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AGRICULTURAL PRICES AND SUBSIDIES IN ZIMBABWE:

Benefits, Costs and Trade-offs

Doris J. Jansen

Economic Consultant

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AGRICULTURAL PRICES AND SUBSIDIES IN ZIMBABWE:

Benefits, Costs and Trade-Offs

Introduction

This report assesses current government pricing and marketing policies of the seven most important agricultural products in Zimbabwe for which government controls the price of output: beef, milk, maize, wheat, cotton, soyabeans and groundnuts. Both producer and consumer pricing policy is analysed, and the impact of these policies on production, consumption, cost of living of low and high income consumers, foreign exchange earnings, attainment of self-sufficiency and budget subsidy requirements are discussed. Many of these subjects have been addressed separately in other sources,[1] but it is hoped that by providing a detailed analysis which includes all important products and which also addresses all the inter-related impacts of these policies, an improved understanding of their benefits, costs, and trade-offs can be attained.

Part I begins with a brief overview of agricultural pricing and marketing policy. It then introduces a framework which will be used to assess the effectiveness of current policies in meeting various (and conflicting) government objectives, the most important of which are: attainment of food self-sufficiency, increased agricultural export earnings, and maintenance of low food prices for the poor. The basic tool to be used in this analysis will be the calculation of export and/or import

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1. The reader is referred to items (17), (18), (19) in the bibliography for good summaries of agricultural pricing and marketing policies and to item (5) for a discussion of subsidies.

parity prices for each agricultural product.[2] This will then be used as the basis for determining whether the present subsidies are producer or consumer subsidies. These border parity prices will first be compared to actual producer prices in order to determine whether producers are being taxed or subsidized. The border parity prices will also be compared to government-controlled consumer prices in order to determine the extent to which consumers are subsidized. The extent to which these subsidies are directed to low versus high income consumers will also be examined.

The purpose of Part II is to provide some prescriptions for change in policies, in order for government to meet its objectives more effectively, given its very tight budgetary and foreign exchange constraints. It is hoped that these recommendations will be of benefit to US AID in determining its strategy regarding the agricultural sector and in discussing policy with government.

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2. It is extremely difficult to establish reliable border price comparisons for many products in Zimbabwe due to the fluctuations in world prices, demand and supply in neighboring countries, and transport bottlenecks which can lead to large changes in transport costs. However, rough estimates can be made and it is felt that these estimates are an essential input into assessing the benefits, costs and tradeoffs of current policies. Sensitivity analysis should of course be employed.

I. CURRENT PRICING AND MARKETING POLICIES

Overview

Government intervention in agricultural pricing and marketing policy in Zimbabwe has a long history, and has over time steadily increased. Intervention policies began with the establishment of the Maize Control Act in 1931 which led to the establishment of the Grain Marketing Board (G.M.B.) This was followed in 1937 by the Cold Storage Commission securing a large measure of control over the beef industry. The Agricultural Marketing Authority was constituted in 1967 and assumed responsibility for the commodity boards. The Cotton Marketing Board was established in 1969. Cotton marketing had, however, been controlled since 1936, first by the Cotton Research and Industry Board and then by a committee of the Grain Marketing Board.

Government intervention in agricultural commodity prices was begun during the Depression in order to maintain farmers on the land in the face of very low export prices for maize. Surpluses for export declined in the late 1930's as farmers switched to tobacco production. Local demand for maize expanded rapidly after the war and maize imports and consumer rationing was imposed. In order to regain self-sufficiency and promote maize production a system of guaranteed prices based on sample surveys of production costs was introduced in 1946. Local selling prices were not allowed to rise in line with producer prices and Government adopted a consumer subsidy policy for maize. While this was acceptable when maize was in deficit, the emergence of surplus production in 1955 raised the problem of an open-ended subsidy commitment which could no longer be justified

by the argument for self sufficiency. Producer price guarantees were thereafter limited to local requirements.

In the period immediately after UDI, foreign currency earnings and food security took on increased importance, and government pricing policy was once again aimed at increasing agricultural self-sufficiency and promoting exports.

In the 1970's government also became increasingly concerned with maintaining low food prices. Since 1976 the trading accounts of all controlled food products have been run at a loss which is met from government revenues.

In 1975 government agreed to announce pre-planting (i.e. minimum guaranteed) prices well before planting so that farmers' could plan their cropping programs. This reduced some of the price uncertainty faced by farmers and encouraged them to meet government's production objectives. The prices were negotiated between producer representatives and government agencies and took into account production costs, forecast internal demand and potential export earnings.

Since independence, few changes in producer pricing policy have occurred. For reasons which are not entirely clear, pre-planting prices were abandoned, and thus any possible incentive effects which higher prices might have had on increased production were lost. For the 1979/80 crop, the maize producer price was increased by 40 per cent and in 1980/81 by a further 40 per cent. The beef producer price has been increased by over 50 per cent since independence. These increases provide strong evidence of the importance which the present government places on food self-sufficiency.

The unchanged policy of setting producer prices primarily on a commerical cost of production basis has been combined with a greater policy

emphasis on maintaining low food prices for consumers. The result has been a sharp increase in required budgetary subsidies. In November 1979 the Muzorewa government introduced subsidies to be paid to milling and edible oil producing companies in order to hold down the price of certain foods. These are in addition to the subsidy requirements of the various agricultural marketing boards when their export and/or domestic selling prices (set by government) are inadequate to cover their handling costs and costs of crops purchased at the government-guaranteed producer prices.

In the past three years the total cost of subsidies has risen extremely rapidly, largely because, with the combination of low consumer prices and the new minimum wage rates, demand has risen to artificially high levels. Table 1 shows that food subsidies have increased from Z$26 million in 1979/80 to Z$51 million in 1980/81 and to an estimated Z$122 million in 1981/82. It is estimated that they may rise to around Z$140 million in 1982/83. Their contribution to rising government budget deficits is not insignificant. These deficits have now exceeded the level of fiscal and financial prudence.

The setting of producer prices begins with the preparation of pricing papers by the Agricultural Marketing Authority (AMA) and producer representatives. After meetings have been held and the trading accounts (received from the various commodity marketing boards) have been analysed, recommendations are forwarded to the Ministry of Agriculture by the AMA. Meetings are also held between producer representatives and the Ministry of Agriculture where producers (overwhelmingly commercial) are given the opportunity to put forward their views on pricing policy. On the basis of these meetings and on the A.M.A. recommendations, the Minister in consultation with his senior officials then decides on appropriate prices

to recommend to the government. A paper in support of such price recommendations is prepared and submitted to the working party of the Ministerial Economic Co-ordinating Committee (M.E.C.C.). The Minister's recommendations may be altered in order to take into account suggestions made by the M.E.C.C. working party. The Minister for Agriculture then presents the proposals to MECC which is a committee composed of Ministers of the economic ministries. After considering the proposals, M.E.C.C. makes recommendations to the Cabinet where the Minister for Agriculture presents the case. The final decision on producer prices is ultimately taken at Cabinet level.

The AMA and the Ministry of Agriculture have outlined the factors that they consider in determining their recomendations for producer prices, but as the following excerpt regarding soyabeans shows, this provides no indication as to the relative importance placed on the many conflicting considerations:

> The factors which Government considers when setting soyabean producer prices include national soyabean production, the G.M.B. budgeted trading account, domestic selling prices, anticipated export realizations, possible subsidies and the degree of Government support required, desirable levels of production to meet domestic requirements and export commitments, marketing costs to the G.M.B., the economic viability of growing soyabeans relative to a price that would stimulate production to desired levels, and political considerations which may influence pricing decisions. Government obtains the information from national statistics on soyabean production, G.M.B. trading accounts, and a cost of production model for soyabeans.[3]

A similar process is used for setting consumer prices, but they are based on recommendations originating from the Ministry of Trade and Commerce, which has responsibility for price control.

This price-setting procedure has one severe shortcoming under the present circumstances where both producer and consumer prices are set for a number of products: there is no single forum, except perhaps at Cabinet

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3. AMA. Information Sheets on Pricing Policy.

level, at which the trade-offs between various objectives and costs are assessed. The recommendations of the A.M.A. and the Ministry of Agriculture represent producer interests (primarily commercial farmers—it is clear that far too little attention is placed on the circumstances of non-commercial producers) and reflect their objectives of increasing agricultural production. They thus argue that producer prices must be set high enough to provide an adequate return to producers so that self-sufficiency and export earnings are maintained. The fact that these two objectives can in fact be conflicting is not always explicitly considered. Moreover, in making the case for a certain level of producer prices, the selling prices of the crops, also set by government, are largely taken as given. Thus the analysis employed is a "financial analysis", when an economic analysis is in fact required to maximize attainment of government objectives. If the selling prices set by government are "inappropriate" in terms of these objectives, clearly the producer prices based on these selling prices will also be "inappropriate" or non-optimal. Moreover, the recommendations for the producer price of one crop take the producer prices of other crops as given, and it is often argued that because the price of competing crop x is so much, the producer price of crop y must be higher. But if the price of crop y is inappropriate, then the price of crop x will also be inappropriate. This in fact appears to have been the situation recently with respect to maize. Because the maize price was raised very substantially, the argument was made that many other crop prices must be raised or farmers would switch to maize production, and production of competing crops would decrease. Thus price setting becomes increasingly far removed from economic considerations.

