The Ethiopian Pulse Industry
A Situation Paper
February 1976
EPID Publication No. 32

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This paper is descriptive in nature and is intended to establish the position of the Ethiopian pulse industry in 1975-76 at the start of the Pulse Project that is being administered by EPID with financial and technical assistance from USAID. By examining the current situation, it is possible to evaluate the base from which the project takes off; then at a later date, it should also be possible to measure more objectively the progress that may have resulted from project activities. A further purpose of this report is to shed light on trends and prospects that may influence the development of the pulse industry; also, to assist in adjusting the Pulse Project activities to meet current and future needs.

In approaching the subject matter, the co-authors decided on a general division into two parts with production being treated largely by Charles T. Hash and marketing being handled mostly by Charles W. Peters. This division was not a strict one, however, and there was constant exchange of ideas and information. The contents of the report have been drawn liberally, but not wholly, from the considerable number of sources available; most of them are listed in the "References" section. At the time this report was prepared, it was not practicable to give more than casual consideration to the findings in EPID's special baseline survey of extension agents and farmers. The final
results of this survey, which was designed to obtain detailed information on several aspects of pulse production and marketing, are expected to be available separately sometime later in 1976.

Notes: Specific sources are generally not cited in this paper; however, they are mostly listed in the "References" section following Part Two of the text.

From 1965 to 1975, the exchange rate has ranged from E$2.07 to E$2.50 to one US dollar; since early 1973 the rate has been E$2.07 - US$1.00.

One quintal (qt.) = 100 kilograms.
PART ONE

THE PRODUCTION BASE
I. INTRODUCTION

Pulse crops of some form are grown in almost all, if not all, of the traditional farming areas of Ethiopia; they are mostly found in the highlands where they are basic in the crop rotations. With few exceptions, pulses are viewed as subsistence crops being sold only in small quantities when the farmer is in need of cash. In recent years, prior to nationalization of farmlands, attractive prices prompted a lively interest in haricot beans among the then growing commercial farming sector of the Rift Valley area. Apparently, many small farmers in this area also entered the production of haricots as a cash crop. Production of other pulses remains almost exclusively in the peasant sector although these crops are at times among the more important enterprises of the small producers; e.g., lentils are highly concentrated on peasant farms in northern Shoa. Practically all of the peasant farmers who are producing the great bulk of pulses in Ethiopia are using the labor-intensive, traditional cultural practices which include much hand work, as well as harvest-run, uncleaned seed and little or no chemical fertilizer and insecticides/herbicides. Improved practices, including mechanization, were being increasingly employed on some of the larger scale, commercial farms that were growing haricot beans in particular.
II. LARGE SCALE PRODUCTION

Production of pulses in the former commercial farming sector can conveniently be thought of as being confined largely to haricot beans, mainly under rainfed conditions in the Rift Valley area. Illustrative of the fact that other areas were also producing haricots; some 430 hectares of these beans were grown on the Ministry of Agriculture and Forestry farm in the lower Didessa Valley in 1975. The concentration of lentils on some peasant farms might also reasonably be viewed as commercial farming on a very small scale.

Cultural practices on the large farms were a combination of the modern and traditional. The seedbed was, in most cases, prepared by using mechanized means with the seed being broadcast or row planted depending mostly upon the availability of equipment. Haricots were sometimes interplanted with maize. Harvesting was done by hand but tractor trailers were often used to haul the crop to the threshing areas. The beans were usually threshed by driving over them with a truck or tractor, by having a group of oxen tread on the crop, or by using hand flails. The straw was removed and the beans winnowed by using traditional hand tools. The "clean" beans— including some straw, chaff and threshing floor debris— were then bagged and removed to the farm storage or to the market via truck or farm trailer.

The land reform proclamation of March 1975 brought an end to private, large scale commercial farming, but some of the former commercial
farms in the Rift Valley continue to be operated under the auspices of the Ministry of National Resources as units of the Rift Valley Lakes Farm Development Corporation (a public enterprise).\(^1\)

Estimates of the hectarage of haricots in 1974 and 1975, as well as of the yields and total production, are given in Table 1.

Table 1: Estimated Area, Yield and Production of Haricot Beans on Large Scale Farms in Ethiopia 1974/1975*  

<table>
<thead>
<tr>
<th></th>
<th>1974</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (hectares)</td>
<td>3,000 - 3,500</td>
<td>1,200 - 2,300</td>
</tr>
<tr>
<td>Yield (qt. per ha.)</td>
<td>6 - 7</td>
<td>8 - 10</td>
</tr>
<tr>
<td>Total Production (MT)</td>
<td>18,000 - 24,500</td>
<td>9,600 - 23,000</td>
</tr>
</tbody>
</table>

* Sources: John Dalton, ECA, Tsegaye Asfaw, MNR, and Mesfin Reade, MOAF.

Recent production cost data on large scale operations is not available, but two studies in 1971 indicated cost of E$26.00 to 26.50 per quintal. Increases in fuel and other costs since that time are believed to have raised production cost under such conditions to $27.00 to $29.00 or more.

As virtually all the large scale farms are now under the management of the government enterprise, it may be expected that the cropping pattern will reflect government policy and objectives, as well as anticipated prices and returns from alternative enterprises. As long as the

\(^1\) About 1,500 hectares of haricot beans were reported by these government farms in 1975/76.
Note: The greatest concentration of production is in Shoa, Begemdir-Simien, Wollo and Tigre Provinces.
nation is below self sufficiency in grains, it can also be expected that pulses for export may be discouraged to some extent. Present management, however, does recognize that some of the state farms may have a greater comparative advantage in pulse production from time to time and that the nation's needs for foreign exchange point up the importance of export income. Some haricots—and perhaps other pulses such as lentils and horse beans—will likely be grown on the large scale state farms if returns appear attractive and such production is viewed as being in the national interest.

III. PEASANT PRODUCTION

Chick Peas (Cicer arietinum)

Sources do not agree, but most informed opinion in the country points toward chick peas as the most important single pulse crop in terms of area devoted to its production in the main crop season. Chick peas are widely grown in the central highland area as shown in Figure 1.

The production of chick peas and other pulses produced in the peasant sector has been variously estimated. In view of the extreme variability of these estimates in some cases, it seems proper to present data from several sources and some comments on the manner in which knowledgeable people view them. Users of the data must choose the figures considered most reasonable; in present circumstances, it is not
practicable to recommend a particular set of estimates as reflecting most accurately the pulse production situation in Ethiopia.

Table 2: Chick Pea Production Estimates - Various Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Area (1,000 ha)</th>
<th>Yield (qt./ha)</th>
<th>Production (1,000 qt)</th>
<th>Cost (E$/qt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sample Survey (1974-75)*</td>
<td>177.0</td>
<td>7.9</td>
<td>1,398</td>
<td>14.66</td>
</tr>
<tr>
<td>FAO Production Yearbook (1974)</td>
<td>308.0</td>
<td>6.4</td>
<td>1,980</td>
<td>-</td>
</tr>
<tr>
<td>Central Statistical Office (1971-72)</td>
<td>302.8</td>
<td>6.6</td>
<td>1,984</td>
<td>-</td>
</tr>
<tr>
<td>Experience, Inc. (1969-70)**</td>
<td>294.2</td>
<td>6.3</td>
<td>1,853</td>
<td>15.25</td>
</tr>
</tbody>
</table>

* Main crops only - Belg crop (small-rains mid-crop) is estimated to be 10% of the total peasant crop in normal years, but only 8% in 1974/75.
** Based upon CSO figures for the most part.

As may be noted, Table 2 indicates average yields of chick peas ranging from 6.3 to 7.9 qt./ha. Yields of chick peas under peasant conditions have been estimated by other sources at 5.7 to 7.0 quintals. Seeding rates are estimated at approximately 50 to 60 kilograms per hectare.

