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DEREGULATION OF LESOTHO'S MAIZE MARKET

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During the past year, there have been major policy reforms in Lesotho and South Africa with respect to maize pricing and marketing. In Lesotho the impact of deregulation on producers, consumers and government revenues was substantially lower than it should have been, and as a result Lesotho was not able to reap the full benefits of these changes. This is partly because information on the changes to the maize marketing system did not reach the potential beneficiaries of the new system. Free and easily accessible information is an essential element of a free market system. SACU countries must ensure the availability of information if they want to compete internationally.

DEREGULERING VAN LESOTHO SE MIELIEMARK

Daar was gedurende die afgelope jaar groot beleidshervormings in Lesotho en Suid-Afrika in verband met mielieprysbepaling en -bemarking. In Lesotho was die impak van deregulering op produsente, verbruikers en regeringsinkomste aansienlik kleiner as wat dit moes wees en Lesotho was daarom nie in staat om die volle voordeel uit hierdie verandering te behaal nie. Dit is gedeeltelik so omdat inligting omtrent die verandering in die mieliebemarkingsstelsel nie die potensieële bevoordeeldes van die nuwe stelsel bereik het nie. Vrye en maklik toeganklike inligting is 'n essensiële element van 'n vrye bemarkingsstelsel. Lidlande van die Suider-Afrikaanse doeane-unie ooreenkoms moet die beskikbaarheid van inligting verseker as hul internasionaal wil meeding.

1. INTRODUCTION

During 1996, the government of Lesotho announced its intention to move away from an agricultural strategy aimed at attaining national food self-sufficiency towards food security. It has been argued that a key area of policy reform necessary to implement this new strategy successfully, includes the deregulation of the main agricultural output and input markets. These were characterised by considerable Government intervention in the form of price fixing and trade protection granted to agricultural parastatals.

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In a previous paper, Van Schalkwyk *et al* (1996) calculated the welfare effects of regulation in Lesotho's wheat market. This paper provides reasons why Lesotho had to deregulate its maize market. Moreover, it shows the welfare impacts of Lesotho's maize pricing and marketing policies. The objective of this study is to quantitatively estimate the impact of deregulation in the maize market on producers, consumers and government revenues. This is compared with the current situation in Lesotho approximately one season after deregulation. Deficiencies in the system are pointed out and recommendations made.

2. THE COUNTRY IN CONTEXT

More than 85 percent of Lesotho's populace lives in rural areas, engaging mainly in informal economic activities. Agriculture is the main occupation of the majority of rural inhabitants. However, it only accounts for a small share of rural household income (World Bank, 1995). The major share of rural household income is derived from remittances from absentee family members -- mainly males -- who engage in migrant labour activities.

About 80 percent of the people live in the lowlands and foothills that comprise 30 percent of the land area. These areas contain most of Lesotho's scarce arable, productive land. Land in the highlands and the Senqu River Valley, which is rapidly eroding, is suitable mainly for grazing and for low population densities. All over the country, rainfall is sporadic and unreliable, and drought or hailstorms often wipe out entire crops. Crop production almost always is heavily dependent on rainfall, as irrigation possibilities are very limited. Only 9 percent of Lesotho's total land area is arable, of which only a relatively small proportion is of high potential (World Bank, 1995).

Lesotho is a landlocked country surrounded by South Africa, from where 95 percent of its imports come and where 40 percent of its exports go to. Lesotho is part of the Rand Monetary Area; its Loti is tied to the South African Rand at a fixed exchange rate of 1:1. It is also a member of the South African Customs Union (SACU). In terms of this agreement, South Africa (or another country) collects its trade taxes at the point of entry into the SACU. These taxes accounted for half of Lesotho's budget revenues (excluding grants) between 1988 and 1993 (World Bank, 1995). South Africa dominates the southern African region in terms of agricultural and industrial production and trade. The linked currencies and a relatively open border therefore *de facto* imply that price levels of goods in Lesotho are often determined in South Africa, and are frequently more dependent on South Africa's policies and economy than that of Lesotho. In addition, the 1986 census found that nearly half of Lesotho's adult male workers were employed in South Africa. In the 1980's, remittances from Basotho

labourers working in South African mines accounted for about half of the country's gross national product (GNP), and equalled 100 percent of its gross domestic product (GDP). Presently, about 40 percent of the male Basotho labour force is employed in South Africa and remittances account for roughly one third of GNP.