Recommendations with respect to selling prices, as well as wholesale

and retail prices in some cases, are made by the Ministry of Trade and Commerce, which takes the producer prices as given. Its primary concern is to keep consumer prices low.

It is not until the discussion has reached the level of the MECC that the entire set of prices—producer, marketing board selling, wholesale and retail prices—are discussed. But by this time the pricing recommendation papers have all been submitted based on the conflcting criteria of the Ministry of Agriculture and Ministry of Trade and Commerce, as well as the Ministry of Finance, which in the last analysis must try to balance the budget.

A Framework for Economic Analysis of Pricing Policy

It would be desirable if, early in the pricing policy discussions some attempt were made to assess the costs and trade-offs of various objectives. In order to do this, one must begin by leaving out of the analysis any of the prices set by government. This is because these are in fact "financial" (or political) prices rather than economic prices, and thus cannot reflect the economic costs or "opportunity costs" to the nation of various sets of prices.

There is a set of economic prices available which can be used as the point of reference in measuring the impact of national pricing policy. These are the relevant international prices or "border prices." They represent the prices which would prevail if the government allowed prices to be set by supply and demand and did not restrict international trade. From the point of view of Zimbabwe, border prices represent the true opportunity costs of the country's tradable products; and because the country has developed over the years a very complex system of market interventions, the appropriate way to measure their impact is in terms of

distortions between existing prices and the opportunity costs determined by international trade.

A systematic comparison of international prices and domestic market values can also provide the basis for an analysis of the consistency between instruments and targets of government policies. While the principle that the price system should serve development objectives is generally accepted, most countries have developed over the years fragmentary and chaotic systems of subsidies and taxes. For many countries, the prevailing market "distortions" may not be related to present goals and in many cases they have been shown to run counter to them. Thus, without denying the possibility of marketing interventions, international border prices can serve as a convenient benchmark to assess the effects of present pricing policy and can facilitate the design of more rational policies.

In the sections below which examine pricing policy with regard to each major agricultural product, border prices have been estimated and serve as the basis of the analysis of the effects of current policy.

The border price of a product is either its c.i.f. import price, if it is imported (at the margin), or its f.o.r. export price, if it is exported.[4] This price reflects the value to the nation of producing one

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4. In order to compare domestic producer or consumer prices with border equivalent (export or import parity) prices, one must use an exchange rate to convert between Zimbabwe dollars and foreign currencies. In the comparisons presented in the tables of this report, the official exchange rate has been used. There is some evidence that the Zimbabwe dollar is currently overvalued. To the extent that this is true, the border equivalent prices converted at the official exchange rate are understated. That is, if the Zimbabwe dollar is 10 per cent overvalued, the border equivalent border prices should be increased by this amount. This would lead to higher producer tax rates (or lower subsidy rates). Similarly, this would also increase the consumer subsidy rates. These adjustments have not been made however, since there is no consensus at present as to the extent or likely duration of the dollar's overvaluation.

more unit of the product. For example, if one more ton of wheat is produced, one less ton will have to be imported, and the savings in foreign exchange is thus the c.i.f. import price of that ton of wheat. On the other hand, if one more ton of cotton is produced, the lint exported earns foreign exchange and thus its border price is the f.o.b. export price of the lint (plus the c.i.f. price of the refined oil imports which can be saved by substituting locally produced cottonseed, and the f.o.b. price of the meal which can be exported).

It is important to note that border prices are being used as a tool of analysis—and not as recommended producer prices.

Once the relevant border price has been estimated, it can be used to derive the "border equivalent" or "economic" producer price. This is done by subtracting any handling or marketing costs from the border price. This represents the price the farmer would receive if government did not set prices and if trade in the commodity were allowed to take place.

By comparing the border equivalent price with the actual government-set producer price, one can determine whether pricing policy is taxing or subsidizing producers. The producer tax or subsidy is the difference between the border equivalent price and the producer price. The rate of producer tax or subsidy is estimated by taking this difference as a percent of the border equivalent producer price. If the producer price is less than the border equivalent price, the producer is being taxed. That is, in the absence of government intervention in agricultural pricing the producer would have received a higher price. If the producer price is greater than the border equivalent price, he is being subsidized. These do not represent actual taxes or subsidies in the financial sense, but rather serve to indicate the incentive effects of pricing policy.

This same framework can be used to determine the extent to which the consumer is taxed or subsidized. Again one begins by looking at the border equivalent or economic price of the product. One then adds on processing costs (non-subsidized) and wholesale and retail margins in order to obtain the border equivalent or economic consumer price. This is then compared to the actual retail price. The rate of consumer tax or subsidy is computed by taking this difference as a percentage of the border equivalent retail price. Again, these do not necessarily represent budgetary subsidies, but rather implicit taxes or subsidies.

Using this framework, it is possible to determine the incidence of the actual budgetary subsidies shown in Table 1 between producers and consumers and thus to compare the results with the objectives of pricing policy. This is done on an individual product basis in the sections below.

In considering these comparisons, it is important that a distinction be made between policy analysis and policy formulation. Border prices are used as a tool of policy analysis. They allow one to compute that set of prices (border equivalent prices) which reflect economic efficiency or "opportunity costs." One can then compare these with actual government-set producer and consumer prices. If there is a divergence, this indicates that current pricing policy is resulting in a loss of economic efficiency. This cost can then be weighed against the estimated benefits in terms of achieving government objectives. If the benefit appears to be worth the cost, the existing producer or consumer prices should be maintained. If not, it should be modified and less costly prices--in terms of economic efficiency--introduced. For example, the groundnut producer price is presently below the border equivalent price: farmers in 1980/81 received Z$390 per ton, whereas the border equivalent price was Z$660. They are

being "taxed," and presumably are not producing as many groundnuts as they would if they received the border equivalent price. Is this loss in economic efficiency (in this case, foregone groundnut production) justified? The benefit of this policy would appear to be that the G.M.B. is making a profit on the groundnut export trading account which is used to offset other losses. Is this benefit worth the cost? Perhaps not, if alternative sources of revenue for the G.M.B. exist which would result in smaller losses in economic efficiency.

Of course, there are considerations in addition to economic efficiency which can be introduced using this same policy framework. Is the taxing of groundnut farmers consistent with government's "growth with equity" objective? Is the financial drain of the beef subsidy worth its benefit in terms of cheap food for the poor?

This analysis could also be refined by considering any taxes or subsidies on inputs used in the production of agricultural products. If producers are paying a price above import parity for fertilizer, for example, then they are in fact being taxed, with the tax rate varying with the amount of fertilizer used on a particular crop. The minimum wage for agricultural workers is another potential source of taxation. To the extent that workers are receiving a wage greater than their marginal product, the farmer employing them is being taxed. (The workers are being subsidized by him). If the tax rate is sufficiently high, it may cause farmers to switch to less labor intensive crops or to the extent fesible substitute capital for labor in producing a particular crop. There is some evidence that this is presently occurring. The result will be a decline in agricultural wage employment. These are all consequences of pricing policy which should be considered when such policy is being formulated.

1. Beef Pricing Policy

Government policy toward the beef industry in Zimbabwe has generally been to promote expansion of the national herd in order to ensure that domestic requirements for beef and its by-products are met; and also to encourage beef exports to favorable markets.

The economic viability of various beef production systems is considered when setting prices and the remuneration to the producer is an important feature of setting prices to achieve policy objectives. Beef cattle costs of production models are utilized to monitor price inflation and economic viability, and to determine the incentive (or disincentive) levels necessary to achieve policy objectives. There are five models which are utilized, all based on commercial production. As yet very little information is available on communal production.

Table 2 shows that during the past ten years the average producer price has increased at an average annual rate of over 11 per cent. This compares to an increase in the average wholesale and retail prices of only 7 per cent and only a 4 per cent increase in the average net export realization. As a result, the beef industry now requires a sizeable budget subsidy.

The beef subsidy, as detailed in the 1981/82 Estimates of Revenue and Expenditure, totalled Z$26 million (compared to only Z$10 million in the previous year).

