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RESOURCE ALLOCATION, INCOME REDISTRIBUTION AND
AGRICULTURAL PRICING POLICIES IN KENYA

by

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Kenya's present agricultural pricing policy originated in the period when large scale European Farmers were politically powerful and able to obtain Government support for a considerable degree of protection in domestic markets, and when exportable surpluses of many commodities could be subsidised by high income domestic consumers. Policies such as those which imply a misallocation of resources through distortions in the price system frequently contain the seeds of their own destruction.

In this case the growth of the small scale African farming sector, together with technological advances, has caused the supply curves for many commodities to shift markedly to the right. Coupled with high producer prices these supply curve shifts have led to large increases in output which the domestic market has been unable to absorb at current consumer prices. Thus commodities have been exported "at a loss," this loss being made up by deliberately raising domestic consumer prices above the normal market level. As the proportion of total production which has to be exported increases, the domestic consumer price has to be raised even farther to meet the export loss. Since these subsidy arrangements are on a commodity basis we find some instances, such as maize, where the heaviest relative incidence of the subsidy is borne by the lowest income urban dwellers.

The extent of income redistribution created
by the existing pricing rules

It is apparent that the existing pricing rules create (implicitly or explicitly) income redistribution effects when compared with optimum resource allocation rules. (see Appendix) These effects reinforced by import taxes, licensing quotas or outright bans on the import of agricultural products from other countries. In this section some crude estimates of the extent of these flows is made, but more attention is given to the direction of these flows, as it is the author's contention that there is no consistent principle regarding income redistribution underlying these flows. For ease of presentation the existing flows are divided under four general headings.

1. Transfers from producers to urban consumers

From the evidence available it would seem that the producer price for high grade beef paid by KMC has been below export parity price, and the domestic consumer price for all beef has been below export parity price plus marketing costs. Thus in effect producers have been subsidising domestic consumers and there has been an effective income transfer from the rural areas' (to the urban areas (mainly Nairobi)). The extent of this transfer was probably in the region of £K100,000 in 1957². The reason for this transfer has probably been the political difficulty of raising the producer (and concurrently) consumer price of beef given the importance of beef in the cost-of-living index for low income Nairobi workers. The "cost" of not raising prices has been a retarding of the growth of the Kenyan beef industry, the continued high level of production of commodities with a lower real value added but which were financially more attractive to individual farmers given the low producer price for beef, a loss of potential income by existing beef producers and a loss of potential foreign exchange earnings. Recent price changes have partially rectified this imbalance but there could still be a case (on resource allocation grounds) for a further rise in producer and domestic consumer prices.

2. Transfers from consumers to producers

For maize and wheat, producer prices are currently above export parity leading to subsidies by domestic consumers (and also tax payers) to producers. At the moment the producer price of maize is shs 25/- 200 lb. net into Maize and Produce Board (MPB) stores and the price to domestic consumer ex-MPB stores in the producing regions is approximately shs 37/-. Allowing a generous margin of shs 4/- for MPB overheads it would appear that there is an income transfer of shs 8/- per 200 lb. from consumers to producers on all maize sold internally. With domestic sales of approximately one million bags per year this represents an income transfer of around £K400,000 from consumers to producers. At the moment there is also an income transfer from taxpayers to producers as the Government has guaranteed to meet any losses made by the MFI on exports and not covered by the subsidy from domestic consumers, up to a maximum of shs 14/- per bag. The size of this subsidy in any one year depends on the amount of maize exported and the market price but in 1967/8 the Government paid a subsidy of £K2million with £K 634,448 being carried forward as recoverable from the Government.

For wheat the current producer price is shs 40/- per 200 lb. (naked Grade 2 $\frac{1}{2}$ producers station f.o.r.) and the current ex-Wheat Board store price to millers is approximately shs 55/10. If there were no necessity to subsidise exports we might expect the ex-Wheat Board store price to fall at least to shs 44/- even if the equilibrium producer price remained at the present producer price of shs 40/-. As 1.2 m bags of wheat are consumed in Kenya we can estimate that a sum in excess of £K650,000 will be transferred this year from domestic consumers to producers. An even larger sum would have been transferred from taxpayers to producers had it proved possible to export surplus wheat at somewhere near the lowest price allowed under the International Wheat Agreement. The equity of this transfer is open to serious question when it is realised that 400 large scale farmers grow over 60 per cent of Kenya's wheat.

For milk and some dairy products the current producer price is also above export parity price and the low prices obtained for exports are compensated for by higher prices charged for milk and some of the dairy products sold internally in Kenya. More empirical work would have to be conducted in this area before quantitative estimates on the size of transfers can be made.

The sugar industry is currently protected by a high level of import duty in addition to a further surcharge on imported supplies made by the single importing agency to bring the price of imported sugar up to the price, paid to domestic sugar manufacturers. It would appear that in 1968 domestic manufacturers were paid some £9 per ton more than the relevant import parity price, which on a production of over 81,000 tons of sugar amounts to a transfer of approximately £K730,000 from consumers to manufacturers (and presumably producers) mainly in the Central Nyanza district. At the same time an excise duty of £K2.494m was collected in 1968 on sugar by the Central Government. This represents a purchase tax rate of 40 per cent.

3. Transfers from producers to other producers

The pricing rules designed to optimise resource allocation between various agricultural commodities imply that the individual producer should be paid a farm-gate price equivalent to the marginal value of the product as it leaves the farm gate. In other words this farm-gate value will vary with location as the costs of transfer have to be deducted from the value of the product in the final market place.

For many commodities where a "free" marketing system operates and where producers have access to adequate market information this does indeed occur. For many major commodities however a uniform ex-farmgate price is paid for a district, a province or even the whole country, the costs of transport being pooled and a uniform transport deduction being made per unit of throughput.

