THE PRODUCTION AND MARKETING OF OILSEEDS IN ETHIOPIA

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INTRODUCTION

The economies of all developing countries including Ethiopia are much dependent on agriculture. About 70% of the population of low income countries depend on this sector for their livelihood; and they spend 60 to 70% of their income on food.[1]

Thus agriculture is the main economic sector in the economy of developing countries in which its share in total employment, in supplying food stuff and in providing rawmaterial for non-agricultural sector are dominant. It is also the main means of obtaining foreign exchange earnings of developing countries. Be it due to lack of market (as a result of high tariff levied by developed countries on manufactured products coming from developing countries) or low income countries in ability to produce manufactured goods (as a result of lack of capital), they cannot export industrial commodities. Therefore, agriculture has a higher share of responsiblity to correct the balance of payment problems of these countries.

In Ethiopia also agriculture has a dominant share in the economy. Nevertheless the growth rate of Ethippia agriculture is very low and is declining in recent years. For instance during 1960-70 and 1970-80 the annual rate of agriculture is 2.2% and 0.7% respectively.[2]

Thus the annual growth rate of agriculture during 1970-80 is lower than the annual growth rate of population during the same year, that is 2.0%[3], which implies that the country has food shortages.

The dominant role of agriculture depends on the singnificance of various agricultural crops while the case of oilseeds only is presented in this paper.

Oilseeds as the name indicates are types of crops that yield oil after some processing. It includes niger seeds, sesameseeds cottonseed, caster seed, Ground nuts, raperseeds, linseed, sunflower, sufflower and so on. Due to data shortages this paper limits its study only to the first six types of oilseeds.

It has been written that "the agricultural production of oilseeds in Ethiopia is at a primitive stage"; and "marketing facilities also need much improvement."[4]

It is in support of these arguments and to find ways and means to improve both the conditions of oilseeds production and marketing facilities this paper is developed.

The main tool used in order to achieve these objectives is qualitative data analysis and in some cases regression analysis has been employed.

In the process of this study the works of different scholars and institutes are used. Their conclusion reveals the existance of inadequate marketing facilities and the subsistance nature of oilseeds production. The results of this study also agree to what has been reported by them.

This paper tries to see the share of oilseeds in the Ethiopian Economy (in chapter 1) followed by production of oilseeds in

Ethiopia(chapter II). In chapter III and IV problems of oilseeds marketing and market for Ethiopian oilseeds are discused respectively. In the final chapter the conclusions and recomendations are given as the final outcome of the research.

FOOTNOTES

1. Work Bank, World development report, (Oxford University Press, 1982) p. 3

2. Work Bank, World development report (Oxford University Press, 1983) p. 184.

3. W/Yohanes Woldeyes, Yemane G/Yesus and Getachew Jenbere, Priliminary survey of Research, production, Marketing and processing oilseeds in Ethiopia. (Epid Publication No. 43 July 1977). p. ii.

CHAPTER I

THE SHARE OF OILSEEDS IN THE ETHIOPIAN ECONOMY

Agriculture was and still is the most important economic sector having a higher share (both in gross domestic product and employment) in the economy of almost all developing countries in general and in the Ethiopian Economy in particular.

In Ethiopia agriculture's contribution to the gross domestic product varries from year to year. For instance, during 1975/76-1979/80 the agricultural sector contribution to the gross domestic product (at constant factor cost of 1960/61) was 48.9%, 48.3%, 47.9%, 46.6% and 46.3% respectively.[1]

Thus agriculture is the mainstay of the Ethiopian economy contributing an average of about 48% of the gross domestic product and 90% of the population derive their livelihood from this sector. Agricultural exports account for 90% of toal exports.[2]

Nevertheless the Ethiopian agricultural sector is not a market oriented economic sector since most of the agricultural products are produced in the peasant sector the production is aimed maily to direct consumption. The surplus product (if any) is sold at local markets where the surplus product originated. This is because Ethiopia is a highly under developed country in which marketing facilities are not well developed.

The favorable geographical location and the existence of wide varriety of climatic conditions permists Ethiopia to be the home of wide varriety of crops. The major type of crops

produced in Ethiopia includes cereals, pulses, oilseeds and other cash crops. Although our major concern is on the share of oilseeds in the Ethiopian economy, it is necessary to present here the shares of other crops for comparison purposes.

As table one shows cereals ranks first with respect to its share both in the area of land cultivated and in total crop production in which it accounts an average for 81.3% of total area cultivated and 81.2% of total crop production during 1976/77-1980/81. It is followed by pulses in which its share during the same pariod was 9.8% of tottal crop production and 11.5% of toal land cultivated. During the period under consideration, 3.8% of the total area cultivated was under oilseeds production and oilseeds accounted for 1.6% of total crop production. Thus oilseeds ranks fourth with respect to its share in the area of land cultivated and in its contribution to total crop output. Note that the share of oilseeds in total crop production and area cultivated increases. This is due to the growing share of state farms who mostly produce oilseeds and other chas crops.

TABLE 1

PERCENTAGE SHARE OF OILSEEDS AND SELECTED CROPS FOR AREA CULTIVATED AND TOTAL CROP PRODUCTION (1976/77-1980/81)

	1976/77		1977/78		1978/79		1979/80		1980/81		1976/77-80/81	
	area	output	area	output	area	output	area	output	area	output	area	output
Cereals	83.4	67.3	84.1	85.5	84.1	86.8	76.8	82.6	77.9	83.6	81.3	81.2
Pulses	13.2	9.7	11.4	11.1	11.3	9.8	10.9	9.9	10.7	8.7	9.8	11.5
Oilseeds	3.3	0.7	3.9	1.8	4.1	1.7	4.4	2.1	3.5	1.6	1.6	3.8
Others	0.1	22.4	0.6	1.6	0.5	1.7	7.8	5.4	7.9	6.1	3.4	7.4

Sources: 1. National Bank of Ethiopia, annual report, 1981

2. CSO, Statistical abstract, 1977.

Although it has an insignificant share in total consumption oilseed is one of the important supplies of food stuff. Particularly during the periodic lent seasons of the Ethiopian orthodox church the consumption of oilseeds is relatively higher. This is because oilseeds are used as a substitue for butter. Since oilseeds production is dominated by the peasant sector most of the seeds are consumed by local peasants. It is to say that the market facilities are not well developed to provide information for the farmer and concequentely to encurage them to produce more, and because small farmers production is mainly subsistance, they may not able to deliver their products to market. Thus insignificant amount of oilseeds is produced for commerical purposes.

However, oilseeds are important crops which contribute towards the foreign exchange earnings of the country. During 1974 - 1981 oilseeds contributes for 6.3% of total export value. This makes oilseeds the fourth major export of the the country next to coffee (that dominates 57.5% of total export value), hides and skins (with 10.4% share in the total export value) and pulses (shose contribution to total value of export is of 3%). The share of oilseeds in the total export value also tends to increase which is mainly duto increase in the unit value of oilseeds.

TABLE 2

PERCENTAGE SHARE OF VALUE OF OILSEEDS AND OTHER SELLECTED MAJOR EXPORT COMMODITIES IN THE TOTAL EXPORT VALUE

(1974 - 1981)

	1974	1975	1976	1977	1978	1979	1980	1981
Coffee	27.3	30.7	55.9	75.4	79.3	68.6	64.1	58.4
Pulses	18.3	13.0	9.6	6.3	2.7	2.6	2.7	3.1
Hides & Skins	8.5	6.9	9.5	6.9	10.5	16.4	12.3	12.2
Oilseeds	17.2	16.9	5.4	2.5	1.9	1.1	1.8	3.6

Source: - NBE, Annual report, 1981

Thus oilseeds are one of the ways and means of diversifying Ethiopian export trade. It is well known that coffee is the main export of the country. But Ethiopia is a small country that she cannot affect the world market price of coffee. That is the price of coffee is dependent on the supply and demand orginating from

the largest countries. In other words, the income derived from export of coffee is subject to high uncertanty. The one possible way of reducing or eliminating this uncertainty is by diversification of export commodities.

Nevertheless, the relative share of oilseeds in the total export value id decreasing in resent years. For instance, table 2 shows that the relative share of oilseeds during 1974-1981 was 17.2%, 16.9%, 5.4%, 2.5%, 1.9% 1.1%, 1.8% and 3.6% respectively. This mainly due to the decrease in the quanityt of oilseeds exports. As table 3 below indicates, during 1976-1981, the quantity of oilseeds export was decreasing at 7.4% per annum. The highest decrease (compared to 1975) of oilseeds export was in 1979 which shows a 92.3% decrease.

The causes for this decline varries depending on type of oilseeds. Therefore it is appropriate to see the export trends and causes for a decline of export of each type of oilseeds.

TABLE 3

EXPORT QUANTITY INDEX OF OILSEEDS

1975 = 100

	1976	1977	1978	1979	1980	1981
Oilseeds	42.8	11.6	11.6	7.7	14.1	27.0
Cottonseed	22.4	37.6	54.3	-	20.0	-
Sesameseed	43.0	8.4	9.1	6.0	12.9	28.2
Castor Been	61.1	5.6	11.1	26.4	4.0	11.1
Niger seed	66.7	28.9	66.7	62.4	23.6	-

Source:- NBE, Annual report, 1981

Taking 1975 as the base year the quantity of cottonseed exported in 1980 decreased by 80%. Cottonseed oil is important for various purposes like manufacture of soap, candles and cosmetics. Although it is a highly demanded type of ilseeds for these puposes and other (such as for margarine manufactures , oilcloth and artifical leather) in over sea markets, its export declined from year to year. The possible explanation for cotton-seed export decline could be the recent years increased domestic processing of these seeds by domestic oil expressions.[3]

Sesame seed is the other type of oilseeds which is highly demanded both in domestic and foreign markets. This is due to its importance for the manufacture of cosmetics, margarine, soap, perfumes and for cooking purposes. Sesame is the most highly priced type of oilseeds in the world market, compared to the seeds we have a present. In 1982/83 sesam seed was exported to the value of about US $935 per metric ton.[4]

Although there is an excellent market for sesam seed there is a year to year decline of exports. For instance, during 1976-81 (taking 1975 = 1000) sesame seed export decreased by 57%, 91.6%, 90.9%, 94?, 87.1% respectively. The only problem in sesame seed export is the inability of country to provide more and even to remain constant due to priorities given to other crops such as creals, and other cashcrops.