Is this a producer subsidy or a consumer subsidy or both? Preliminary indications are that it is in fact both. Table 3 derives the producer and consumer subsidy rates for beef, using the methodology outlined above. This table shows that in every year since 1975 the producer price has been above the average net export realization. This would

indicate a producer subsidy, which has ranged between 45% and 135% of the border price. This is largely due to the extremely low export prices which Zimbabwe faced during sanctions and will continue to face until its abattoirs meet the health standards required for exports to the EEC under Lomé. As Table 3 shows, once these exports are begun, Zimbabwe will benefit from a much higher beef export price. As a result, if there are no additional producer price increases, the producer will be "taxed" rather than subsidized at present. At present, one can perhaps rationalize the current subsidization of the producer by considering it as an investment in the beef industry designed to provide an incentive to the rebuilding of the herd so that when exports to Lomé are possible, there will be beef to export. However, it could be argued that the present producer price is providing existing producers with an "excess profit" (see Table 3, line 12—Returns to Commercial Producers).

On the basis of the historically low export prices, the consumer has not really been subsidized in terms of border equivalent prices. However, once the export price increases, the implicit tax rates will quickly turn into a very steep implicit subsidy rate. One could argue that the fairly modest "tax" rates in recent years should be even higher, since it is perhaps the beef consumer who should finance some of the rebuilding of the industry after the war. Certainly domestic beef prices have risen at a very modest level in recent years, and as Table 4 shows, most beef is not purchased by the poor. This table compares the expenditure pattern of lower and higher income urban households based on admittedly fairly old data—the 1976/77 and 1977/78 expenditure surveys published by the Central Statistical Office. But even if expenditure patterns have changed somewhat since that time, it is clear that the principal beef consumers—and thus beneficiaries of the beef subsidy—are high income urban households. In

1977/78 they spent on average $19 per month on beef, whereas low income households spent $11. Moreover, low income urban households are not really the poor. Rural households, which make up the vast majority of the poor, do not purchase much beef at price-controlled prices. Their consumption comes primarily from the slaughtering of cattle in the communal areas. This is largely unaffected by price control.

Beef pricing policy, because it results in such an artifically low price for beef, also leads consumers to substitute beef for other products which are close substitutes. Poultry and pig production, for example, are undoubtedly being discouraged since they cannot compete with subsidized beef. It is unclear why government would want to encourage beef production and discourage pig and poultry production.

2. Dairy Pricing Policy

Government policy with regard to the dairy industry is similar to that for beef: to ensure the adequate supply of dairy products to meet domestic consumption requirements and to exploit export opportunities whenever feasible.

Table 5 provides a comparison of the movements in the producer price for milk and retail price for whole milk and lacto during the past ten years. The average annual increase in the producer price was 11 per cent, compared to a 7 per cent increase in the retail price for milk consumed principally by those in the urban areas and a 14 per cent increase in the retail price for lacto, consumed principally by those in the rural areas. Although this reflects the policy established during the Smith government, it is useful to analyze these price movements in order to assess what corrections might be in order to more directly fulfill the objectives of

the present government.

The budget subsidy required by the Dairy Marketing Board (D.M.B.) as a result of pricing policy is shown in Table 1. It totalled between Z$2 and Z$4 million during 1978/79 to 1979/81 but then rose to over Z$10 milion in 1981/82.

Calculations presented in Table 6, while admittedly based on crude data, indicate that the milk subsidy, unlike the beef subsidy, is entirely a consumer subsidy. While it is extremely difficult to estimate the import parity price for milk, since much of it is traded internationally at subsidized prices, it is estimated that in 1981/82 the producer price was slightly less than the import parity price. Thus milk producers were not subsidized. On the other hand, milk consumers were subsidized at the rate of 41 percent. That is, the actual retail price is only 41 percent of the border equivalent retail price.

Table 4 shows that most of this subsidy goes to high income urban consumers. They spend $9.93 (1977 prices) per month on fresh milk, compared to only $2.68 by low income urban consumers. Since the population in the rural areas purchases very little milk from the DMB, and what they do is either sterilized milk or lacto, neither of which is subsidized, they do not benefit from the subsidies which the DMB receives from government as a result of pricing policy.

The current pricing policy has also had the effect of increasing the demand for dairy products—already rising extremely rapidly due to minimum wage increases. This has necessitated the rationing of cheese and butter and stopped the exports of all dairy products except to fulfill existing contracts.

3. Maize Pricing Policy

As in many sub-Saharan African countries, the maize price is greatly influenced by political considerations. It is probably safe to state that the objective of government is to achieve self-sufficiency at almost any cost. This is substantiated by recent pricing policy. As mentioned above, the maize price has increased by 100 per cent in the past two years. As Table 7 shows, while the selling price to the millers has moved up commensurately, the retail price has not. Thus the bulk of the subsidy required is directed to the millers and this has increased substantially in recent years. In 1980/81 the total maize subsidy was Z$24 million (ref. Table 1), but last year this rose to an estimated Z$70 million, of which $65 million was to the millers.

Table 8 indicates to what extent this represents a producer and/or consumer subsidy. Since Zimbabwe has recently exported maize, let us first look at the border equivalent prices based on export parity. These show that in recent years maize producers have received a subsidy. It has ranged from 3 per cent of the export parity border equivalent producer price in 1980/81 to over 40 per cent in 1978/79. At import parity, producers were taxed in 1979/80 and only marginally subsidized more recently (1-2 per cent). Consumers have received a much greater subsidy. In 1980/81 the consumer subsidy as a percent of the border equivalent retail price was 54 per cent. That is, consumers paid only Z$89 per ton of roller meal compared to the economic price of Z$ 102 based on export parity, and with no subsidies to millers. It is clear that the consumers are the overwhelming beneficiaries of the maize subsidy, and that it is a sizeable subsidy. If we refer once again to Table 4, it can be seen that high income urban consumers spend only Z$1.87 on maize meal, compared to

Z$5.30 by low income urban households. Thus the maize subsidy is more efficient at reaching the "poor" than the beef or dairy subsidies. However, the majority of the poor, namely those who live in the rural areas, are not able to benefit from this subsidy to the same extent that the urban households can, due to the more limited availability of roller meal at price-controlled prices in the more remote rural areas.

This policy has also resulted in the closure of smaller hammer mills in the rural areas since they do not receive a government subsidy and thus cannot compete with the large millers, which are heavily subsidized, and incidentally running into capacity problems!

As a result of the powerful incentive effect of very large budgetary subsidies, maize pricing policy in recent years has resulted not only in a heavy fiscal burden, but also in an extremely costly oversupply. In 1981/82 GMB purchases totalled about 2 million tons, compared to domestic demand of only 800,000 tons. The need to export this extremely bulky, low-value product, overburdened the transport network which was already under considerable strain during this period. Self-sufficiency had been achieved, but at a considerable economic cost.

Another recent development in maize pricing policy has been the extension of the government-controlled producer price to maize delivered to "border depots" and more recently to (AID-financed) "primary marketing depots" in the communal areas, all of which are considerably more distant from the millers than the original line of rail depots of the G.M.B. This policy of "uniform pricing" has proved to be extremely expensive in other sub-Saharan African countries, and it appears is gradually being introduced in Zimbabwe. Prior to the establishment of these additional GMB depots in the outlying areas, approved buyers purchased the maize from producers, and deducted their handling and transport charges from the minimum producer

price. It now appears to be government policy to introduce a transport subsidy element into the maize price.

4. **Wheat Pricing Policy**

After UDI and the imposition of economic sanctions, the government adopted policies aimed at promoting self-sufficiency in wheat production. The objectives were to pre-empt acquisition difficulties, to save foreign exchange and to make fuller use of national irrigation potential.

With the increase in minimum wages, domestic wheat consumption is rising fairly rapidly as processed wheat products exhibit a greater income elasticity than do other staple foods such as maize. Pricing policy is directed therefore to the objective of increasing production to meet increasing internal demand.

In recent years the wheat producer price has been slightly above export and import parity. This has provided an adequate incentive to producers to maintain domestic production, but as Table 9 shows, not sufficient to guarantee self-sufficiency. In order to achieve self-sufficiency it thus appears that a price considerably higher than import parity is required. Given that at present there are no other crops which can be grown in winter, using present investments in irrigation, paying farmers a producer price somewhat above import parity to induce them to expand production to meet domestic requirements is in fact consistent with economic efficiency. It should be noted however that the policy of subsidizing bread consumption, which in fact is done by paying the millers a subsidy of nearly Z$6 million a year, in this case <u>increases</u> the difficulty of achieving self-sufficiency since it increases the demand for bread above what it would be in the absence of such a policy. No data was obtained on milling costs, and thus it is not possible to determine the

rate of the consumer subsidy. Its budgetary cost has risen sharply, however, as real incomes of urban consumers have risen due to minimum wage increases.

5. Cotton Pricing Policy

Cotton is grown by both traditional and commercial farmers, and thus pricing policy has an important impact outside the commercial sector. Prices to local spinners are based on export parity, although normally set at slightly lower level than export prices. All cottonseed, a by-product of lint production, is locally consumed. The selling price to local expressors results from negotiations between the expressors and the Ministry of Trade and Commerce.