The effects of this system are seen most clearly in the case of a product like maize where a continuous exportable surplus is assumed and the producer price under the proposed pricing rules would be geared to the f.o.b. Mombasa price. Under this system a series of railhead prices would be established by deducting the railage charge from the f.o.b. Mombasa price and either making producers responsible for their own transport to the railhead and paying on a delivered railhead basis or by making a further deduction which varies either directly or proportionally with the distance of the producer (or the producers' market place) from the railhead and paying on a delivered-market place basis. At the moment a uniform railage deduction is made from all producers regardless of their distance from Mombasa and then the transport costs incurred in moving produce from local markets to FPB railhead are pooled in a district or a province and pooled between all producers in that area.

Thus at the moment producers nearest the Coast are subsidising those up-country and those nearest the railhead are subsidising those at a distance from the railhead. The potential magnitude of this income transfer is of considerable importance as Table 1 shows

Table 1 Transport deduction for producers located near railhead
Maize shs per 200 lb.

| Producers location | Existing pricing rules (Transport pool charge plus uniform rail deduction 1968) | Proposed pricing rules (Actual rail charge) |
|--------------------|---|---|
| Bungoma | 7/26 | 5/81 |
| Kisumu | 8/11 | 5/40 |
| Sagana | 5/91 | 3/59 |
| Konza | 7/96 | 3/31 |
| Mombasa | 13/26 | - |

Transport pool arrangements of varying types are in operation for most of the other major commodities and are great favourites of farmers' unions in all countries of the world. One feature in their favour is that they lead to some simplification of administration where producers have to be paid from a central organisation or where there are monopolistic tendencies in the transport system otherwise it would seem preferable on resource allocation grounds to make producers responsible for transport costs.

This in its turn would create a new income redistribution effect as it would increase the profitability of farming near market centres. If there were a well developed land market we would expect to see these locational advantages reflected in higher land rents in favoured locations and intensified land use in these areas. In the absence of this land market the resource allocation effect of removing transport pools is somewhat dampened because although there is an incentive for producers near market centres to intensify production there is no compulsion for them to do so. In the latter case a land tax based on locational and potential productivity factors might produce the necessary stimulus to optimal use of land, just as in the first case of a well developed land market a similar land tax, or even income tax could be used to cream off the economic rents accruing to the owners of the land with favourable location aspects.

The removal of transport pools also has the effect of contracting the extensive margin of production. This is one case where there may be a strong divergence between private and social marginal costs and some form of subsidy to remote areas may be justified.

If this divergence does occur it is probably desirable that it is a general transport subsidy which comes directly from the Central Government and not from certain other producers who just happen to produce the same commodity as those in remote areas.

4. Transfers from overseas consumers to domestic producers

This form of income transfer is becoming of less importance than perhaps it was formerly as it depends either on the exploitation of an overseas inelastic market, as was probably the case for pyrethrum before synthetic substitutes were discovered, or the presence of an overseas market controlled by quota arrangements so that supplies are deliberately restricted. If the ability to produce these commodities is restricted by individual producer quotas then the marginal revenue accruing to the producer may be above his marginal costs of production and this places him in a favoured position vis-a-vis other producers who do not possess quotas. As discussed in the Appendix, this income redistribution effect can be taxed away and to a greater or lesser extent it is for coffee through the export tax, but there is no similar tax for pyrethrum.

The haphazard nature of the income flows hinted at above leads one to question whether there is a rational approach to income redistribution within Kenya's agricultural policy, or whether these flows are created as by-products of other actions. For instance it does seem that income redistribution in the maize and wheat industries although deliberate in the past when producers had more say in setting prices at the present time is a temporary phenomenon and is purely the outcome of the policy of making the industries self financing. For beef the Government does seem to be gearing producer prices mere to export parity. The problem here is that, for a variety of reasons, the consumer price of beef can only be raised slowly. Whether the Government will modify the present pricing system in the dairy industry remains to be seen-dairy products in all countries create some notoriously complex pricing problems and at the moment the whole of this topic is under review. For pyrethrum and coffee the size of the income transfer is at present questionable due to changed marketing possibilities in the case of pyrethrum and increased costs of production and a lower world market price in the case of coffee. There are of course, income transfers associated with transport pool arrangements but it is doubtful whether a need for income redistribution was the reason for initiating the pools, although further research would be needed to verify this contention. This leaves us then with sugar as the sole major commodity in which there is an obvious and perhaps deliberate income transfer, but even in this case it could be that sugar manufacturers and producers are being protected on infant industry grounds. This would be confirmed if the ex-factory price of sugar was reduced to below import parity price levels as self sufficiency approaches.

We may safely conclude from this that it is unlikely that income redistribution is a major policy objective in Kenya's agricultural policy.

Is the agricultural pricing system an efficient method of achieving income redistribution?

Although income distribution may not be a deliberate policy objective in Kenya's existing pricing policy, it is interesting to speculate whether the agricultural pricing system could be the most efficient instrument to achieve income redistribution in a country at a similar stage of development as Kenya. There are two difficulties in analysing this problem. First, one is concerned with the major section of the economy & the secondary effects of income distribution are important but difficult to trace. Secondly for policy issues one is concerned with dynamic aspects of the problem whereas one can only clearly analyse the static issues. Thus the following comments should be treated as preliminary thoughts in a field of research which requires much more development.

The most likely aim of a Government in trying to achieve some degree of income redistribution is to reduce the urban-rural earnings differential. However there are possibly three separate motives for this action. First, it may be an objective on straight forward grounds of equity. Second the aim may be to slow down the rate of rural-urban migration to avoid the problems of urban unemployment. Third, the intention may be to generate more income and/or employment opportunities in the rural areas because of the anticipated rapid increase in rural population.

If the Government is concerned mainly with the equity consideration then the policy should aim at transferring income from the rich to the poor regardless of location. In Kenya, and probably in other countries, it is naive to assume that all urban dwellers are richer than all rural dwellers, or that all rural dwellers are equally poor. Moreover the method of redistribution usually chosen, namely a food tax and agricultural subsidy on an individual commodity basis is notoriously inefficient (e.g. maize) in achieving an equitable distribution of income. Although realising the practical problems, a more appropriate solution to the equity objective is a more progressive form of income tax, including perhaps some form of negative rate for the very poor.

