks. While government efforts are now to develop the once neglected small-scale sector, this is not evidenced by

the allocation to agriculture as it has averaged around 6.2 percent during the period 1980/81 to 1988/89. Presently the expanded education system as well as instability in Mozambique continue to absorb most of government resources.

Table 19 also shows that most of the allocation to agriculture continues to be absorbed by subsidies. While subsidies peaked at 71.6 percent in 1978/79, they dropped on average to about 51 percent after independence. Present government effort is to reduce these subsidies which mostly go forward financing agricultural market boards deficits.

Expenditure on agricultural research as a proportion of total government agricultural budget dropped from 20.9 percent in 1976/77 to 4.3 percent in 1988/89. It is important to note that government research effort is complemented by that of the private sector which is mostly sponsored by the large-scale commercial farmers. The drop in expenditure for agricultural extension has been equally significant; from 24.3 percent in 1966/67 to a low 4.4 percent in 1971/72. Expenditure peaked to 18.8 percent in 1981/82 and by 1988/87 only 8.5 percent of the expenditure on agriculture was allocated to extension services. Again like research services, most of the extension effort by government is presently directed to the small-scale sector while the large-scale commercial sector benefits mostly from the Commercial Farmers Union (CFU) as well as private organizations like fertilizer and chemical companies.

From Table 19 it would appear that agricultural research, extension and veterinary services have benefitted from a reduction in subsidies. The troughs in subsidies expenditure correspond to peaks on research, extension and vets services. It is also important to note that expenditure on agriculture is an underestimate as it does not reflect expenditure by the private organizations. However, expenditure on these very important facets of agriculture has dropped in percentage terms.

Table 19: Government Expenditures on Agriculture, 1966/67-1988/89

Year	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89
in 1000 Zimbabwean dollars																							
Total Budget Government	152110	163895	188382	225313	213884	238361	255802	366201	474383	546872	608092	738157	882880	984271	1225934	1627535	2121732	2935560	3052689	3389163	3875289	4573810	5390240
Total Expenditure Agriculture	11207	17008	24646	54116	24502	41912	33524	42596	45414	32522	27697	39721	65246	67762	63628	66939	99643	153836	221983	225407	319676	313807	418761
Research	1729	1868	1997	2237	2450	2749	3055	3484	3666	4290	5799	6367	6585	7432	8142	10131	9888	18001	12005	14494	15071	16008	18193
Extension	2722	2980	3096	3376	1855	1860	2067	2198	2317	2522	2819	3119	3089	8637	10236	12593	15307	14705	17302	19988	26531	30345	35440
Veterinary Services	952	943	1015	1053	1152	1222	1341	1605	2277	1730	2373	2375	1885	1885	1907	3020	5244	6374	6911	6792	8618	9868	10296
Subsidies	1556	2514	4015	16016	9915	21739	19690	28440	25778	9462	8616	18207	46782	46793	29705	25741	43738	75910	127771	139200	148248	166000	216873
as percent of total government budget																							
Agriculture	7.4	10.4	13.1	24.0	11.5	17.6	13.1	11.6	9.6	5.9	4.6	5.4	7.4	6.9	5.2	4.1	4.7	5.2	7.3	6.7	8.2	6.9	7.8
Subsidies	1.0	1.5	2.1	7.1	4.6	9.1	7.7	6.7	5.4	1.7	1.4	2.5	5.3	4.8	2.4	2.2	2.1	2.6	4.2	3.8	3.8	3.6	4.0
as percent of total expenditure on agriculture																							
Research	15.4	11.0	8.1	4.1	10.0	6.6	38.1	8.2	8.1	13.2	20.9	16.0	10.1	11.0	12.8	15.1	9.9	7.0	5.4	6.4	4.7	5.1	4.3
Extension	24.3	17.5	12.6	6.2	7.6	4.4	6.2	5.2	5.1	7.8	10.2	7.9	4.7	12.7	16.1	18.8	15.4	9.6	7.8	8.9	8.3	9.7	8.5
Veterinary Services	4.5	5.5	4.1	1.9	4.7	2.9	4.0	3.8	5.0	5.3	8.6	6.0	2.9	2.8	3.0	4.5	5.3	4.1	3.1	3.0	2.7	3.1	2.5
Subsidies	13.9	14.8	16.3	29.6	40.5	51.9	58.7	57.4	56.8	29.1	31.1	45.8	71.6	69.1	46.7	53.4	43.9	49.3	57.6	57.3	46.4	52.9	51.6

Source: Calculated from Billing (1985) for 1966-1985 and from Government of Zimbabwe, Estimates of Expenditure for 1986-1988.

## 4.2 Agricultural Research

The rapid expansion of farm production in Zimbabwe since 1980 would not have happened without the existence of a technological package adapted to its agroecological conditions. For more than 50 years now, Zimbabwe's agricultural research has aimed at developing high-yielding varieties (e.g. maize, sorghum). Before independence, research mainly focussed on individual components of crop production (i.e. plant breeding, plant nutrition, cropping techniques and plant protection) but with hardly any emphasis on Farming Systems Research (FSR). The FSR was established in 1980. With the shift of focus to communal areas, FSR now plays a major role in the development of the communal areas.

The agricultural research system comprises the Department of Research and Specialist Services (R & SS), the Veterinary Services (both in the Ministry of Lands, Agriculture and Rural Resettlement), the University of Zimbabwe and privately financed organizations, i.e.