Production of cotton by commercial farmers increased steadily during the latter half of the 1970's, but fell off slightly in the past two seasons due to the relatively high maize price. Production in the communal lands is also sensitive to the maize price, but production has recovered from the low levels achieved during the late 1970's when production was hindered by the war. The recently announced increase from 40 cents to 51.5 cents per kilogram will provide an incentive for increased production next year. Unfortunately, since it was announced at the end of the growing season, rather than as a pre-planting price, it could not serve as an incentive to production for this year.

Based on a comparison of costs of production obtained from the Commercial Farmers Union, it appears that the margin as a percent of variable costs obtained from cotton production has been less than that obtainable from maize. Cotton is more labor intensive and thus has been hit hard by the increases in the minimum agricultural wage.

Very little data is available on non-commercial costs of production,

but based on results of a survey in the Gokwe farming area, during the 1980/81 season farmers received a net return of 79 cents a day in cotton growing, compared to Z$ 1.31 from maize. With the increase in the cotton price, the net return for cotton would rise to Z$ 1.31, exactly the same as maize.

Table 12 compares the producer price for cotton with the border equivalent price. The latter is based on the export parity price of lint and meal, and the import parity price for oil. It shows that the producer has in fact been taxed during the past four seasons. That is, he has obtained a price 7 to 19 per cent less than he would have received in a free market situation. However, on the basis of the recently increased producer price, the producer this year will probably receive close to the border equivalent price. Since nearly 60 per cent of the cotton is grown by non-commercial producers, this removal of the "tax" on cotton production would appear to be consistent with government's equity objective and desire to increase agricultural production in the communal areas.

6. Soyabean Pricing Policy

Soyabean is grown primarily by commercial farmers and production has increased steadily in recent years, despite the adverse effects of the relative increase in the maize producer price. Exports have had to be cut back in view of the rapidly rising domestic demand for vegetable oil.

Table 14 shows that during the past three years the producer price has been fairly close to export parity. Thus producers have been neither taxed nor subsidized. On the basis of admittedly shaky data on oil expressors' costs and margins for one year, consumers of vegetable oil appear to be taxed slightly—10 per cent on the basis of import parity (and 42 per cent on the basis of export parity). This might indicate that either oil

expressors are extremely inefficient or extremely profitable. In view of the fact that government sets both the raw material purchase and output price of the expressors and directs a fairly substantial subsidy to them (Z$6 million in 1981/82) surprisingly little data appears to be available to government on oil expressors' costs. This would appear to be one area meriting further investigation to determine whether in fact it is the oil expressors rather than producers or consumers who are being subsidized by pricing policy.

7. **Groundnut Pricing Policy**

Groundnut pricing policy has its principal impact on producers in the communal areas who in 1980/81 produced nearly 90 per cent of the national supply. Groundnuts are quite labor intensive and even before the recent minimum wage legislation, commercial farmers were more inclined to grow less labor-intensive crops.

Table 16 provides estimates of the producer tax/subsidy rates. It is interesting to see that on the basis of export parity, that is, for producers of confectionery grade groundnuts, the producer tax rate has varied from 11 to 41 per cent. This is by far the highest tax rate of any of the controlled agricultural products. It is also the crop for which the largest share of production comes from non-commercial farmers. This would appear to be inconsistent with the present government's concern with equity and increasing cash incomes in the rural areas.

II. SUMMARY ASSESSMENT AND RECOMMENDATIONS

This examination of producer and consumer pricing policy for agricultural products points out a number of areas in which policy has been effective and other areas in which changes would appear to be required in order to make policy more consistent with the present government's objectives.

Pricing policy has been fairly effective in achieving one objective: providing production incentives for commercial farmers. This has resulted in Zimbabwe's enviable record of near self-sufficiency in food.

While the present government also places a high value on self-sufficency, it has other critically important objectives which require a trade-off to be made. These include the objectives of fostering development in the communal lands, and of keeping the price of food low for the lowest income groups. At present, pricing policy has not made a trade-off between these objectives, and the result has been a disastrous increase in budgetary subsidies. The financial resources of government have clearly been stretched as far as they can be—some would say farther than they should have been—in order to have policies which can achieve all these objectives. Farmers have gotten higher prices, consumers (at least urban consumers) have gotten higher incomes and stable prices, and budget subsidies have made up the difference.

A financially feasible solution must be found. The following recommendations for amending present pricing policy should contribute to this solution. The suggestions for policy changes are also essentially costless. That is they do not require someone receiving less in order for

someone else to receive more. This is because they are designed to contribute to a more efficient allocation of resources within agriculture, so that the same given amount of resources provides greater production.

Producer Pricing Policy

As mentioned above, the major strength of the present producer pricing policy is the incentives it provides to agricultural production. In other African countries where similar analyses have been carried out, producers are shown to nearly always have been "taxed." That is, producer prices are substantially below the border equivalent prices.[5] As we have seen, groundnuts are the only crop in Zimbabwe where producers have been and are currently taxed. This is significant, however, since it 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 or production—almost to the exclusion of other equally relevant considerations. It is probably not accidental that the one crop which was not represented by the strong commercial farmers' lobbying groups did not benefit from producer price increases to the extent of others. 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.

First and foremost, it is essential that export and import parity prices be introduced as the basis for setting prices, since by doing so a set of relative prices will be established for crops and livestock farming

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5. For a comparison of the experiences of 13 Sub-Saharan African countries the reader is referred to Agricultural Pricing Policy in Sub-Saharan Africa in the 1970's. Doris J. Jansen, December 1980. World Bank unpublished working paper.

areas which are consistent with the country's economic opportunity costs and which will lead to the most efficient allocation of crop and livestock activities. At present it would appear to be extremely difficult for government to decide which crops it should encourage smallholders to grow through its pricing policy. Should they be given a greater price incentive to grow cotton, groundnuts, soyabean or maize? This question can be answered at least preliminarily by estimating what are the border equivalent producer prices for these crops. Then one can compare these with both commercial and communal costs of production to determine whether any production is likely at prices which are reasonably close to export or import parity. Next one can estimate at what level the maize price must be set to achieve self-sufficiency, if all other prices are set on the basis of border prices, that is, on the basis of economic efficiency considerations. Note that this is the opposite of the procedure often used of setting the maize price first, largely based on short-run political considerations, and then setting all other prices on the basis of this politically set price. Not surprisingly the result is a set of relative prices which bear little resemblance to the economically efficient set.

The preceding recommendation also points to additional changes required. First, data must be collected on yields and costs of production of farmers in the communal areas. If policy is increasingly to serve to encourage production in these areas, this information must be obtained. Of course, it is also essential information for efforts to increase productivity in the communal areas by introducing appropriate technology and improved cropping and animal husbandry practices.

Second, the feasibility of setting up stabilization funds for crops which are exported by the relevant marketing boards should be examined.

This would allow government to provide farmers with fairly stable guaranteed minimum prices, while at the same time basing them on border prices, since the stabilization fund would be used to make up the difference between the producer price and border equivalent price during a year of low border prices and could contribute to the fund during a border price "boom." One weakness of the present situation, whereby the marketing boards have no stabilization funds, is that during periods of high export prices farmers obtain supplementary payments and get at times a very high return over their cost of production, and in years of low border prices they demand, and usually receive, a subsidy from government to maintain producer prices at an "incentive" level.

Third, pre-planting prices should be re-introduced. One of the major objectives of pricing policy is presumably to provide an incentive to increased production. This cannot be done if the producer price is announced <u>after</u> the crops are planted.

Fourth, regionally uniform crop and livestock prices should not be introduced. This results in a costly transportation subsidy. Since it allows for a transport subsidy equal in fact to 100 per cent of cost, the highest subsidy rates are for goods with the largest weight-to-value ratio--particularly inefficient in Zimbabwe, where there is a very tight transport constraint. If providing particular assistance to farmers in remote areas is desired, this is more appropriately done through improvements in roads, social infrastructure, extension services or simply seeing that inputs are available to farmers at cost-covering prices.

Consumer Pricing Policy

It is in the area of consumer pricing policy for agricultural products that a major change is required immediately. As the tables in this report show, consumers (principally in the urban areas) have been subsidized at extremely high rates in the past two years. These subsidies are posing an unbearable strain on the budgetary resources of the government, as well as leading to artificially high demands for the subsidized products, which serves paradoxically to render the objective of food self-sufficiency a constantly receding target. Moreover, since the majority of the "poor" do not live in the urban areas, these subsidies widen the gap between real incomes in the rural and urban areas. These extremely high consumer subsidies must be gradually cut down to manageable size, particularly those for maize meal. Subsidies for some goods, consumed primarily by the upper income classes, such as beef, fresh milk, and white bread, should perhaps be eliminated altogether. Not only is the cheap food policy bankrupting the Treasury, it is also seriously impairing the attainment of three national objectives with which it is in conflict: food self-suffiency, increased foreign exchange earnings and, most importantly, equity.

