The Marketing of Uncontrolled Grains in Zimbabwe

M. PILAZER

Kay Muir is a lecturer at the University of Zimbabwe
CONTENTS

i Introduction

ii The Millets - Munga and Rapoko. Small Farmer crops

ii The 1951 - 1963 experiment with millets (with graphs A-D)

iii Production Profile

iv Food use

v Nutritional aspect

vi Feed use

vii Physical production

viii Present Marketing Situation

ix Desirability of encouraging production

x Ideas for Improving Marketing Facilities

Barley - Large scale commercial farmer crops

i Production profile

ii Marketing - the present situation

iii Food use

iv Feed use

v Nutritional aspects

vi Physical production

vii Desirability of encouraging production

References

i Personal communications

ii Books, articles and reviews
Introduction

The three uncontrolled grain crops singled out for consideration are: Barley (Hordeum vulgare L.), Munga or pearl millet (Pennisetum americanum (L.) L. Schum) and Rapoko or bulrush millet (Eleusine coracana (L.) Gaertn.). There are other uncontrolled grains produced in this country, albeit in small quantities (e.g. rice, oats). Whereas information was scanty and scarce on the three covered, it was non existent for any other non-controlled grains.

Working on the information collected, the two millets (munga and rapoko) have been considered in the context of a communal land or small scale farmer, and barley as a large scale commercial farming crop. It is true, for instance, that large scale commercial farmers have produced millets in the past (see Dunlop, GMB annual reports 1951 - 1962), but the vast majority of the production of millets is firmly in the hands of the small scale farmer. The same can be said of barley and the large scale commercial farmer.

The 1951 - 1963 experiment with millets

From 1951 to 1963 the Grain Marketing Board (GMB) carried out a marketing experiment with the small grains. However it was deemed unsuccessful and Rapoko was decontrolled in 1961 and Munga in 1964 - leaving only Sorghum controlled out of the "small" grains.

The history of this attempt is outlined in graphs A - D. The data used are estimates only and although they are unreliable estimates it is considered that the overall trends and patterns are relatively accurate.

The picture is that maize was the dominant crop in terms of output, sales (the slight "setback" of 1964 was reversed in later years, see Muir 4/81) and percentage sold. It is, perhaps, in the percentage of output sold to the GMB that the crux of the matter is realized. This is that the two millets were never really considered both a cash and a subsistence crop as maize and groundnuts were and are.

(1) Muir (Working paper 6/81) brings up the point, backed with figures (page 17), about the reliability of crop estimates made by such sources as the Department of Native Affairs. However, as Muir points out, such estimates are the only series available. The fairly low yields per ha (when compared to the commercial sector) used in the production profile have been confirmed by more than one source (again, Muir 6/81).
Production generally increased over the years but sales, after peaking in 1956 and 1957, declined. Prices offered for the millets were not that different from maize (see graph C), and in fact rapoko prices were generally appreciably higher. Prices, it appears, were not a sufficient stimulus to cause the millets to move out of their production areas in the quantities (or percentages) of maize. Rapoko did respond to the high prices of 1956 and 1957, but as these were almost double that offered for maize, the prices were soon reduced.

The GMB faced severe fluctuation of supply and the stabilization of supplies proved difficult and expensive (in 1956 and 1957 the GMB imported 184,350 bags and 95,070 bags of rapoko from Kenya (GMB)). The GMB dropped the experiment as "unsuccessful" in the early 1960's (Dunlop). In looking at whether or not it is desirable to encourage production of these two uncontrolled millets the experience of the GMB, from 1951 - 1964, must be remembered.

Production profile

"During this century, maize (introduced into Central Africa by the Portuguese in the seventeenth century) has become a very important crop and has almost replaced millet as the staple food", (Weinrich).

This is amply demonstrated by the following table (table 1).