Lesotho's agriculture is relatively open to external influence. Since South Africa and Lesotho are members of the SACU, no import tariffs are levied on trade between the two countries. For those commodities for which the Government of Lesotho (GOL) does not restrict importation, price trends and changes in South Africa directly affect prices in Lesotho. However, in the case of maize, the Government of Lesotho has, in the past, based gazetted into-mill prices on the pan-territorial selling prices of the South African Maize Board within South Africa (Bayley, 1993; Westlake, 1996). Thus, there has been an indirect, but strong, link between prices in South Africa and Lesotho. After liberalising the marketing of maize in Lesotho, changes in South African prices should have a rapid direct impact on prices in Lesotho.

3. LESOTHO'S AGRICULTURAL POLICIES (1967 - 1996)

Until 1996, the marketing of maize in Lesotho was primarily governed by the 1967 Agricultural Marketing Act, the 1979 Marketing Amendments Act and various Legal Notices. The 1967 Marketing Act empowered the Minister of Agriculture to gazette regulations and/or intervene in the marketing of maize. The government of Lesotho intervened in the domestic markets of maize in two ways. It controlled imports and prices (Ministry of Agriculture, 1995).

Import control

There has for a number of years been no formal policy to restrict imports of maize (Ministry of Agriculture, 1995). However, many traders argued that in practice it was very difficult to import significant quantities of maize into Lesotho (Bayley, 1994). Furthermore, maize imports were restricted immediately after harvest. Maize could be imported from South Africa through the South African Maize Board. However, the large mills tended to dominate such processes. In the 1992/93 marketing season, the three big mills were responsible for 97% of the 189 500 tonnes of commercial maize imports for which permits were issued (Bayley, 1993). In practice, the large mills imported maize without restriction. Permits to import maize meal were only issued if the large-scale mills were unable to meet domestic demand fully. At all other times, imports of maize meal were banned.

Price control

Prices were controlled by the government at three levels of the marketing chain:

- for whole grain: into-traders' depots; and into-mill, at the mill-gate;
- for milled products: ex-mill, at the mill gate.

Provided they met minimum quality standards, large mills were obliged to accept, and pay the gazetted price, for maize delivered to them by Lesotho producers. There was no effective control of prices at which the large-scale mills sold from their depots in the districts, of the selling prices of the small-scale roller mills or of wholesale and retail prices. Prices were gazetted at the start of the marketing year. All gazetted prices were pan-seasonal and territorial.

4. THE IMPACT OF MARKET INTERVENTION IN LESOTHO

The conventional wisdom is that controlled prices for maize and maize meal in Lesotho have been set at artificially high levels, well above those which would have existed in a free market, thereby encouraging the production of maize at the expense of other crops.

In the case of maize, this contention has been based partly on the fact that the gazetted producer prices in Lesotho have been well above producer prices in South Africa. However, Lesotho has had to purchase its maize from the Maize Board, *not* from South African farmers. The Government, therefore, used the higher South African Maize Board selling price as the basis for setting domestic producer prices. Furthermore, the cost of maize imported from South Africa, landed in Maseru, included transport costs dependent not on the proximity of South African maize production to Lesotho's mills, but on the location of the silos which housed the maize allocated to Lesotho buyers by the South African Maize Board. Railage from Schweizer Reneke to Maseru is far higher than from Ladybrand or Kroonstad. Thus, the gazetted producer prices have approximated import parity. In practice, maize grain prices in informal domestic markets in Lesotho have tended to be higher than the gazetted prices for maize grain at traders' depots (Bayley, 1994). This is due to a combination of (a) the fact that whole maize has not been imported in sufficient quantities to keep the price down to import parity, and (b) that the alternative source of imported maize has been in the form of relatively high-cost pocketed maize meal produced by the

large mills and (c) that most areas of Lesotho are deficit, not surplus, maize areas within a few months after harvest (Bayley, 1994).