This and other cultural practices used for the major pulse crops are to be reported in an EPID study of traditional pulse growing expected to be released later in 1976.

In considering these various estimates, one must take into account the strengths and weaknesses of each. The 1974/75 Agricultural Sample
Figure 2: Major Production Area - Horse Beans

Note: The greatest concentration of production is in Shoa, Wollo, Tigre, Gojjam and Begemdir-Simien Provinces.
Survey is based upon generally sound statistical procedures but quite a small sample (2,741 of an estimated 4,127,000 farm households). In the process of sample selection, some households could have easily been left off the list and thus totals might be somewhat under-estimated. On the other hand, the Central Statistical Office (CSO) estimates appear to be extrapolations of an original set of estimates arising from a sort of "windshield survey" conducted by a team of expatriates in the early 1960's. These estimates have been revised and modified as indications seemed to warrant. They are better described as a numerical expression of informed opinion than as precise measures of the various factors estimated. The FAO estimates appear to be based largely on CSO data.

**Horse Beans (Vicia faba)**

Horse beans (broad beans) are usually considered as the second ranking pulse crop grown under peasant conditions in Ethiopia. It should be noted, however, that the Agricultural Sample Survey shows a larger estimate of area devoted to horse beans than to any other pulse crop. Like chick peas, horse beans are grown over a large part of the Ethiopian highlands (see Figure 2).

Seeding rates for horse beans are estimated to be in the range of 200 kilograms per hectare. Such a high seeding rate is necessary to

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1/ Some 99.999 percent of the variation in chick pea production between 1960 and 1972 is explained by a simple lineal trend line. Given the vagaries of both man and nature, it is hardly likely that crop production could fit so precise a formula.
Figure 3: Major Production Area - Haricot Beans

Note: The greatest concentration of production is now or has been in Shoa, Arusi, Gemu Gofa, Harerghe and Sidamo Provinces.
establish a suitably dense stand with this large seed. Eichberger's estimate, however, is a low rate of only 62 kilograms per hectare, but this was based on only eight reporting farms.

Table 3: Horse Bean Production Estimates - Various Sources

<table>
<thead>
<tr>
<th></th>
<th>Area 1,000 ha.</th>
<th>Yield qt./ha.</th>
<th>Production 1,000 qt.</th>
<th>Production Cost E$/qt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sample Survey (1974-75)*</td>
<td>320</td>
<td>8.7</td>
<td>2,784</td>
<td>12.87</td>
</tr>
<tr>
<td>FAO Production Yearbook (1974)</td>
<td>155</td>
<td>9.9</td>
<td>1,540</td>
<td></td>
</tr>
<tr>
<td>Central Statistical Office (1971-72)</td>
<td>150</td>
<td>10.2</td>
<td>1,529</td>
<td></td>
</tr>
<tr>
<td>Experience, Inc. (1969-70)**</td>
<td>144</td>
<td>9.6</td>
<td>1,378</td>
<td>12.36</td>
</tr>
</tbody>
</table>

* Main crop only - see footnote Table 2.
** Based on CSO figures for the most part.

The above and all subsequent tables should be interpreted in light of the qualifying comments suggested following Table 2.

Haricot Beans (Phaseolus vulgaris)

Peasant production of haricot beans is concentrated in southeastern Shoa, northern Gemu Gofa, Arusi and the Chercher highlands of Harerghe (see Figure 3). As production is so concentrated, it is quite likely that the total hectarage reported in the Agricultural Sample Survey underestimates the actual area planted to this crop in 1974-75 in the traditional farming sector. Such an assertion is based on the fact that relatively
The greatest concentration of production is in Shoa, Wollo, Begemdir-Simien, Gojjam and Wollega Provinces.
few farms growing haricots would likely turn up in the final sample while many farms in the rather small growing area might have relatively large areas devoted to this crop.

Table 4: Haricot Bean Production Estimates (Traditional Sector)

<table>
<thead>
<tr>
<th>Source</th>
<th>Area 1,000 ha.</th>
<th>Yield qt./ha.</th>
<th>Production 1,000 qt.</th>
<th>Production Cost E$/qt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sample Survey (1974-75)*</td>
<td>70.0</td>
<td>6.9</td>
<td>483</td>
<td>24.69</td>
</tr>
<tr>
<td>FAO Production Yearbook (1974)</td>
<td>99.0</td>
<td>7.9</td>
<td>780</td>
<td>-</td>
</tr>
<tr>
<td>Central Statistical Office (1971-72)</td>
<td>95.5</td>
<td>8.1</td>
<td>772</td>
<td>-</td>
</tr>
<tr>
<td>Experience, Inc. (1969-70)*</td>
<td>93.7</td>
<td>7.7</td>
<td>723</td>
<td>26.00</td>
</tr>
</tbody>
</table>

* See footnotes Table 2.

Seeding rates on haricots range from 50 to 70 kilograms per hectare.

Field Peas (Pisum sativum)

Field peas, like chick peas and horse beans, are grown over a wide area of the Ethiopian highlands as can be seen from Figure 4. More than any of the major pulse crops, the field peas are utilized locally; very few are normally exported.
Note: The greatest concentration of production is in Shoa and Gojjam Provinces.
Table 5: Field Pea Production Estimates - Various Sources

<table>
<thead>
<tr>
<th></th>
<th>Area 1,000 ha.</th>
<th>Yield qt./ha.</th>
<th>Production 1,000 qt.</th>
<th>Production Cost E$/qt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sample Survey</td>
<td>108.0</td>
<td>4.8</td>
<td>518</td>
<td>15.31</td>
</tr>
<tr>
<td>FAO Production Yearbook</td>
<td>143.0</td>
<td>9.4</td>
<td>1,350</td>
<td></td>
</tr>
<tr>
<td>Central Statistical Office</td>
<td>137.1</td>
<td>9.7</td>
<td>1,324</td>
<td></td>
</tr>
<tr>
<td>Experience, Inc. (1969-70)*</td>
<td>135.0</td>
<td>9.4</td>
<td>1,264</td>
<td></td>
</tr>
</tbody>
</table>

* See footnotes Table 2.

Seeding rates for field peas are estimated to range from 120 to 150 kilograms per hectare.

Lentils (Lens esculenta)

The reported growing area for lentils is remarkably concentrated, being confined largely to northern Shoa and small neighboring areas in Gofjam and Wollo (see Figure 5). This concentration may have led to the same sort of distortion in estimating aggregates as was discussed in the case of haricot beans. While the other traditional pulse crops, with the exception of haricots, are a staple item in local diets, lentils are viewed as more of a luxury food and are apparently produced mainly as a cash crop. Although they can be found in many local markets, it is apparent that a fairly high proportion of the crop is now moving into export channels; this has been particularly true in 1974 and 1975.
Table 6: Lentil Production Estimates - Various Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Area 1,000 ha.</th>
<th>Yield qt./ha.</th>
<th>Production 1,000 qt.</th>
<th>Production Cost E$/qt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Sample Survey (1974-75)*</td>
<td>116.0</td>
<td>4.3</td>
<td>499</td>
<td>-</td>
</tr>
<tr>
<td>FAO Production Yearbook (1974)</td>
<td>184.0</td>
<td>6.1</td>
<td>1,130</td>
<td>-</td>
</tr>
<tr>
<td>Central Statistical Office (1971-72)</td>
<td>176.8</td>
<td>6.5</td>
<td>1,157</td>
<td>-</td>
</tr>
<tr>
<td>Experience, Inc, (1969-70)*</td>
<td>174.4</td>
<td>6.1</td>
<td>1,065</td>
<td>18.44</td>
</tr>
</tbody>
</table>

* See footnotes Table 2.