TABLE 1: Percentage of total area planted to 4 crops and the average yields (per ha)

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Maize</td>
<td>30</td>
<td>44</td>
<td>47</td>
<td>28</td>
<td>38</td>
</tr>
<tr>
<td>% kg/ha</td>
<td>351</td>
<td>501</td>
<td>686</td>
<td>535</td>
<td>756</td>
</tr>
<tr>
<td>Munga</td>
<td>18</td>
<td>116</td>
<td>14</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>% kg/ha</td>
<td>194</td>
<td>443</td>
<td>532</td>
<td>330</td>
<td>285</td>
</tr>
<tr>
<td>Rapoko</td>
<td>16</td>
<td>253</td>
<td>4</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>% kg/ha</td>
<td>326</td>
<td>485</td>
<td>815</td>
<td>504</td>
<td>615</td>
</tr>
<tr>
<td>Groundnuts</td>
<td>5</td>
<td>194</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>% kg/ha</td>
<td>194</td>
<td>326</td>
<td>364</td>
<td>400</td>
<td>379</td>
</tr>
</tbody>
</table>

Sources (all adapted) (i) 1948/49 - CSO Report 1951
(ii) Others - Whitsun Foundation, 1978

From this table we can see the four crops discussed here, collectively, claimed a 16% increase in area planted in the 28 years covered. One notes the diminishing area of rapoko and the increase in the other three crops. Maize, certainly for the last 12 years, commands a greater area than both the millets put together. It is interesting to note that whilst rapoko has consistently recorded higher yields per hectare, than munga, munga is a considerably bigger crop in terms of area planted.
One may now rank the four crops (in terms of area planted) and deduce that rapoko has lost favour, as a crop, and groundnuts has the largest increase. This sort of information is very important when considering if it will be advantageous to encourage production. The main advantage to the production of munga and rapoko is that they can be grown more successfully than maize in dry areas.

Food use

Table 1 implied that a figure like yield per hectare is not the only factor affecting production decisions. The uses and the production requirements will obviously have a marked effect on the amount and for what reason, a crop is grown. Examining such factors as possible usage can help us reach a decision on desirability of promotion and it may also indicate the path along which a marketing improvement effort can best begin.

"Though displaying some peculiarities, all grains are rather similar in the kind and amount of nutrients they contain, and in nutritive value" (Jasnay) (See also Oliver). As such, then, there should be little or no difference in demand for various grains (possible exception of oats) on nutritional grounds. However, the fact that demand, expressed in area planted, differs for each grain indicates that people have different uses, and therefore a possible priority listing, for the different grains.

Grains, for human consumption, can be used in the form of porridge, flat-bread (unleavened), bread (leavened) and beverages. Jasney gives an expanded explanation of the various products. In Zimbabwe, grain porridge is very much part of the daily diet for a large percentage of the populace. Weinrich claims that "... most Karanga prefer maize to millet porridge". However Weinrich did report that, in the Karanga area she investigated, the closer a farmer came to complete subsistence so the percentage of millet grown rose. Master farmers definitely grew far more maize (as a cash as well as a subsistence crop) than millet.

I found a definite lack of information as to exactly what farmers, who grew the two millets, did with the produce. Johnson remarked that the two millets were highly important food crops and Oliver remarked that they are used for "food and beer making". Weinrich quoted earlier, remarked that maize has almost replaced millet as a staple food — both in porridge form and as a "green" vegetable (which millet cannot be eaten as). Mr. Gapare, president of the Master Farmers Association, felt that there is a definite switch to maize as the main food crop. This was due to many factors including the fact that millets, especially rapoko, are harder to grind and prepare than maize. With millets the hust, or hull, has to be removed, and then the grain fried, then ground, then made into a porridge. Definitely more work than maize (Mr. Gapare). Rapoko beer has a distinct taste that is not enjoyed by all. An interview with Chibuku's (brewers of traditional beer) local production manager revealed that different grain malts are used in different areas to suit local tastes. For instance in Harare maize and sorghum malts are used whilst in places like Hwange or Rusape rapoko is preferred. Johnson reported that rapoko malt gave beer a distinctive flavour only really popular in the Eastern Districts.
From the food use aspect millets have waned in popularity as food. Would a marketing promotion of the millets' be fighting an uphill battle against an irreversible decline in consumer demand? Obviously an important question.