The process which has led to high informal whole grain prices in the domestic market is simple: Consumers in Lesotho had the option of buying domestically produced whole grain from farmers or traders and having it milled, or buying pocketed maize meal produced by the large mills, from maize that was for the most part imported from South Africa. Between the marketing years 1985/86 and 1989/90 inclusive, the proportion of the maize milled at the three big industrial mills that was delivered by Basotho farmers to the mill gate was between 2.5% and 14.9%. In 1992/93 that figure was a mere 1.1% (Bayley, 1993). The figures demonstrate that traditionally Lesotho's industrial mills have profited most when the Lesotho crop has been at its smallest. Normally, a consumer is not prepared to pay more for whole grain than the price of pocketed maize meal less the cost of having the whole grain processed at a small-scale mill (Bayley 1993; 1994). Thus, the retail price of pocketed maize meal in the formal market placed a ceiling on the price of whole grain in informal markets. This ceiling was substantially higher than the gazetted price for whole grain at traders' depots, which, is set approximately at import parity. This is for a number of reasons. First, the unit costs of milling grain in the large-scale mills is substantially higher than in small-scale mills (Ministry of Agriculture, 1995). Second the cost of formal packaging is usually greater than the cost of the bag-container used for transport to and from a small-scale mill. Third, there is no retail margin. Finally, the retail price of the maize meal produced in the large-scale mills is subject to sales tax at 10 percent, whereas most small-scale trade in grain evades this tax (Ministry of Agriculture, 1995).

The welfare impacts of the interventions in Lesotho's maize industry are quantified using a standard partial equilibrium comparative analysis in the Marshallian surplus framework, similar to that adopted by Bale & Lutz (1981), Bale & Greenshields (1987) and Tsakok (1990). The basic analytical structure is presented by the equations in Table 1, as taken from Tsakok (1990). Data for the analysis of welfare gains/losses induced by the policies which impacted on production, consumption, trade etc. of maize in Lesotho were obtained from the Ministry of Agriculture (1994), Buro of Statistics (1994) and the National Early Warning Unit (1995). The calculations were done for the 1991/92 to 1995/96 production seasons.

Lesotho's gazetted prices represent domestic prices for maize meal. Maize meal sold by the industrial mills contains 70% white maize meal and 30% yellow maize meal (in the 1995/96 marketing season). South African selling prices of maize grain were adjusted accordingly. South African prices were used because Lesotho has over a number of years imported most of its maize from South

Africa. An effect of the recent maize market liberalisation in South Africa is that South African producers have a locational advantage towards consumers of

Table 1: Welfare analysis of maize trade and processing, 1991/92 to 1995/96

Variable	Label	Formula	Prices/Values ¹				
			1991/92	1992/93	1993/94	1994/95	1995/96
<u>Parameter</u>							
\underline{s}	domestic price of maize meal (mill gate)		819.00	817.88	904.13	944.63	1056.39
Pd	“border” price of maize meal (mill gate)		619.33	710.41	748.49	734.45	848.68
Pb	price elasticity of demand ²		-0.513	-0.513	-0.513	-0.513	-0.513
nd	price elasticity of supply ²		0.151	0.151	0.151	0.151	0.151
es	Nominal Protection Coefficient	Pd/Pb	1.322	1.151	1.208	1.286	1.245
NPC	implicit tariff	NPC-1	0.322	0.151	0.208	0.286	0.245
t		tPb/Pd	0.244	0.174	0.172	0.222	0.197
t'	value of domestic production at domestic price	Pd*Dom.Prod	35.51	53.31	95.69	117.64	131.56
V'	value of domestic consumption at domestic price	Pd*Total supply	139.91	152.09	222.85	169.75	189.84
W'							
<u>Analysis</u>							
NELp	deadweight loss in production	$0.5*es*t'^2*V'$	0.159	0.069	0.214	0.439	0.384
NELc	deadweight loss in consumption	$0.5*nd*t'^2*W'$	2.12	0.67	1.69	2.16	1.883
WGp	change in producer surplus	$t'V'-NELp$	11.29	7.99	19.68	33.23	31.81
WGc	change in consumer surplus	$-(t'W'+NELc)$	-36.09	-20.66	-40.06	-39.93	-39.21
^GR	change in mill revenue	$t'(W'-V')$	25.31	12.98	21.89	11.60	11.46
Loss/cap	Loss per capita	WGc/Total population	19.68	10.98	20.75	20.15	19.79

Notes: ¹⁾ Prices are in M/ton and values are in M million

²⁾ Price elasticities are taken from Wright and Nieuwoudt (1993)

Lesotho. Transport costs and the processing profits and operating expenses of private village mills were added to the South African selling price of maize, as reported by the Directorate: Agricultural Statistics and Management Information (1997), to represent the border price of maize meal. The existence of a difference suggests an efficiency loss, or an implicit "tariff" on consumers.