Lastly, if in future financially viable trade-offs are to be made between the conflicting objectives of high producer prices and low consumer prices for agricultural products, it is necessary for there to be a forum where both consumer and producer interests can be discussed and debated. At present, producer pricing recommendations are made largely in isolation of their implications for consumer prices, and consumer price controls similarly ignore their implications for producer prices. Since at present it is the Ministry of Finance which is ultimately forced to grapple with the trade-offs required, it is recommended that it be given an important

role early on in the formulation of pricing policy. Perhaps a pricing policy "technical task force" could be set up within the Ministry with the responsibility of preparing detailed pricing policy papers and recommendations. Information would be collected and analyzed on an individual product basis from both the producer and consumer points of view. This would include data on costs of production, border parity prices, supply response, marketing board costs, processing costs, distribution costs, and income and price elasticities. Costs would also be compared with those in other countries in order to assess whether domestic operations require improvements in efficiency. The costs and benefits of alternative sets of producer and consumer prices would be clearly explained. The appropriate trade-offs could then be explicitly chosen by policymakers in other ministries and ultimately at Cabinet level.

TABLE 1

BUDGETARY SUBSIDIES FOR AGRICULTURAL PRODUCTS

(ZIMBABWE $ THOUSAND)

YEAR	MAIZE	MAIZE MEAL	WHEAT	FLOUR	SOYABEAN	EDIBLE OIL	BEEF	DAIRY	CHEESE	TOTAL
1974/75									12	12
1975/76	272		2191					1875	1	4339
1976/77	568		2020		532		6338			9458
1977/78	420		2798				11265			14483
1978/79	12757		3666		1534		20516	3700		42173
1979/80	4270	1400	925	3300	1379		12920	2108		26302
1980/81	9662	14439		5607	1919	4822	9619	4500		50568
1981/82	5110	64800		8500	956	6200	25730	10354		121650
1982/83										140000 (EST)

NOTES:

1. THE MAIZE, WHEAT AND SOYABEAN SUBSIDIES ARE PAID TO THE GRAIN MARKETING BOARD; THE BEEF SUBSIDY TO THE COLD STORAGE COMMISSION, THE DAIRY & CHEESE SUBSIDY TO THE DAIRY MARKETING BOARD, THE FLOUR MAIZE MEAL SUBSIDY TO THE MILLERS, AND THE EDIBLE OILS SUBSIDY TO THE OIL EXPRESSORS. IN THE GOVERNMENT BUDGET, THESE SUBSIDIES ARE ARBITRARILY DIVIDED BETWEEN THE MINISTRY OF AGRICULTURE AND THE MINISTRY OF TRADE AND COMMERCE. FLOUR, MAIZE MEAL AND EDIBLE OILS GO UNDER THE HEAD OF THE MINISTRY OF TRADE AND COMMERCE; THE REMAINDER TO THE MINISTRY OF AGRICULTURE.

SOURCES:

CALLEAR, FOOD SUBSIDIES IN ZIMBABWE

GOZ. ESTIMATES OF EXPENDITURE.

TABLE 2

BEEF: PRODUCTION, PRODUCER PRICE, & SELLING PRICES

CALENDAR YEAR	OFFTAKE COMMERCL	OFFTAKE SM-HOLDERS	AVE PRODUCER PRICE	AVE WHOLESALE PRICE	AVERAGE NET EXPORT REALIZATION
	(MILL HEAD)				
1970	0.32	0.12	32.75	32.75	36.00
1971	0.41	0.11	36.76	33.96	35.00
1972	0.54	0.09	40.38	34.97	38.00
1973	0.62	0.13	48.81	37.41	48.00
1974	0.47	0.15	56.82	41.47	66.00
1975	0.41	0.11	58.96	44.82	57.00
1976	0.59	0.10	57.00	47.42	48.00
1977	0.67	0.07	57.91	47.66	40.00
1978	0.69	0.04	57.26	51.42	38.00
1979	0.61		70.46	59.39	56.00
1980			81.11	63.01	54.00
1981			105.00	69.83	
1982			128.10		
AVERAGE ANNUAL PERCENT CHANGE:					
1970-81			11.1	7.1	4.1
1979-82			22.0		

SOURCES:

AGRICULTURAL MARKETING AUTHORITY

MINISTRY OF AGRICULTURE

CENTRAL STATISTICAAL OFFICE

TABLE 3

BEEF: EFFECT OF PRICING POLICY ON PRODUCERS AND CONSUMERS

	1979	1980	1981	PRE-LOME 1982	POST-LOME 1983
1. NET EXPORT PRICE, FOB, C/KG, BONE-IN ADJUSTED FOR QUALITY DIFFERENTIAL	56.00	54.00	54.00	70.00	159.00
IMPORT PARITY PRICE, CIF, C/KG				120.00	120.00
2. LESS HANDLING & MARKETING COST/MT	19.72	21.75	24.70	28.41	32.67
3. PLUS REVENUE FROM OFFALS & HIDES	12.29	13.52	15.36	17.66	20.31
4. EQUALS BORDER PRICE EQUIVALENT PRODUCER PRICE					
A. EXPORT PARITY:	48.57	45.77	44.66	59.25	146.64
B. IMPORT PARITY:				120.00	120.00
5. PRODUCER PRICE (AVE ALL GRADES)	70.46	81.11	105.00	128.10	128.10
6. PRODUCER TAX(-)/SUBSIDY PER TON					
A. EXPORT PARITY:	21.89	35.34	60.34	68.85	-18.54
B. IMPORT PARITY:				8.10	8.10
7. PRODUCER PRICE AS % BORDER EQUIV. PRICE					
A. EXPORT PARITY TAX(-)/SUBSIDY RATE:	45	77	135	116	-13
B. IMPORT PARITY TAX(-)/SUBSIDY RATE:				7	7
8. BORDER PARITY PRICE					
A. EXPORT PARITY:	56.00	54.00	54.00	70.00	159.00
B. IMPORT PARITY:				120.00	120.00
9. PLUS WHOLESALE MARGIN (35%)	19.60	18.90	18.90	24.50	55.65
10. EQUALS BORDER EQUIV. WHOLESALE PRICE, C/KG				42.00	42.00
A. EXPORT PARITY:	75.60	72.90	72.90	94.50	214.65
B. IMPORT PARITY:				162.00	162.00
11. AVERAGE RETAIL PRICE, C/KG	80.00	86.00	114.00	114.00	125.40EST
12. CONSUMER TAX(-)/SUBSIDY, C/KG					
A. EXPORT PARITY:	-4.40	-13.10	-41.10	-19.50	89.25
B. IMPORT PARITY:				48.00	36.60
13. CONSUMER SUBSIDY AS % BORDER EQUIV. WHOLESALE PRICE					
A. EXPORT PARITY TAX(-)/SUBSIDY RATE:	-6	-18	-56	-21	42
B. IMPORT PARITY TAX(-)/SUBSIDY RATE:				30	23
14. RETURNS TO COMMERCIAL PRODUCERS:					
GROSS INCOME	0.77	1.01	1.19	1.45	
LESS NON-LABOR VARIABLE COSTS	0.45	0.58	0.66	0.72	
LESS LABOR COSTS	0.08	0.09	0.14	0.23	
EQUALS MARGIN OVER VARIABLE COSTS	0.24	0.34	0.39	0.50	
MARGIN AS PER CENT OF VARIABLE COSTS	45	51	49	53	

NOTES:

COSTS ARE FOR GRASS FED CATTLE

SOURCES:

AGRICULTURAL MARKETING AUTHORITY

TABLE 4: COMPARISON OF EXPENDITURE OF LOWER AND HIGHER INCOME HOUSEHOLDS

	LOWER INCOME HOUSEHOLDS		HIGHER INCOME HOUSEHOLDS	
	1976/77 SURVEY*		1977/78 SURVEY	
	DOLLARS	PER CENT	DOLLARS	PER CENT
AVE. MONTHLY INCOME:	88.20		825.00	
AVE. MONTHLY EXPENDITURE:	84.94	100.00	665.00	100.00
FOODSTUFFS	42.05	49.51	106.12	15.96
BREAD & CEREALS	12.35	14.54	12.82	1.93
WHITE BREAD	5.92	6.97	4.18	0.63
MAIZE MEAL	5.30	6.24	1.87	0.28
MEAT	12.46	14.67	33.88	5.09
BEEF	10.81	12.73	19.32	2.91
OILS & FATS	2.26	2.66	4.07	0.61
COOKING OILS	1.31	1.54	0.96	0.14
MILK, MILK PRODUCTS & EGGS	4.19	4.93	17.15	2.58
MILK:	3.37	3.97	10.50	1.58
FRESH	2.68	3.16	9.93	1.49
SOUR	0.37	0.44		
CONDENSED	0.15	0.18	0.18	0.03
POWDERED:	0.16	0.19	0.39	0.06
MILK PREP FOR BABIES	0.17	0.21	0.22	0.03
ICE CREAM	0.05	0.06	1.46	0.22
EGGS	0.80	0.94	2.00	0.30
CHEESE	0.02	0.03	2.06	0.31
DRINK & TOBACCO	4.11	4.84	29.09	4.37
CLOTHING & FOOTWEAR	7.30	8.60	37.69	5.67
RENT, WATER, FUEL & LIGHT	14.46	17.03	115.21	17.32
HOUSEHOLD STORES	5.05	5.94	50.73	7.63
PERSONAL CARE & HEALTH	0.94	1.10	38.78	5.83
TRANSPORT	6.34	7.47	73.20	11.01
MISCELLANEOUS	4.69	5.52	214.18	32.21
PER CENT OF FOOD EXPD SUBSIDIZED:		60.00		34.00
PER CENT OF TOTAL EXPD SUBSIDIZED:		30.00		5.00

NOTES: LOWER INCOME HOUSEHOLDS ARE DEFINED AS THOSE WITH INCOMES <$210/MO. THIS EXCLUDES UNEMPLOYED AND SELF-EMPLOYED HOUSEHOLDS.
HIGHER INCOME HOUSEHOLDS ARE DEFINED AS THOSE WITH INCOMES >$230/MO.THIS ALSO EXCLUDES UNEMPLOYED AND SELF-EMPLOYED HOUSEHOLDS.