Nigerseed is the other most important type of oilseeds in which its oil is mostly used by the people for cooking purposes.

it is one of the export items of the country. The cake from this seed and its leaves are used for animal feeding. These uses of niger seed makes it a demanded crop both in domestic and foreign markets. For example "during 1970-75, the Ethiopian vegetable oil industry processed 330 tons of different oilseeds out of which niger seed comprised 50%".[5] Thus niger seed is the most which is proccesed dmoesticly. That is niger is the most important crop, used by vegitable oil industries as raw material. The maximum oversea requirement for nigerseed is about 10,000 tons per annum while exports over the past two or three year have not exceeded five or six handred tons per annum.[6]

Though excellent market is available, the export of niger seed is true for the other types of oilseeds, shows a declining trend. As table 3 indicates the decline in niger seed export for 1976 - 1980 was 33.3%, 71.1%, 33.3%, 37.3%, 76.4% respectively. The main reasons for this decline are, low level of production of nigerseed and high domestic demand for the seed.

Linseed also is an important type of oilseed for manufacturing of cooking oil and jute making. In Ethiopia linseed is used (as a raw material) by vegetable oil industries to produce cooking oil. During 1970-75, Linseed (incombination with rapeseed) accounts for 40% of total oilseeds crushed in the country by domestic oil mills.[7] The seed also has important demand in oversea markets.

However, the problem in the exports of linseed mainly lies with respect to its quality. In other words, the Ethiopian linseed fell - to satisfy the required level of quality, which creats a

problem to find market for this seed. The main factors which contributes to the bad quality of linseed are adulterants such as perilla made up high percentage, having been grown with the linseed and were extremely difficult to separate from it.[8] The low level of production at the present time (due to its declining demand on export market) also may contributs to the recent years small/no quantity export of this seed.

The production of ground nuts is concentrated in Eritrea and Hararge administrative regions. Due to political reasons the production of ground nuts is very small and this is reflected in a low level of export of this seed.[9] That is the production areas are subject to poletical unrest in which this becomes the main reason for the declining of ground nut exports. As some informations from custumers on world market suggests the quality of present gound nut is lower than the past. Therefore, there is a need to improve its quality. This is possible by removing the bark of the ground nut. Ground nuts contain a chemical colled "toxin" which has 1.2% share. The existance of this chemical restricts the sale of ground nuts for some of our customers. But for most of the custumers it does not restrict and we should not warry much about lack of markets for ground nuts due to the existance of toxin. Thus except due to low level of production and some equality problems there is excellent market for ground nuts too.

In addition to its significance to foreign exchange earnings of the country ground nut is important for the manufacure of cooking oil, butter making (not common in Ethiopia) and its by-products are used for animal feeding.

Castor bean is another type of oilseed which grows wild in the country. This means the production and exports of this seed depends according to the situation. That is there may/may not be production of castorseed. Since the crop is not given attention it may be attacked by disease ~~as~~ and other forests which may result in a low level of out put of costarseed. Therefore, the income dervide from export of costarseed is not much reliable. Quality problems may also be included as contributing factors for decreasing quantity of exports of castor seed.

Because of its high acidic content the market prospects for Ethiopian Rapeseeds are not good.

From the above analysis one can logically conclude that oilseeds are not contributing as much for foreign exchange earnings of the country as they should. This is because of various problems such as low level of production, low level of quality of total out put and high acidic nature of some of the seeds. Therefore, to increase the share of oilseeds both in domestic consumption and in exports there should be ~~there should be~~ improvements in the above major constraints.

FOOTNOTES

1. Calculated from Statistical abstract, 1980, CSO, p. 174.

2. H.Borger, B and others, Production Marketing and Consumption of potato in Ethiopian highlands (Holleta, Awassa, Alemaya), (Berlin, Technische universitat, center for adcanced training in agricultural development, 1980) p. 24.

3. Institute of Agricultural Research (IAB), Research on Oil and Industrial crops in Ethiopia (1977/78 - 1980/81), (A.A. Artistic Printers, 1981) p. 262.

4. Ethiopian Oilseeds and pulses exporting corporation, 1982/83 budjet year operation report, (Unpublished material), p.2

5. Wolde Yohannes Woldeyes, Yemane G/Yesus and Getachew Jenbere, Preliminary survey of Research, Production, Marketing and processing of oil seeds in Ethiopia, (Epid, Publication No. 43, July 1977) p. III - 4.

6. Ibid.

7. IAR, Op. cit, p. 262.

8. Ibid.

CHAPTER II

THE PRODUCTION OF OILSEEDS IN ETHIOPIA

In the production of oilseeds we deal with the growing of these crops via biological processes. The process of cultivation sowing, weeding and harvesting are also included under the term oilseeds production but not activities such as processing and marketing.

2.1 PRODUCTION REQUIREMENTS AND MAJOR PRODUCING AREAS

The existence of a wide variety of crops is a function of the availablity of different types of soils and climatic conditions. The altitude of regions is the main reason for difference of climatic conditions and soil types. Therefore, the normal growth of oilseeds is also dependent on the altitude of regions. The first group of oilseeds that grow well in highlands above 1500 meters altitude includes nigerseed, linseed, rapeseed, sunflower and sufflower while oilseeds that are adaptable to lowlands below 1500 meters altitude includes sesameseed, castor bean (seed), Ground nuts and cotton seed.[1]

It is important to note that some of the crops (such as castor bean sunflower and sufflower) can grow either in highlands or lowlands or both.

Thus, with repectto altitude oilseeds production requirements and major producing areas are divided into lowlands and highlands. Although important to understand the general production requirements of these crops, the above catagorization is not sufficient to know

the specific requirements of each of the crops. It is also difficult to know what type of oilseeds are produced in which area. To do so the fallowing analysis would try to concentrate on the production requirement and major producing area of each of the oilseed types.

2.1.1 HIGHLAND OILSEEDS

NIGERSEED:- Nigerseed is a type of oilseed which is endigenous to Ethiopia. It can well grow in areas with an altitude ranging from 1700 to 2200 meters about sea level. Moderately how weather rather than cold weather is favourable for the normal growth of nigerseed. It does not favour heavy rainfall. In the whole growth period an average of 300 milimeters of rainfall gives good yield. Except on sandy sail, nigerseed can grow well on any type of sail. It is possible to sow late on sail whose water absorbing capacity is higher because the seed can grow by the moisture from that sail. As proved by research, the application of fertilizer on niger seed production cannot increase yield.

Before sowing the field should be prepared well (with the help of oxen it required three to four times of ploughing) the faster growth of niger seeds. Sowing season depends on the type of soil and weather conditions. Most of the times, niger seed can be sown during August on the sail whose absorpative capacity is higher. On the other types of the sail it can be sown starting from June 15 to 30.

Up to now there is no improved seed that yields better than the seeds used by local farmers. The seeds can be sown either by

broadcasting or in raws. In the first case the seed requirement amounts to 15 kilo grames per hectare while in the second case 10 kg per hectare is needed. Therefore, sowing by raw can reduce the amount of seed requirement by 33 percent. There should also be a 30 centimere gap between raws.

Nigerseed, being among the oilseeds which are not very much affected by weeds, weeding takes place once after a month of sowing. Up to now, there are no diseases and pests that seem to affect this seed. It is also believed that pests do not so much attack the seed during its storage in "Gotta"*

Nigerseed can ripen after three to six months of sowing. Since it is small in size and black in colour we cannot see it when it is shade off on the ground. Therefore, there should be serious attention to reduce wastage during harvesting. Harvesting takes place by cutting with the help of sickle. After cutting the harvest should be gathered and kept standing on its stocks. When it is dry enough the plant can be taken to "Awdima"** and treshed by animals ro by human labour. The seed and its strow usually are spparated by using wind power. The more the plant is dry the easier is the separation of the seed from the straw. The major Niger seed producting regions are Gojjam, Gonder, Tigray, Hararghe, Wellega and Shoa.

LINSEED:- It is mostly produced in areas where altitude is between 2200 and 2700 meters above sea level. Compared to Nigerseed, Linseed has higher rain requirements. During its growth period 450 milimeteres of rainfall is required. Clay soil is favourable for the best growth of linseed . It has normal fertilizer requirements. i.e., 30 kg of area and 50 kg of DAP per hectare

*"Gotta" - Traditional farmer's storage system

**"Awdima" - Small area of land used for treshing.

With respect to field preparation linseed is the same with that of nigerseed. Although sowing periods varry according to weather conditions, it is possible to sow between the middle of June and July. The postponement of sowing beyond this period exposes the seed to dew . Like nigerseed, the size of linseed is very small and cannot penerate the large volume of soil covering it. Therefore it should be sown on a leveled and moderately stamped fields. There are many resrarch undertakings in respect of sellecting improved seeds. The results of the researchs showd that "sikrit" and "concrant" are high yielding varrieties of linseed. The amount of the seed to sow is determined by the type of methods of sawing. In broadcasting the amount of seed required is 35 killograme per hectare while in raw planting 25 killograme per hectare is required.

Weeds, leaves and root diseases can easily attack linseed. Therefore, it requires repeated weeding and fast application of pestacides. Crop rotation and substitution of present varieties are also important methods of controlling these problems.

Cutting and uprooting are two different methods of harvesting of linseed. If linseed remaines unharvested for a long time, it is very difficult to cut or uproot the plant, because the seeds can shade off when it is cut . The treshing process is the same with that of Nigerseed.

RAPEN SEED:- The other name of rapeseed is COLZA seed. Most of the rapeseed produced in Ethiopia is grown in the administrative regions of Arussi, Shoa, Gojam, Begemider, and Wollo. It grows well in areas above 1500 meters altitude. The crop can grow best in the cooler highland areas of the country.

2.1.2. LOWLAND OIL SEEDS

SESAME SEED: - The plant cun grow well in areas whose altitude is upto 1500 meters from sea level. The crop favoures dry weather but does not grow well on fertile land. To sow on nonfertile land there should be some application of fertilizer that amounts to 100 killograme of DAP per hectare. The minimum and highest rainfall requirement of the crop is 300 to 400 militers and 400 to 500 milimeters respectively.

Sesame seed needs good preparation of fields. The field should be clean from weeds and pieces of stock of the crop. Sowing is possible during anytime of then year (if irrigation is applied), but, only during June if rain water is used. The average seed requirement of the crop is 6 killograme per hectare. If it is to be sown by rows, each row should have 40 centimeters gap between them. It should also be covered by light sail because it prevents the seed from remaining burried under the soil.

Sesame production is not highly affected by weeds. But for good results weeding should take place during infant stages of the crop. Diseases attacking Sesame seed includes leaves drop, viruses and grass hopper. The losses of the seed coused by these diseases is belived to be very low and can be controlled by pesticides. To reduce losses during harvesting the plant should not be highly dried on farms. Harvesting, treshing and other processes are the same with niger seed and linseed.