- the Cotton Research Station;
- the Tobacco Research Board (TRB);
- the Agricultural Research Trust (ART);
- the Zimbabwe Sugar Association Research Station;
- the Rattray Arnold Research Station of the Seed Co-operative and
- the SADCC/ICRISAT Research Station at Matopos.

Of the above research institutions, R & SS, ART and the Rattray Arnold Research Station of the Seed Co-operative specialize on food crops such as maize, wheat, sorghum, soyabeans, groundnuts and millets.

The private research institutes are organizationally and financially independent but, in terms of research work undertaken, they work closely with state-financed institutions.

While research before independence concentrated on the needs of commercial areas (i.e. Natural Regions I to III), the small-scale sector did benefit from such research (particularly the early-maturing maize hybrid varieties developed for Natural Region III). Maize yields doubled between 1950 and 1980. The small-scale sector also benefitted from the recommendations for fertilizer/pesticides worked out for the commercial farming areas, in particular with regard to cotton and maize.

After independence, the government institutions concentrated their research on the needs of communal areas, while the private-sector research institutes expanded to maintain support for the commercial farms. Public research then concentrated on drought-tolerant crops, such as sorghum, millets and sunflower which can be grown in more marginal areas (i.e. Natural Regions III, IV and V) where the majority of the communal-area farmers lives. To strengthen the research work in the communal areas, the Farming System Research Unit was established within the Department of Research and Specialist Services (R & SS).

In the 1988/89 fiscal year, expenditure on agricultural research was about 4 percent of the total budget which was allocated to agriculture. On average, agricultural research has been getting a smaller share of the "cake".

There is need for full support by the public sector of the agricultural research considering that its major focus is now on the once neglected communal areas.

#### 4.3 Agricultural Extension

One cannot attribute the success of agricultural crop production particularly in the communal areas to one factor but a number of factors. It is a combination of factors ranging from increased credit facilities to improved transport and marketing systems. The focussing of research on to the needs of communal farmers

backed by an efficient extension service (now the responsibility of Agritex) has contributed to the success of communal farmers.

Before independence the extension services were run on a two-tier system - with Conex (Department of Conservation and Extension) providing its services mainly to the commercial sector (large-scale and small-scale commercial sectors) and Devag (Department of Agricultural Development) providing its services to the communal farmers.

The two departments were merged in mid-1981 to form Agritex. The activities of Agritex now center on the communal areas, resettlement areas and small-scale commercial areas. The large-scale commercial farmers are offered extension service on request. This is not to say that the large-scale commercial farming areas are not well catered for. Private companies - for instance fertilizer companies and chemical companies provide extension services. Their activities are also complemented by the Commercial Farmer's Union (CFU).

Agritex, which is staffed with some 2,500 people of which approximately 1,600 are extension workers, provides extension services to about 8,000 communal farmers and an ever increasing number of resettlement farmers (whose figure currently stands at around 50,000) and provides services to the large-scale commercial farmers on request.

Because the present ratio of extension workers to farmers (1:850) is low, Zimbabwe's extension strategies are constructed on a group approach. This approach improves the unacceptable extension worker/farmer ratio and recognizes the extension role of farmer leaders.

It can be noticed that the reorientation towards the communal areas has not been followed up by an increase in staff. There is need to improve conditions of employment in order to increase the present extension worker to farmer ratio from 1:850 to an acceptable figure of 1:600.



Between 1977/78 and 1981/82 the budget for extension increased at an average annual rate of 1.7 percent in nominal terms. Thereafter, there was a decline up to 1984/85 and picked up to 6 percent of expenditure on agriculture and remained constant until 1987/88. During the 1988/89 fiscal year the share of extension services in the total agricultural budget was 8.5 percent.

There is still a need to increase the budget of extension services, with particular emphasis on salaries of staff so that experienced personnel can be retained and at the same time attracting new staff of suitable calibre.

#### 4.4 Agricultural Credit

Generally the financing system in Zimbabwe is well developed and well organized with the Reserve Bank of Zimbabwe being the Central Bank. There are five commercial banks (100 branches all over the country) which offer banking facilities. There are also other supplementary institutions including building societies, the Post Office Savings Bank, six finance houses, two discount houses and one Development Bank. Such a well developed financial system, however, excludes the small-scale farmer (particularly the communal farmer) from its lending facilities because their lending policy is based on viability, proven past performance and, above all, collateral security as the criteria for credit eligibility. Even if a small-scale farmer would satisfy the other conditions, he would still be in difficulty because he could not provide collateral security. These institutions in practice only provide credit to the large-scale commercial farmers.

Before independence, communal farmers were only assisted by voluntary, private, religious and charitable organizations which could offer only little help in view of the weakness of their resources in relation to the large number of farmers who needed assistance. While the large-scale commercial sector was being served by the Agricultural Finance Corporation (AFC) and

commercial banks, the small-scale commercial sector was being assisted by the government. Fertilizer companies (i.e. Windmill and ZFC) helped communal farmers to develop savings clubs through which they received credit. Such credit was in kind.

Zimbabwe established its first governmental credit institution in 1924. This institution was the Land and Agricultural Bank. It was replaced by the AFC which was established in 1971 and at the time was only extending credit to the large-scale commercial sector; in 1979 it was allowed to extend credit to communal farmers as well.