An effort was made to calculate price elasticities for the supply and demand of maize in Lesotho. Data availability presented some problems, as the available time series are relatively short which restricts estimation possibilities. However, both the price elasticities of supply and demand yielded results that are not significantly different from zero, which implies total price inelastic supply and demand for maize. These results were consistent regardless of the methodology and functional specification used. These results are in accordance with *a priori* expectations for a country like Lesotho:

- (i) the price elasticity of supply is expected to be very low -- approximating zero -- when the one crop dominates the production scene as is the case with maize, when there are no obvious production substitutes, and when most of the households only produce for own consumption, within a relatively limited and poor production environment; and
- (ii) the price elasticity of demand is very low --also approximating zero-- if the crop is the dominant staple, it dominates the consumer market, and has no immediate substitutes, within a relatively isolated consumer market. Of all the variables tested in the different regression equations, only rainfall yielded significant results and then only with respect to the supply of maize. The better the rainfall during the planting season, the more maize is planted and harvested --i.e. it affects both intended and actual supply.

Although the elasticities that were obtained are plausible, theory stipulates that both quantity demanded and supplied should show some reaction --albeit small-- to price changes, particularly within a normal competitive environment. It has already been illustrated that the situation with respect to marketing of maize in Lesotho was not conducive to smallholder grain production and/or competition. For this reason, it was decided to rather use comparable price elasticities of supply and demand derived for South Africa under similar conditions. Although these elasticities are also relatively small (inelastic), the advantage is that they are significantly different from zero, which allows for analysis of the welfare implications of alternative marketing arrangements on producers and consumers.

The deadweight losses in maize production for the 1994/95 and 1995/96 seasons are estimated at M0.439 million and M0.384 million, respectively. For maize consumption, deadweight losses are estimated at M2.16 million and M1.883 million, respectively. This yields a total deadweight efficiency loss of M2.599 million for the 1994/95 season and M2.267 million for 1995/96 season. The following welfare gains and losses were calculated:

- producers of maize gained M33.23 million during the 1994/95 season and M31.81 million during the 1995/96 season;
- consumers of maize lost M39.93 million during the 1994/95 season and M39.21 million during the 1995/96 season. This amounts to a loss of approximately M20 *per capita* per annum; and
- mills benefited (as monopoly rents -profits or absorbed as inefficiencies) M11.60 million during the 1994/95 season, and M11.46 million during the 1995/96 season.

It should be noted that the *per capita* consumer loss would have been larger if it were not for the subsidies which the three industrial mills received from Government. This ultimately leads to lower gazetted consumer prices. In Lesotho, distortions arose because of:

- (i) the import ban on milled maize;
- (ii) the *de facto* monopoly on maize grain importation and pricing; and
- (iii) the oligopoly and subsidisation of large retailers. In the above analyses, only the welfare implications of the monopoly situation in which the mills found themselves were analysed. According to the World Bank (1995), the inefficiencies arose from the mill's monopolistic profits and inefficient operations, as compared to the profits and operating costs incurred by private smaller-scale millers in Lesotho's villages.

6. RECENT POLICY CHANGES

During the second semester of 1996 and the first semester of 1997 there have been major policy reforms in Lesotho and South Africa. Almost all intervention in Lesotho's maize market has been suspended (Ministry of Agriculture, 1997):

- Regulations that restrict or distort the flow and prices of maize grain and meal have been removed.
- Regulations that restrict the flow of inputs used in maize production have been abolished.
- The Lesotho Government is currently privatising the Lesotho Flour Mills.

The liberalisation of the South African maize market allows South African producers to sell to anyone, even to foreigners. After this change and Lesotho's own liberalisation process, it is possible for the inhabitants of Lesotho to buy South African maize and/or maize meal. One would therefore expect South African and Lesotho maize prices to differ with only the transport cost. This assumes no transaction costs, which clearly is not the case given informal markets and small traders. However, traders are not necessarily small. Therefore, transaction costs in excess of 15% seems very high, indicating that the market is not functioning well (effectively).

A quick survey has revealed that the price difference for maize meal across the border of the two neighbouring countries exceeds the transport cost. The price for a tonne of maize meal in Maseru is R1 212, whereas in Ladybrand, which is approximately 20km from Maseru, it is R1 040. Transport cost from Ladybrand to Maseru is R21, which is R151 lower than the difference between the Maseru and Ladybrand maize meal price. According to the Ministry of Agriculture (1997), informal imports of maize have increased. However, it is not as high as has been expected.