The Nutritional aspect

Already remarked upon is that most grains are very similar in nutritional status and therefore, from a nutritional aspect there is little to be gained by promoting one grain over another. The danger lies when grain crops, like the millets, are promoted instead of the more energy rich crops (like groundnuts and other legumes). The Children's Supplementary Feeding Programme in Zimbabwe showed that there is a serious mal- and undernutrition problem in the 1 - 5 year old age group. (See the abstract and report on programme - Ministry of Health, 1982).

Childhood nutritional problems often revolve around energy intake. Until recently kwashiorkor and marasmus were seen as opposite ends of childhood malnutrition - protein deficiency and energy deficiency, respectively but the idea that the conditions are separate and distinct has come under question. Although exact protein and energy requirements of a young child are still to be finalised beyond question, there is a growing feeling that most Third World children receive enough protein for their requirements. The problem is lack of energy to utilise it (Waterlow and Payne).

This is where grains, including the millets in question, become a problem, as they have relatively low energy concentrations. Staple foods prepared from cereals and root crops typically have a crude energy density of 9 kcal/gramme. This means a one year old child would have to eat a kilogramme of food each day simply to meet his energy needs (Morley and Herman). The problem, then, is one of bulk. Protein and carbohydrates provide about 4 calories (per gramme) of energy as opposed to fats/oils, which provide about 9 calories per gramme (Dr. Sanders - personal communication). Often a small child cannot eat enough of the bulky grain porridges to satisfy energy and other requirements.

The concept of nutrition is very important when considering the promotion of any crop. Large areas of this country are planted to grain and often we experience a surplus in many areas. Yet distribution and many other problems make such programmes like the Children's Supplementary Feeding Programme essential. From a nutritional point of view, it would, therefore, seem better to promote legumes and vegetables, than another type of grain. Groundnuts would best fulfill nutritional requirements and appear to have fared well as both a cash and a subsistence crop.

Feed use

We have shown that millets may be a "less preferred" food for humans mainly because of the change in taste patterns and the difficulty in preparing them. Livestock are not always given a choice of grain preference. Oliver felt that munga and repoko make adequate ingredients in a feed ration. Basing his recommendations from a variety of sources, Oliver stresses the idea that neither millet should be given as a complete
and total ration and both have to be ground before being offered. Calder was reported as showing both to have counter-effects to maize's softening effect of depot fat in pigs. Munga should not be fed to breeding sows when ergot content is high (as in wet seasons) as it may affect milk production. Rapoko has a lower nutritive value for steer fattening than munga or maize and should not take up more than 50% of any ration (Oliver). As Ward comments, stockfeeds can "create a useful economic outlet for these grains (the millets)", though he cautions against their being grown at the expense of maize or sorghum "... as the yield potential of millets is generally lower". (See table 1). This is mainly because there has been little research on hybrid varieties and also because these grains tend to be grown in low-re rainfall areas.

Physical Production

In Tanzania millet, sorghum and cassava "... are grouped together as drought resistant staples ...." As such they are seen to play an important role in providing food in semi-arid and drought stricken areas. Production, it has been recommended, should be "vigorously" promoted to try and attain some measure of food self sufficiency, even in bad years (Agric. Price Review - Tanzania).