In 1978 the total amount of credit extended to farmers in the communal areas and small-scale commercial areas was a mere Z\$ 1.5 million; the largest part went to the small-scale commercial areas. The large-scale commercial areas at the time received altogether Z\$ 134.5 million (1977) through the AFC.

Farmers in the communal areas and the resettlement areas form a special category in so far as they have no land titles (i.e. no collateral); and hence in respect of these groups and the small-scale commercial areas, the government has taken over the loan loss risk as well as part of the lending costs. Credits to small-scale farmers which in 1980/81 were negligible rose to Z\$ 145 million within four years. Over the same period, the number of borrowers increased to over 90,000. A large number of communal farmers still have no access to credit mostly because of a lack of resources on the part of the AFC and because of problems being encountered by the AFC in trying to extend credit to numerous small farmers who lack collateral.

The regional Co-operative Unions (CUs) play an even more important role in lending to small farmers. They act as wholesale dealers and distribute agricultural inputs against vouchers issued by the AFC. They also buy from their members the products to be marketed by the marketing boards and retain the sales revenue to the extent that the producers have to meet amor-

tization obligations. The enlargement of the co-operative functions has led to a serious strain on these as yet rather weak organizations which put their potential for future developments at risk.

#### 4.5 Marketing Infrastructure

In Zimbabwe, the government is responsible for providing national marketing infrastructure e.g. storage depots, roads, etc., while farmers, millers and oil expressors provide their own storage facilities. The provision of national storage depots is undertaken by the Grain Marketing Board (GMB) and Cotton Marketing Board (CMB), while provision of roads is undertaken by the Ministry of Transport.

On the other hand, the Cold Storage Commission (CSC) provides abattoirs for the slaughter of animals as well as cold stores for the storage of beef and meat. It is important to note that existing side by side with the CSC are registered private abattoirs.

Prior to independence, most of the marketing infrastructure was concentrated in the large-scale commercial areas and urban centres. The situation changed after independence with the government placing much more emphasis on developing the communal areas. For instance, there has been noticeable expansion of depots in the communal areas (Table 20). Coupled with the expansion of depots has been the establishment of collection points for grain and oil seeds.

If the government is to realize its aim of having each farmer within a 60 km reach of a depot, then more of these depots will need to be constructed in the communal areas.

Table 20: GMB Marketing Depots

Year	1975	1980	1981	1982	1983	1984	1985	1986	1987
Total Depots	32	34	37	41	43	44	45	51	58
Communal Depots	1	3	6	10	12	13	14	20	
Collection Depots	0	0	0	0	0	0	135	57	

To alleviate the plight of communal area farmers, the GMB in 1985 established 135 collection points. The collection points vary with each season. If the season is bad for instance, then the number of collection points to be established is reduced. A collection point is only maintained if it is expected that about 10,000 tonnes of grain will be harvested within the area surrounding the collection point.

The aim of establishing depots and collection points is to reduce the distance to marketing facilities to 20 km. Farmers bear the transport costs either to the depots or collection points, while the GMB meets the remaining transport costs to the urban centres where most silos are located. For any produce which goes via collection points, Z\$ 1.00 per bag is charged as a contribution to the GMB costs of transport from the collection point to the depot.

As the communal farming sector continues to increase its marketable surplus, the GMB capacity will be stretched to the limit. So while the GMB continues with its depot expansion, there is a need to involve co-operatives and farmer groups. However, participation of co-operatives and farmer groups is likely to be limited by their ability to obtain funds.

The CSC provides farm gate transport for those farmers who book in advance. Presently, mostly large-scale commercial farmers utilize this service, as their animals are ready for slaughter when they are ferried to the CSC abattoirs. Such farmers are paid per cold dress mass (CDM).

On the other hand, the small-scale farmers are mostly served with sale pens whose number has increased very much since independence. At these sale pens, the CSC competes with private buyers through an auction system. The animals are paid on the hoof. Normally the animals from these sale pens are either passed through the CSC feedlots or ranches before they are slaughtered so as to bring them into condition.

Prior to independence only the large-scale commercial sector was well served with rail and road services. However, after independence, the government has embarked on a road development programme particularly in the communal areas. A number of major roads in the communal areas have or are being brought up to modern standards. This improvement programme has also extended to the feeder roads. Despite these efforts by government some of the roads are almost impossible to use during the rainy season to a point where access to market for the small-scale farmers can be virtually impossible at some periods.

It can be established from the foregoing that overall government expenditure on agriculture through public funds is directed particularly for the small-scale sector. For instance cattle dip services, extension services and research services are provided free for the small-scale farmer. Also the credit facilities through the AFC are provided at subsidized rates. The AFC charges 13.5 percent interest irrespective of whether the loan is short, medium or long term while commercial banks charge over 17 percent.

The large-scale commercial farmers pay for most of their services through some form of levy except for those services provided by government. For instance they pay for the cattle dip services, extension and research services, provided by the farmers' organization. This is paid through levies charged on revenue from crop sales as well as livestock sales. It is thus important to note that the large-scale commercial sector has a greater say and therefore control over the services it receives than does the small-scale sector which relies on bureaucratic systems hampered by poor salaries, transport and general support.

## 5. Summary and Conclusions

One of the most powerful factors influencing output is pricing policy. There is evidence to suggest that farmers in Zimbabwe are highly responsive to price changes and that the structure of agricultural output is also determined to a large extent by the relative prices of crops. The design and implementation of price policies in the agricultural sector is, therefore, of outmost importance. The Zimbabwean government intervenes considerably in the agricultural sector and the most important agricultural products - maize, wheat, cotton, soyabeans and groundnuts - have regulated prices.