The wisdom of redistributing income through the medium of the agricultural pricing system as a method of slowing down the rate of rural-urban migration is more difficult to assess. At a first glance, a tax on foodstuffs consumed in the urban areas with the proceeds directed to those areas where the propensity to migrate is highest might seem to be quite useful. However to be successful we would have to ensure that the higher cost of living in urban areas created by the tax acted as a deterrent to potential migrants. What is the possibility of higher food prices leading to increased wage demands by urban workers, with real incomes for urban workers remaining unchanged but with the higher wages being reflected in increased prices for industrial output? Furthermore, the form in which the food tax is remitted to the rural areas will alter its effectiveness. To be successful the proceeds of the tax have to get to potential migrants in a form which induces them to stay in the rural areas. Straight forward remittance in the form of higher prices for a few commodities may not be sufficient. Finally, the causes for migration are not sufficiently well known for us to be certain that closing the urban-rural earnings gap per se will prevent migration, and in any case one has to be sure that the subsidised persons are the potential migrants.

Will income redistribution help to generate more income and/or employment opportunities in the rural areas? This depends very much on the form of the food tax and the elasticity of demand for food stuffs. Whilst a general ad valorem food tax will raise rural monetary incomes if the overall demand for food is price inelastic, a food tax on a single commodity may reduce the quantity consumed if substitutes are available. One method which should ensure some generation of incomes for the rural areas is if a food tax is placed on a product with a relatively inelastic demand, and the proceeds of the tax are used to raise the producer price of a commodity with an elastic demand (e.g. an export crop)

Even so, there are limitations to the effectiveness of this method. In the first place, although we can expect some increase in total monetary incomes in the rural sector, the amount to which total real incomes will depend on the overall effects of the tax on the urban:rural terms of trade. Second, owing to the relative size of the urban and the rural populations, a high incidence of food tax is required to make any appreciable impact on rural per capita incomes.

Could we expect the introduction of the proposed pricing rules to have any beneficial effect on the urban/rural earnings differential and on employment both in the urban and the rural sectors? If the existing pricing rules are retained in Kenya producers will continue to be attracted to producing those commodities which yield the highest net return. These will tend to be those where the internal demand is sufficiently inelastic that domestic prices can be raised to a level to offset losses on exports or where production quotas are used to restrict supply. Besides its other defects, this system does not appear conducive to an expansionist agricultural policy. Using the proposed rules the cost of foodstuffs in urban areas will be export parity plus marketing costs, or equilibrium price plus marketing costs if the equilibrium price is above export parity price. The effect of introducing this change at the moment in Kenya should be to lower the cost of living in the urban areas. Urban dwellers may then spend a lower proportion of their income on foodstuffs or spend the same proportion either purchasing a greater quantity of foodstuffs or purchasing "higher quality" products (which may infer more nutritious products or products with a higher service content e.g. more convenient or more packaging). Thus in the short run we would not expect the flow of money income to the rural sector to increase, indeed it may even decrease. On the other hand, the decline in the price index for food shall reduce the pressure for wage increases and slow down the rate of increase in the price of goods and services produced in the urban areas, stabilising the cost of inputs purchased by the rural sector and to some extent redressing the terms of trade between rural and urban sectors. *wrap!*

In the longer run however, we would expect the lower prices of foodstuffs in the urban areas to lead to a higher percentage of incomes being spent on non-food items, so that manufacturing and service industries experience an increased demand. Concurrently in the rural sector application of the proposed pricing rules should have led to a reallocation of resources from the present pattern to one that leads to an increase in the real output of the rural sector. Whether monetary incomes in the rural sector also rise will of course depend on international price movements for agricultural products, but if the rural sector have been given good advice on likely price trends and assistance in becoming more flexible between commodities one would hope that total monetary income will also rise. Thus the use of the proposed pricing rules holds out the hope (if nothing more) that incomes and employment opportunities in both the urban and rural sectors will be encouraged. Whether this increases or decreases the rate of rural/urban migration remains in doubt. As stated earlier it could well be that the rural/urban income gap is not the critical factor in migration and that it is employment opportunities which are of importance. In this case the proposed pricing rules should assist the unemployment problem by increasing (slightly) job opportunities in towns but increasing rural employment opportunities, both farm and non-farm, even more.

Although the evidence presented here is tentative in the extreme, it does suggest that in the long run the policy which is likely to assist the development of the rural sector is in fact a policy which makes no overt attempt at income redistribution from the urban to the rural sector. For a country like Kenya which is fairly well advanced into the monetary economy, which has to rely on the agricultural sector for a large proportion of national product and foreign exchange earnings, and is not in serious balance of payments difficulties, the importance of achieving an optimum allocation of resources (in a dynamic context) is of paramount importance. Remote areas do present special problems but modification of the proposed pricing rules is not likely to be the most efficient method of dealing with this problem.

FOOTNOTES

1. In 1967, approximately 40 per cent of KMC's throughput was from about 200 established ranchers mainly in the Laikipia, Nakuru and Machakos districts. The larger portion of their supplies came from cattle traders representing numerous producers mainly from Nyanza, Kajiado and Machakos districts.
2. Recent calculation by T.J. Aldington from information presented in T.J. Aldington and F.A. Wilson (1968) The marketing of beef in Kenya I.D.S. Occasional Paper No. 3.
3. In the absence of any firm data, the import parity price is used here as an approximation for the equilibrium price. This will give a conservative estimate of the "true" income transfer.

A P P E N D I X

A Proposed Agricultural Pricing Policy for Kenya

Over the past few years it has become increasingly obvious that Kenya's existing agricultural pricing policy is both undesirable on economic grounds and becoming unworkable financially. The effects of the present pricing policies have led to pressures both to prevent further escalation in consumer prices and to halt the decline in producer prices. At the same time the Treasury is neither in a position to finance these losses indefinitely given the difficulties of raising sufficient Government revenue from the existing tax structure, nor even if it were would it be particularly willing to do so given the relatively favourable balance of payments situation.