Seeding rates for lentils are estimated to be in range of 25 to 30 kilograms per hectare.

Prospects for increased production from the traditional farming sector

Due to the overwhelming dominance of the peasant sector and its reinforcement by the recent land reform proclamation, there should be an expanded hectarage of crops for which there is a ready market at attractive prices. As the major thrust of government pressure in this direction is aimed at cereals, however, little improvement in pulse prospects and incentives to produce can be expected in the short-term future. Currently, unforeseen shifts in priorities could easily alter this expectation; for example, this might happen if the need to step up exports of pulses became urgent.
PART TWO

THE MARKETING BASE
I. DOMESTIC REQUIREMENTS

With the exception of haricot beans, which are mostly produced for export, the other major pulse crops of Ethiopia are utilized largely by the local population; along with the cereals, they make up the most important part of the native diet. Aside from haricots, the major pulses now grown are chick peas, field peas, horse beans and lentils. Considerable quantities of chick peas in particular are consumed in the fresh form.

Although there are no comprehensive or reliable data available on per capita consumption/disappearance of pulses, a number of estimates have been made by persons and organizations that have had occasion to consider the subject. Perhaps the outstanding feature of these per capita estimates is their tendency to agree more or less in total but to show wide variations among the individual pulse crops making up the total.¹/

For purposes of this report, an independent estimate of domestic requirements for the major pulses has been prepared; necessarily, this estimate is based upon certain assumptions on such determinants as

¹/ To illustrate how contradictory these data may be, the most recent survey by the Planning and Programming Department (MOAF) indicates that horse bean production is almost double that of chick peas; most other production estimates currently available show substantially more chick peas than horse beans. The PPD survey also reported 1974/75 production of lentils at only 49,900 MT but 1975 exports (converted to gross production) were equivalent to about 90% of the output; it is unlikely that domestic consumption could be reduced to the level indicated.
population, per capita use, income growth and shifts in consumption pattern. Based mostly on reported production, population and exports from 1969/70 to 1971/72, the following per capita rates were established for disappearance and net consumption (includes both fresh and dry forms):

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Disappearance kg. per annum</th>
<th>Net Consumption kg. per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chick peas</td>
<td>7.5</td>
<td>6.2</td>
</tr>
<tr>
<td>Beans (all types)</td>
<td>6.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Field peas</td>
<td>5.2</td>
<td>3.5</td>
</tr>
<tr>
<td>Lentils</td>
<td>3.6</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>23.0</strong></td>
<td><strong>17.4</strong></td>
</tr>
</tbody>
</table>

In explanation of the difference between disappearance and net consumption; the former is the quantity threshed on-farm, or the total.

If disappearance is computed on the basis of the 1974/75 production indicated in the agricultural sample survey by PPD/MOAF, adjusted for equivalent quantities exported, then the per capita figures are considerably different:

- Chick peas: 5.1 kg. per annum
- Horse beans: 9.2 kg. per annum
- Field peas: 1.9 kg. per annum
- Lentils: 0.4 kg. per annum
- Total: 16.6 kg. per annum

Haricot beans are not included because commercial production is not included in the sample survey. The 16.6 kg. indicated by this computation compares to 21.2 kg. adopted in the text (haricots excluded) and would indicate net per capita consumption of these four commodities totaling only about 12.6 kg. per annum. Other estimates of net consumption of the five major pulses have ranged from 16.2 kg. upward to 25.0 kg. per annum. These discrepancies serve to indicate the probability that there is a high degree of error in any event and that selection of some mid-point may be a reasonable procedure. Little reliance can be placed on the relative position of the individual products; the total may be somewhat more meaningful.
produced, while net consumption is what remains for actual use as human food. In arriving at the net amount consumed, allowance must be made for quantities used for seed or other non-food purposes, shrink due to spoilage or damage by insects and rodents, and cleanout of impurities. The allowances vary from crop to crop, but the overall average is about 24 percent. In determining domestic requirements, it is perhaps obvious that disappearance is the most basic element because it reflects the actual production required on-farm in order to provide the net amount going into human consumption; the same may, of course, be said of the production required to cover exports.

In projecting domestic requirements for the major pulse crops of Ethiopia over the period of 1975 to 1990, the following assumptions are made:

1. Population in 1975 is 27 million and the annual growth rate will be 2.3%.
2. Income growth per capita will not average more than 1% per annum.
3. Income elasticity of demand for pulses is 0.5, making a 0.5% growth rate due to income.
4. Other influences such as increased on-farm use after land reform will have a moderate effect, sufficient to result in an average growth rate overall of 3.0% per annum.
5. The relative importance of the five major pulses in the Ethiopian diet will not change materially in the near future.
On the basis of these assumptions, including those listed above on per capita needs, the estimates for 1975-90 have been computed and are listed in Table 7.1

Table 7: Estimated Production Requirements to Meet Domestic Needs for Certain Pulse Crops

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chick peas</td>
<td>202</td>
<td>234</td>
<td>272</td>
<td>315</td>
</tr>
<tr>
<td>Beans (all types)</td>
<td>181</td>
<td>210</td>
<td>244</td>
<td>282</td>
</tr>
<tr>
<td>Field peas</td>
<td>141</td>
<td>164</td>
<td>190</td>
<td>220</td>
</tr>
<tr>
<td>Lentils</td>
<td>97</td>
<td>113</td>
<td>130</td>
<td>151</td>
</tr>
<tr>
<td>Total</td>
<td>621</td>
<td>721</td>
<td>836</td>
<td>968</td>
</tr>
</tbody>
</table>

Note: See text of report for assumptions on which these estimates are based. To convert the indicated total production to net consumption, a shrink factor of 24% is used; thus the 621,000 MT disappearance for 1975 becomes 472,000 MT actually available for consumption as human food.

In evaluating the significance of the estimated requirements, it must be emphasized that the growth rate overall is much more important than the specific quantities indicated for the individual pulses. Over the 15-year period, the production of beans, chick peas, field peas and lentils for domestic use only will need to increase by 56%, or an average of almost 4% annually for 1975-90; this in itself, exports entirely aside, is

1/ Different assumptions on per capita disappearance result in proportionately different production requirements; e.g., if the rates indicated by the 1974/75 Agricultural Sample Survey are used, the aggregate production needs for domestic use would be some 20% less than indicated by Table 7. The growth rate, however, would be the same in either case.
a formidable task where production is likely to continue to be highly concentrated on the small, peasant-type farms. If production increases of this magnitude are achieved in pulses and other food crops, then the daily caloric intake of the average Ethiopian would increase moderately; the implication being that overall consumption, pulses being one major component, would advance from perhaps 1,900/2,000 in 1975 to 2,200/2,300 in 1990. By 1990, the per capita disappearance of the major pulses would have increased from 23.0 kg. to 25.1 kg. per annum.

II. EXPORT TRADE

Pulses have been exported from Ethiopia for at least 30 years. So far as is known, there have never been any imports of other than minimal quantities of these commodities. From 1948 to 1961, the average composition of pulse exports was 36% horse beans, 33% lentils, 13% haricot beans, 13% chick peas and 5% other (almost entirely field peas). From 1961 onward, haricot beans gained rapidly in relative position.