GROUND NUTS: It gorws in warm regions of Harar and Eritrea administrative regions from an altitude of 1100 meters upto 1500 meters.

Ground nuts can grow best on sandy saoil. It requires adequately prepared land.

Most of the times Ground nuts are sawn beggining from the end of May upto September. Simillarly, with other crops considered, the seed can be sown either by broadcasting or by rows in which the latter gives better yields than the former. The seeds can be sown both with its cover and without its cover. Since it permites faster growth and reduces seeding rate sowing of uncovered Ground nuts seed is preferable. The seeding rate of c-round nuts ranges from 60 to 8o killograme per hectare.

As any type of agricultural products, one of the means of improving the yield of Ground nut is the introduction of improved seeds. The already developed improved seed varrieties includes Shullamiz, N = C_2 , G.A - 219/20 and Vurdinia Bunchs. In regions where they are growing by rain fall the yield is 20 quintals per hectare while in irrigated areas the yield may upto 40 quintlass per hectare.

Weeds, diseases and pests affect the production of this crop. Therefore, the other production requirements of Ground nut includes, weeding after six months of the crops growing, introduction of new varrieties and applications of pesticides.

The yellow colour of the leaves of the ground nut is indicative of ripening of the crop. For harvesting to take place, the seed also should have red colour. Up rooting is the method of harvesting of the crop. Treshing is the same with other types of oilseeds and it is stored un separated from its cover.

TABLE 4

Production indices of Oilseeds

1971/72 = 100

	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	80/81
Production	100	41	43	8	21	9	17	16	24	19
Area	100	50	53	16	31	17	21	24	28	23
Yield	100	79	76	174	89	45	76	66	85	79

SOURCES 1. CSO, Statistical Abstract (1972 and 1975)

2. NBE Annual Report (1978 and 1981)

2.2 PRODUCTIVITY AND QUALITY OF THE TOTAL OUT PUT OF OILSEEDS

The out put of oilseeds have been decreasing due to dramatic decline in the area of land under oil seeds cultivation and to lesser degree due to decrease in the productivity of land.

Taking 1971/72 as above year (as indicated in thable 4), the highest decline in the output of oilseeds was in 1974/75 which shows a 92 percent decrease intotal production. In the same period the area under oilseed decresed by 84 percent while yield per hectare increases by 74%. Compared to the base year, the 1973/74 decrease in output that shows only a 57 percent decrease was very small. This smaller decrease in output should be explained by small or decrease in the area of land under oilseeds cultivation which records only 47 percent decrease. At the time yield decreased by 24 percent.

During the periods under consideration output of oilseeds shows an annual average decrease of 78 percent. In the same period, area of land under oilseed production and productivity of land shows a yearly average decrease of 71 percent and 15 percent.

Thus the above analysis reveals that most of the decrease in oilseed production is due to the decrease in the area of land cultivated for this purpose. It also shows the inefficiency of production of oilseeds because most of the output variation is dependent on the variation of area of land. The low level of productivity in oilseeds production (all crops) can best be shown if we try to analyse the position of the country with respect to productivity with other countries.

In Ethiopia(as shown in table 5), the yield for sellected oilseeds vary between 3.7 quintals for linseed and 6 quintals per hectar for ground nuts. In most of the cases the yield of oilseeds in Ethiopia is low taking into concideration Africa, developing countries, developed countries and world's average. This implies that production of oilseed, in Ethiopia is at the subsistance level, being dominated by the peasant sector who operate in traditional ways. It is to say that the dominant possition of peasants in the production process and their inability to use modern inputs is responsible for this low level of productivity. During the years 1974/75, 1975/76 1976/77 and 1977/78 the peasant sector had a share of 100%, 99.95%, 99.56%, 98.85% of the total oilseeds production respectively. On average the peasant sector dominates 99.59% of total olseeds production in the country.[2]

TABLE 5

ESTIMATED YIELD (QUINTAL!HA) OF MAJOR OILSEEDS IN ETHIOPIA AND SOME SELLECTED REGIONS (1979)

	Ethiopia	developing Africa	developing Countries	developed Countries	World
Rapseed	4.0	4.0	6.1	12.8	8.5
Groundnuts	6.0	8.9	9.7	23.5	10.2
Linseed	3.7	7.1	4.3	5.9	5.0
Castor Seed	4.8	7.8	9.4	21.1	12.5
Sesamseed	5.7	2.9	3.0	3.6	3.0

Source:- FAO, Production year book, 1979, Vol. 33.

The yield is sesameseed production is exceptionally highest in Ethiopia (compared to all regions) becase of best weather conditions for the growth of sesameseed. Although low yields oilseeds characterize in Ethiopia, sesame yield is the greatest of all regions. This indicates that the country's potential for export of sesame if she can produce more.

The lowest productivity in oilseeds production can have implication on the quality of total output. This is because the factores contributing for the low level of yield also affects the quality of oilseeds output. This factors includes the unavailablity of fertilizer, and preharvest losses due to insects, weeds and climatic factors. Weeds can affect the quality of output because if the oilseed is mixed with the seed of weeds its is not said to be of good quality.

In addition to the above explained factors, the primitive storage facilities by farmers lead to spoilage and losses of quality of the total output. Since the Ethiopian farmers storage system is inadequate the stored output is subject to rainfall, rats and moth attacks. For example Rats after consuming the product they can spoil it by their wastes. Thus from all the above analysis one can conclude that oilseeds are not good in quality. Therefore, there is a need to improve the quality of oilseed products. This is possible through reducing weeds, application of pesticides and by improving the present storage system. Adequate marketing facilities such as standardization, grading and weighing can also enhance the farmers interest to improve the quality of total output. That is, if the farmer recieve better price for better quality than he receive

for bad quality, he may try to deliver good quality oilseeds output. The introduction of improved seed can also improve both the productivity and the quality of outputs. For example introduction of seeds that are not easily attacked by weeds, pests etc. But the peasant sector is subject to problems related to capital scarcity. Therefore, to improve the productivity and quality of the total output the peasant should have to credit facilities.

OILSEEDS OUTPUT PROJECTION

Based on the model developed in annex-1 and 2 we will try to etsimates output of oilseeds in the future. As derived in annex 1 of the paper our model is $\hat{Y}_t = -0.21 + 5.06X_t$ $Ry^2x = 93.7\%$

(0.1195) (0.105)

Thus $Ry^2 = 93.7\%$ indicates that our model is one of best fit. $B_o = -0.21$ - This means if there is no any area of land commited to oilseeds production, output will be -0.21 units which emplies import. The marginal parameter B_1 is equal to 5.06 which means that if area of land under oilseed cultivation increases (decreases) by one unit, oilseeds output also increase (decrease) by 5.0674 units. Thus output and land area under oilseed move together.

TABLE 6

year	Estimated output	Estimated area of land
1981/82	831.7	201.5
1982/83	693.7	174.3
1983/84	574.7	150.8

Assuming every thing is going as it is at the present time one can forecast that oilseeds output during 1981/81 - 1983/84 would be 831.7, 693.7, 574.7 thousands quintals respectively.

FOOTNOTES

1. Woldeyohannis Woldeyes, Yemane G/Yesus and Getachew Jenbere, Preliminary survey of Research, Production, Marketing and processing of oilseeds in Ethiopia, (Epid, publication No. 43, July 1977)p. II-2 ~~Addis Ababa~~.

2. National Bank of Ethiopia, Annual report, (Addis Ababa, published by NBE, 1978), pp. 9-10.

CHAPTER III

THE PROBLEMS OF OILSEEDS MARKETING

3.1 The scope of Agricultural Marketing

The meaning of marketing as used by different economists, is different. For example, there are economists who consider marketing as the 'sale' of a product.[1] But selling is one function of exchange and can not be the appropriate meaning of marketing. There are related activities which should be included under the term marketing. This includes, storage, transportation, and processing.

It is worth to mention that, for some economists the services provided by the consumer should also be included under the term marketing.[2] After buying the product (for example oilsseds) the consumer may use their own packaging, transportation facilities and storage facilities. They may also process it. During this process there are some additional costs which could be incured by consumers. If the meaning of marketing is to be complete these costs should also be included. Though it is important for theoretical purposses, such a definition is not practical. This is due to the difficulties of colleting data on the provision of services by different consumers.

The term marketing can also be defined by the performance of all business activities involved in the flow of goods and services from the point of intial agricultural production until they are in the hands the ultimate consumer.[3] Such a definition seems appropriate way of defining agricultural marketing. It analyzes

the process of marketing by analyzing the role and operation of market organizations. In other words the role of middle men' from rural assemblers market to retailers market is taken into consideration. Thus the concept of marketing can be understood with respect to, first, merchant middle men which includes retailers and whole salers; secondly, agent middlemen that invludes brokers and commision men; Thirdly, speculative middle men whose major aim is profit making, furthly facilitative organizations whose help to various middle men is important for efficient operations of these people.

Marketing can also be seen in the light of analysis of the marketing of specific products.[4] This approach to the term marketing is what we call the commodity approach. Here the process of marketing of specific products, for example, Nigerseed, Sesame sedd and other oilseeds, can be analysed. Under this approach, the functionalist approach to marketing according to which marketing is the process of delivering goods to the consumer, and the approach of institutionalists who define marketing as the structure and operation of agricultural marketing corporations. This concept of marketing is important to understnad the specific problem for specific product. In our analysis of the problem of marketing we would follow M.E. Brunk's and L.B. Darha's definition according to whom marketing is "a series of services involved in getting the product from the point of production to the point of consumption."[5] Therefore, marketing in our cases includes the time when the product are packed and leave the main gate of the farmer till it reaches the hands of the consumer. In otherwords, the process of selling and buying, storage and transportation; standardization, financing, risk-bearing and market informations are included under the term marketing. Thus we have defined the concept of marketing by its functional performance.

The purpose of engaging in agricultural marketing here is to evaluate the efficiency of marketing and to introduce the means of changing if it is not efficient. These changes in the process of marketing may or may not be accepted to all parties. For example, changes that would increase the satisfaction of the consumer may not increase (even reduce) the profit of the producer. In the same way changes that can increase the profit of the producer may not also increase satisfaction of the consumer. Therefore; efficient marketing should serve both interests.