THE DOLLAR AMOUNTS FROM THE 1976/77 LOWER INCOME SURVEY WERE INFLATED BY 9 PER CENT (ACCORDING TO THE LOWER INCOME CPI) IN ORDER TO ACHIEVE COMPARABILITY WITH THE HIGHER INCOME SURVEY OF 1977/78.

TABLE 5

DAIRY: PRODUCTION, PRODUCER PRICES AND RETAIL PRICES

YEAR ENDING JUNE 30	TOTAL MILK PRODUCTION (M KG)	AVERAGE PRODUCER PRICE (C/KG)	RETAIL PRICE WHOLEMILK (C/600ML.)	RETAIL PRICE LACTO (C/600ML.)
1970	23.90	6.24	7.91	
1971	21.50	6.58	8.45	
1972	20.50	6.71	8.45	5.30
1973	20.90	7.18	8.45	8.40
1974	18.70	7.31	9.50	8.40
1975	15.10	8.72	9.50	9.50
1976	11.20	10.33	11.61	10.60
1977	10.20	10.16	12.00	11.00
1978	8.80	10.16	12.00	11.00
1979	7.30	12.96	14.00	12.00
1980	6.70	15.54	16.00	16.00
1981		19.58	16.00	17.00
1982		23.02		
AVERAGE ANNUAL PER CENT CHANGE:				
1970-81		11.0	6.6	13.8

SOURCES:

MINISTRY OF AGRICULTURE

AGRICULTURAL MARKETING AUTHORITY

TABLE 6

MILK: EFFECT OF PRICING POLICY ON PRODUCERS AND CONSUMERS

	1979/80	1980/81	1981/82	1982/83
1. IMPORT PARITY PRICE, CIF, CENTS/KG			29.62	
2. LESS DMB HANDLING COSTS			0.67	
3. PLUS DMB PROCESSING COSTS			0.80	
4. MULTIPLIED BY QUALITY DIFFERENTIAL (FRESH EQUIV.)				
5. EQUALS BORDER PRICE EQUIVALENT PRODUCER PRICE			23.80	
6. PRODUCER PRICE (AVE ALL GRADES)			23.02	29.02
7. PRODUCER TAX(-)/SUBSIDY (C/KG)			-0.78	
8. PRODUCER TAX/SUBSIDY AS % BORDER EQUIV. PRICE			-3	
9. BORDER PARITY PRICE			29.62	
10. PLUS DISTRIBUTION COSTS			14.00	
11. EQUALS BORDER EQUIV. RETAIL PRICE/KG			43.62	
12. BORDER EQUIV RETAIL PRICE PER 600 ML (.617)			26.91	
13. ACTUAL RETAIL PRICE, C/600 ML			16.00	
14. CONSUMER SUBSIDY, C/KG			10.91	
15. CONSUMER SUBSIDY AS % BORDER EQUIV. RETAIL PRICE			41	
16. RETURNS TO COMMERCIAL PRODUCERS:				
GROSS INCOME			23.39	
LESS NON-LABOR VARIABLE COSTS			14.78	
LESS LABOR COSTS			2.05	
EQUALS MARGIN OVER VARIABLE COSTS			6.56	
MARGIN AS PER CENT OF VARIABLE COSTS			39	

NOTES: IMPORT PARITY PRICE IS BASED ON FULL VALUE OF SKIM MILK POWDER LANDED AT Z$2010/MT & BUTTER OIL AT Z$2600/MT

SOURCES: DAIRY MARKETING BOARD
COMMERCIAL FARMERS UNION

TABLE 7

MAIZE: PRODUCTION, PRODUCER PRICE, & LOCAL SELLING PRICE

MKTING YEAR	PRODUCTION COMMERCL	PRODUCTION COMMUNAL	PRODUCER PRICE	LOCAL SELLING PRICE	RETAIL PRICE ROLLER MEAL
	(THOUS MT)				
1970/71	1329	57	38.45	43.24	
1971/72	1682	69	32.51	43.24	
1972/73	784	17	29.59	43.24	
1973/74	1567	54	37.30	43.24	
1974/75	1260	54	43.52	43.24	
1975/76	1205	70	48.25	51.54	
1976/77	1140	61	48.00	51.54	
1977/78	1102	64	52.00	51.54	45.00
1978/79	707	35	53.00	57.07	49.00
1979/80	1000	54	60.50	63.00	51.00
1980/81	1900	97	85.00	89.00	51.00
1981/82			120.00	137.00	51.00

AVERAGE ANNUAL PERCENT CHANGE:

1970/71-1981/82	10.9	11.0
1979/80-1981/82	40.8	47.4

SOURCES:

AGRICULTURAL MARKETING AUTHORITY

MINISTRY OF AGRICULTURE

CENTRAL STATISTICAAL OFFICE

TABLE 8

MAIZE: EFFECT OF PRICING POLICY ON PRODUCERS AND CONSUMERS

	1978/79	1979/80	1980/81	1981/82
1. EXPORT PRICE, FOB, PER METRIC TON	51.72	86.67	130.52	112.00
IMPORT PRICE, CIF, PER METRIC TON	NA	118.06	132.63	135.00
2. LESS HANDLING & MARKETING COST/MT	8.73	9.74	13.79	17.00
3. EQUALS BORDER PRICE EQUIVALENT PRODUCER PRICE				
A. EXPORT PARITY:	42.99	76.93	116.73	95.00
B. IMPORT PARITY:	NA	108.32	118.84	118.00
4. PRODUCER PRICE (AVE ALL GRADES)	60.50	89.10	120.00	120.00
5. PRODUCER TAX(-)/SUBSIDY PER TON				
A. EXPORT PARITY:	17.51	12.17	3.27	25.00
B. IMPORT PARITY:		-19.22	1.16	2.00
6. PRODUCER TAX/SUBSIDY AS % BORDER EQUIV. PRICE				
A. EXPORT PARITY TAX(-)/SUBSIDY RATE:	41	16	3	26
B. IMPORT PARITY TAX(-)/SUBSIDY RATE:		-18	1	2
7. BORDER PARITY PRICE PER 1 TON ROLLER MEAL				
A. EXPORT PARITY:	57.41	96.20	144.88	124.32
B. IMPORT PARITY:		131.05	147.22	149.85
8. PLUS MILLING COSTS/TON (ESTIMATE)	24.50	26.34	29.27	33.66
9. BORDER EQUIVALENT RETAIL PRICE/TON				
A. EXPORT PARITY:	90.10	134.80	191.56	173.78
B. IMPORT PARITY:		173.13	194.14	201.86
10. ACTUAL RETAIL PRICE (50 KG SIZE)/MT (10% MARGIN)			89.20	
11. CONSUMER SUBSIDY PER TON ROLLER MEAL				
A. EXPORT PARITY:			102.36	
B. IMPORT PARITY:			104.94	
12. CONSUMER SUBSIDY AS % BORDER EQUIV. RETAIL PRICE				
A. EXPORT PARITY TAX(-)/SUBSIDY RATE:			53	
B. IMPORT PARITY TAX(-)/SUBSIDY RATE:			54	
13. RETURNS TO COMMERCIAL PRODUCERS: (PER HA)				
YIELD	4000	3600	5700	3700
GROSS INCOME	242.00	320.76	684.00	444.00
LESS NON-LABOR VARIABLE COSTS	213.29	246.03	278.41	349.75
LESS LABOR COSTS	44.46	45.60	76.16	113.12
EQUALS MARGIN OVER VARIABLE COSTS	-15.75	29.13	329.43	-18.87
MARGIN AS PER CENT OF VARIABLE COSTS	NEG	10	93	NEG
14. RETURNS TO NON-COMMERCIAL PRODUCERS (PER HA)				
YIELD			1100	
GROSS INCOME			132.00	
LESS NON-LABOR VARIABLE COSTS			19.00	
EQUALS NET RETURN			113.00	
MAN DAYS REQUIRED:			86	
NET RETURN PER MAN-DAY:			1.31	

NOTES: MILLERS COST BASED ON ESTIMATE FOR 1981, DEFLATED BY THE CPI FOR OTHER YEARS.
COMMUNAL COST OF PRODUCTION BASED ON SURVEY DONE IN GOKWE AREA.
EXTRACTION RATE OF 90% ASSUMED FOR ROLLER MEAL.