In recent years, exports of pulses from Ethiopia have been among the more important earners of foreign exchange with an extreme range in fob value running all the way from E$16 million in 1970 to over E$100 million in 1974; in 1974, pulses were second only to coffee in value of export shipments. Preliminary reports for 1975, however, indicate that pulse exports declined in value by some 35% (E$66 million
vs. E$102 million) as compared to the 1974 record high for a like period. During the 10-year period beginning in 1965, exports of the major pulse crops have ranged from 51,100 metric tons in 1970 to 141,500 metric tons in 1973 (see Table 8). The rapid build-up in exports during 1973 and 1974 was the result primarily of greatly increased production of haricot beans expressly for the export market; privately operated, commercial farms were largely responsible for the increase. Recently, there has been a falling off of exports, particularly haricots and chick peas, but the impact of this decline has been softened somewhat by record highs in the overseas movement of lentils. Among the major pulse crops, only haricot beans have been produced primarily for export; however, of late, an increasingly important part of the lentil crop has also been sold abroad. In contrast to haricot beans, the field pea crop is almost completely for domestic use as is indicated by the limited quantities normally exported; no exports of field peas were reported during 1975.

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1/ This represents the movement through normal, legal channels; there are also undetermined quantities of unrecorded illegal exports moving particularly from Eritrea, as well as from Harerghe to Somalia and from other provinces that border on Sudan and Kenya.

2/ At variance with the usual pattern, however, Ethiopia did export almost 10,500 MT of field peas in 1974; this was clearly an atypical situation. Apparently, the 1974/75 crop of both field and chick peas was poor (frost damage, etc.) which left few peas available for export.
Price movements reflected in fob returns from pulse exports since 1970 were marked by relative stability from 1970 through 1972 (see Table 9).

In 1973 and 1974, however, prices advanced rapidly only to be followed by a decline in 1975 that was particularly drastic on haricot bean exports which fell from an average of E$1,032 in 1974 to E$622 per metric ton fob port, during 1975. Even at this lower level, the 1975 returns on haricots were about the same as in 1973; other pulse exports have continued in 1975 at a significantly higher price level than in 1973. The decline in 1975 returns (as compared to 1974) for other pulses was much less severe with lentils down by only some 13% from E$955 to E$834 per metric ton. The increased returns received for Ethiopia's pulses in 1973 and 1974 appear to have been related to advancing prices in the world markets and to some extent, allegedly improved quality in the local exports. In 1974, in particular, world exports were at a considerably reduced level which resulted

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Table 8: Quantity of Pulses Exported from Ethiopia
1965 - 1975

<table>
<thead>
<tr>
<th>Year</th>
<th>Chick peas</th>
<th>Horse beans</th>
<th>Haricot beans (1,000 metric tons)</th>
<th>Lentils</th>
<th>Field peas</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>9.5</td>
<td>17.8</td>
<td>19.7</td>
<td>5.8</td>
<td>2.3</td>
<td>55.1</td>
</tr>
<tr>
<td>1966</td>
<td>10.9</td>
<td>22.4</td>
<td>19.5</td>
<td>14.9</td>
<td>1.5</td>
<td>69.2</td>
</tr>
<tr>
<td>1967</td>
<td>10.7</td>
<td>24.7</td>
<td>17.9</td>
<td>15.0</td>
<td>0.9</td>
<td>69.2</td>
</tr>
<tr>
<td>1968</td>
<td>13.9</td>
<td>16.5</td>
<td>19.3</td>
<td>22.0</td>
<td>1.0</td>
<td>74.7</td>
</tr>
<tr>
<td>1969</td>
<td>8.0</td>
<td>27.4</td>
<td>16.7</td>
<td>24.5</td>
<td>2.0</td>
<td>78.6</td>
</tr>
<tr>
<td>1970</td>
<td>2.2</td>
<td>15.6</td>
<td>17.1</td>
<td>15.8</td>
<td>0.4</td>
<td>51.1</td>
</tr>
<tr>
<td>1971</td>
<td>6.3</td>
<td>15.6</td>
<td>22.6</td>
<td>18.0</td>
<td>0.2</td>
<td>63.7</td>
</tr>
<tr>
<td>1972</td>
<td>10.7</td>
<td>19.0</td>
<td>25.7</td>
<td>21.9</td>
<td>0.5</td>
<td>77.8</td>
</tr>
<tr>
<td>1973</td>
<td>8.1</td>
<td>29.7</td>
<td>79.1</td>
<td>22.2</td>
<td>2.4</td>
<td>141.5</td>
</tr>
<tr>
<td>1974</td>
<td>8.2</td>
<td>26.0</td>
<td>46.0</td>
<td>30.0</td>
<td>10.5</td>
<td>120.7</td>
</tr>
<tr>
<td>1975 (prelim.)</td>
<td>1.0</td>
<td>22.2</td>
<td>41.5</td>
<td>37.3</td>
<td>-</td>
<td>102.0</td>
</tr>
</tbody>
</table>
in a significant increase in prices; the average price advance for world imports was some 50% per metric ton from 1973 to 1974.

Table 9: Average Value of Pulse Exports from Ethiopia 1970 - 1975

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chick peas</td>
<td>235</td>
<td>283</td>
<td>279</td>
<td>444</td>
<td>582</td>
<td>539</td>
</tr>
<tr>
<td>Horse beans</td>
<td>225</td>
<td>268</td>
<td>291</td>
<td>295</td>
<td>489</td>
<td>404</td>
</tr>
<tr>
<td>Haricot beans</td>
<td>396</td>
<td>447</td>
<td>402</td>
<td>633</td>
<td>1,032</td>
<td>622</td>
</tr>
<tr>
<td>Lentils</td>
<td>312</td>
<td>314</td>
<td>322</td>
<td>564</td>
<td>955</td>
<td>834</td>
</tr>
<tr>
<td>Field peas</td>
<td>257</td>
<td>265</td>
<td>284</td>
<td>643</td>
<td>769</td>
<td>-</td>
</tr>
</tbody>
</table>

On the world scene, Ethiopia's place as an exporter of pulses was moving rapidly forward from 1970 through 1974; in fact, it was reportedly the third largest exporting country in 1974 - only the USA and Morocco were listed by FAO as having a larger volume of exports. In 1974, pulse exports from Ethiopia were over 7% of the total world imports; in 1970, this figure was less than 3 percent. What the relative position will be in 1975 is not entirely clear but it is likely to have deteriorated through a combination of a recovery in the volume of world trade and a decline in Ethiopian exports. The outlook for pulses in the world market appears encouraging in light of the failure of production to keep pace with population growth during the last decade, as well as the increased cost of animal products as a source of protein. FAO reports indicate that while world population was increasing by 23.5% from 1963 to 1974, total world pulse production was up only slightly over 5%; the range was wide among the individual crops, however, with haricots and broad beans showing increases of
16.7% and 12.4%, respectively. Dry peas gained 9.3% and lentils 17% but the output of chick peas actually declined by 17% during the period.

Historically, the export of pulses from Ethiopia has been in the hands of the private, commercial sector with government playing only a minor role consisting largely of licensing and of quality and exchange controls. Bilateral government trading arrangements have not been an important element in pulse exports; however, there are now definite indications that government policy may be shifting toward this approach.

Markets for the pulses that have been exported in quantity from Ethiopia are highly differentiated from item to item and destinations of shipments appear generally to have been firmly established although some important changes have occurred recently.

Europe in general, and West Germany, Netherlands and other Common Market countries in particular, have been the major outlet for haricot beans while horse beans have gone mostly to the nearby Middle East and to Japan. Chick peas have been sold largely to Sri Lanka, the Middle East and the United Kingdom with Sri Lanka the most important single market. Lentils until recently were purchased largely by Sri Lanka with much smaller quantities moving to Middle Eastern countries and to Western Europe. The limited exports of field peas have been taken mostly by the Middle East and Western Europe. Since 1972, the Ethiopian export

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1/ Apparently, for the time being, the output of the state farms that is handled by the Export-Import Corporation is to be put up for bid in lieu of the Corporation itself engaging directly in the export trade.
The trade in pulses has undergone some distinct shifts in the traditional pattern; most notable is the increasing importance of certain Middle East buyers such as Egypt and the decline of Sri Lanka as a principal buyer of lentils in particular. Another development has been the emergence of the USA and certain Eastern Bloc countries (USSR and Yugoslavia, for example) as destinations for limited quantities of haricot beans and field peas. There has clearly been no organized effort made by Ethiopia to produce new types of pulses for export, possibly to new markets, or to exploit in depth even the established markets for existing products.