The term efficient marketing as defined by Richard L. Kohls is nothing more than maximization of input - output ration.[6] The output of efficient marketing should be the gain in the earnings of the producer and increased satisfaction of the consumer. Inputs are ways and means by which such objective is achieved. These includes improvements in storage, transporation, grading, market informations and son which inturn needs capital labour and managerial skills. For marketing to be efficient the cost of such inputs should either be reduced with out reducing the satisfaction of the consumer and the profit of the producers (farmers), or increase if the benefit is more than the cost. Therefore, marketing efficiency does not necessarly mean reduction in the cost of inputs. Thus "improvements in marketing might be accomplished by reducing costs or by increasing costs of given services if such is more than offset by the savings jointly affected in other services."[7]

Makret efficiency includes both operational and price efficiency where the former assume decreasing costs without reducing the ouput, while, the later assumes efficiency in buying and selling, and pricing systems. Operational efficiency is the function of reduction on damages i in transporting ouput and spoilage of the stored output. This

This efficiency can be achieved through efficient utilization of the available technologies or through introduction of new techniques that would reduce cost and leaving the out put unchanged or some times improved.

3.2. PROBLEMS OF OIL SEEDS MARKETING

In our analysis of problems of oilseeds marketing the problems we consider are general agricultural marketing problems. Therefore, one should not understand them as problems specific to oilseeds marketing.

3.2.1. STORAGE, HANDLING AND PACKAGING

The disproportional balance between supply and demand is the function of lack of adequates storage facilities. This discripuncies in the supply and demand and reflected in price fluactuations. Thus, storage facilities are necessary to have the product at a desiered level at any time and to stabilize prices. However, storage facilities in Ethiopia are scarce and inadequite.[8] Gotta and underground storage systems are the well known storage facilities available for farmers. Nevertheless, there storage facilities are not adequate because they expose the oilseeds to Rodents, rainfall, flood, fire and so on. Ruaral market dealers may also have there own storage system which made from stick and mud wall; and earthy floor. Though better than the farmers storage systems such storage facility is not adequate because it cannot present the product from the attack of fire and rats. At the whole sale level there is moderetely improved storage system. The wholesalers stores are mostly walled by cement block and the floor is cemented. The only best storage system in Ethiopia is the goverments storage system which is made from steel. Though good interms of quality the governments storage facilities are also inadequate in the sense that their capacity is very small.

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In adequacy of storage facilities is reponsible for most of post harvest oilseeds losses. More than 100 of species of pests have been indentified to attack storred out put, and the contimated loss due to these pests was in the first half of storage season amounts to 15-20 precent.[9] Accepting such estimate and by assuming that all the produced oil seeds are storred upto the end of the first half of storage season, we can estimate oilseeds losses during 1975/76-1980/81.

The estimate on table of shows during the years 1975/76-1980/81 the loses of oilseed in storage was 185.6, 78.9, 102.6, 146, 215.8, 173.4 thousands quintals respectively. Which is 17.5% pf the oilseeds produced. If this loss was eliminated, it was possible to export oilseeds to the value of 15330.56 6973.2, 8249, 23973.2, 332046.2 and 29946.1 thousands for the respective years.

TABLE 7

Table of Estimates of Oilseeds Losses

	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Total oilseed Production (in 000' quintal)	1060.5	451	856.5	834.4	1233.2	990.9
Average oilseeds losses in storage 175% pf total production (in ooo'quintal)	185.6	78.9	109.6	146	215.8	173.4
Unit value of oilseeds (Eth. $per quintal)	82.6	88.38	80.4	164.2	148.5	172.5
Oilseed losses in value terms (in 000'Eth.$)	153305	6973.2	8249	23973.2	332046.2	29946.1

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It has been stated that "losses in storage need grater attention than losses at other stages because grater losses have been reported by various investigations at this stage than any other and also because relatively easier to estimate as well as prevent or reduce."[10]

Thus relatively higher crop losses in storage than others and the relatively lower costs of ways and means to control such losses necessitates the adoption of improved storage systems. But such a system needs substantical amounts of capital which is not availiable for small farmers. Therefore, inorder to attain such objective (i.e. creation of improved storage facilities) eredir and other government assistnce to the former should be available.

When need arises to transport the product to market the product needs certain packaging and transportation means. in Ethiopia silicha* is the well known packaging means for farmers. After reaching on the market, and ownership of the product is transferred to assemblers, the product is packed by sacks. The sacks weight 100 killograms when full. These packaging and handling means being promitive it is reasonable to expect losses either in weight or quality of the product. But losses due to inadequat methods of packaging and handling may not occur only from the farmers storage to market and at the assemblers level. On the contarry it can occur also during the transportation of the product from the farm to the farmers storage, at the wholesale level, and retail level. Therefore, immovement should be made at each level of packaging means to reduces losses although high or concentration should be given at the farm level.

3.2.2. TRANSPORTATION

Transportation is one of the marketing facilities which of available can play important role in the delivery of goods from the surplus producing areas to the deficit producing areas

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*Silicha- tradtional farmer's packaging means made from hides and skins.

through which it makes possible price equalization between different areas. This reduces long distance movement of farmers in search relatively higher prices; and permits proportional redi income of consumers.

To expand and improve the actual and potential markets effective and swift transportation is necessary. In other words marketing efficiency i.e. increased satisfaction of consumers and increased benefits to producers are dependent on the efficiency of transportation. For transportation to be efficient transport costs should be lower which inturn depends on the availability of improved transportation system. Thus, transportation is the basis of adequate and effective marketing.

However, in Ethiopia, human labour and pack animal such as donkeys, mules, camels, horse s are the only means for the farmer to tansport oilseeds to the nearest rural market. This transport system is not swift and effective. In most cases the farmer to sell his oilseeds and to return back home may take him a minimum of one day. It is also estimated that "the change for pack animals average to about Eth.$0.63/ton-km. or over six times the truck freight rate in all weather roads."[11] Thus the usage of pack animals as a means of transportation costs much higher than the use of truck transportation. The usage of pack animals as a means of transportation may also have negative effect on the quality of oilseeds. Foinstance, during the dry seasons oil seeds can be transported over long distances and a significant amount of weigh losses can occur due to excess heat from the sun. The loss

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in the quality of oilseeds is even much higher during summer. When oilseeds are loaded by pack-animals, rain, flood and mud can make it spoiled and wet.

From the rural markets to large urban market or between urban markets, trucks are used as the main means of transportation. But most of oilseeds production areas are very far from such market and road transportation is not available at the required level, It has been reported that compaired to the size of the country, the road ratio of 11.1 killometers per 1000 square killometer is very low even by the standard of our continant.[12] The available trucks in Ethiopia are limited which permits truck renters to charge high price for the service that transportation cost is very high.

3.2.3. GRADING AND WEIGHTING

Grading takes place by differntiating the product in to lots according to specfic quality. And each lot being the same with respects to the quality so specified. Homogenity of lots is important for standurdization. Unless the lots are not homogeneous it is difficult to introduce standards.

The process of grading and standardization are important for transportation to be facilitated. But how grading facilitates transactions. Through grading transuctions are facilitated because, the farmer eliminate the need for perosnal inspection of oilseeds by consumer and processors. If oilseeds are grouped according to their quality and characterstics, exchange relationship, between sellers and buyers become easier. which in turn would result in better efficiency of marketing.

In Ethiopia physical appearance, shelled or unshelled (in the case of ground nuts) and content of impurities are the only ways in grading of oilseeds. Such a grading system do not consider the essential characterstics of the product. For example, it does not take in to account, acidic, protein, oil contents of oilseeds. Thus oilseeds were and the oil still graded on primitive bases. This has implication on the quality of oilseeds produced. It is to say that, because the price received by the farmer, for his oilseeds he sales reflects for the quantitity of product not for its quality, the farmers do not have any incentive to produce quality out put. The weak grading system also hinders the introduction of improved seeds, pesticides improved storage systems, increases fraudulent practices and make harder for producers to sale their oilseeds. Inadequate grading system that results in low quality oilseeds also makes Ethiopian oilseeds export non-competetive on the world market. "Local standardization and grading methods are at best primitive... henceby default the potential entry of Ethiopia production in to "rest of world" markets has been serviously restricted."[13]

Therefore, there should be adequate standardization and grading methods to facilitate trade, to satisfy consumers requirements, to improve the quality of out uputs through which it is possible to improve the earnings of the farmer and the nation as a whole, to reduce fradulence on the market and for other purpouses.

Problems of weighting is also one important factor which hampers the distribution of oilseeds and other agricultural pro-

ucts in Ethiopia. Since most of the farmers are illitrate, they cannot read and understand the units of weight which results in exploitation of farmers by rural assemblers. Rural dealers may also use uncertified weights; to reduce the weight of oilseeds and consequently to pay low prices for the farmer. These process should be controlled by governmental and public institutions. There are also some farmers who deliberately mix the soil with oilseeds to be payed for the soil as if it is oilseeds. This last problem can easilly be controlled through grading.

3.2.4. Market Intelligence

Market intelligence here reffers to market information. For efficient and smooth operation of marketing there should be adequate and timely information. "Information on current price is necessary, so is information concerning quantities now available in storage, enroute and in prospect. Demand facts need to be collected. Information is need at all levels in the marketing channel from the points of first sale from the farm, through the various points in the wholesale and processing stages, to the retail level when the goods are sold to the consumer."[14]

Marketing information by avoiding glut or shortage, excessively wide margin, uncertainity of prices, plays a facilitating role in the process of marketing. Thus market informations reduces uncetainity of market.

In countries like Ethiopia where inadequacy of massmedia, pre dominance of illitracy, absence of private and public agencies

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to provide information, inadequacy of mail and telephone services exist information about the present and future market contion is very weak. In Ethiopia, middle men such as, merchants and brokers are the main source of information, to all parties concerened. But the problem with these source of information is that these middle men do not provide facts but on the contrary they provide information infavour of them selves. Most of the information about the operations of the market is available for wholesalers and reatilers while for farmers and consumers such information is scarcely available or even may not available at all. As a result most of the profit margin are concentrated for middle men (especially for the wholesalers) while the earnings of the farmer and purchasing power of the producer is very low. It is said that "the death of adequate and reliable informations at all levels is a primary cause of unequal bargaining power, poor producer price, and the low level of intermarket price consonance."[15]

Therefore, to cope with such problems informations should be available about the present and future market trends, about the quantity and quality of out put, about the present and future trends of supply and emand. This could be possible through intensive usage of massmedia for this purpose and eradication of illitracy.

3.2.5. CREDIT FACILITIES

It is one characterstics of developing countries that credit facilities are not adequate. As we have seen earlier (in chapter II), Ethiopia ranks last in its productivity of oilseeds produ-

ction. This is due to shortage agricultural inputs; which if available can increase the yield. The vast majority of Ethiopian farmers are operating at inefficient methods of agricultural production. Most of the increase in oilseeds out put is due to expansion in the area of land not due productivity. Thourh it is not an acute problems at the presne t time (since much it arable land reamin uncultivated), the prospect, growth of population and depletion of land will creat problem if this condition is to continue. Therefore, there should be applications of modern inputs to control both the depletion of land and shortages in the eara of land in the future. It is also important to apply chemicals to reduce or even to eliminate the force of pests, insects and other related negative factors that will lead to oilseeds losses.