This financial breakdown of the existing pricing arrangements has precipitated an interest in the creation of a pricing policy which is both workable and more suited to the conditions which Kenya is likely to face in the 1970's. Kenya is likely to have three major policy objectives which can be influenced by the agricultural pricing system. For instance given the projected population growth rate, the anticipated per capita real income increase and the rate of urbanisation, it is apparent that either domestic commercial food production will have to continue to expand at a fairly rapid rate or Kenya will have to import some foodstuffs in future years. At the same time Kenya may also wish to increase its foreign exchange earnings from agriculture by expanding production of those commodities in which she has a comparative advantage. To maintain self sufficiency and to expand agricultural exports would obviously call for a large increase in productivity from the agricultural sector and there could be conflict between the relative expansion of domestic or export commodities. In this case there might be strong pressure on political grounds to achieve self sufficiency at any cost whilst on economic grounds a more flexible trading policy might be desirable.

Second, in common with many other countries there is increasing concern within Kenya both with the apparent urban-rural earnings differential and with the related (but by no means identical) problems of rural-urban migration and urban unemployment. Both problems be aggravated in the future if the urban-rural earnings gap widens, and one imagines that it will be a policy objective to try to prevent this happening.

Third, as Helleiner¹ has recently argued, the growing demand for Government revenue may mean that more interest will be taken in taxing the agricultural sector and this tax aspect may be incorporated in future pricing structures.

These policy objectives are most likely to be met by a pricing system which aims solely at maximising the growth of GDP by achieving (in a dynamic context) an optimum allocation between agricultural commodities of those resources which are currently employed in the agricultural sector.

The proposed pricing rules

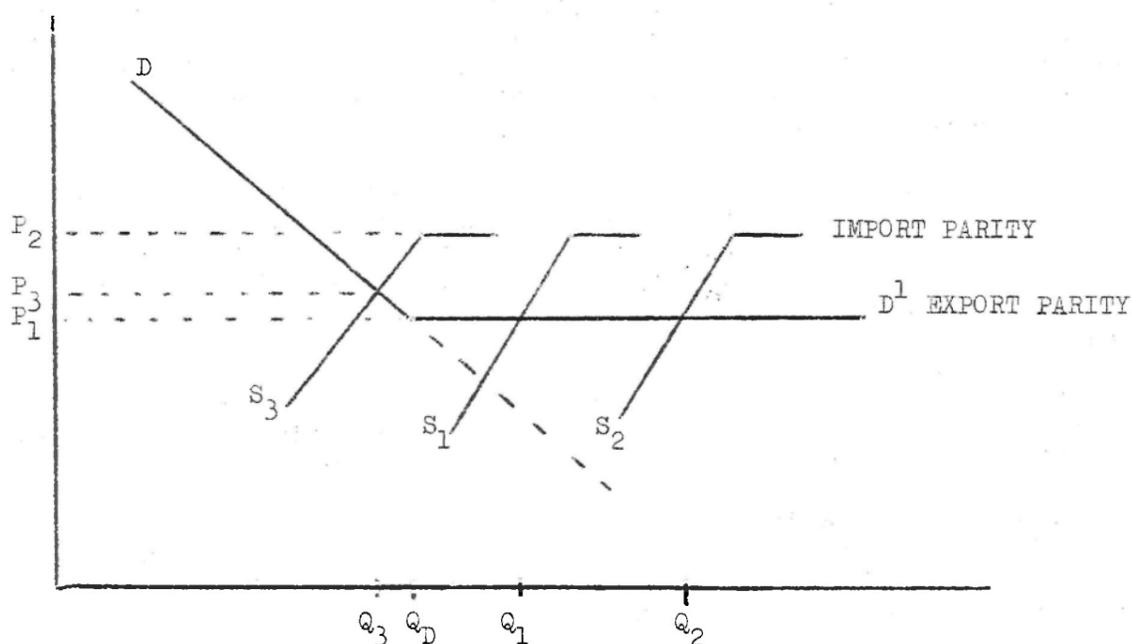
This optimum contribution of the agricultural sector should be achieved if for each agricultural commodity output is at a level where marginal (social) revenue is equated to marginal (social) costs, providing there is a purely competitive environment in the internal market both for the agricultural and the non-agricultural sectors. Although we assume as a necessary condition for optimisation that producers are price takers in the domestic market (they are not allowed to collude to exploit monopolistic power as this will distort consumer's preferences and lead to a non-optimisation of satisfaction), in export markets we require producers to act collectively to exploit monopoly power on foreign consumers wherever possible², as from a national point of view we are not concerned with the welfare of people outside Kenya.

The actual form of the pricing rule to be used to attain an optimum position varies with the type of market situation which faces Kenya, but virtually every situation can be covered by one of the four pricing rules which are developed below. These rules are presented in a simplified diagrammatic form and more sophisticated models may be required in practice.

A. Domestic demand curve downward sloping (elastic or inelastic), export demand infinitely elastic at the world market price

The domestic demand curve and the world demand curve (standardised on an f.o.b. basis) can be combined to form a total demand curve DD' (Diagram I). Let the supply curve be represented initially by S_1 , then Q_1 will be produced with Q_D being sold on the domestic market at price P and $Q - Q_1$ being exported at the same price. Thus providing the supply curve intersects the horizontal portion of the demand curve producer price should be set at the relevant export parity price in the different production areas.