In the short-term future, providing that the production of pulses on the former commercial farms now nationalized into state farms is given a lower priority than other crops, then it appears inevitable that Ethiopia’s pulse exports, haricot beans especially, will continue to decline. Most observers agree that the prospects of increasing measurably and quickly the marketable surplus of pulses in the peasant sector are not at all encouraging. In this sector, the primary emphasis will undoubtedly continue to be on production for domestic use with on-farm family needs given a high priority.

Reportedly, there are several other factors currently contributing to the declining volume of pulse exports; notably, a credit problem on the part of some exporters along with considerable uncertainty among exporters and overseas buyers as to national production and marketing policies in Ethiopia. The most recent effort to ease the credit problem is the making available of a bank advance equal to 60% of the value of pulses held in storage by exporters - certification of quality and quantity by the Ethiopian Grain Board is required.
III. MARKET STRUCTURE AND PRACTICES

Pulse crops in Ethiopia are with few exceptions produced by the peasant farmers numbering over 4 million in total who individually cultivate very small areas of land; a 1974/75 survey indicates that 50 to 60% of the total holdings in this sector are under 1.0 hectare in size and that average plantings of the individual pulses are about 0.33 hectare\(^1\). It is further estimated that 80% or more of these farmers do not have ready access to a road. With the exception of haricot beans which move mostly into export, pulse crops now produced in Ethiopia are intended primarily for family use and thus over half of the output does not enter the commercial market channels at all\(^2\). From 1970 through 1974, exports have ranged from 11 to 28% of the reported production; the average was about 18%. During the same period, it is estimated that about 43% of the aggregate pulse crops may have left the farms with 18% exported, 10% going to rural, non-farm users and 15% reaching urban outlets. Field peas and chick peas in particular, and horse beans to a slightly less degree, are consumed in-country; proportionately, haricots and lentils have made

\(^1\) It is not known with any real certainty just how many of the farm units in the peasant sector are growing pulse crops but indications are that it would be well under 50%; perhaps as low as 25/30%. As has been noted, pulses are primarily an upland crop; this tends to restrict the production area.

\(^2\) Much of the rapid build-up in exports of pulses that occurred after the low point reached in 1970 was the direct result of increasing production of haricot beans, and possibly to some extent lentils also, which were grown extensively on the large-scale, commercial farms (now mostly nationalized as state farms or operated by groups of small farmers).
up the bulk of exports in recent years. Except for haricots and lentils, both of which are relatively concentrated in production area, the pulse crops are widely dispersed throughout the uplands of Ethiopia. As urban population grows and/or if pulse exports increase, a greater volume of these products will find its way into the marketing channels; this will undoubtedly affect in various ways both the market structure and trade practices.

Given the setting as outlined, it is apparent that the initial stage in marketing, i.e., assembling the product, is an enormous task in itself. The individual lots offered for sale by the farmers are normally very small; few would exceed a quintal (100 kg.) at one time. Transportation to the first point of sale is most often by carrying the product bodily or by using a donkey. In the primary or village markets, as well as in the larger central/terminal markets, there are numerous grain buyers, operating independently or as agents for others, but price competition on the buying side is minimal. There is no formal grading except where pulses are exported, but buyers do roughly differentiate products offered according to amount of impurities and sometimes, color or origin. There is virtually no commercial cleaning of pulses by dealers except just before export; otherwise, consumers hand-clean the products themselves. Impurities in pulses usually run from 10 to 15% where

1/ In Ethiopia, pulses are included in the general term "grain" which also covers the cereals.

2/ Reportedly, some pulses have at times been exported in the uncleaned, harvest-run form for cleaning and processing at destination.
threshing is done in the traditional way with oxen; this being the case, transportation costs are considerably higher than would be the case if cleaning took place nearer the point of initial entry into the market stream. Pulses for export are normally machine-cleaned and then hand-sorted as well. It has been reported that the capacity of the commercial cleaning facilities which are concentrated mostly in Addis Ababa, Asmara and Nazareth is in excess of current needs. This would undoubtedly not be true if the bulk of the pulses used for seed were cleaned commercially and if hand cleaning by consumers were replaced by commercial cleaning. It is apparent that seed should be cleaned but whether Ethiopian consumers in general would pay a sufficiently higher price for clean pulses for home use to justify the operation is currently unknown and needs investigation.

Generally, scales are used in those country market places reached by road, as well as in all the larger markets; elsewhere, local units of measurement (usually based on volume) are often employed by the buyers. It is widely alleged that grain buyers "adjust" the scales in their favor and thus take advantage of the seller, usually a farmer. Donkeys, in particular, are used extensively by buyers as well as farmers in moving

1/ Of late, it has been increasingly difficult and sometimes practically impossible to sort pulses, especially haricots, so that they are of uniform color, shape and size. This problem stems primarily from the widespread use of mixed seed by the growers (pure, clean seed for most pulse crops is not now readily available to most farmers).

2/ A good example of how these facilities have been concentrated at certain points is the fact that the equipment for cleaning and processing lentils is mostly in Asmara and thus may or may not be readily available to process lentils from other areas where the bulk of the crop is currently produced.
pulses to the market centers where truck transportation is available and quantities to be moved onward are large enough to make up a load. It has been variously estimated that there may be as many as 12,500/25,000 grain dealers in rural areas and 4,000/8,000 in the towns. The primary dealers located in the some 2,500 rural-level markets, are said to take a profit margin of E$2/4 per quintal for their services; this does not include whatever may be realized through dishonest weighing. Multiple handling is common, with several dealers frequently handling the product before it reaches the terminal wholesale markets such as Addis Ababa, Asmara and Nazareth. Figure 6 outlines the general flow of pulses through the traditional marketing structure. In arriving at a farmgate price from the wholesale level prevailing in Addis Ababa, for example, a deduction of E$6 per quintal is often used; from wholesale to retail, the difference may be about E$2 only. Little is known about the margins or costs of dealers in the central/terminal markets.

There is currently no effective public source of market news, especially on prices; private dealers, however, usually have their own channels through which they get their information, generally by telephone. Newscasts and published reports are generally not considered trustworthy. All grain markets in Ethiopia are considered to be "thin" in that only a

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1/ Other important central markets would include Dire Dawa, Dessie, Mekele, Jimma, Gondar, Debre Markos, Asela, Shashamane and Lekempt.

2/ Another approach to estimating farmgate prices is to compute them on the basis of 75% of the Addis Ababa wholesale prices.
Figure 6: Product Flows in the Traditional Pulse Marketing System

Note: This diagram is adapted from EPID Publication No. 14 by Bo Wickstrom.
small volume one way or the other can have a marked effect on price.

Even rumors of shifts in supply will cause price fluctuations at times.

Country dealers normally work down from the terminal market price in determining what they will pay farmers for their pulses; i.e., they simply deduct all the costs involved plus an allowance for their handling margin.

Pulses and other grains are held in storage by both farmers and dealers; even consumers who often buy by the quintal provide some storage. Individual farmers may store up to 7.5/10.0 quintals in baskets, large jars (dibignit) or gourds within the home and sometimes in underground pits (gudguads) or special bin-like structures on stilts above ground (gotera).