SOURCES: COMMERCIAL FARMERS UNION, AGRICULTURAL MARKETING AUTHORITY.

TABLE 9

WHEAT: PRODUCTION, PRODUCER PRICE, AND SELLING PRICE

MKTING YEAR	DELVRIES TO GMB	PRODUCER PRICE	LOCAL SELLING PRICE	EXPORT PRICE FOB SBY	IMPORT PRICE CIF SBY
	(THOUS MT)	(Z$/ M.T.)			
1970/71	54	69.45	79.45		
1971/72	89	69.29	78.24		
1972/73	82	69.01	75.33		
1973/74	86	69.18	75.41		
1974/75	90	79.89	79.51		
1975/76	129	110.00	100.07		
1976/77	148	121.00	100.07		
1977/78	171	123.00	113.36		
1978/79	207	110.00	120.67		230.00
1979/80	159	115.00	134.00	121.94	185.00
1980/81	163	135.00	134.00	127.10	
1981/82		165.00	157.00	124.02	180.00
1982/83		190.00			

AVERAGE ANNUAL PERCENTAGE CHANGE:

1970/71-1981/82

1979/80-1981/82

SOURCES:

MINISTRY OF AGRICULTURE, AMA

TABLE 10

WHEAT: EFFECT OF PRICING POLICY ON PRODUCERS AND CONSUMERS

	1978/79	1979/80	1980/81	1981/82
1. EXPORT PRICE, FOB, PER METRIC TON	121.94	127.10	124.02	
IMPORT PRICE, CIF, PER METRIC TON		185.00		180.00(EST)
2. LESS HANDLING & MARKETING COST/MT	18.49	18.48	19.21	22.09(EST)
3. EQUALS BORDER PRICE EQUIVALENT PRODUCER PRICE				
A.EXPORT PARITY:	103.45	108.62	104.81	
B.IMPORT PARITY:		166.52		157.91
4. PRODUCER PRICE (AVE ALL GRADES)	106.00	111.00	131.00	175.00
5. PRODUCER TAX(-)/SUBSIDY PER TON				
A.EXPORT PARITY:	2.55	2.38	26.19	
B.IMPORT PARITY:		-55.52		17.09
6. PRODUCER TAX/SUBSIDY AS % BORDER EQUIV. PRICE				
A.EXPORT PARITY TAX(-)/SUBSIDY RATE:	2	2	25	
B.IMPORT PARITY TAX(-)/SUBSIDY RATE:		-33		11
7. BORDER PARITY PRICE PER 1 TON FLOUR				
A.EXPORT PARITY:				
B.IMPORT PARITY:				
8. PLUS MILLING COSTS/TON (ESTIMATE)				
9. BORDER EQUIVALENT RETAIL PRICE/TON				
A.EXPORT PARITY:				
B.IMPORT PARITY:				
10.ACTUAL RETAIL PRICE (50 KG SIZE)/TON				
11. CONSUMER SUBSIDY PER TON FLOUR				
A. EXPORT PARITY:				
B. IMPORT PARITY:				
12. CONSUMER SUBSIDY AS PERCENT OF RETAIL PRICE				
A. EXPORT PARITY:				
B. IMPORT PARITY:				
13. RETURNS TO COMMERCIAL PRODUCERS:(PER HA)				
YIELD	4400	4500	4800	4900
GROSS INCOME	466.40	499.50	628.80	857.50
LESS NON-LABOR VARIABLE COSTS	317.45	362.89	440.80	512.22
LESS LABOR COSTS	37.60	40.00	39.00	73.50
EQUALS MARGIN OVER VARIABLE COSTS	111.35	96.61	149.00	271.78
MARGIN AS PER CENT OF VARIABLE COSTS	NEG	24	31	NEG

SOURCES: CFU, AMA, GMB

TABLE 11

COTTON: PRODUCTION, PRODUCER PRICES, & SALES REALIZATIONS

HARVEST YEAR	PURCHASES BY C. M. B. LARGE-SCALE COMMERCL	OTHER	PRODUCER PRICE (GRADE A)	SALES REALIZATIONS LINT EXPORTS	LINT DOMESTIC	INDUS. SEED
	(THOUS M.T.)		(C/KG)	(CENTS/KG)		($/MT))
1971	114	27	16.34	50.67	45.61	43.20
1972	126	41	18.30	53.08	55.84	41.90
1973	111	30	26.59	62.58	74.67	44.30
1974	125	39	28.00	93.39	95.75	57.30
1975	122	40	26.25	73.01	68.90	55.50
1976	102	32	35.88	98.98	85.52	55.40
1977	111	36	33.00	103.01	99.33	56.60
1978	130	43	33.00	105.14	89.36	62.70
1979	133	32	34.00	113.38	102.22	75.60
1980	148	37	37.50			
1981	128	76	40.00			
1982			51.50			
AVERAGE ANNUAL PERCENT CHANGE:						
1971-79:			9.6	10.6	10.6	7.2

SOURCES:

MINISTRY OF AGRICULTURE

AGRICULTURAL MARKETING AUTHORITY

TABLE 12

COTTON: EFFECT OF PRICING POLICY ON PRODUCERS

	1978/79	1979/80	1980/81	1981/82	
1. EXPORT PRICE, FOB, LINT PER M.T.	971.60	1067.10	1197.80	1333.00	
2. MULTIPLY BY .347 TO GET SEED COTTON MT EQUIV.	337.15	370.28	415.64	462.55	
3. LESS GINNING COSTS/MT SEED COTTON	26.75	34.78	32.19	37.75	
4. LESS HANDLING AND MARKETING COSTS	34.88	40.87	31.58	42.58	
5. EQUALS NET REVENUE FROM LINT SALES	275.52	294.63	351.87	382.22	
6. PLUS REVENUE FROM SALE OF COTTONSEED (633 KGS):	53.89	71.14	85.07	90.74	
A. LANDED COST IMPORTED CRUDE OIL/MT	286.48	399.00	440.00	500.00	
B. MULTIPLIED BY .633 & BY .18 EXTRACTION RATE	0.11	0.11	0.11	0.11	
EQUALS SEED COTTON METRIC TON EQUIVALENT	32.64	45.46	50.13	56.97	
C. EXPORT PRICE OF MEAL,FOB	99.00	117.28	152.55	152.55	
D. MULTIPLIED BY .633 & BY .45 EXTRACTION RATE	0.28	0.28	0.28	0.28	
EQUALS SEED COTTON METRIC TON EQUIVALENT	28.20	33.41	43.45	43.45	
E. LESS PROCESSING COSTS OF DOMESTIC COTTONSEED (.1139 X PER TON COST)	10.47	11.63	12.83	14.58	
F. PLUS SAVINGS OF COSTS OF REFINING IMPORTED CRUDE OIL (.1139 X PER TON COST)	3.52	3.91	4.31	4.90	
7. EQUALS BORDER EQUIVALENT PRODUCER PRICE (C/KG)	32.94	36.58	43.69	47.30	
8. PRODUCER PRICE (AVE ALL GRADES)	30.49	32.62	36.28	38.21	50.00(EST)
9. PRODUCER TAX (-)/SUBSIDY PER M.T.	-2.45	-3.96	-7.41	-9.09	
10. PRODUCER TAX/SUBSIDY AS % BORDER EQUIV. PRICE	-7	-11	-17	-19	
11. RETURNS TO COMMERCIAL PRODUCERS:(PER HA)					
YIELD	1635	1770	1702	1700(EST)	
GROSS INCOME	498.51	577.37	617.49	649.57	
LESS NON-LABOR VARIABLE COSTS	328.95	301.80	334.74	396.93	
LESS LABOR COSTS	112.31	82.40	131.56	181.72	
EQUALS MARGIN OVER VARIABLE COSTS	47.25	193.08	151.19	70.92	
MARGIN AS PER CENT OF VARIABLE COSTS	10	50	32	12	
12. RETURNS TO NON-COMMERCIAL PRODUCERS (PER HA)					
YIELD				1100.00	
GROSS INCOME				420.31	
LESS NON-LABOR VARIABLE COSTS				221.00	
EQUALS NET RETURN				199.31	
MAN DAYS REQUIRED:				251.00	
NET RETURN PER MAN-DAY:				0.79	

NOTES: SMALLHOLDER COST OF PRODUCTION BASED ON SURVEY IN GOKWE FARMING AREA. COTTONSEED PROCESSING COSTS ARE BASED ON 1981 ESTIMATED COSTS, DEFLATED FOR EARLIER YEARS BY THE CPI. THE IMPORT PARITY PRICE OF OIL IS ALSO BASED ON DEFLATED ESTIMATES OF THE 1981 PRICE.