DIAGRAM I

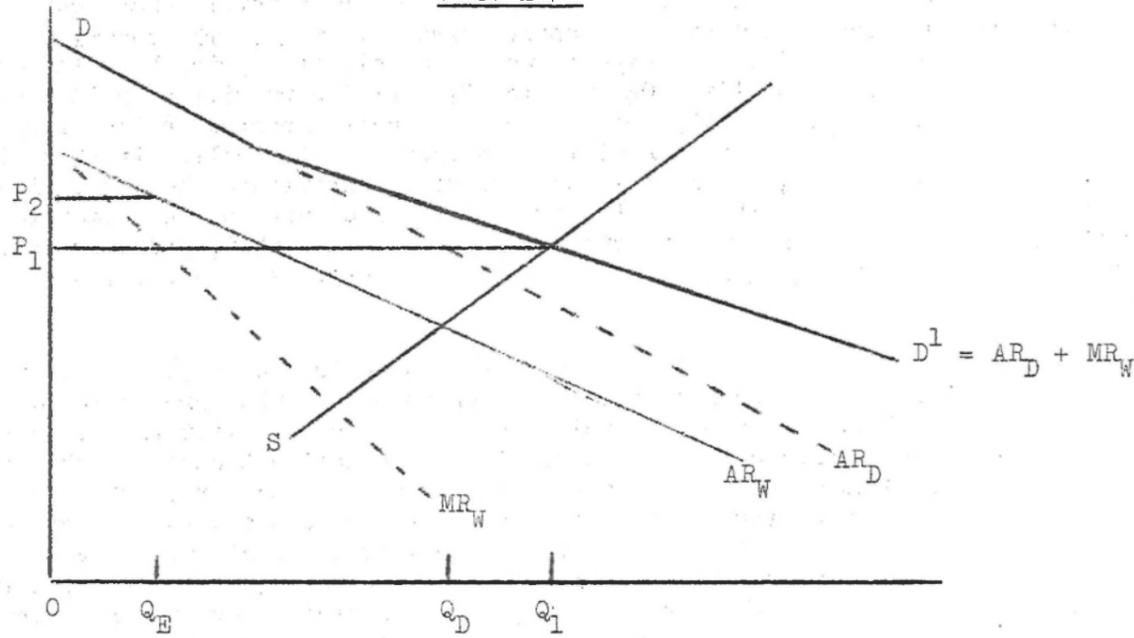


If the supply curve shifts to S_2 , Q_2 should be produced with Q_D again being sold on the domestic market but $Q - Q_2$ being exported. If the supply curve intersects the total demand curve to the left of Q_D e.g. S_3 producer price should

be allowed to reach its own equilibrium at P_3 and no produce should be exported. However, for any agricultural product the domestic producer price should not be allowed to rise above the long term import parity price for at this point it becomes more profitable to import that portion of total demand which domestic suppliers are not willing to produce at the import parity price. If the export parity price falls we would expect more to be sold on the domestic market.

B. Both Domestic and Export Demand Curves Downward Sloping

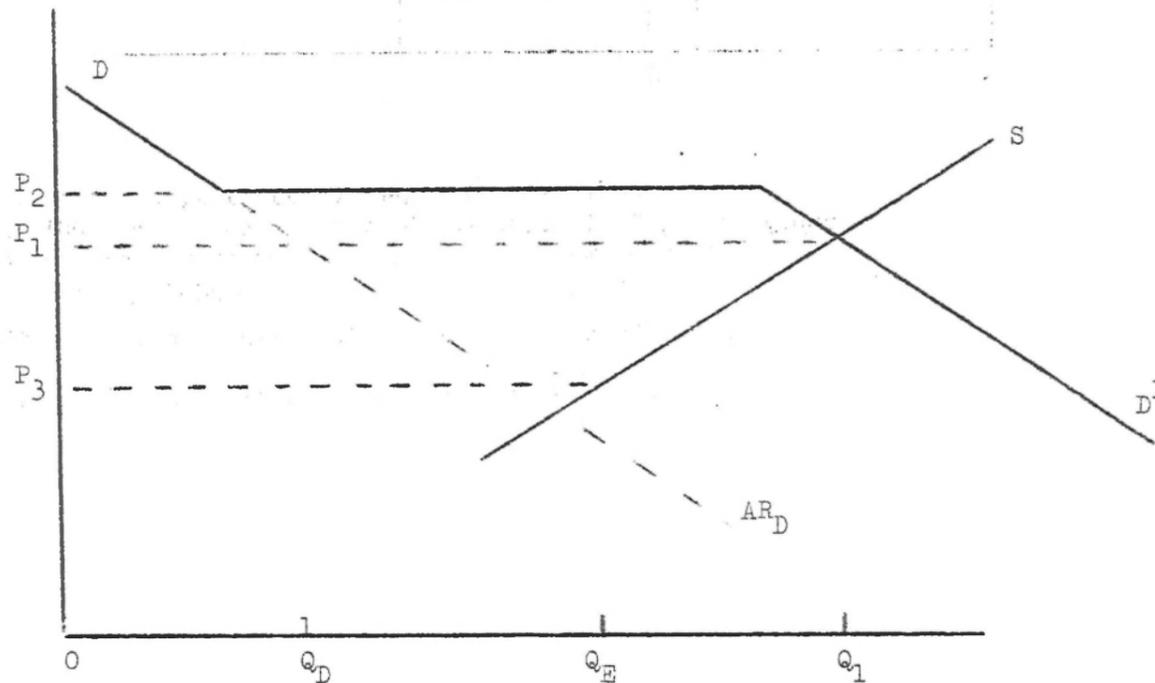
DIAGRAM 2



For the export market we are concerned with equating marginal cost and marginal revenue, whereas for the domestic market we are concerned with equating marginal cost and price (because for an individual price taker facing an infinitely elastic demand curve at the ruling market price marginal revenue will equal price). Thus our total 'demand' curve DD^1 (Diagram 2) is a summation of the domestic demand curve (AR_D) and the marginal revenue curve (MR_W) derived from the export demand curve. If the supply curve intersects this total 'demand' curve at Q_1 , Q_D will be sold on the domestic market at price P_1 and Q_E will be exported at a price P_2 . Producers should be paid the price P_1 , the monopoly price P_2 per unit of exports being contributed to general Government revenue. (If it were distributed to producers the pooled price would encourage a greater production than Q_1 i.e. marginal cost would exceed marginal revenue).