Most farmers do not themselves have capital or cannot get credit to engage in speculative storing. Characteristically, storage facilities are generally poor outside the central/terminal markets but good in the larger market centers. It is said that storage space in such places as Addis Ababa, Asmara and Nazareth is rarely used to capacity but in the outlying areas, it is generally insufficient which tends to force a quick turnover of stocks.

Storage losses have been estimated at 1/2% per month in the upland areas where insects, rodents and moisture result in damage; in the lowlands, such losses may be twice as great with insects and mold the major problems.

In general, however, Ethiopia's climatic conditions are favorable to grain storage. A survey conducted several years ago by USAID indicated that grain storage facilities in the major markets of Ethiopia have a capacity of over 370,000 tons; this does not include port and on-farm or village storage.
With an estimated 80% of the rural population living in areas that are not readily accessible to modern transport, it is obvious that transportation is a major problem in marketing pulses and other farm products. It is said that Ethiopia has the most critical need in all Africa for both penetration and farm-to-market roads. At present, it is necessary to resort to slow and laborious transport by animals such as donkeys, mules, horses or camels and in many cases, by human packing or carrying of the produce for distances ranging from a few kilometers to over 100 kilometers; often over very difficult terrain. Up to the first point of sale, grains are most frequently transported in small bags, goatskins, sacks, etc., that can be carried by animals or humans; once in the market stream, sacks are generally used in handling and storage of these commodities. Where there are roads, there are usually motor trucks available that provide a very satisfactory service; normally at a reasonable price. In estimating the costs of hauling grains by truck, the usual figure currently used has been E$0.10/12 per ton/kilometer although rates may be less on long hauls or more in particularly difficult situations. Transport of pulses is quite seasonal with the peak occurring between November and March, during and shortly after harvest. The movement at this peak period is countered to some extent by the other and later seasonal movement from central/terminal markets to deficit areas. Exports of pulses are moved to Djibouti and Massawa by rail as well as to Assab by truck. This service is considered to be generally satisfactory.

From the marketing standpoint, one of the more interesting and also significant features of the pulse situation is the flow of these products.
from surplus producing areas to the deficit consuming areas. Unfortunately, there are cases where a particular area may be classified as both surplus and deficit depending on the time of year. It is not unusual to have a movement to central/terminal markets at or shortly after harvest only to have this followed by a reverse flow later; this phenomenon is largely the result of inadequate storage up-country plus an unwillingness or inability on the part of dealers and/or growers to hold stocks for any extended period. Another fairly common occurrence is to have a surplus area and a deficit area separated by only a short distance but still not accessible to one another because there is no road link. In the 1973 report on market structure by the Planning and Programming Department of the Ministry of Agriculture, the flow of pulses and other grains to and from the provinces was indicated graphically. On the basis of this analysis, the provinces may be classified generally as being all or in part either surplus or deficit areas so far as pulses are concerned:

<table>
<thead>
<tr>
<th>A. Surplus</th>
<th>B. Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bale</td>
<td>Eritrea</td>
</tr>
<tr>
<td>Arusi</td>
<td>Gojjam</td>
</tr>
<tr>
<td>Harerghe</td>
<td>Wollega</td>
</tr>
<tr>
<td>Wollo</td>
<td>Illubabor</td>
</tr>
<tr>
<td>Shoa</td>
<td>Kefa</td>
</tr>
<tr>
<td>Begemdir-Simien</td>
<td>Gemu Gofa</td>
</tr>
<tr>
<td>Tigre</td>
<td>Sidamo</td>
</tr>
</tbody>
</table>
This classification is not absolute because even in the deficit provinces
there may be surplus producing districts and vice versa in the provinces
listed as having a surplus. Also, in a number of cases, the in-flow of
pulses is seasonal and does not ordinarily occur throughout the year.

Grain dealers in Ethiopia generally have access to at least a
limited line of credit but such credit often is not adequate to permit the
carrying of any substantial inventory or to allow investment in additional
physical plant, especially up-country storage. Dealers obtain credit from
banks or through private channels such as other dealers and family or
friends. A few loans are made to farmers by the grain traders. Seed is
sometimes available through the dealers but it is generally of very poor
quality—only market run and uncleaned. Virtually no other input ser-
vices are provided by the dealers.

Despite the numerous weaknesses and inefficiencies that have been
noted in the marketing services for pulses and cereals, the fact remains
that the system has "worked" over a long period of time. The products
have been moved in considerable quantities from point of production to the
domestic consumers and/or exporters. It would appear reasonable to
build upon and improve or supplement the indigenous marketing structure
wherever practicable rather than attempt at one stroke to replace the entire

\[1/\] Prior to nationalization of farm lands, it is probable that landlords,
through their rents collected in kind may have provided one third or
more of the grains reaching urban areas; elimination of this channel in
the marketing system will require considerable adaptation and adjustment.
IV. PRICE PATTERN

Prices prevailing on the major pulses in Ethiopia are generally assumed to be export oriented; i.e., they follow closely the fluctuations in net returns for the shipments to overseas markets. Field peas are an exception because they are almost wholly consumed in the domestic market. This assumption that the general level of domestic prices of horse beans, haricot beans, chick peas and lentils is export-oriented appears to have reasonable validity so far as the wholesale prices in central/terminal markets are concerned. The case is much less apparent at the farm level although even here there is undoubtedly a direct relationship because the general level of farmgate prices is obviously influenced by prices prevailing in central/terminal markets.

Farm prices and wholesale prices as well tend to fall behind the export parity during periods of rapidly rising prices in the overseas markets; 1974 with its very high prices is a good example. When the reverse happens, however, dealers appear to become wary, and domestic prices

1/ One of the most persuasive arguments for this policy is the generally lower cost of marketing through traditional channels, particularly in those places where transportation and communication facilities are limited.
if anything, may actually anticipate the decline. To indicate how closely wholesale prices may sometimes relate to theoretical export parity; in 1972, chick peas averaged E$16.3 per quintal in Addis Ababa which converts to about E$10/11 at the farmgate; exports that year averaged E$28 per quintal (fob port), or about E$10 theoretically available at farmgate\(^1\). In 1974, when export prices were advancing rapidly, the relationship was not nearly so close; E$21 at farmgate based on Addis Ababa wholesale vs. E$45 derived from average fob prices on exports. It should be noted that cereals in Ethiopia were held at artificially low prices in 1974; this certainly operated to restrain the normal tendency of pulses to move toward the higher level of export parity in the domestic market (cereals and pulses are price competitive).

Price averages are compiled by the Ethiopian Grain Corporation on a monthly and annual basis for the major pulses in the principal central/terminal markets. Similarly, fob value of exports of these products is being reported by the Customs Head Office and more recently by the Ethiopian Grain Corporation (see Table 9). Price reporting for the farmgate level and for country markets is practically non-existent at the present time; this is the reason for applying arbitrary conversion factors to such price data as are available in order to get some order of magnitude on farm or country prices. Obviously, there is an acute need for

\(^1\) Costs applicable to handling and processing of pulses from farmgate to Addis are said to be about E$6 per quintal; from farmgate to port, costs are currently estimated at E$175/225 per metric ton (10 qts.); in 1972, the range was E$125/175.
effective price reporting below the wholesale and export markets.

Among the major markets, there are more or less clearly defined differentials in pulse prices but these differences do not necessarily reflect transportation, storage, handling and other costs that might be expected to determine the regional price structure. Clearly, price variations among areas often far exceed transportation costs. Table 10 shows the average wholesale prices of peas, horse beans, chick peas, lentils and haricot beans in a number of the larger markets during 1974.