Increasing productivity through the applications of agricultural inputs needs substantial amount of capital which is not available for small farms. Therefore, credit should be available for farmers to break these constriants.In rural Ethiopia, merchants, relatives and local money lenders are the main sources of credit for the farmer.

Nevertheless there are problems with this system of credit which would lead to futher impoverishment of small farmers. This is because of high interest rates asked by lenders. Forinstance, the 1971-75 survey in Wegera awraja shows that interest on cash received is about 120% and in kind it amounts to 100%.[16] As a

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result farmers preffer to remain with the existing inefficient production systems.

Awareness of these problems, the past regime had tried to make available the credit through financial institutions especialy the AID bank. But such credits was not adequate in the sense that it was concerntrated to large commorcial farms which results in the further enrichment of large owners and poverty and evictions of small farmers.

At the present time most of the agricultural credit is granted to state farms.

T A B L E 8.

Compatative figures 9 loan granted to state farms Co-operatives and individual farms (1976-1978)

Year	Individual farms		Co-operatives		State farms		Total	
	Amount Eth.$	%	Amount Eth.$	%	Amount Eth.$	%	Amount Eth.$	%
1976	140,448	0.1	3,242,673	2.2	145,439,935	97.7	148823,056	100
1977	74,359	0.1	13,339,980	8.5	143,099,287	91.4	156513,626	100
1978	84,963	0.1	109,383,319	10.6	91,867,204	89.3	102,890486	100

Sources: Agricultural and inustrial development Bank, annual report, 1977 and 1978.

As table 8. indicates during the years 1976, 1977 and 1978 state farms dominate 97.4% and 89.3% of total credit respectively.

The co-operatives sector whose share, during 1976, 1977 and 1978 was 2.2%, 8.5% and 10.6% of total agricultural credit respectively, is the second favored sector. Compaired to the state farms and co-operatives sector, credit for individula farms is insiginifcant. During 1976, 1977, 1978 the share of indvidual farms in the total agricultural credit do not show any change. In other words, individual farms dominate only 0.1% for respective years. One of the resons for such a system of credit is to encourage social property and co-operativization of agricultural production. It has been also stated that credit institutions usually advances loan to large farm operations for they fill that the cost of administering credit to small farmers and their repayment capacity tend to be incomptaible with the operational values of the fincancial institutions; and large scale farmes in most cases, have better education and occers to extension services, they can use the credit more productively.[17]

More specifically, the main resons for discouraging individual farms and favouring co-operatives and state farms in credit are the following.

1. To weaken private property and encourage social property.
2. Financial institutions except that cost of administering credit for small farmers is very high.
3. Most of credits available are short-form credits and, thereforem credit institutions feel that small farmers cannot re-pay with in a specified date,
4. The main objectives of agricultural credit is to enhance national development through improved agricultural production. But, most of small farmers being

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illitrate they may not use the resource productively.

Because most of oilseeds are produced under individual farms and because credit for small farmers is still insiginficant we can resonably ecpect that the producters price is still very low. That is becuase of lack of cash to pay governmental taxes and public contribution the farmer is obliged to sale his oil-seeds immidiately after harvest. As it will be be seen (in chapter IV) price of oilseeds during harvest period (especialy on December) reaches its lowest point.

The argument here is not to say that credit should be granted to individual farms, becuase it creates problems already given above. Therefore; the possible solutions for the present inadequacy of credit are co-operetivization of agricultural prod-ction and elimination of illiteracy.

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CHAPTER IV

THE MARKET FOR ETHIOPIA'S OILSEEDS

4.1. The Doemestic Market

4.1.1. Domestic Consumption.

As has been said in chapter I, oilseeds are important crops for various purposes which includes for soap making, for manufacture of margárine for domestic house hold consumption and so on. In Ethiopia oilseeds are mostly processed and consumed domestically particularly at the farmers home. To show the amount of domestic sonsumption (in this case includes, oilseeds consumed at the farmlevel and processed by local mills) the following model is constracted.

$$Y = Z+X+L \quad \ldots\ldots\ldots (1)$$

where Y= total oilseeds output

Z= total export

X.= Domestic consumption

L= Storage loses

Therefore, $X. = Y-(Z+L)$ ..... (2)

Using this formula the following figures are calculated to represent domestic consumption and are used to show how most of oilseeds are domestically consumed.

TABLE 9

The share of domestic consumption of oilseeds

In total oilseeds production.

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TABLE 9

The share of domestic consumption of oilseeds in total oilseeds Production.

Year	Out put (in 000' quintal)	Domestic Consumption	
		Volume (in 000' quintals)	%
1976	1060.5	553.9	53
1977	451.0	155.9	34.6
1978	856.5	015.3	71.8
1979	834.4	639.4	76.6
1980	1233.2	914.6	74.2
1981	990.9	650.2	65.6
T O T AL	5426.5	3529.3	

Source: National Bank of Ethiopia, Annual reports, 1978 and 1981

As it can be observed from table 9, above , the proportion of domestic consumption of oilseeds compaired to total production of the given crop is very high and grows from time to time. For instance, during the period 1976-81 the share of domestic consumption in total oilseeds production was 53%, 34.6%, 71.8%, 76.6%, 74.2% and 65.6% respectively. Here the only exception is the 1977 consumption level in which its share was only 34.6% However, during the whole period under consideration 65.% of the total production is domestically consumed in which the remaining 35% is either exported or spoilèd in storage.

The average annual growth of oilseeds consumption during the period under consideration is 2.7% while production decreased by 1.1% annually. This may have resulted from various factors, but the main reasons could be the decrease in the area of land under oilseeds cultivation(with respect to decrease in production) the increase in domestic processing of oilseeds (which permits

increased domestic consumption).

Given the 1976-81 trends (i.e. annual decreasing rate of production 1.1% and 2.7% annual growth rate od domestic consumption) Ethiopia may end up being in importer of oilseeds rather than being an exporter.

As far any agricultural products the types of consumption of oilseeds are several and differ between regions. It is mostly consumed after being roasted and pounded into flour by mukecha*. That is the flour of the roasted oilsedds combined with water and lemon and other spices is used as substitute of Wat**. This is a well known type of food in rural Ethiopia., especially when house wives have no time to prepare wat. It is to say that because house wives in the rural area work on fields to help their housbands, at times may not have enough time to prepare food.

In addition oilseeds are important for the preparation of kibanueg*** Which is used as a substitute for manufactured oil in the preparation of wat.

Oil seeds can also consumed after being processed by oil mills. This is some what the modern way of consuming oilseeds mostly in urban areas.

Thus there three main possible ways of sonsuming oilseeds i.e, as directly substitute for wat, as a substitute for oil and as manufactured oil.

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*Mukecha- It is mostly made form wood and used for punding oil seeds and other food items.

**Wat- is the usual Ethiopian food item consumed in combination with injera (Ethiopian gread).

*** Kibanueg- is the most delicious oil processed by local peasants.

4.1.2. OILSEED PRICES

In a perfectly competetive economy, the price of agricultural products, in general is determined by demand and supply forces. Though good for theoretical purposes the assumption of perfect competition is not a realistic assumption. In the real world we live competetions are imperfect and thus supply and demand are not the only price determining forces. Ethiopia being a small country both as producer and exporter of oilseeds she cannot fully compete with majot oilseeds exporter. "At present Ethiopia exports 35% of the total production but it contributes only 1% of the total world trade."[1] This can lead us to blieves that the price of oilseeds in the word market is determined by the larger exporting countries. This world market price can have influence (inaddition to supply of oilseeds on world market may enhence Ethiopia oilseeds exports which inturn reduces the domestic supply of oilseeds that leads domestic depends on world market price of the given crop.

Seasonality in the Price of Oilseeds:- As for any agricultural products there are seasonal fluctuations in the price of oilseeds. There are factors which contribute to such fluctuation of price with in ayear. This includes first of all the dependence of oilseeds production on natural conditions i.e., while consumption of oilseeds takes place through out the years its production(harvest) takes place in a short period.

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Mostly starting from about the end of November is to the end of Janauary. Here the problem is that the produced oilseeds are delivered to market immidiately after harvest. This is because immidiately after harvesting process is finsished farmers, need cash for different purposes such as to pay for government taxes, to buy clothing for them selves and their children. The inadequacy of storage facilities also contributes to the delivery of oilseeds to market immidiately after harvest. In Other words because storage facilities are inadequate farmers may prefer to ~~state~~ their oilseeds before spoilage. The comming of Christian fasting about a month after oilseeds harvesting can also significantly affect the supply of oilseeds through out the year. That is most of the oilseeds are consumed during a short time while it is demanded through out the year. This leads to the increase in price of oilseeds as we go far and far from the harvesting seasons. This should be taken in relative coution because for some of the months of the years this cannot hold true. It is because the monthly variation of prices of oilseeds in the international market, government price policies may distort prices.