C. Export Market Restricted by Export Quotas

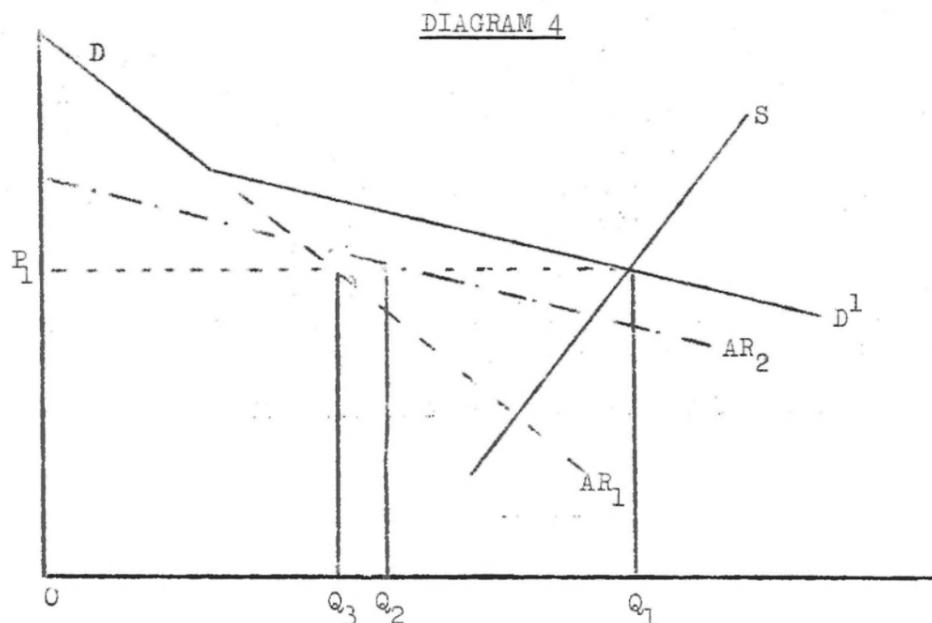
DIAGRAM 3



Let us assume that the export quota for a crop is fixed by international agreement at Q_E which can be sold at a price P_2 . Furthermore there is a domestic market AR_D . These two markets can be combined to form a total demand curve DD^1 (Diagram 3) which intersects the supply curve, S_1 at Q_1 . The quantity Q_{QE} will be exported to satisfy the export quota and sold at a price P_2 . The domestic market will receive a quantity Q_{QD} at price P_1 . Producers will be paid a price P_1 , the monopoly profit of P_1P_2 obtained on each unit exported being allocated to general Government revenue. A similar analysis can be applied if there is a non-quota export market, but in this case we would substitute the marginal revenue curve of the non-quota market for the average revenue curve of the domestic market. If there were no markets other than the quota market, producer price should be lowered to P_3 which will call forth a quantity just sufficient to satisfy the quota market.

Pricing policies which allow producers to retain the economic rent resulting from the artificial restriction of supply such as occurs when production quotas are allocated to individual can be criticised on two grounds. First they tend to shelter inefficient producers who can remain in production because of the artificially raised prices. Second they create a favoured group of producers. When there are technical reasons favouring the retention of quota systems and the direct payment to the producer of the full proceeds of the quota arrangements are unavoidable, these disadvantages can be lessened either by selling all quotas periodically to those producers offering the highest bids, or by placing a levy on producers equal to the economic rent obtained by a reasonably efficient producer.