As shown in this study, government intervention in producer prices has generally been favourable to agricultural production. Groundnuts and soybeans are the only crops in Zimbabwe where producers have been and are currently taxed. This contrasts with evidence on other Sub-Sahara African countries where producers are nearly always taxed. However, it also points to perhaps the most serious shortcoming of present policy. It is that producer prices are to a considerable extent based on commercial farmers' cost of production. It is probably not accidental that groundnuts - which are not represented by the strong commercial farmers' lobbying groups - are actually discriminated against. If, as is desired, production from the communal areas is to become increasingly important in the years ahead, it is critical

that considerations other than commercial farmers' costs of production enter into the pricing policy equation at an early stage.

A major issue that emerges in this context is the link between foreign and domestic prices, irrespective of what the magnitudes of agricultural taxes and subsidies should be. Many existing interventions effectively limit the role of world prices in determining the domestic prices of traded agricultural commodities, thus making it difficult for the sector to develop along the lines of its comparative advantage.<sup>6</sup>

It is important, therefore, to evaluate the full complexity of interventions to gauge their impact on incentives and resource allocation. The only tenable approach is to try to estimate the sectorwide consequences of alternative price levels and modes of implementation (including macro-policy instruments like exchange rates, monetary policies, credit allocations and tax rates), and to encourage policymakers to review those consequences before settling on policy actions.

### Footnotes

- 1 It is complementary to Kiel Working Papers Nos. 419 and 441 [Wiebelt (1990a), (1990b)] which investigate the linkages between industrial trade policies and agriculture.
- 2 This section is taken from Takavarasha (1990).
- 3 Major objectives of government intervention in agriculture can be listed as follows:
  - to stabilize farm incomes and prices;
  - to achieve food self-sufficiency through increased production;
  - to maintain and/or encourage an acceptable product mix;
  - to maximize export earnings;
  - to increase employment opportunities;
  - to improve the standard of living in rural areas;
  - to keep prices of food and industrial raw materials at reasonable levels;
  - to provide raw materials for the agricultural processing industries.
- 4 Currently, the announcement of the preplanting producer prices only applies to winter wheat, whose planting season is six months later than for the other major crops. Preplanting prices already existed between 1975 and 1980 [Jansen (1982)].
- 5 At the beginning, the quota amounted to 8,100 tonnes. It has increased to 9,100 tonnes under the recently concluded Lomé IV agreement.
- 6 It should be noted that border prices provide reference points; they do not automatically argue for free trade (complete non-intervention). There are often good economic reasons to depart from foreign prices. In all cases, however, the preferred means should be explicit taxes or subsidies, levied at the border. The use of other controls creates implicitly an unstable fiscal regime. Additionally, an implicit regime is unknown to policymakers, so that policy discussions can neither focus on the rationale for border-domestic price disparities nor proceed with knowledge of what exactly are those disparities.



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## Appendix 1: The Producer Price Formulation Mechanism

The active representation of all sections of the farming community is a special feature of the process of determining the guaranteed agricultural prices in Zimbabwe. The setting of producer prices begins with discussions between farmer organizations and the economic policy committee of the Agricultural Marketing Authority (AMA). The AMA is a statutory body which oversees all statutory marketing boards. The farmers present details on the production costs of the product in question and hence their bids for the new price level. The AMA representatives evaluate for each crop the expected board revenue and make their recommendations. The two groups then discuss the crucial issues, after which the following steps are taken:

- a. The three farmer organizations jointly present their price recommendations to the Ministry of Agriculture. The AMA Economic Policy Committee also presents its recommendations.
- b. The Secretary for Agriculture and subsequently the Minister hold discussions with the representatives of the three farmer organizations.
- c. The minister and his senior officials discuss the cases presented and decide on their recommendations.
- d. The secretary presents these recommendations to a working party of permanent secretaries of the Economic Ministry which is chaired by the Secretary of Finance, Economic Planning and Development. The working party reports to the Ministerial Economic Coordinating Committee (MECC) chaired by the Minister of Finance, Economic Planning and Development.
- e. The MECC makes the final recommendations to the cabinet. The Minister of Agriculture presents his case to the committee and can present his own position at the cabinet meeting, if he disagrees with his MECC colleagues.

f. The cabinet then makes the final decisions, taking into account all the economic, social and political implications of the new set of prices. This also applies to the setting of new consumer prices, which are recommended by the Ministry of Industry and Commerce after representations from the AMA.

The producer price formulation mechanism is complex and is governed by numerous factors including the marketing environment, the inflation rate, the marketing boards' trading accounts, levels of parity prices, product substitution effects, costs of production, etc. However, for a long time, the price formulation mechanism revolved around the cost of production models which were formulated in the early sixties. With current government desire to reduce subsidies to parastals such issues as boards' trading accounts are now paramount. Moreover, the need to remain competitive on the world or regional markets leads the government to consider parity prices much more seriously than in the past, particularly for export crops such as seed cotton, etc.

Official producer prices are set uniformly throughout the country and marketing year. Therefore, the present producer price policy is liable to entail efficiency losses, since it does not take into account the geographically varying comparative advantages and seasonally changing supply and demand conditions of the domestic market.