Mr. Gapare commented that amongst master farmers the millets are encouraged for personal consumption but that there is a big switch to maize for consumption/demand reasons (see section on food use) and due to production and management problems, arising from processing these crops. Johnson reports that rapoko is fairly drought resistant, once established, and can give a "reasonable" yield on as little as 380mm of rain. Maximum yield, he remarks, "... requires unrestricted moisture availability about 10 weeks after germination, i.e. in January or February". He felt that rapoko is more commonly grown in the "wetter" regions of Zimbabwe (e.g. Natural Regions II and III). Etasse reports that early maturing pearl millet (munga) needs about 350mm of soil moisture for a cultivar with a maturation period of 90 - 100 days. Millet yields are lower than those for maize but they will survive under drier conditions than maize and are grown mainly as an insurance crop in those areas which are subject to severe droughts. Obviously millet yields will be higher in good years but their main advantage is that they will survive and produce some output in much harsher conditions than maize. Soils can be of a poorer quality than those required for maize although the best yields are still obtained on better soils (Johnson; Weinrich). Tillage is always worthwhile and, being of small seed size, a fine seed bed is required. Both millets respond to fertilizer, but excess application can lead to rank growth (Johnson; Etasse).

The production problems arise in weeding and harvesting. Most farmers will broadcast the seed and this also requires a transplanting and thinning operation. Neither millet can stand much weed competition but it is apparently difficult to distinguish the rapoko grass weed from the crop until about 3 - 5 weeks. Then weeding can take as much as 30 man days per acre (Howden, as reported by Johnson). Mr. Gapare commented that a minimum of two weedings is necessary to make the crop "worthwhile". Howden stated that harvesting, done by hand cutting implements, can take 15 - 20 man days per acre. Rapoko can be left in the fields after the...
rains as it does not shatter, making harvest timing less critical. The millets also require threshing after a suitable time drying in the sun.

The main advantage of millets in terms of production is that they can survive harsher conditions than maize - they can survive when grown in poorer soils, with less rain and they have a shorter growing period. Their major disadvantage is that they are very labour intensive and may create labour bottlenecks for weeding and harvesting. Their low yields even under reasonable growing conditions are another drawback but in this area it is possible that research into hybrid varieties which retain the drought resistant qualities of these millets may make the crops more attractive.

Present marketing situation

A peasant farmer can sell his munga or rapoko if he so wishes. All firms that deal with stockfeeds will purchase the millets. Munga is used for stockfeeds. National Foods Ltd. purchased 40 000 bags (91 kg) in their Northern Region, at $7 - $7.50 per bag, in 1981. Farmers Co-op (Mashonaland will pay $6 - $6 per bag though they only use it occasionally and claim both millets are "difficult" to use. Blue Ribbon also uses it for stockfeeds. Rapoko is used to make the malt for traditional beer. National Foods paid $12 per bag and bought 7 000 bags in 1981. Farmers Co-op is currently paying $8 a bag. (All from personal communications with various company representatives).

All firms described supplies as adequate and sufficient to meet needs and none had plans to expand supply. Supplies were brought either into Harare or deposited at a company depot in the rural areas. Traders very often act as middle men, buying odd amounts from farmers then delivering it to the depot. As such it would be fairly safe to assume that few farmers would receive the prices mentioned above.

Desirability of encouraging production

As the production profile, food and feed use showed us the two millets are still important and useful crops in this country. However, historically, GMB's attempt to market part of the millet crop (as a residual-buyer) was a failure. The two millets are not nutritionally essential, compared with other grains and the GMB already provides marketing facilities for two grains (maize and sorghum). The physical production aspect showed up many difficulties and could be cited as reasons for not encouraging production. According to Mr. Gapare, the Master Farmers Association seems to be taking this view and are more interested in cowpeas, nyemo beans, sunflowers and other non-cereal crops. The other problem in encouraging production is the question of demand. Millets are not a preferred food crop and if large surpluses were generated it may not be possible to sell them.

If agricultural researchers are able to breed varieties which would increase yields whilst maintaining or even improving the drought resistant qualities of millets, it may be important for a marketing
organisation to try to promote demand for these products. Large parts of this country which are unsuited to maize production, grow maize both because it is a preferred grain and because in good years when there is a surplus, the surplus can be profitably sold. In poor years, however, farmers growing maize in these areas are exposed to food shortages and possible starvation. It may, therefore, in future years be important for research and marketing campaigns to concentrate on producing and popularising acceptable foods from millets.