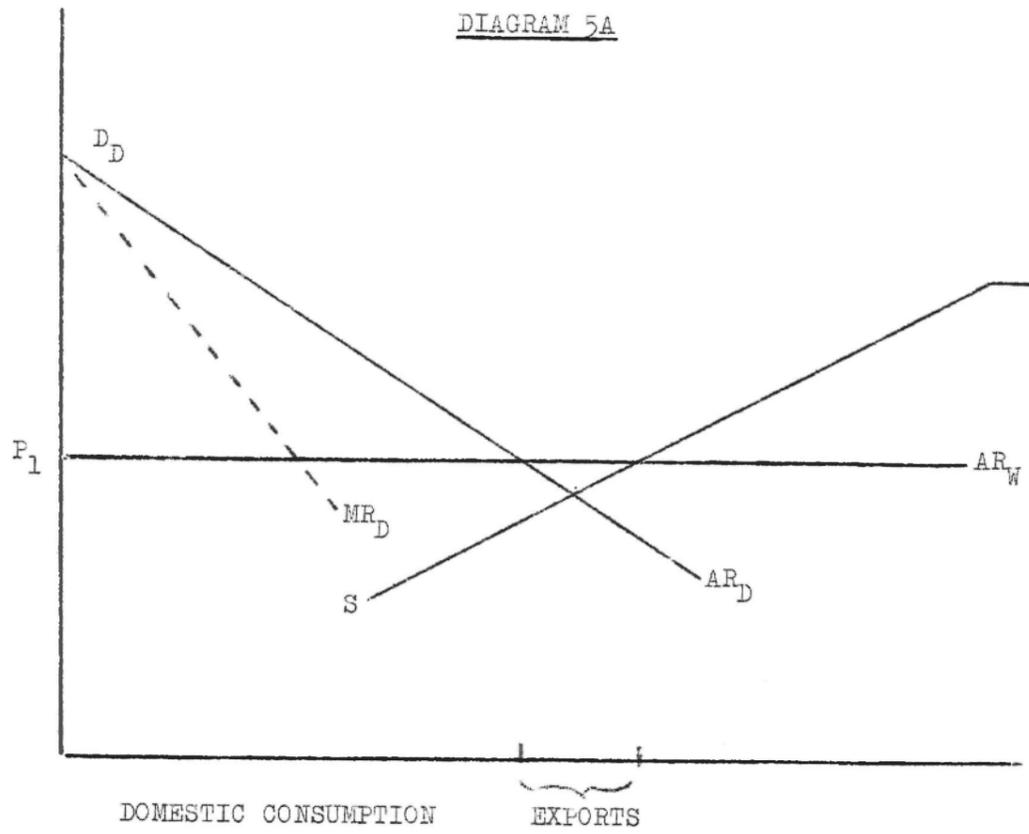
D. Two or more domestic markets



Producer price should be allowed to find its own equilibrium, or be set, at the point where the supply curve, S , intersects the total demand curve DD^1 in Diagram 4 formed by the summation of the two domestic demand curves AR_1 and AR_2 . At this produce price P_1 , Q_1 will be supplied, Q_3 being demanded by the market represented by AR_1 and Q_2 by AR_2 . No price discrimination between the two markets should be allowed, that is, producers should remain price takers.

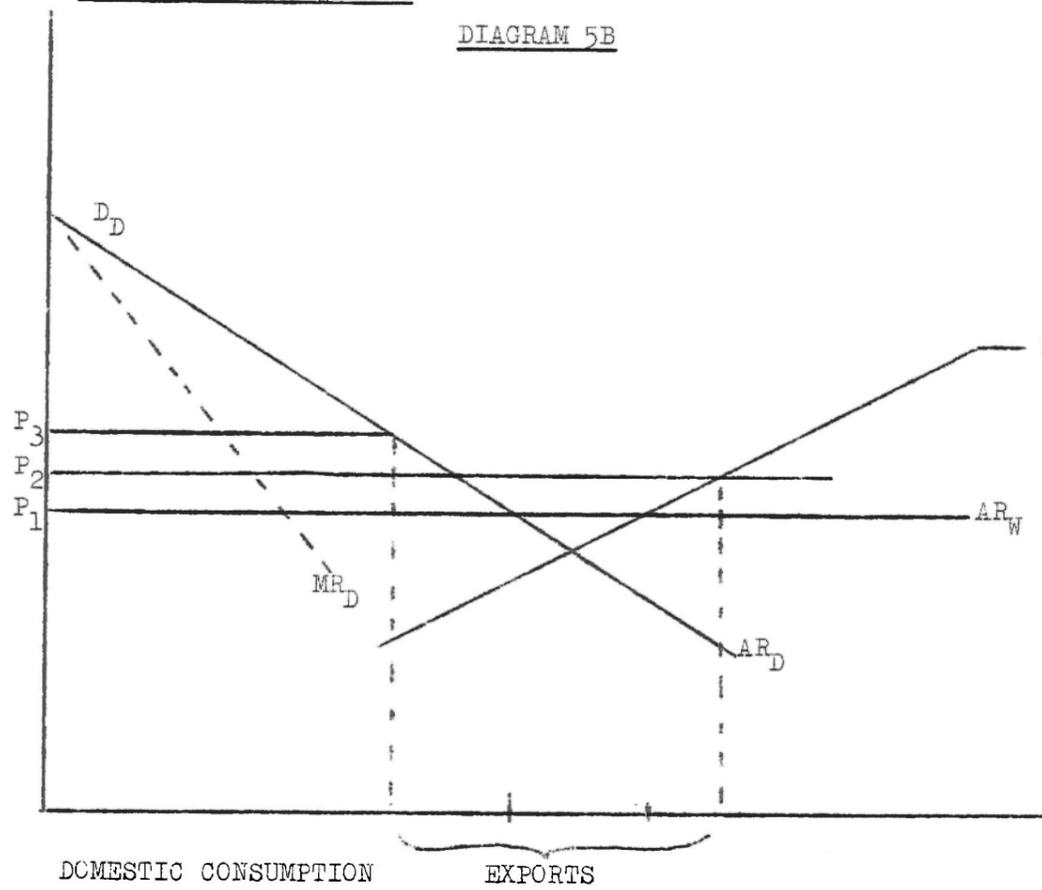
Proposed Pricing Rule

DIAGRAM 5A



Existing Pricing Rule

DIAGRAM 5B



Proposed pricing rules, existing pricing rules and policy objectives

Although all the intricacies of possible trade-offs between policy objectives will not be discussed here, the effect on some of the major possible policy objectives of moving from the existing pricing rules to the proposed pricing rules can be illustrated very clearly by the use of simple diagrams.

A. Domestic demand curve downward sloping, export demand curve infinitely elastic at the world market price

The proposed pricing rules are generalised in Diagram 5A and the existing pricing rule in Diagram 5B, AR_D representing the domestic demand curve, MR_D

being the corresponding marginal revenue curve. The export parity price is represented by P_1 . It is assumed that under the existing pricing rule that the producer price P_2 is set above the export parity price P_1 causing the domestic consumer price (net of marketing costs) to be raised to P_3 to compensate for export losses.

i Maximising contribution to national income

Studying the two diagrams it is obvious that the use of the existing pricing rule does not lead to a maximisation of real national income as an output is produced where marginal cost exceeds marginal revenue. It should therefore be possible to increase national income by diverting resources from this activity to others.

Only if the marginal social cost curve (supply curve) were lower than the marginal private cost curve (for example land and/or labour had no alternative uses) might the existing pricing rule be economically acceptable and consistent with maximising real national income. However one cannot assess the likelihood of this occurrence until the proposed pricing rules have been applied for a sufficient period to allow factor owners to adjust to the new situation. This adjustment process is hampered at the moment because the gap between export parity price and actual producer price varies from commodity to commodity.

ii Maximising foreign exchange earnings

For the individual commodity shown in the diagrams it appears that foreign exchange earnings are greater under the existing pricing rules than under the proposed pricing rules.

However part of this is caused by artificially restricting domestic demand in order to raise revenue which is transferred to producers. The other part is achieved by the diversion of resources from other activities. Now there are no a priori grounds for deciding whether these same resources used in other fields would have a greater or lesser impact on net foreign exchange earnings (i.e. they could be used in import substitution industries as well as for direct exports).