Appendix 2: Producer Prices, Border Prices and Nominal Rates of Protection<sup>a</sup> of Zimbabwe's Major Agricultural Commodities

	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89
<b>Maize (\$/T)</b>																							
(a) Depot Price							43.33	65.83	80.03	71.31	74.09	64.92	73.82	81.28	133.15	130.89	95.73	105.54	299.14	207.77	157.55	181.37	330.50
(b) Operating Costs	11.76	7.13	7.03	6.25	10.47	8.95	9.73	10.51	10.86	15.51	23.95	8.42	5.78	22.30	16.32	28.86	30.64	38.19	44.22	75.18	76.70	63.23	66.39
(c) Border Price							33.60	55.32	69.17	55.80	50.14	56.50	68.04	58.98	116.83	102.03	65.09	75.35	254.92	132.59	80.85	118.14	264.11
(d) Producer Price	28.76	29.13	32.53	30.97	32.97	30.05	25.88	36.37	40.11	37.00	44.00	52.00	53.00	60.50	85.00	120.00	120.00	120.00	140.00	180.00	180.00	180.00	195.00
(e) Selling Price	43.02	43.02	43.02	43.02	43.02	43.02	43.24	43.24	43.24	51.54	51.54	51.54	57.07	63.89	89.00	137.00	137.00	157.00	177.00	222.00	222.00	222.00	245.00
(f) NRP %							-23	-34	-42	-34	-12	-8	-22	3	-27	18	84	59	-45	36	123	52	-26
Average NRP %	9																						
<b>Wheat (\$/T)</b>																							
(a) Depot Price							70.99	70.99	117.17	122.14	97.43	117.83	121.94	127.10	127.56	188.52	205.64	279.44	296.92	303.33	378.17	326.01	367.63
(b) Operating Costs					10.98		9.57	11.23	16.95	9.32	12.53	24.04	13.64	9.46	7.95	24.66	29.13	32.66	28.84	44.05	76.78	57.54	60.42
(c) Border Price							61.42	59.76	100.22	112.82	84.91	93.79	108.30	117.64	119.61	163.86	177.51	246.78	268.08	259.28	301.39	268.47	307.21
(d) Producer Price	65.90	74.10	74.10	69.10	72.35	72.35	71.31	69.10	79.89	110.00	121.00	123.00	110.00	115.00	135.00	165.00	190.00	220.00	250.00	285.00	300.00	330.00	365.00
(e) Selling Price					79.33	78.02	77.75	75.49	79.51	79.51	100.07	113.36	113.36	120.67	134	157	169	239	285	323.5	354.25	425.53	425.53
(f) NRP %							16	16	-20	-2	43	31	2	-2	13	1	7	-11	-7	10	-0	23	19
Average NRP %	8																						
<b>Groundnuts (\$/T)</b>																							
(a) Depot Price							140.54	223.87	323.72	371.31	353.28	494.05	448.77	526.31	763.68	595.39	579.24	779.86	896.72	833.99	1237.69	1044.06	1100.00
(b) Operating Costs							8.89	6.29	4.56	14.34	15.35	19.47	24.34	31.16	49.59	80.79	68.18	92.65	136.59	226.53	195.53	179.70	188.69
(c) Border Price							131.65	217.58	319.16	356.97	337.93	474.58	424.43	495.15	714.09	514.50	511.06	687.21	760.13	607.13	1042.16	864.36	911.31
(d) Producer Price	105.59		131.40	130.89	130.98	139.79	154.63	184.82	250.00	207.60	244.00	295.00	330.00	387.16	390.00	420.00	450.00	450.00	500.00	750.00	750.00	900.00	1000.00
(e) Selling Price	75.83	75.56	77.50	76.94	77.00	76.67	91.17	115.75	203.00	203.00	203.00	203.00	270.00	350.00	350.00	350.00	350.00	460.00	460.00	720.00	720.00	960.00	949.90
(f) NRP %							17	-15	-22	-42	-28	-38	-22	-22	-45	-18	-12	-35	-34	23	-28	4	10
Average NRP %	-18																						
<b>Soyabeans (\$/T)</b>																							
(a) Depot Price							66.55	161.32	179.61	127.87	164.67	186.16	176.08	181.65	267.11	166.02						755.00	753.85
(b) Operating Costs				8.33	10.14	10.32	16.36	37.62	41.37	11.43	10.55	25.25	16.28	20.38	25.88	26.21	34.02	37.29	37.16	46.00	50.92	59.96	51.94
(c) Border Price							50.19	123.70	138.24	116.44	94.12	160.91	159.80	161.27	241.23	139.81						695.04	701.91
(d) Producer Price			83.88	83.96	84.34	73.00	81.81	109.01	102.90	102.90	129.25	140.35	145.00	160.00	170.00	170.00	200.00	260.00	287.00	320.00	340.00	385.00	420.00
(e) Selling Price			90.20	65.60	58.79	58.52	91.43	123.57	101.00	101.00	101.00	121.75	130.00	169.00	160.00	160.00	168.00	314.00	332.00	361.50	405.00	449.22	516.64
(f) NRP %						46	-34	-21	-12	9	-20	-12	-10	-34	22							-45	-40
Average NRP %	-13																						