As graph 1 shows the price of oilseeds during may June and July(Showing seasons) is higher than the prices in other months. The higher price for the whole period is observed in June while the lowest prices is in December. The price of oilseeds starts to decline begining November upto January(harvesting seasons). The graph also showes after reaching its peak in June starts to decline up to August. This may be due to the excess supply

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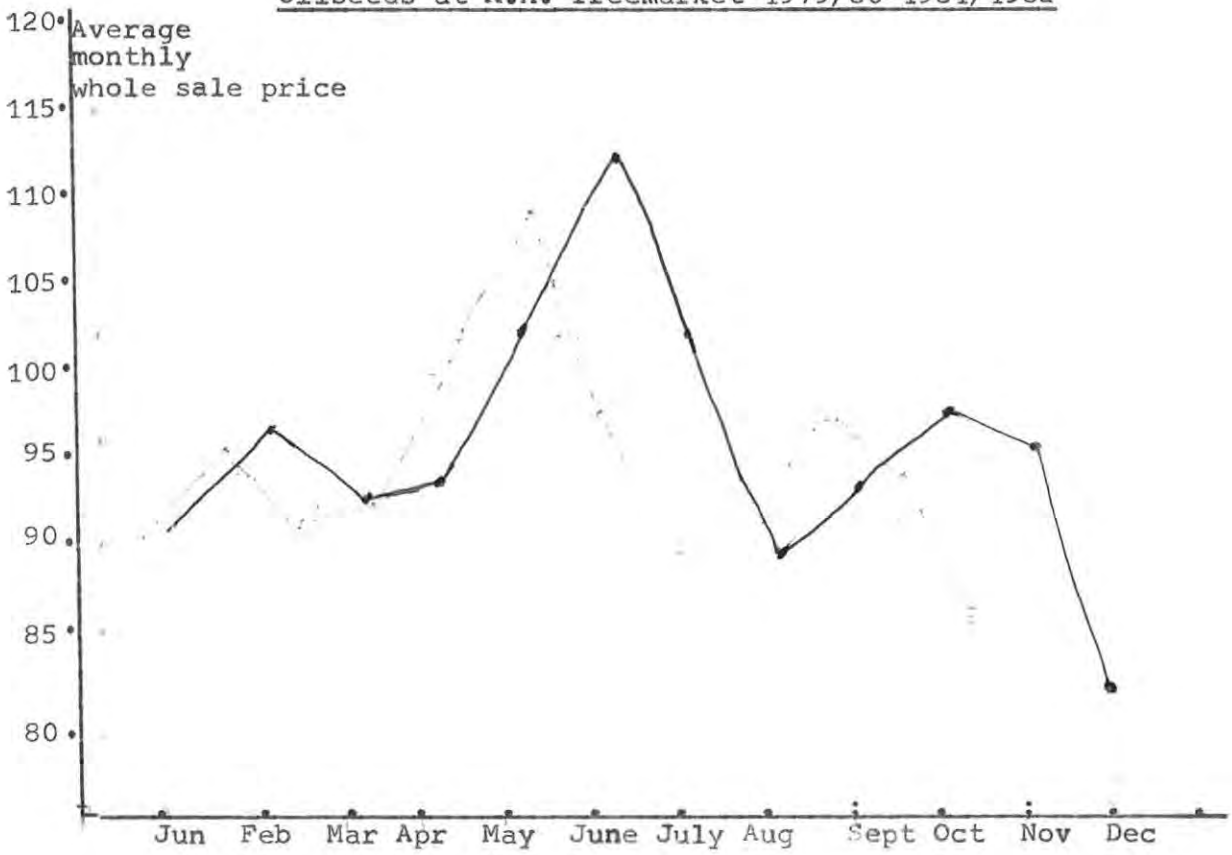
of oilseeds on the market-that is because farmers store some of the output for seeding during June-July, after saving the surplus would be sold on the market and creats relatively excess supply on the market which leads to lower prices.

Regional Variations in the Price of Oilseeds: In the surplus producing areas the price of oilseeds is lower than the price in the deficit producing areas. This is the case prevailing in every economy through dominant in developing countries. This is due to the existence of in adequate transportation and unorganized infromation systems. If the market facilities were developed, differences in the production of oilseeds between

Graph 1

Average Monthly Wholesale Price Sellected Oilseeds at A.A. freemarket 1979/80-1981/1982



Source: Drived from, Statistical data on AMC operations, (statistics division, planning and Market research Department, unpublished, March 1983). pp.85-88

different regions may not be reflected in price differences. In Ethiopia market facilities are found to be in great scarcity and a concequent wide price differences between regions prevails.

TABLE 10

Average Whole sale Price of oilseeds in sellected Towns. (in 1977)

(in Birr 1 quintal)

Item	Asmera	Debre-Markos	Dire-Dawa	Gondar	Nazaret
Nigerseed	68.0	41.88	43.34	41.75	43.00
Linseed	50.44	33.22	61.75	41.75	39.6
Sesamseed	113.66	n.a	83.66	87.37	n.a
Rapeseed	n.a	31.25	36.00	n.a.	n.a
Costor bean	63.6	28.12	30.55	n.a.	36.00

Source: Central Statistics Office, Statistical obstract, 1978.

As the table above indicates the highest price of Nigerseed is in Asmara while the lowest price is in Gondar. Except for sesame seed, for all oilseeds the lowest price prevailed in Gondar and Debre Markos markets (the largest producers). For most of oilseeds the highest prices are observed in Asmara and Dire Dawa (deficit production areas).

Thus regional price differnces are the result of differences in the supply of agricultural products (oilseeds)and inadequate transportation facilities.

It is also important to note that the price of oilseeds show an increasing trend overtime. Assuming every thing being constant this is the result of first of all, the growing demand for oilseeds (both in domestic and overseas markets), and secondly,

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scarcity in the supply of oilseeds (due to low level of production).

TABLE 11

Whole sale Price Index of Oliseed for Addis Ababa 1975-100

Item	1976	1977	1978	1979	1980
Oil Seeds	111.7	161.9	181.1	217.3	198.0

Source: National Bank of Ethiopia, Annual Report, 1980.

Compared to 1975 level the wholesale price of oilseeds in Addis Ababa during 1976-80 grows at 11.7%, 61.9%, 81.1%, 117.3% and 98% respectively. The highest growth of oilseed price is observed in 1979. While the lowest is in 1976.

4.1.3. THE STRUCTURE AND FUNCTIONING OF THE DOMESTIC MARKET

In Ethiopia there are organizations who collect, transport and sale oilseeds to final consumers, processors and exporters. Those includes both the private organizations and government marketing agencies. With respect to private organization we have assemblers, wholesalers, retailers, exporters, processoers, brokers and agents.

Assemblers are these who buy oilseeds either from the farmer or from other small assemblers (who buy oilseed from the farmer for resale either to higher order collectors or directly to consumers in rural market). Small collectors are mostly partime assemblers

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for the fact that their engagement is in agricultural production and they act as merichant for some of the days. However, this should not imply that all small assemblers are partime merichants because there are assemblers who live in small towns (villages)whose major occupation is collecting and reselling. Small collectors may have no storage facilities and hence the oilseed they purcase are stored in sacks and silicha until resale. They also operate with low level of capital and hence these people (small assemblers) sale the product immidiately after purchase.

The larger assemblers are better than small asseblers be it iterms of capital or storage facilities possesion. They possess trucks to transport oilseeds to urban areas They lend money for mini— Collectors and farmers who deliver out to them. These people may re-sale their out put to consumers and wholesalers at the same market or deliver oil-seeds to other markets(for example urban markets).

Wholeaslers take the central position in the distribution of oilseeds from the farmer to the consumer. They mostly live in large urban centre. Wholesalers posses improved storage facilities and have better acess to credit facil-ties and hence they can withhols sale in periods when the price of oilseeds is very low which inturn implys that their earnings from the sale of oil seeds is not so much that is usually they sellect the best profitable prices.

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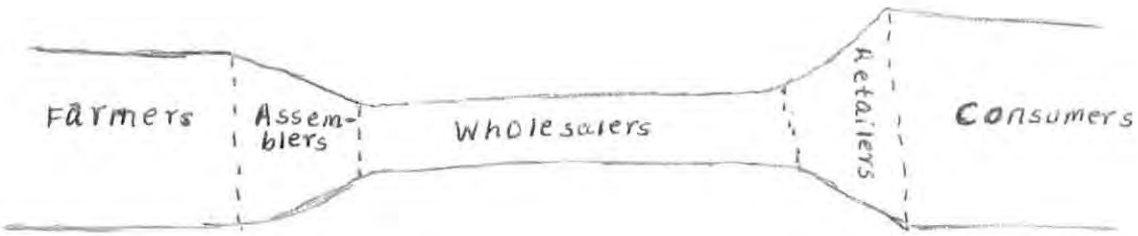
Their scale is mostly directed to exporters, processors, and retailers.

Retailers after buying the oilseed sell to consumers in small quantities. They may have some storage facilities, and can exist mostly in cities and urban centers, and small towns.

Thus the structure of oil seeds market seems a double edged funnel. The following graph may help in understanding the market structure in Ethiopia.

Figure 2



Since marketing of oil seeds passes through these stages price of oilseeds definetly increases by far greater than the farmgate prices. In other words when assemblers purchase oilseeds, they may have their own costs and when re-sell to wholesalers they added their own profit margins. In the same way, as the wholesalers sell their oilseeds to retailers they calculate and add their profit margin. As we have said above since wholesalers are owners of improved storage facility and because they have large volume

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of capital they can sale the oilseed at best profitable price; it is resonable to expect that most of the profit margins are concentrated in the hands of these people. It is also appropriate to say that the most losers are the farmers and consumers. The farmers do not have any cost calculation, and have no cash needed for various purposes and hence are obliged to sell their oilseed at any price.

In addition to private organizations there are government organization which all involued in the marketingg of oilseeds. Among them agricultural marketing corporation(AMC) is the main one at the present time. It was established in 1969 (EC) with the objective of "executing the government policy in the field of grain marketing, procurement and distribution of inputs and marketing national grain revenue."[2] As we have said above the existance of many middle men in the market chanal do not benefit the farmer and final consumers. And this results in increasing prices of oilseeds in which most of the increse in price is goimg to middlemen for small services they add on the product. Therefore, it was to smooth out this discrepancies and to stablize prices the main aim of the agricultural marketing corporations establishment.

There should be ways and means for the achievement of this goal. In Ethiopia the ways and means of acheving the goal is the power given to agricultural marketing corporation. This includes the power to:-

1. "Purchases of agricultural products;

2. Export agricultural products or sell the same for domestic consumption;
3. Import agricultural product;
4. Maintain a national emergency grain reserve;
5. Purchase or sell inputs with in Ethiopia or abroad
6. Purchase, process., mill, transport sell or store agricultural products and inputs whether for profit or other wise.
7. Cause to be constructed, to equipm and maintain bulidings, silos, storage facilities, grian elevators and other stractures and machinery;
8. Own,process, mortgage, sell and exchange property for the purchase of attaining its objectives and, the proper functioning of its operation,
9. Charge opporiate fees for the services it renders;
10. Enter in to contracts and to borrow money;
11. sue and be sued in its own name; and
12. Discharge such other necessary duties for the attainment of its objectives."[3]

With these objectives and powers agricultural marketing corporation, started operation and at present time it function as the main government market organization. The corporation purchase, oilseeds from peasant associations, producers co-operatives, services co-operatives, merchants and government institutions.*

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*Government institution includes prisons and settlement centers.

The main supplier of the organization are merchants. For example in 1981/82 for which the data is available 70% of total AMC's purcahse was comming from merchants followed by service cooperatives secotr which supplies 25.4% of total purchases. The corporation's purchase is mostly based on quota basis. That is each supplier must deliver a specified amount of grain to the corporation.

After purchasing on this basis the corporation adds its profit margin and sells it to its customers such as government institutions (which includes national food corporations, ministry of defence, Ethiopian oilseeds and pusses exporting corporation) public organizations and others.