The Government could increase foreign exchange earnings from some products without disturbing the equation $MC=MR$ by levying a tax on domestic purchases of the commodity and its substitutes and banning imports. This would restrict domestic consumption and make more of the commodity available for the export market, whilst at the same time increasing Government revenue by the amount of the tax. Of course if the Government were really intent a maximising foreign exchange earnings it could ration the quantity of certain commodities consumed on the domestic market and these policies could be extended to a point where the whole output of a commodity was exported. One can imagine the effect on domestic consumers' satisfaction!

iii Maximising producers' revenue

This could be achieved by restricting supplies on the domestic market to that point where the marginal revenue derived from domestic sales (MR_d) equals the marginal revenue derived from export sales (P_e). This involves the maximum possible income transfer from consumers of this commodity to producers of this commodity. It could however increase or decrease the total domestic expenditure on agricultural commodities and would have important effects on the welfare and standard of living of consumers. Against this it would increase foreign exchange earnings compared to the earnings derived from implementing the proposed pricing rule. The existing pricing rule which aims solely at a 'break even' policy does not maximise producers revenue, and on a priori grounds one cannot state whether the existing pricing rules raise producers incomes above those which would exist if the proposed pricing rules were used this depends on the alternative uses to which the misallocated resources could be applied.

iv Maximising Government revenue

Helleiner has recently argued ⁴ "If the desire is to raise government revenues with a minimum of distortion of the incentives which would result in the absence of such taxes and a minimum of discrimination (inequity), an attempt should be made to achieve equi-proportionate taxes on each crop. What is a neutral tax system in this sense? This is by no means self-evident. It is best defined I believe, as one in which equal proportions of value added by the agricultural sector are deducted in taxes from each this is the same thing as total factor earnings in production - whether they are wages, interest, rent or profit"

This would seem to be most readily obtained in practice by the use of an constant ad valorem tax on all agricultural products. It would be difficult to obtain the same state of neutrality by imposing taxes on the existing pricing system.

v. Maximising consumer satisfaction

These methods of transferring income from specific consumers to specific producers by means of raising consumer prices have the same consequences on consumer satisfaction that the ad hoc application of direct taxes have - namely, they distort the pattern of choices open to the consumer so that his optimum choice of goods under this pricing system yields him less satisfaction than on equivalent tax yield taken as indirect taxation.

This system also creates problems of inequality if it is necessary to raise the price of a basic foodstuff, like maize, in order to offset export losses. In this case the effective incidence of the price rise is likely to fall most heavily on the poorest members of the community as the foodstuff will form a relatively high proportion of their household budget.

B. Both domestic and export demand curves downward sloping

The main difference between the existing pricing rule and the proposed pricing rule (shown in Diagram 2) is that the monopoly profit of $P_1 - P_2$ per unit of exports tends to be passed on to producers. In order to prevent this higher producer price encouraging a larger output which could only be sold on the world export markets at a lower price, thereby increasing the commodity's foreign exchange earnings but reducing its income, recourse is made to individual production quotas, leading to the problems which have been discussed earlier. The only redeeming feature of the present pricing rule is that the income transfer tends to be from overseas rather than domestic consumers to domestic producers of the commodity. Whether this is the best use of these monopoly profits is a matter for Government policy.

C. Export market restricted by export quotas

Again the existing pricing rule uses quotas to achieve the optimum output, the monopoly profits accruing to producers, whilst in the proposed pricing system the optimum supply would be obtained by lowering producer price, monopoly profits accruing to the Government. In the case of coffee the presence of an export tax creams of a portion of the monopoly profits. However this is not a very efficient system as the tax is specific but the price and output of the crop tend to fluctuate, thus there may be occasions when the producers' contribution is greater than the economic rent.

D. Two or more domestic markets

In this market situation, exemplified by milk and dairy products the existing pricing rule is extremely complex. However the essential features are that producers use their collective monopoly powers to exercise a classic form of price discrimination in the domestic market, charging the consumer a higher price for milk used in liquid form than in manufactured form. At the same time a three-tiered pricing system is practised between producers, "quota holders" "contract suppliers" and "non-contract suppliers" each receiving different prices for their production. Thus we have an income transfer from consumers to producers, but some producers obtain a greater benefit from this income transfer than others. Under the proposed pricing rules all producers would receive the same price for milk (before deduction of transport costs) and consumers would pay for products based on milk content plus manufacturing costs. The producer price might be above or at export parity price depending on the position of the producers' supply curve relative to the total demand curve. (It is recognised that the imperfect nature of the export markets for milk products might create a stepped demand function and lead to problems with the normal concept of export parity.)

To summarise, it is extremely doubtful if the existing pricing rules lead to a maximisation of real national income, and their effects on foreign exchange earnings are indeterminate. They undoubtedly raise the domestic consumer price of foodstuffs, but the extent to which they raise the total monetary income accruing to agricultural producers in Kenya depends on the price and expenditure elasticities of demand of various foodstuffs and on the alternative uses to which resources devoted to "surplus" production can be diverted.

A P P E N D I X

FOOTNOTES

1. G.K. Helleiner (1968) Agricultural export pricing strategy in Tanzania
East African Journal of Rural Development I, ppl-17
2. The opportunities for this type of action are now virtually non-existent as the demand curve facing Kenya for nearly all products is relatively elastic. Deliberately restricting supplies in order to raise world market prices may have accelerated the search for cheaper substitutes and synthetics.
3. It is assumed throughout these pricing rules that in order to achieve an optimum utilisation of resources producers should pay transport costs to the final market place. Some qualifications on this are given later. The concept of a single, unchanging world market price is admittedly naive - in practice it is customary to avoid rapid and large changes in producer prices, by view on the likely long term trend of world market prices. However in loing this one foregoes some of the short term gains which might result from more rapid switches from crop to crop.
4. Helleiner op. cit. p 11