## Appendix 2 (continued)

	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89
<b>Red Sorghum (\$/T)</b>																							
(a) Depot Price							39.00	77.91	58.45	49.06	70.99	71.81	88.91	99.68	117.56		118.24			225.71	217.42	175.34	195.80
(b) Operating Costs	14.26	1.18	9.90	5.03	8.19	10.36	11.57	6.96	14.34	31.36	6.59	11.04	12.02	12.35	20.16	33.13	29.92	31.93	38.47	80.61	169.97	138.85	145.07
(c) Border Price							27.43	70.95	44.51	17.70	64.40	60.77	76.89	87.33	97.40		88.32			145.10	47.85	36.49	50.73
(d) Producer Price	28.66	32.88	35.16	35.53	37.25	38.64	41.65	41.81	41.81	41.54	60.00	75.00	75.00	80.00	105.00	115.00	115.00	120.00	140.00	180.00	180.00	100.00	130.00
(e) Selling Price					55.60	54.95	54.67	54.84	54.56	54.56	71.75	71.75	90.00	98.00	117.00	117.00	117.00	147.00	165.00	239.00	239.00	256.00	256.47
(f) NRP %							52	-41	-6	135	-7	23	-2	-8	8		30			24	276	174	156
Average NRP %	50																						
<b>White Sorghum (\$/T)</b>																							
(a) Depot Price							39.00	77.91	58.45	49.06	70.99	71.81	88.91	99.68	117.56		118.24			225.71	217.42	175.34	195.80
(b) Operating Costs	14.26	1.18	9.90	5.03	8.19	10.36	11.57	6.96	14.34	31.36	6.59	11.04	12.02	12.35	20.16	33.13	29.92	31.93	38.47	80.61	169.97	138.85	145.07
(c) Border Price							27.43	70.95	44.51	17.70	64.40	60.77	76.89	87.33	97.40		88.32			145.10	47.85	36.49	50.73
(d) Producer Price	28.66	32.88	35.16	35.53	37.25	38.64	41.65	41.81	41.84	41.54	60.00	75.00	75.00	80.00	105.00	115.00	115.00	120.00	140.00	180.00	180.00	180.00	195.00
(e) Selling Price					55.60	54.95	54.67	54.84	54.56	54.56	71.75	71.75	90.00	98.00	117.00	117.00	117.00	147.00	165.00	239.00	239.00	256.00	256.47
(f) NRP %							52	-41	-6	135	-7	23	-2	-8	8		30			24	276	193	204
Average NRP %	83																						
<b>Beef (c/kg)</b>																							
(a) Depot Price	37.00	36.00	39.00	39.00	36.00	35.00	38.00	48.00	66.00	57.00	48.00	40.00	38.00	56.00	53.00	82.00	92.00	93.00	131.00	201.00	649.00	629.00	
(b) Operating Costs		5.42	5.43	5.39	4.47	4.92	4.90	5.24	7.12	9.72	10.85	11.43	13.52	16.57	26.15	32.04	45.32	54.35	73.74	91.90	114.25	102.65	
(c) Border Price		30.58	33.57	33.61	31.53	30.08	33.02	42.76	58.88	47.28	37.15	28.57	24.48	39.43	26.85	49.96	46.68	38.65	57.26	109.10	574.75	526.35	
(d) Producer Price	33.99	35.49	36.32	35.94	35.76	36.76	40.38	48.81	56.82	58.96	57.08	57.91	57.26	70.46	82.11	102.80	129.19	130.62	147.94	153.30	179.83	236.39	
(e) Selling Price	30.80	32.14	33.84	33.57	33.92	33.97	34.97	37.41	41.47	44.82	47.22	47.66	51.42	59.39	63.01	79.28	105.06	123.55	149.82	159.42	172.78	208.19	
(f) NRP %		16	8	7	13	22	22	14	-3	25	53	103	134	79	202	106	177	238	158	41	-69	-55	
Average NRP %	61																						

## Appendix 2 (continued)

	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89
Seed Cotton (c/kg)																							
(a) FOB Lint Price	48.15	48.72	43.67	45.33	50.67	53.04	62.58	93.75	73.01	98.98	101.01	105.14	113.38	128.75	142.92	141.47	140.03	148.95	253.72	228.80	187.57	236.90	299.12
(b) Export Costs	2.40	2.90	3.67	4.10	3.70	3.45	3.52	3.52	5.51	7.26	5.56	9.77	12.92	14.30	15.68	16.45	17.27	20.45	22.04	23.29	29.40	35.81	38.82
(c) Depot Price/Lint	45.75	45.82	40.00	41.23	46.97	49.63	59.06	90.23	67.50	91.72	95.45	95.37	100.46	114.45	127.24	125.02	122.76	168.50	231.64	205.51	158.17	201.09	260.30
(d) Depot Price*	16.01	16.04	14.30	14.43	16.44	17.37	20.67	31.58	23.63	32.10	34.11	33.38	35.16	40.06	44.53	43.76	42.97	58.97	81.07	71.93	55.36	70.38	91.11
(e) Operating Costs	10.34	9.77	12.78	14.61	14.32	2.38	1.96	2.70	2.80	3.86	4.08	5.19	5.80	6.45	6.84	6.47	13.54	16.28	14.53	10.42	13.79	15.08	15.84
(f) Revenue Lint	5.67	6.27	1.22	-0.18	2.12	14.99	18.71	28.88	20.83	28.24	30.03	28.19	29.36	33.61	37.69	35.29	29.43	42.69	66.54	61.51	41.57	55.30	75.27
(g) Revenue Seed	3.31	3.59	4.21	3.95	4.72	4.12	4.32	4.19	4.43	5.73	5.55	5.54	5.66	6.27	7.56	9.67	9.96	10.00	18.40	19.50	19.50	19.56	22.00
(h) Border Price	8.98	9.86	5.43	3.77	6.84	19.11	23.03	33.07	25.26	33.97	35.58	33.73	35.02	39.88	45.25	44.96	39.39	52.69	84.94	81.01	61.07	74.86	97.27
(i) Producer Price	14.70	15.61	15.61	15.17	15.17	16.34	18.30	26.59	28.00	26.25	35.88	33.80	33.00	36.50	37.50	40.00	51.50	51.50	57.00	67.00	75.00	80.00	85.00
(j) Domestic Price*			14.97	15.36	15.96	19.54	16.13	32.51	24.12	29.39	34.77	31.28	35.78	38.73	41.78	41.19	41.19	45.91	55.84	58.39	57.65	57.38	57.34
MRP %	64	58	107	302	122	-14	-21	-20	11	-23	1	-2	-6	-8	-17	-11	31	-2	-33	-17	23	7	-13
Average MRP %	27																						