However, under present conditions it is not certain that a marketing improvement programme, aimed specifically at the uncontrolled grains, would be the best use of scarce resources (which always seem to be in demand elsewhere). The uncontrolled grains should perhaps be integrated into wider schemes aimed at all of the uncontrolled crops. The last section of this paper, therefore, deals with marketing of food crops in general.

Ideas for improving marketing facilities

Jones lists five points that a marketing system should be expected to overcome in Africa. These are 1) Basic lack of organisation, 2) Nature of African society, 3) Inadequate demand, 4) Inadequate physical and institutional infrastructure, 5) Exploitative activities of middlemen. I feel that these points, basically, may be used to sum up the situation facing us here in Zimbabwe.

Perhaps the most pertinent point to remember when considering any idea for marketing in the rural, or communal area is that any scheme will be operating over a fairly large area (unless it is very restricted in aims). Also to be dealt with is the fact that a large number of farms are about 5 hectares in size (see Weinrich and C50 1952). Therefore the amounts of produce that each farmer would want to market would be limited (especially when compared to the commercial sector). The sum total of produce may be large but scattered over many farms.

In such a situation the basic organisation of marketing must be of an efficient nature. The problem is how do you go about improving and unifying the markets? Is every aspect of marketing controlled by some authority? Do you include prices, because, although price factors are closely interlinked to marketing factors, they can theoretically be considered distinct (Dunlop). However such is the importance of prices in the marketing of produce that it would be difficult not to include some price involvement (see Wilson; Fleetschner; and Tanzanian Agric. Price Review).

However the involvement of price in an attempt to improve marketing need not be of a rigid and fixed nature. Organisational involvement can range from merely an informative role to rigid control of virtually every step. For instance an authority could run at least one stall in each market with price tags clearly labelled (FAO, 1962). Such a stall would act as a guide for all parties involved in the rest of the market. An
authority could also help the farmer make his goods more marketable by helping him grade and pack his produce in a manner indicated desirable by consumers. The authority could also indicate the price a farmer should expect to receive either locally or further afield.

Another important aspect is that of transportation and the roads used to convey produce from farm to market. The roads are important because poor roads result in more vehicle wear and, therefore, greater expense per distance. Any road building or improvement programme almost automatically helps marketing (FAO, 1962). The actual vehicle fleet situation is quite problematic. It is difficult not to be aware in this country of the shortage of vehicles and of spares and skilled labour to maintain them. Perhaps an authoritative body could run a produce "taxi" in certain areas. This would periodically go on a round trip collecting farmers and produce to take to the nearest market. The farmers could pay a fee for such a service. Even if an official body cannot run such an enterprise they could perhaps "sell" the idea to a few entrepreneurs whose rates could be fixed, like passenger taxis in town. To facilitate such an idea the vehicles used should be standardised. Repairs could, perhaps, be undertaken by some government agency until private enterprise is sufficiently established to take over (again repairs and spares on a standardised fleet can be more easily cost regulated).

Another problem is one of storage. Often a farmer has produce to sell when consumers are not willing to buy. An official body (local government or central) could set up storage facilities at the markets. Integrated into such an idea could be the grading and packing system mentioned earlier. Perishable produce could be stored in a cold room which the farmer may not be able to afford himself. Such a "depot" that graded, packed and stored a farmer's produce could also act as "brokers" finding buyers for the produce further afield who would either pay more and/or accept larger quantities. Groups of farmers could easily join together and have the "depot" sell their produce altogether. Again the standardised grading would facilitate such an exercise. All such services need not be free, a fee, either set or on a sliding percentage scale, could be charged. Thus a farmer would pay for a marketing service and be entitled to expect good service in return.