TABLE 12

Percentage of AMC's Sales by its Customers

	1977/78	1978/79	1979/80	1980/81	1981/82
Government Institution	59.6	82.6	96.6	99.6	71.3
Public Organzation	0.04	--	2.5	0.015	28.7
Others	40.36	17.4	0.9	0.385	--
TOTAl	100.0	100.0	100.0	100.0	100.0

Source: AMC, Statistical data on AMC operations, 1983.

Most of the sales of the corporation are going to the government institutions, which during 1977/78-1981/82 accounted for 59.6%, 82.6%,96.6%,99.6% and 71.3% of total AMC's sales respectively. The third are public organization whose share is lowest compaired to government institutions and others.

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Begining 1980/81 upto the present the organization uses uniform purchasing prices. In other words, the corporation pays the same amount of price whether it is purchased from deficit areas or from surplus producing areas. That is only the quantity of purchase is lower than purchase from surplus producing areas while the price is the same. The following table may help in understanding the uniformness of the price of oilseeds. From 1980/81 to 1983/84 the price of Nigerseed, Linseed, Rapeseed, are Birr 50 per quintal, Birr 46 per quintal and Birr 46 per quintal respectively.

TABLE 13

Agricultural Marketing Corporation's
Oilseeds Purchasing Prices
(in Birr per quintal)
(1980/81-1983/84)

	1980/81 - 1983/84
Nigerseed	50
Linseed	46
Rapeseed	46

Source: AMC's unpublished data.

The usage of uniform price system all over the country is important in the sense that it permits equal distribution of income among farmers and to reduce accounting and administrative complexities. Due to uniform price usage accounting control and administrational complexities are simplified becuase calculations of costs and determination of re-selling price, control of puchasing agents becomes more easier.

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Nevertheless, the usage of uniform price system has also its own short comings for it does not give allowance for differences incosts of production. Costs of production are different between defferent regions and even with in the same region due to the fact that fertility of the land is different for different regions and locations. The farmer who plants oilseeds on fertile land may incure less cost than the farmer who produce oilseeds on nonfertile land. These difference in the cost of oilseeds production is not consodered by the corporations price policy Which may creat disincentive on the farmer (who incurs much costs) to produce more oilseeds. It also implies uneven distribution of income in the sense that those who incure much cost and those who incure less cost receive the some price. Thus the corporations price poilcy leads to two contraictory ways, on one hand to development and on the other to undevelopment. This process also aggravate the operation of black markets. That is farmers preffer to sale their oilseeds to merchands at relatively high price.

Those conditions can be corrected through governmenh taxation policy. It is to say that those who incurr loweost in production and receive the same price as those who incure higher cost, should pay relatively higher taxes and the later should be compensated (subsidized) to bring about evenly distribution of income. However, at the present situation it is diffieult to calculate costs of production, to tax more one and to subsidize the other (due to problem of administering each farmer). Therefore, co-operativization may be the one possible way out to this problem.

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4.2. THE EXPORT MARKET FOR OILSEEDS.

Almost all developing countries in genral derive their foreign exchange earnings from the export of primary products. Ethiopia which is not an exception also depends on foreign trade which accounts for 22 precent of the country's gross domestic product. This can have an impilcation on the dependence of the country on foreign trade. But earnings from foreign trade for countries like Ethiopia who export primary products is subject to fluctuation. As the price of primary product decreases it reduces the earnings of countries who export these commodities.

Therefore, there is a need to increase the volume of exports becuase this can compensate the fall in the unit price of primary commodities. It is also necessary to drivesity exports in the sense that the fall of earnings from export of a single commodity (in our case Coffee) may be compensuted by increase in the price of other commodities (for example oilseeds). Nevertheless, at the present time the share of oilseeds export in total production is very low. During the period 1976-81 Ethiopia exports only 30.3%, 47.9%, 16.2%, 5.9%, 8.3% amd 16.9% of total oilseeds out put resepectively. On average Ethiopian exports only 20.9% of the total oilseeds produced during the year in which the remaining 79.1% if either domestcall consumed or last in storage.

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TABLE 14

Oliseeds Export as Compaired to Total Output

Year	Out put in 000'quintals	Export in 000'quintal	Export as a Percentage of total out put
1976	1065.5	321.2	30.3
1977	45.1	216.2	47.9
1978	856.5	138.6	16.2
1979	834.4	49.0	5.9
1980	1233.2	102.8	8.3
1981	990.9	167.3	16.9

Source:- National Bank of Ethiopia, Annual Report, 1978 and 1981.

As table 14 shows the percentage share of oilseeds export in total oilseeds production has decreased over the years. This indicates that during the period under consideration domestic consumption increased. The decrease in the volume of export is also explained by the decrease in oilseed production.

Thus assuming no other new export commodities available to the country and no increase in the volume of other exports (for example, coffee and hides &skins) and also the increased need to import industrial goods, the loss of income from oil-seeds may aggravate the Ethiopian balance of payments problem.

Though there is problem in finding market for some of Ethiopian oilseeds (for example linseed and rapeseed) due to quality problems, for most of our oilseeds there is a good market if any is available for export. Most of Ethiopian oilseeds are exported to Asian countries whose import accounts for 73.1% of total Ethiopian oilseeds exports during 1976-1980, in

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which Japan ranks first in importing Ethiopian oilseeds followed by Israel, Saudi Arabia and Yemen. From 1976 upto 1980 these countries imported 30.7%,14.7%.15.5% and 7.1% of total oilseeds exports of the country.

As table 15, trys to show Europe is the second important importer of Ethiopian oilseeds. During 1976-80 Ethiopia exported 17.5% of its total export to Europe. During the same period, with in Europe; Poland ranks first by importing 4% of total Ethiopian exports.

The lowest protion of Ethiopia oilseeds export is imported by African countries in which during the period under consideration imported only 8.2% of total oilseeds export of Ethiopia Dijibout is in important country which accounts for 6.1% of Ethiopian oilseeds exports.

But what are the prospects of Ethiopian oilseeds? As we have stated above Ethiopian oilseeds export shows decreasings trends in recent years due to both decrease in production and relative increase in domestic consumption. Thus oilseeds export is dependent on demestic sonsumption. This can be shown by the model developed in the annex part of this paper (see annex-7)

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	Qu
Dijibouti	
U.A.R.	
Other Africa	
Total Africa	
France	
W.Germany	
Nezerland	
Switherland	
Poland	
Yugoslavia	
Holland	
Greece	
Other Europe	
Total Europe	
Japan	
Israel	
Saudi Arabia	
Yemen	
S.Yemen	
Other Asia	
Total Asia	2(
Others	
and total	269.

Source: Min

Thus we have found (see annex of) the values of our parameters . our model is $Z_t=9.61+0.815X_{1t}+0.987X_{2t}$ with R_z^2 . X_{1x2} = 99.85% which implies that 99.85% of the varriation (i.e. increase or decrease) in export is explained by the varriations (i.e. increase or decrease) in both oilseeds production and domestic consumption of the given crop. Z_t, X_{1t} and X_{2t} are total olseeds export in time t, total oilseeds output in year t and total domestic consumption in year t respectively. B_o equals to 9.61 which means if both oilseeds production and domestic consumption become zero, volume of export would be 9.61 units. Thus the value of B_o represents autonomous export. B_1=0.815 means if oilseeds ouput increases (dicreases)by 1 units (in our case quintal) export increase (decrease) by 0.815 units. In the same way B_1 = -0.987 means if domestic consumption increases (decreases)by one unit (quintal), export decreases (increases)by 0.987 quintals

Thus export has direct relationship with production while its relation with domestic consumption is inverse using the model developed here, this paper trys to show the prospects of Ethiopian oilseeds exports.

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TABLE 16

Projected Exports of Oilseeds
(in thousands quintals)

Year	Estimated output(X_t)	Estimated consuption(X_2)	Estimated export (Z_t^a)
1982	831.7	552	142.61
1983	693	468.6	112.5
1984	574.7	397.8	85.4

During the 1972-81 the actual data (see annex 7) shows that production, consumption and export shows the annual decreasing rate of 15.2%, 15.1% and 15.3% respectively. One can observe here that although both export and consumption desreased, the decrease in export is greater than the decrease in domestic consumption. This can indicate that the relative share of domestic consumption in total production increases,

Given the annual decreasing rates 15.1%(in consumption) and 15.2% (in production); and if situations continue as they are, the Ethiopian oilseeds export at the end of 1984 will be only 85.4 thousand quintals.

As we have stated earlier except for some quality problems there is a good market for Ethiopian oilseeds. Therefore, there is a need to increase the quantity and to improve the quality of oilseeds export. If quantities and qualities of oilseeds export are not improved (if continue as it is at the present time) the role of oilseeds export as the source of foreign exchange earnings is very weak. Given the above trends after few years Ethiopia

may become and importer rather than exporter of oilseeds.

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2. Issued by Provisional Military Government of Ethiopia, Agricultural Marketing Coroporation Establishment Proclamation, (Negarit Gazeta, 36th year-No.7, Proclamation no 105 of 1976, article 6/76) p.95

3. Ibid., (article 7/76)p.95

4. Agricultural Marketing Corporation, 1975 (E.C.) budget year, first half semi annual, process report. (Addis Ababa Unpublished) p.16

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CHAPTER V

CONCLUSIONS AND RECOMENDATIONS.

Oilseeds are important crops which play a role (although not significant comaired to cereals and pusses) as supplies of food stuff whether they are consumed as a substitute for wat and butter, or as a substitute for manufactured oil. It is also one important rawmaterial for oil and soap manufacture.

About 6.3% of the total export earnings of the country depends on oilseeds, It ranks fourth next to coffee, hides and skins; and pulses. Thus oilseeds are one of the ways and means in and through which Ethiopian export trade could be diversified and the balance of payments problem of the country could be minimized if not totally eliminated.

However, oilseeds are not contributing what they should contribute forwards the foreign exchange earnings of the country. This is because the quantity that could be potentially exported is not actually exported. Especially during the recent years the quantity of oilseeds export shows a declining trend. The recent years increasing share of doemstic consumption and the decline in area of land under oilseeds cultivation that results in a decrease of oilseeds output are among the major factors which contributes to this decline of quantity of export of oilseeds. The low level of productivity under Ethiopian

oilseeds ocultivation which is less than African, developing countries, developed countries and World's average can also contribute for low level of production and thus low level of exports of oilseeds. The factors which contribute to low yield includes weeds, pests, diseases and so on. These factors that contribute to lowyield also reduces the quality of oilseeds output.