\* The MRPs are calculated due to the following formula:  $MRP = (Producer Price - Border Price) \times 100 / Border Price$ . "Border price" means the export parity price (the import parity price in the case of wheat), which can be derived from the depot price by subtracting (adding) the operating costs of the marketing boards. In the special case of cotton the export parity price is the sum of the seed and lint revenues. The depot price of cotton lint is converted into seed equivalents through multiplication by the factor 0.35.

Appendix 3: Nominal Producer Prices of Zimbabwe's Agricultural Commodities (1966/67 to 1989/90) and CPI (1970/71 to 1988/89)<sup>a</sup>

Year	Maize	White Sorghum	Red Sorghum	Wheat	Cotton	Soya-beans	Ground-nuts	Beef	CPI= <sup>b</sup> 1980
1966/67	28.76	28.66	28.66	65.9	14.7		105.58	33.99	
1967/68	29.13	32.88	32.88	74.1	15.61		n.a.	35.49	
1968/69	32.53	35.16	35.15	74.1	15.61		131.40	36.22	
1969/70	30.97	35.53	35.53	69.1	15.17	83.88	130.89	35.94	
1970/71	32.97	37.25	37.25	72.35	15.17	83.96	130.98	35.76	49.40
1971/72	30.05	38.64	38.64	72.35	16.34	84.34	130.78	36.76	50.75
1972/73	25.88	41.65	41.65	71.31	18.3	73.08	154.63	40.38	57.55
1973/74	36.37	41.81	41.81	69.18	26.59	81.81	184.82	48.81	54.35
1974/75	40.11	41.84	41.84	79.89	28.00	109.01	250.00	56.82	58.20
1975/76	37.00	41.54	41.54	110.00	26.25	102.90	207.60	58.96	63.35
1976/77	44.00	60.00	60.00	121.00	35.88	102.90	244.00	57.00	69.65
1977/78	52.00	75.00	75.00	123.00	33.00	129.25	295.00	57.91	76.55
1978/79	53.00	75.00	75.00	110.00	33.00	140.25	330.00	57.26	82.85
1979/80	60.50	80.00	80.00	115.00	36.50	145.00	387.16	70.46	93.25
1980/81	85.00	105.00	105.00	135.00	37.50	160.00	390.00	81.11	100.00
1981/82	120.00	115.00	115.00	165.00	40.00	170.00	420.00	102.80	113.85
1982/83	120.00	115.00	115.00	190.00	51.50	200.00	450.00	129.19	130.45
1983/84	120.00	120.00	120.00	220.00	51.50	260.00	450.00	130.62	156.05
1984/85	140.00	140.00	140.00	250.00	57.00	287.00	500.00	147.98	181.45
1985/86	180.00	180.00	180.00	285.00	67.00	320.00	750.00	153.30	198.10
1986/87	180.00	180.00	180.00	300.00	75.00	340.00	750.00	179.83	226.25
1987/88	180.00	180.00	100.00	330.00	80.00	385.00	900.00	236.39	253.11
1988/89	195.00	195.00	130.00	365.00	85.00	420.00	1000.00	254.12	263.49

<sup>a</sup> All prices are expressed in Z\$<sub>b</sub> per tonne, except for beef and cotton which are expressed in Cents per kg. <sup>b</sup> CPI is the average of the lower and higher income groups.

Source: Nominal producer prices are taken from MLA & RR, Statistics Files, the CPI is taken from CSO, Quarterly Digest of Statistics.



#### Appendix 4: Evolution of the Grain Marketing Board

Direct state intervention in marketing and pricing in agriculture has been in operation in Zimbabwe since the early 1930s.

Prior to 1931 when the Maize Control Act was brought into force, maize marketing has become chaotic (GMB Annual Reports). Producers, either through their co-operatives or independently competed with one another and with imports from South Africa for the limited local market causing domestic prices to fall to uneconomic levels while even lower prices prevailed on overseas markets in the grip of a world trade depression. Incomes were so low that a living could hardly be made, producers could not afford to follow good farming practices, soil exhaustion and erosion became serious problems and yields fell. Clearly, such an important sector of the national economy could not be allowed to collapse and jeopardize the supply of the staple foodstuffs of the majority of the population.

This resulted in the establishment of a board 58 years ago which assumed the same basic responsibility as the Grain Marketing Board (GMB) has today. Actually the statutory control of the marketing of grain began with the enactment of the Maize Control Act, 1931. This was amended and consolidated from time to time and remained in force until 1950 when it was replaced by the Grain Marketing Act, No. 31 of 1950. This latter Act provided, in particular, for the control of other products in addition to maize.