Table 10: Average Monthly Wholesale Prices of Certain Pulses in Selected Ethiopian Markets, 1974

<table>
<thead>
<tr>
<th>Market</th>
<th>Peas (E$ per quintal)</th>
<th>Horse beans</th>
<th>Chick peas</th>
<th>Lentils*</th>
<th>Haricot beans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addis Ababa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>30.0</td>
<td>22.5</td>
<td>27.2</td>
<td>69.9</td>
<td>51.1**</td>
</tr>
<tr>
<td>Monthly range</td>
<td>26.2-32.8</td>
<td>19.5-24.5</td>
<td>22.4-33.9</td>
<td>42.2-115.0</td>
<td>47.3-54.5</td>
</tr>
<tr>
<td>Nazareth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>30.4</td>
<td>22.7</td>
<td>-</td>
<td>51.7</td>
<td></td>
</tr>
<tr>
<td>Monthly range</td>
<td>24.6-34.0</td>
<td>21.0-24.4</td>
<td>-</td>
<td>42.0-58.2</td>
<td></td>
</tr>
<tr>
<td>Debre Markos</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>29.0</td>
<td>21.7</td>
<td>23.9</td>
<td>47.3</td>
<td></td>
</tr>
<tr>
<td>Monthly range</td>
<td>26.0-32.0</td>
<td>17.5-24.0</td>
<td>22.8-25.5</td>
<td>32.9-60.4</td>
<td></td>
</tr>
<tr>
<td>Dessie</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>29.7</td>
<td>24.4</td>
<td>29.9</td>
<td>51.8</td>
<td></td>
</tr>
<tr>
<td>Monthly range</td>
<td>27.4-31.5</td>
<td>23.7-25.0</td>
<td>29.0-32.2</td>
<td>50.1-53.1</td>
<td></td>
</tr>
<tr>
<td>Asmara</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>32.2</td>
<td>33.1</td>
<td>35.9</td>
<td>62.6</td>
<td></td>
</tr>
<tr>
<td>Monthly range</td>
<td>25.0-35.5</td>
<td>26.3-35.2</td>
<td>26.3-44.9</td>
<td>59.3-65.1</td>
<td></td>
</tr>
<tr>
<td>Dire Dawa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>36.4</td>
<td>28.1</td>
<td>37.1</td>
<td>55.8</td>
<td></td>
</tr>
<tr>
<td>Monthly range</td>
<td>35.2-38.0</td>
<td>26.5-30.0</td>
<td>30.0-44.3</td>
<td>50.0-58.5</td>
<td></td>
</tr>
</tbody>
</table>

* Split and whole types are not differentiated.

** Applies only to small haricots; Michigan type averaged E$61.0 per quintal with a range of 35.0 to 96.2 in monthly averages.
The behavior of these monthly averages is contrary to normal expectation in that there is little or no evidence of a gradually increasing level between harvests that would reflect actual costs involved in storing and/or transporting supplies. Monthly prices are often erratic in their movements which may reflect the "thinness" of the market and the lack of sufficient reliable information to justify confidence and encourage stability; also, it might indicate that the market is being manipulated. At any given time, however, buying and even selling prices offered by individual dealers in a particular location are remarkably uniform. 1/

To some extent, pulses may be substituted for cereals in the Ethiopian native diet; thus, there is an element of direct price competition between these two types of "grains." The relative prices of pulses and grains also have a distinct bearing on the decision of farmers to grow one crop or another. In February 1975, for example, through direct subsidization of cereal imports and/or the imposition of price controls by government, the Addis Ababa wholesale price of maize was some 70% below import parity; while for wheat and sorghum, the figure was 52% and 44%, respectively. Cereal prices, if left to free market forces, would be expected to approach import parity because for a number of years, Ethiopia has not been self-sufficient in some of these products. By comparing estimated net returns at the farm level for pulses vs. cereals in 1973/74, it is apparent that

1/ The situation on the buying side has been described as being, in effect, almost monopsonistic (one buyer, many sellers).
pulses were generally more profitable for the farmer to produce. In 1975/76, however, the comparative advantage of pulses may shift for two reasons; first, the return from pulse exports is lower; and second, the government has instituted a limited grain purchase program that will likely increase the price of cereals measurably.

V. GOVERNMENT INVOLVEMENT

In general, the marketing of pulse crops in Ethiopia has been left largely to the private commercial sector with the government maintaining a relatively low profile of intervention and control. There have been and are regulations affecting certain aspects of pulse marketing, especially on the export side, and sporadic attempts have been made to influence prices; the latter, however, have had little effect on the pulse trade (they have applied mostly to cereals). Several government organizations/agencies now have a real or potential role on the marketing side but their activities are currently overshadowed by the apparently imminent establishment of a broadly-based Agricultural Marketing Corporation (AMC) that would absorb certain of the existing programs (see Section VI for a description of the AMC proposal).

The Ethiopian Grain Board (EGB) was revived in 1970 after being dormant for several years. Although set up as a semi-independent agency, the EGB is chaired by the Minister of Commerce and Industry and other government people are among the governing body. The more important
objectives of this agency are to improve quality, to protect the nation's foreign exchange position and to maximize exports; also, the EGB may regulate prices, advise on production programs, license grain processors and enforce quality standards. Currently, the following are among the more important activities of the board so far as pulses are concerned:

1. Issuance of export permits or certificates in which quality, origin and authorization to sell are listed. A permit will not be issued unless the price appears to be reasonable and the quality must conform to the standards that have been established by the Ethiopian Standards Institute (ESI). Through the mechanism of this permit, there has been some effort made to set what is in effect a minimum price on pulse exports. The EGB has a staff of inspectors who are responsible for enforcement of the quality control program.

2. Regulation or influencing of prices at the farm, wholesale and retail levels through the promulgation of minimum and/or maximum prices or the setting of price guidelines. During the 1975/76 season, only field peas among the pulse crops are

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1/ It has been alleged that at times, failure to approve prices that are reasonably consistent with the international market situation has resulted in Ethiopian pulses being held off the market; if true, this could in certain cases provide an "umbrella" effect benefitting pulses from other competing production areas abroad.

2/ Pest control is an integral part of this program; in Ethiopia, a good beginning has been made on control of infestation in pulse exports, but there remain some weak spots, particularly at the ports.
covered by the price schedule announced in December 1975; the other major pulses are excluded because it is reasoned that their price is export oriented.

3. Licensing of grain cleaners and regulation of the charges they may levy for their services; currently, the stipulated rate is E$1.00 per quintal.

4. Control of containers used in exporting pulses; only new bags of any type approved by the board may be used. Because they affect the cost of bags, the tariff and tax levied by the government on these containers and/or sack materials deserve mention.

   Ethiopian exporters generally ship pulses in 100 kg. bags, although some markets prefer the 50 kg. size.

5. Provision of data on export trade and news on present and prospective market conditions abroad.

Potentially, the Ethiopian Grain Corporation (EGC) could play a very important part in pulse marketing, but thus far, it has never exerted a significant influence on the products. The EGC is another semi-autonomous agency along the lines of the EGB, with the Minister of Agriculture as board chairman of the corporation. It has broad authority to purchase and/or export cereals, pulses and oilseeds. For various reasons, among them inadequate funding, limited expertise and a lack of

1/ Although written into the statutory base of the regulations, this service fee of E$1.00 per quintal is considered unrealistically low and the actual fee is usually negotiated by the parties involved.
proper facilities, the corporation itself has not been an important element in the export of pulses; it has purchased limited quantities of cereals and a few pulses for domestic use and has also handled most of the sizeable imports of cereals. At times, the EGC has supplied relatively small amounts of pulses, particularly haricot beans, to the private exporters to supplement their own stocks. At one time, the corporation extended credit to certain growers who were producing pulses for export.