If official bodies are reluctant, for various reasons, to enter such a field permanently they could arrange with a group of farmers to act as "initiators". Credit could be more easily arranged and supervised in a group situation like this, then on an individual farmer's basis.

The actual market places themselves, where such marketing 'co-operatives' could be centred, offer official bodies another chance to actively help marketing. The actual placing of markets is of great importance. "Great foresight is needed in determining their (market place) location" (FAO). There is a scheme to establish "growth" centres in our rural areas (Whitsun Foundation). An appropriate market place, properly set out with facilities like storage and information (already mentioned) could easily be set up at such centres. The periodic market concept would be most useful in outlying areas where investment in permanent infrastructure is not warranted. Whatever system is adopted to help production via
better marketing it should, I feel, be allowed a large amount of flex-
ibility in all spheres to meet different situations in different locations.
Certainly a constant monitoring role would be required of both local and
central governments, backed by the ability to step in and alter any faults
so detected.

BARLEY

Though Muir (6/81) gives yields for barley obtained from the peasant
sector from 1974 to 1979, I have been unable to find any reference to area
planted, usage or even general mention of the crop being grown in the
communal lands. Therefore I will treat barley as a large scale commercial
farmer's crop, grown in winter under irrigation.

Production profile

From 1890 - 1940 barley was grown mainly as a winter fodder crop, along
with oats, and only small amounts were used for malting (see Muir, 1/81). As
wheat production capacity has risen since then, so naturally (since
they are both winter irrigated crops) has the production potential for
barley.

In 1974 only 4419 tonnes of barley was produced by large-scale farmers
and in 1980, 24 122 tonnes were produced. This increase was reflected
in both area planted (1358 ha in 1974 and 4773 ha in 1980) and in yield
per hectare. The number of farmers growing barley almost doubled in the
same period (C50, 1981). As a winter grain crop, grown by the large-
scale commercial farmers, barley appears to be about one-seventh the
importance of wheat, in terms of area planted. In 1979 the wheat crop
had a gross value of some $18 million and barley $2,5 million (Muir
4/81, Table 4)

Marketing - the present situation

Information and data were scarce but it would appear that National
Breweries are the largest single buyers and users of barley in this
country. The maltings plant of the breweries works out the tonnage of
barley they think they will require based on predictions of demand for
their products (basically beer). Pro-forma "invitations" are then sent
to farmers (generally the breweries "know" their farmers) who return
these indicating the amount they wish to grow. Farmers pay all inputs
and pay transport to the nearest railhead. The maltings arrange bags
(generally hired from some company) but the farmers must pay the carriage
to their farms.

Prices paid to the farmer are completely uncontrolled by any government
authority. However barley does have a 0,5% levy and is considered an

The breweries generally aim to set a price that makes barley as profitable (equal profit margin) as wheat. In 1982, for example, farmers who receive a contract to supply from the breweries will receive $184 per tonne (naked, Grade A), which is 3.6% below the wheat price of $190 tonne, offered by the GMB. Those farmers who do not secure a contract to supply barley from the breweries can sell it to them but at a non-contract price. 1981 saw these non-contract prices 10% below those of the contract prices (Agricultural Economics and Market Report, June 1981.)

The residue (dried brewers grains) is sold to stockfeed companies on a tender basis. The residue is much in demand for stockfeed as it is of high quality.

The breweries claim they have no supply problems (outside supply being affected by weather) and could easily "almost double supply". In fact a quota system is often introduced by the breweries. Some farmers are willing to grow barley even without the surety of a contract, hence the non-contract prices. This seeming popularity amongst farmers for growing barley will be discussed in physical production.

Food use

Barley is used "... almost exclusively in Asia and Northern Africa, for food in the form of flatbread or porridge. Another important use is for beer ...." (Jasny). Whether or not barley would be an acceptable staple food in this country is something of an academic question since it must be grown using irrigation. Physical production problems, lack of consumer interest and lack of knowledge of barley's existence account for the lack of interest in this crop in the communal areas.