In that year, beans, mhunga (pearl millet), rapoko (finger millet), sorghum and groundnuts became controlled products. Three of these products namely bean, rapoko and mhunga, ceased to be controlled in 1959, 1962 and 1965, respectively.

Following the dissolution of the Federation of Rhodesia and Nyasaland at the end of 1963, the marketing of maize, sorghum, mhunga and groundnuts in Rhodesia continued under the Federal Act. It was replaced on 1 May 1966.

On that date the Grain Marketing Act, No. 20 of 1966 was brought into force. An amendment was made to the Act which, on 1 December 1967, constituted the Agricultural Marketing Authority (AMA) as the Board of the GMB. In addition to responsibilities for grains and oil seeds, following the dissolution on 30 June 1960 of the former Cotton Industries Board, the GMB was appointed the agent of government for the purpose of purchasing seed cotton from growers, ginning it and disposing of the resultant lint and cotton seed.

The GMB carried out this function aided by subsidiary legislation made in terms of the Control of Goods Act, until the Cotton Marketing and Control Act was brought into operation on the 1 March 1969.

The GMB also acted as the agent of government from 1966 to 30 April 1969, for the purpose of marketing soyabeans. Interest in this crop grew to the point where, at the request of the Rhodesia Oil Seeds Producers' Association, it was declared to be a controlled product under the Grain Marketing Act on 1 May 1969.

Wheat, which had been marketed by the GMB in the 1969-70 year as a designated product in terms of the Agricultural Marketing Authority Act, was declared a controlled product in terms of the Grain Marketing Act on 1 May 1970.

During the latter part of 1971 the Rhodesia Coffee Growers Association made moves to have the marketing of coffee brought under statutory control and, as an interim measure the Minister of Agriculture appointed the GMB on 27 January 1972 to act as an agent for the government for the purchase and sale of the unsold balance of the local coffee crop of the 1971/72 harvest year. Coffee was then formally declared to be a controlled product in terms of the Grain Marketing Act on 1 May 1972.

## Appendix 5: Function of the Marketing Boards

The Agricultural Marketing Authority (AMA) boards are controlled by Acts of Parliament. The functions of each board according to the relevant Act of Parliament are:

### 1. Cotton Marketing Board (CMB)

- to do all things necessary and consistent with the provisions of this Act - to ensure the orderly marketing of seed cotton grown in Zimbabwe and of lint and cotton seed obtained therefrom;
- to regulate and control the varieties and, where necessary, the quantities of seed cotton to be grown in any area or areas of Zimbabwe;
- to buy and sell seed cotton, lint and cotton seed may be delivered to it in accordance with the provisions of this Act;
- to provide control or promote the provision of facilities for the handling and storage of seed cotton, lint and cotton seed and for the ginning of seed cotton;
- with the approval of the Minister to import seed cotton, lint and cotton seed as it may deem necessary;
- subject to any general directions by the Minister to export seed cotton, lint and cotton seed as it may deem necessary;
- to do such other things including the removal of linters from cotton seed and the marketing of such linters, not inconsistent with the provision of this Act, as in its opinion are necessary to assist the orderly development of the production, ginning and marketing of seed cotton and the marketing of lint and cotton seed, and

- to do such things whether in relation to cotton or not, not inconsistent with the provisions of this Act as may be required by the Minister.

## 2. Dairy Marketing Board (DMB)

- buy at the appropriate prescribed price any butter fat, cream or milk which is delivered by a registered producer, wholesaler or butterfat cream or milk, as the case may be, to any depot appointed by the Board for the purpose, and
- manufacture and prepare milk products, and
- market within and outside Zimbabwe milk and milk products.

## 3. Cold Storage Commission (CSC)

- purchase at the appropriate prescribed prices all livestock delivered by any person to the works of the commission, and
- operate abattoirs and refrigerating works for the purpose of chilling, freezing and storing beef, mutton, pork, poultry, fish and other perishable foodstuffs of whatsoever nature, and
- operate canning factories and works for the purpose of manufacturing glue, blood meal and other by-products of the carcasses of livestock and for processing beef, mutton, pork, poultry, fish and other perishable foodstuffs of whatsoever nature and for the manufacture of ice.

## 4. Grain Marketing Board (GMB)

- to do all things necessary and consistent with the provisions of this Act to ensure the orderly marketing of controlled products within any prescribed area;

- to buy and sell any controlled product which is delivered to or acquired by it under the provisions of this Act;
- to provide storage, handling and processing facilities for controlled products;
- to maintain stocks of controlled products as it may consider necessary;
- to import or export controlled products as it may consider necessary, and
- to do such other things whether in relation to a controlled product or not inconsistent with the provision of this ACT, as may be required by the Minister.

#### 5. Tobacco Marketing Board (TMB)

The Tobacco Marketing Board is a parastatal body responsible for the control and regulation of tobacco marketing, both within and outside Zimbabwe, in terms of the Tobacco Marketing and Levy Act, 1977. The marketing of tobacco in Zimbabwe is done through an Auction System. The board consists of three members representing the growers, and three members representing the buyers under a chairman appointed by the Minister of Agriculture. It is financed in equal proportions by the Tobacco Trade Association and Zimbabwe Tobacco Association from levies raised on their members in terms of the aforementioned Act.