Van Zyl *et al* (1996) recommended to the Government of Lesotho to concentrate on the provision of timely information to facilitate the proper working of the maize market. It seems that the improper working of the new liberalised market in Lesotho should, at least partly, be ascribed to the inability of the Government of Lesotho to provide timely information to the general population of Lesotho. The welfare increase due to liberalisation is therefore substantially lower than what it should have been, had the government provided information timely.

7. CONCLUSION

The results of this study show that marketing arrangements for maize in Lesotho were highly distorted and imposed a heavy tax on the Lesotho economy in terms of deadweight losses in efficiency. It resulted in considerable welfare losses to consumers - including the majority of rural -

and agricultural households who are net consumers of this commodity. These distortions inhibited the development of the private sector, which ultimately keeps producer prices down. The Lesotho Government has moved in the right direction by liberalising its maize market. Unfortunately, Lesotho was not able to get the full benefit of this recent move because information on the deregulation and how the new maize market works has not reached the people who should reap the benefits of the new system. In order to be more successful, a few things will have to be done. First, one of the necessary conditions for effective competition and efficient markets is that all buyers and sellers have perfect- and equal knowledge of all prices and the factors that affect market conditions. Information is needed for production and marketing decisions. Providing information to make markets work is an important function of government. Currently, it is not geared to do this on a regular basis as required. This situation is also true for South Africa.

REFERENCES

BALE, M.D. & GREENSHIELDS, B.L. (1978). Japanese agricultural distortions and their welfare value. *American Journal of Agricultural Economics*, 59:59-64.

BALE, M.D. & LUTZ, E. (1981). Price distortions in agriculture and their effects : An international comparison. *American Journal of Agricultural Economics*, 63:8-22.

BAYLEY, B. (1993). *Maize marketing in Lesotho and its impact on consumer prices*. Unpublished report. Drought Relief Implementation Group, Maseru.

BAYLEY, B. (1994). *Agricultural marketing in Lesotho and price transmission to the village level : Implications and options for policy*. Unpublished report. Drought Relief Implementation Group, Maseru.

BUREAU OF STATISTICS. (1995). Data collected for various years. Lesotho : Ministry of Planning.

THE DIRECTORATE: AGRICULTURAL STATISTICS AND MANAGEMENT INFORMATION. (1997). *Abstract of agricultural statistics*. Pretoria : The Directorate : Agricultural Statistics and Management Information.

MAKENETE, A.L., ORTMANN, G.F. & DARROCH, M.A.G. (1997). Maize marketing and pricing in Lesotho: implications for policy reform. *Agrekon*, 36(1):10-26.

MINISTRY OF AGRICULTURE. (1994). *Agricultural situation report*. Compiled by Ministry of Agriculture, Bureau of Statistics and Department of Economics and Marketing, Maseru, Lesotho.

MINISTRY OF AGRICULTURE. (1995). Data for various years, Lesotho, Maseru. Ministry of Agriculture. 1992. *The Informal Grain Market in Lesotho*. Proceedings of a Seminar. Maseru, Lesotho.

MINISTRY OF AGRICULTURE. (1997). *Personal communication* with Mr. K.C. Cekwane and Mrs M. Motsamai, respectively Director and Chief Director Ministry of Agriculture, Co-operatives and Marketing, Lesotho.

NATIONAL EARLY WARNING UNIT. (1995). *Data for various years*. Maseru, Lesotho.

TSAKOK, I. (1990). *Agricultural price policy - A practitioner's guide to partial - equilibrium analysis*. New York :Cornell University Press.

UNPUBLISHED RESEARCH REPORT. (1996). University of Pretoria, Pretoria.

VAN SCHALKWYK, H.D., VAN ZYL, J. & DOYER, O.T. (1996). Welfare effects of regulation in Lesotho's wheat market. *Agrekon*, December 1996, 35(4):291-296.

VAN ZYL, J., VAN SCHALKWYK, H.D. & DOYER, O.T. (1996). *Lesotho: impact analysis of deregulation of the grain sector*. PU report, Maseru, Lesotho.

WESTLAKE, M.J. (1996). *Liberalisation of the domestic maize and wheat markets*. FAO report, Maseru, Lesotho.

WORLD BANK. (1995). *Lesotho poverty assessment*. Human Resources Division, Southern Africa Department, Africa Regional Office.

WRIGHT, P.D. & NIEUWOUDT, W.L. (1993). Price distortions in the South African maize economy : A comparative analysis. *Agrekon*, 32(2):51-59.