Malting barley needs to be of a much higher quality than barley used for anything else. Jasny (1940) says "... that in the economic sense it may be proper to speak of two different grains (malting barley and ordinary barley)". This is essential to bear in mind if one is thinking of promoting the crop in communal lands. The farmers, due to lack of input and irrigation, may be unable to obtain malting quality barley. Thus if they produce ordinary barley, a food or feed outlet must be available.

(1) All information on marketing via the National Breweries comes from a personal communication with Mr. Kennedy, unless otherwise stated.
Feed Use

Barley is quite a good feed crop, being only slightly less palatable than maize and, apparently due to its hull, contains about 4 – 5% less digestible nutrient than maize (see Jasny and Oliver). Brewer dried grains are considered good feed value and have a higher (more than double) and better quality protein than maize. Being very fibrous only small amounts are suitable for pigs (Oliver).

Physical production

According to Mr. Kennedy (National Breweries, personal communication) farmers like to grow barley as a winter grain crop, as opposed to wheat, as it is hardy, less susceptible to disease, has a higher yield and requires less input than wheat.

Certainly Jasny supports the hardy aspect, claiming only millets surpass it as a drought resistant crop. "As a winter crop barley has no rivals in dry conditions". Jasny stresses that high nitrogen content in the soil means high protein content in the barley, which is "undesirable" for beer production. Hence the reduced input requirement, at least for fertilisers. From 1976 – 1979 Muir (6/81) records that barley farmers all had higher yields per hectare than wheat, and these ranged from a peak 19% to a low of 3% more barley per hectare than wheat.

Desirability of encouraging production

Both wheat and barley as winter irrigated crops provide an "outlet" for resource use during Zimbabwe's dry winter. However the irrigation resources are scarce and expensive and, therefore, it is essential that a crop that will serve both the farmer and the country be promoted.

Barley, with its favourable physical production factors, would seem a logical choice to promote. But one must remember that, given the restricted resources available, promotion of barley will most likely mean a reduced growth rate, stagnation, or even reduction, of wheat production.

Wheat is an essential crop, used in making leavened bread, for which no other grain crop can be used to produce a product of comparable quality (Jasney). Given a rising demand for bread, especially from the lower income urban workers (due to increased minimum wages and other such factors), wheat will have to be imported in ever greater quantities, if a policy that causes wheat production to remain static, is followed.

One could claim that barley could be grown and exported in exchange for wheat. A "comparative advantage" situation, working with a country where wheat growing is "easier". 1979 saw barley malt being exported to the value of $2,89 million (Mvix4/81).

However I am personally against any policy that leads to the lessening of Zimbabwe's "food security profile", i.e. makes the importation of a basic food a necessity. I believe that, due to political and geographical considerations, the expansion of wheat as a winter crop, is more important than barley.
The current marketing situation shows that enough barley is produced for malting (and even export) and that it can quite easily be obtained. The system appears to be working and the commercial farmers, via such quasi-political bodies as the CFU, is in a rather strong position to alter any faults in the current marketing system.
REFERENCES

Personal communications

1. Mr. Pigate  GMB, Harare (Head Office)
2. Mr. Fernandes  Farmers Co-op, Harare (Purchasing)
3. Mr. Kennedy  National Breweries Malting Plant, Kwe Kwe
4. Mr. MacCarthy  Blue Ribbon Foods, Harare (Head Office)
5. Mr. Kind  National Foods, Harare (Head Office)
6. Mr. Gapara  President, Master Farmers Association, Harare
7. Dr. Saunders  Children Supplementary Feeding Programme, Harare

Books, articles and reviews


Fleischner, -. 1971. Structural Patterns in Marketing of Selected Agricultural Products in Chile. Univ. of Wisconsin, Madison.


Jasny, --. 1940. *Competition amongst Grains*. Food Research Institute, California.