At the end of 1975, following announcement of price guidelines by the EGB, the corporation announced a purchase program for grains that would be available at nine EGC buying stations in Shoa, Keffa, Tigre, Wellega and Gojjam provinces. This purchase program is centered on cereals although buying prices of E$26/27 per quintal for field peas and E$38/39 for lentils were listed for two stations in Shoa. Deliveries under this purchase program are expected to be made mostly by state farms, development projects (CADU, WADU, etc.) and some 40/45 EPID marketing centers. The prices offered by the EGC are at the upper end of the range published by the EGB and the corporation has an initial allocation of some E$50 million available for implementing this program.

Although pulses are not an important part of the current project, the experience gained in this activity should prove invaluable in case the coverage is expanded at some later date. It is now too early to judge the

1/ The program was expanded in January 1976 to include an offer to buy haricot beans at up to E$40 and horse beans at up to E$22, delivered to EGC in Addis Ababa.
effectiveness of this effort, particularly as it relates to grower prices. It is likely, however, that the 1975/76 EGC grain purchase program may have a moderate side effect on pulses through the offering of country prices for cereals that are somewhat above the level that might otherwise have prevailed. This, of course, tends to reduce whatever competitive advantage pulses have had over cereals; this advantage has been due mostly to government policy to restrain the tendency of cereals to rise toward import parity. The probability that pulse production may become relatively less advantageous is also compounded by the decline in export prices since 1974.

The newly initiated output marketing role of the Extension and Project Implementation Division (EPID) of the Ministry of Agriculture and Forestry Development is that of serving as a buying agent for the EGC in the grain purchase program; this is in addition to its regular services of providing the channel for distribution of certain inputs such as fertilizer, insecticides, seeds, etc., and for extending related production credit. These marketing activities of EPID on both the output and input sides are conducted primarily through the marketing centers of the Minimum Package Project (MPP). Although EPID presently is little concerned with the marketing of pulses, it may become more of a factor in the future if the government becomes actively interested in the purchase of these products.

Other government organizations that are to some extent involved in the marketing of pulses are:

1. National Bank of Ethiopia which administers currency regulations
affecting external trade. The bank must approve the transactions where exports of pulses and/or settlement of claims are involved.

2. Customs Department which requires substantial documentation of exports and also collects the 2% transaction tax on pulse sales.

3. Ministry of Commerce and Industry is generally responsible for overall surveillance of all marketing activities in Ethiopia; this ministry also licenses dealers engaged in export trade.

4. Export-Import Corporation is, as the name implies, a government-controlled trading corporation through which Ethiopian products, including pulses, might be exported. This channel might be utilized particularly if Ethiopia should move toward bilateral trading on a government-to-government basis.

VI. THE AGRICULTURAL MARKETING CORPORATION

Although it has not yet been formally established as an operating agency, there is every reason to believe that the new Agricultural Marketing Corporation (AMC) will become a reality in 1976. Because of the broad and far-reaching potential of the AMC in the marketing of pulses, it should be considered an important element in the situation as of 1975/76. Basically, the AMC would initially absorb and consolidate the functions of the present EGC and AIMS (Agricultural Inputs Marketing Service) and also take over the transport service of certain other government agencies. The AMC would work very closely with an expanded EGB,
but the board would remain a separate entity. An executive head of the semi-autonomous AMC would be appointed by the Minister of Agriculture; other directors would include the head of EPID and the General Manager of EGB, as well as representatives of the National Bank of Ethiopia and the Minister of the Interior.

The stated purpose of the AMC is to handle a progressively increasing volume in 1) the marketing of cereals, oilseeds and pulses, and 2) the distribution of agricultural inputs such as fertilizer, seed and chemicals. Among the objectives, the following hoped-for results are important:

1. A closer relationship of seasonal and geographical price variations to cost, and stabilization of prices from year to year.
2. Greater prevalence of sound marketing practices including proper weighing, grading and stock management.
3. Provision of a timely, economical supply of inputs to EPID marketing centers, cooperatives and state farms.
4. Expeditious handling of produce so as to avoid congestion at the country level.
5. A decrease in margins between farmers and the wholesale market, leading to improved grower returns.
6. Assurance of proper food distribution in-country.
7. Operation of the AMC in such a way that it will cover its costs including depreciation and interest on capital.
8. A greatly improved system of market information and crop forecasting.
It is contemplated that the corporation will operate primarily at the whole-
sale level in making sales, but it may influence the retail prices where
margins appear excessive. It is not the expressed intention of the corpora-
tion to eliminate private dealers; rather, the AMC would provide another
element of competition in the trade.

The AMC plans to have field branches in the following locations:

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<thead>
<tr>
<th>Branches</th>
<th>Sub-branches</th>
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<tbody>
<tr>
<td>Addis Ababa</td>
<td>Debre Zeit</td>
</tr>
<tr>
<td>Nazareth</td>
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<td>Shashamene</td>
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<td>Jimma</td>
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<td>Dire Dawa</td>
<td>Ifjiga</td>
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<td>Lekempt</td>
<td>Ghimbi</td>
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<tr>
<td>Debre Markos</td>
<td>Bahar Dar and Gondar</td>
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<td>Dessie</td>
<td>Kombolcha</td>
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<td>Mekele</td>
<td>Adwa</td>
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<td>Asmara</td>
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It has been estimated that by 1979/80, the new organization might be
buying as much as 161,000 MT of produce through EPID and/or coopera-
tives, 152,000 MT from state farms and 14,000 MT from private sources;
also, it may import up to 150,000 MT of grains annually. It would hope
to handle as much as 137,000 MT of imported inputs, mainly fertilizer.

In addition to the 10 branches and 9 sub-branches, there may be as many
as 50 temporary retail outlets (at any one time) under AMC control.

Also included in the projections is construction of 150,000 MT of new
storage and acquisition of 80 trucks with trailers. All of the foregoing

1/ It is indicated that these retail outlets would be operated by AMC only
in locations where prices appear unreasonable and only for such time
as is required to correct the situation.

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are estimates that are included in the final project plan as submitted to IBRD/IDA in September 1975.

The AMC project contemplates the setting up of an Internal Marketing Department within the EGB for licensing and supervision of the private grain trade. Also, a market intelligence unit would be provided in the Grain Board as well as support for improved crop forecasting within the Ministry of Agriculture. If, as planned, the AMC controlled 40% of the wholesale trade in cereals, pulses and oil crops in the major markets by 1979/80, then the Corporation would be in position to exercise strong control over domestic prices. A licensing system (under EGB) is contemplated to give leverage required to keep private wholesale dealers in line with the official AMC policy. It is further intended to facilitate private retail trading through assistance to local governments in regulating trade and improving marketing infrastructure. Exports of pulses and other products purchased by the AMC may be handled by the Corporation itself or through an agency arrangement with the Export-Import Corporation and/or private exporters. On the input side, the AMC will be the sole importer so far as supplying EPID marketing centers and the state farms is concerned; it will also be responsible for arranging imports of grains.

Under the comprehensive program of price fixing that is an integral part of the AMC project, pulse prices would be based on export parity adjusted for differences in location which is about the way the present system operates. One new proposal suggested is the imposition of a cess on exports when world prices are especially favorable with the provision
that funds so collected would be placed in a stabilization fund for use during periods of low export prices\(^1\). Projections for exports of pulses/oilseeds by AMC itself are very modest; only 20,000 MT by 1979/80\(^2\). This level is considered realistic by the project planners in light of the strong emphasis expected to be given cereal crops in the MPP areas and on state farms during the upcoming five years.

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1/ This cess which is in the nature of a special tax on exports would also serve to restrain domestic prices where such prices tend to be based on export parity.

2/ This estimate does not reflect exports by private dealers, Export-Import Corporation and/or others engaged in this trade.
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