SOURCES:

COMMERCIAL FARMERS UNION
AGRICULTURAL MARKETING AUTHORITY
OIL EXPRESSORS

TABLE 13

SOYABEAN: PRODUCTION, PRODUCER PRICE, & SELLINNG PRICES

MKTING YEAR	GMB PURCHASES	EXPORTS	AVERAGE PRODUCER PRICE	LOCAL SELLING PRICE	NET EXPORT REALIZATION
	(THOUS. M.T.)		(Z$/M.T.)		
1970/71	9.00	6.00	85.05	66.70	66.00
1971/72	9.00	6.30	84.89	59.07	66.00
1972/73	3.40	7.40	73.63	96.18	66.00
1973/74	8.00	1.00	112.03	126.26	149.00
1974/75	19.00	9.20	126.76	126.32	149.00
1975/76	27.90	11.00	105.56	103.75	98.00
1976/77	44.80	4.70	110.10	103.75	104.00
1977/78	44.10	16.20	132.00	103.75	168.00
1978/79	69.70	29.30	143.00	124.50	155.00
1979/80	81.00	11.70	152.25	150.00	177.00
1980/81	93.60	0.60	168.00	193.84	185.00
1981/82			170.00		175.00
1982/83			200.00		
AVERAGE ANNUAL PERCENT CHANGE:					
1970/71-1980/81:			7.0	11.3	10.9

SOURCES:

MINISTRY OF AGRICULTURE

AGRICULTURAL MARKETING AUTHORITY

TABLE 14

SOYABEAN: EFFECT OF PRICING POLICY ON PRODUCERS AND CONSUMERS

	1978/79	1979/80	1980/81	1981/82
1. EXPORT PARITY PRICE, FOB, PER MT	154.87	176.86	184.57	
2. LESS HANDLING AND MARKETING COSTS	11.95	15.15	21.20	
3. EQUALS BORDER EQUIV. PRODUCER PRICE	142.92	161.71	163.37	
4. AVE PRODUCER PRICE (A GRADE)	143.00	152.25	168.00	200.00
5. PRODUCER TAX (-)/SUBSIDY PER M.T.	0.08	-9.46	4.63	
6. PRODUCER TAX/SUBSIDY AS % BORDER EQUIV. PRICE				
EXPORT PARITY TAX(-)/SUBSIDY RATE:	0	-6	3	

I. EXPORT PARITY DERIVATION OF BORDER EQUIV. RETAIL PRICE

1. BORDER PARITY PRICE TO EXPRESSORS ($/M.T. SOYABEAN)	184.57
2. ADJUSTED FOR AMOUNT NECESSARY FOR 1 TON OIL	1054.69
3. PLUS REFINING & PROCESSING COSTS	128.00
4. LESS REVENUE FROM SALE OF MEAL (4.39 T @ $184.62/TON)	810.48
5. PLUS PACKAGING AND FILLING COSTS	204.26
6. PLUS PROCESSORS & RETAILERS MARGINS (35%)	201.76
7. EQUALS BORDER EQUIV. RETAIL PRICE PER TON OF OIL	778.23
8. BORDER EQUIV. RETAIL PRICE PER 750 ML BOTTLE	0.53
9. ACTUAL RETAIL PRICE	0.76
10. CONSUMER SUBSIDY/TAX (-) PER BOTTLE	-0.23
11. CONSUMER TAX(-)/SUBSIDY RATE AS % BORDER EQUIV. RETAIL PRICE	-42

II. IMPORT PARITY DERIVATION OF BORDER EQUIV. RETAIL PRICE:

1. BORDER PARITY PRICE PER MT IMPORTED CRUDE OIL	500.00
2. PLUS REFINING COSTS	43.00
3. PLUS PACKAGING & FILLING COSTS	204.26
4. PLUS PROCESSOR & RETAIL MARGINS (35%)	261.54
5. EQUALS BORDER EQUIV. RETAIL PRICE PER M.T.	1008.80
6. BORDER EQUIV. RETAIL PRICE PER 750 ML BOTTLE	0.69
7. ACTUAL RETAIL PRICE EDIBLE OIL (750 ML)	0.76
8. CONSUMER SUBSIDY/TAX(-) PER BOTTLE	-0.07
9. CONSUMER TAX(-)/SUBSIDY RATE AS % BORDER EQUIV. RETAIL PRICE:	-10

10. RETURNS TO COMMERCIAL PRODUCERS: (PER HA)				
YIELD	2109	2192	2100	1700
GROSS INCOME	301.59	333.73	352.80	340.00
LESS NON-LABOR VARIABLE COSTS	224.78	257.81	286.87	337.68
LESS LABOR COSTS	17.70	21.34	32.75	46.92
EQUALS MARGIN OVER VARIABLE COSTS	59.11	54.58	33.18	-44.60
MARGIN AS PER CENT OF VARIABLE COSTS	24	20	10	-12

SOURCES: COMMERCIAL FARMERS UNION
AGRICULTURAL MARKETING AUTHORITY
OIL EXPRESSORS

TABLE 15

GROUNDNUTS: PRODUCTION, PRODUCER PRICE & SELLING PRICE

MKTING YEAR	PRODUCTION: LARGE-SCALE COMMERCIAL	PRODUCTION: SMALL-SCALE COMMCL	PRODUCTION: COMMUNAL AREAS	PRODUCTION: TOTAL	CLASS A1 PRODUCER PRICE	DOMESTIC REALIZ.	EXPORT REALIZATION
	(THOUS MT UNSHELLED)				(Z $ PER M.T. SHELLED)		
1970/71	2.90	9.90	140.10	152.90	130.98		
1971/72	3.90	14.60	180.70	199.20	130.79		
1972/73	6.30	3.90	71.00	81.20	154.63		
1973/74	9.60	8.70	187.20	205.50	192.39		
1974/75	8.30	9.00	181.80	199.10	250.00		
1975/76	9.60	9.90	180.00	199.50	220.43		
1976/77	6.30	5.00	140.00	151.30	275.76	207.00	319.00
1977/78	5.80	6.90	122.20	134.90	295.00	219.00	428.00
1978/79	7.50	6.00	108.30	121.80	330.00	327.00	394.00
1979/80	4.60	4.50	65.00	74.10	360.00	370.00	505.00
1980/81	19.40	9.50	210.00	238.90	390.10	376.00	709.00
1981/82					420.00		
1982/83					450.00		
AVERAGE ANNUAL PERCENT CHANGE:							
1976/77-1980/81					9.1	16.1	22.1

SOURCES:

MINISTRY OF AGRICULTURE

AGRICULTURAL MARKETING AUTHORITY

TABLE 16

GROUNDNUTS: EFFECT OF PRICING POLICY ON PRODUCERS

	1978/79	1979/80	1980/81	1981/82
1. EXPORT PARITY PRICE,FOB, PER MT	394.45	505.42	709.28	
2. LESS HANDLING AND MARKETING COSTS	25.06	31.16	49.59	
3. EQUALS BORDER EQUIV. PRODUCER PRICE	369.39	474.26	659.69	
4. AVE PRODUCER PRICE (A GRADE)	330.00	360.00	390.10	420.00
5. PRODUCER TAX (-)/SUBSIDY PER M.T.	-39.39	-114.26	-269.59	
6. PRODUCER TAX/SUBSIDY AS % BORDER EQUIV. PRICE				
EXPORT PARITY TAX(-)/SUBSIDY RATE:	-11	-24	-41	
7. RETURNS TO COMMERCIAL PRODUCERS:(PER HA)				
YIELD	2109	2192	2100	1700
GROSS INCOME	695.97	789.12	819.21	714.00
LESS NON-LABOR VARIABLE COSTS	224.78	257.81	286.87	337.68
LESS LABOR COSTS	17.70	21.34	32.75	46.92
EQUALS MARGIN OVER VARIABLE COSTS	453.49	509.97	499.59	329.40
MARGIN AS PER CENT OF VARIABLE COSTS	187	183	156	86
8. RETURNS TO NON-COMMERCIAL PRODUCERS:				
YIELD			482.00	
GROSS INCOME			173.52	
LESS NON-LABOR VARIABLE COSTS			0.00	
NET RETURN			173.52	
MAN-DAYS REQUIRED:			103.00	
NET RETURN PER MAN-DAY:			1.68	

SOURCES: SOURCES:

COMMERCIAL FARMERS UNION
AGRICULTURAL MARKETING AUTHORITY

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