Improvements in these problems needs improvements in the efficiency of marketing. This is because the present marketing systems are not efficient in the sense that credit facilities; transportation; grading, standardization and weighting; storage facilities, and market informations are ineffieient. Inadequacy of those facilities opens the way for middlemen to take most of the profit margin. Thus the benefit of the farmer from such organization of market is very low which has a negative effect on the quantity and quality of oulseeds output. It is to say that because credit facilities, storage facilities market informations and transport facilities are inadequate the price received by the farmer is very low which implies that the farmer has no incentive to produce more and to improve the quality of out put. In adequacy of grading and standardizing also contributes to the low quality of Ethiopian oilseeds. Oilseeds are not appropriately graded (except by their physical appearance and by their impurity content) and the price received by the farmaer for the same

type of oilseeds (what ever its oil, acidic, protine content etc) is the same. Thus if the price is the same for all (be it bad quality or good quality) there is no need to improve the quality of oilseeds.

In effieiency of marketing facilities (such as shortage of storagefacilities and inefficiency of credit facilities)by creating inbalances between supply and demands can also result in seasonal fluctuation of the prices of oilseeds. In other words, the tradtional storage facilities such as Gotta and under ground storage systems are inadequate to store the output for a long time; and equally important farmers have no cash to pay governmental taxes and to buy goods they need; and because they have no access to credit facilities (e.g. most of the available credits are granted to state farms followed by co-operatives) they are obliged to sell their oilseeds immidiately after harvest. However, the price of oilseeds during harvest seasons (November,December, and January)is very low while it is higher during sowing seasons (May,June and July). Thus farmer being selling their oilseeds immediately after harvest which means at lower price, they can not buy and have no incentive to use improved techniques in the production of oilseeds.

Shortages of transport facilities can also result in a real varriation in the prices of oilseeds. The price of oilseeds is lower in surplus producing areas (Dbre Markos and Gondar) while it is higher in deficit producing areas

(Asmara and Dire-Dewa). If efficient transport system were available, this divergences in the price of oilseeds between regions (markets) might not have been observed. This is because by transporting oilseeds from surplus producing areas to deficit producing areas prices between different markets could be brought closer to each other. Thus inadequate transport system by allowing differences in the price of oilseeds, allows for uneven distribution of income whether seen from the point of view of the producer or from the point of vi view of the consumer. In addition to this the traditonal transport means such as donkies, mules, camels, horses and human labour are not swift and efficient and modern transport systems are in shortage,which would result in a relativelly higher transport cost. The higher the transport cost means the higher the price that consumers pay and reduction in their real income. Due to inadequate transportation the price received by the farmer may also be relatively lower because transportation by pack animals may reduce the weights of oilseeds (dry seasons) and can spoil the product (especialy) in summer).

To be more specific the overall out comes of adequate marketing facilities are:-

1. Very low profit margin for the farmer and high profit margin for middlemen (especialy the whole sellers);

2. Very high prices paid by the consumer which employees very low real income of the consumer;
3. Inability and less incentive to produce more oilseeds, and to buy improved input for immproving the quality of oilseeds.

The low quality of oilseeds may have also a negative effect on the foreign exchange earnings of the country. In other words, because the quality of Ethiopia's oilseeds are low the nations oilseeds exports cannot compete efficiently on foreign markets which employs low foreign exchange earnings. The level of quantity of oilseeds export as a result of lowlevel of production also leads to the same result. Higher domestic price of oilseeds incomparison to foreign price also discourage exports which can result in again to low level of foreign exchange earnings. The final result of low foreign exchange earnings, low walfare for the society as a whole.

Thus inadequate (inefficient) marketing either by reducing domestic production or by reducing foreign exchange earnings of the country reduces the living standard of the society as a whole.

It was to overcome these problems through eliminating / weakening middlemen and through stablizing prices of oilseeds the establishment of Agricultutal Marketing corporation (AMC) in 1969 (E.C.) came into being . To fulfill these

objectives the corporation has been given power among which the power to buy and to re-sell both in export and domestic market are included. Most of the purchases of the corporation are from marchants while most of the sales are going to government institutions.

Nevertheless, up to now the Corporation is not in a position to satisfy the objective of its establishment This is mainly due to the following problems.

Though weakend to some extent middlemen are still operating in the market channel and almost all conditons that prevailed in the past few years do exist at the present time as well.

The usage of uniform price system by the corporation (although assumed to bring about even distribution of income and efficient accounting systems; and effiemency of addministration) resulted in uneven distribution of income which is opposite with its objectives. That is to say that oilseeds produced under high cost operation (non-fertileland) and oilseeds produced with low cast operation (on fertile land) are equaly priced which means low income for the former high income for the later. The farmer also preffers to sell his oilseeds to merchants at a relatively higher prices and because merchants advance credit to individual farmers. This process aggraviate balck markets which concequently result in a higher consumer prices that emply lower real income.

Thus even after the establishment of AMC, there is no significant improvement which would permit the farmer to produce more and to improve the quality of oilseeds; and the export earnings from these crops is still low.

However, except for some of the Ethiopian oilseeds such as Rapeseed and lineseed (due to quality problem), there still exists excellent market for Ethiopian oilseeds. The main market for Ethiopian oilseeds are Asia, Europe and Africa. Therefore, there is a need to increase the quantity and quality of oilseeds, ~~quality of oilseeds exports~~. This is possible through giving the farmer an incentive to produce more to improve the quality of oilseeds output. Improvements in market facilities are the channels through which these incentives could be created. This being the case agricultural marketing eorporation's price policy favoured increased prudction of oilseeds by increasing its relative price (compaired to cereals and pulses). state farms also increase the production of oilseeds and other cash crops. These are the main reason for the present time increasing share of oilseeds in total area cultivated and thus in the total crop out put. Its share in the total export value also increased. How ever the problem here is that its shares in the total area cultivated and in total crop output are increasing at a decreasing rate.

Assuming conditions are going as they are at the present time Ethiopia after some years could be a net importer of oilseeds. That is to say area of land under oilseeds cultivation,oilseeds output and quanitity of oilseeds export continue to decrease Ethiopia the exporter of oilseeds could be an importer. The behefits of the farmer and the consumer(from consuming oilseeds) would remain low or even decrease from the present level.

Thus further improvements in the marketing facilities is needed. However, further improvement in the marketing facilities at the present time in which most farmers live in separation by long distance is difficult. This is due to the fact that constraction of road transport may need high costs . The present time dominate passitions of private farmers (i.e. both in their ownership of land and production of oilseeds) which is opposite to the future economic goal of the country, the illitracy of small farmers, their inability to re-pay the loan they borrowed with in a specified date hampered the distribution of agricultural credit. In other words co-operatives and state farms are favoured by credit instituttions in which private farmers have no acess to credit facilities.

Therefore, to improve the present inefficient marketing systems co-operativization and resettlement policies are important. These are long-term policies which have already started to be implemented in Ethiopia.

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Annex.-1

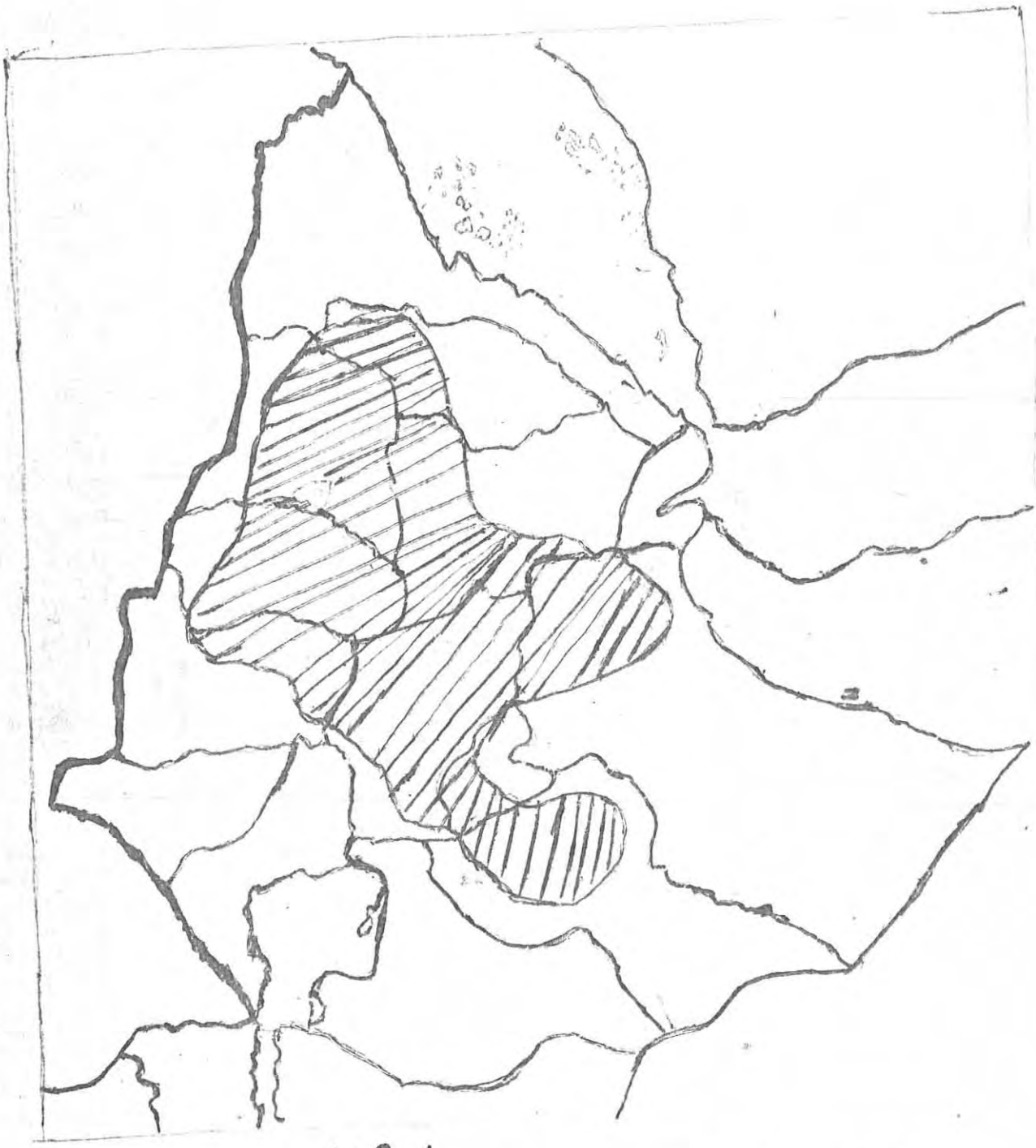

FIG. 1
NIGER SEED GROWING AREAS IN ETHIOPIA

Source: See Annex four.

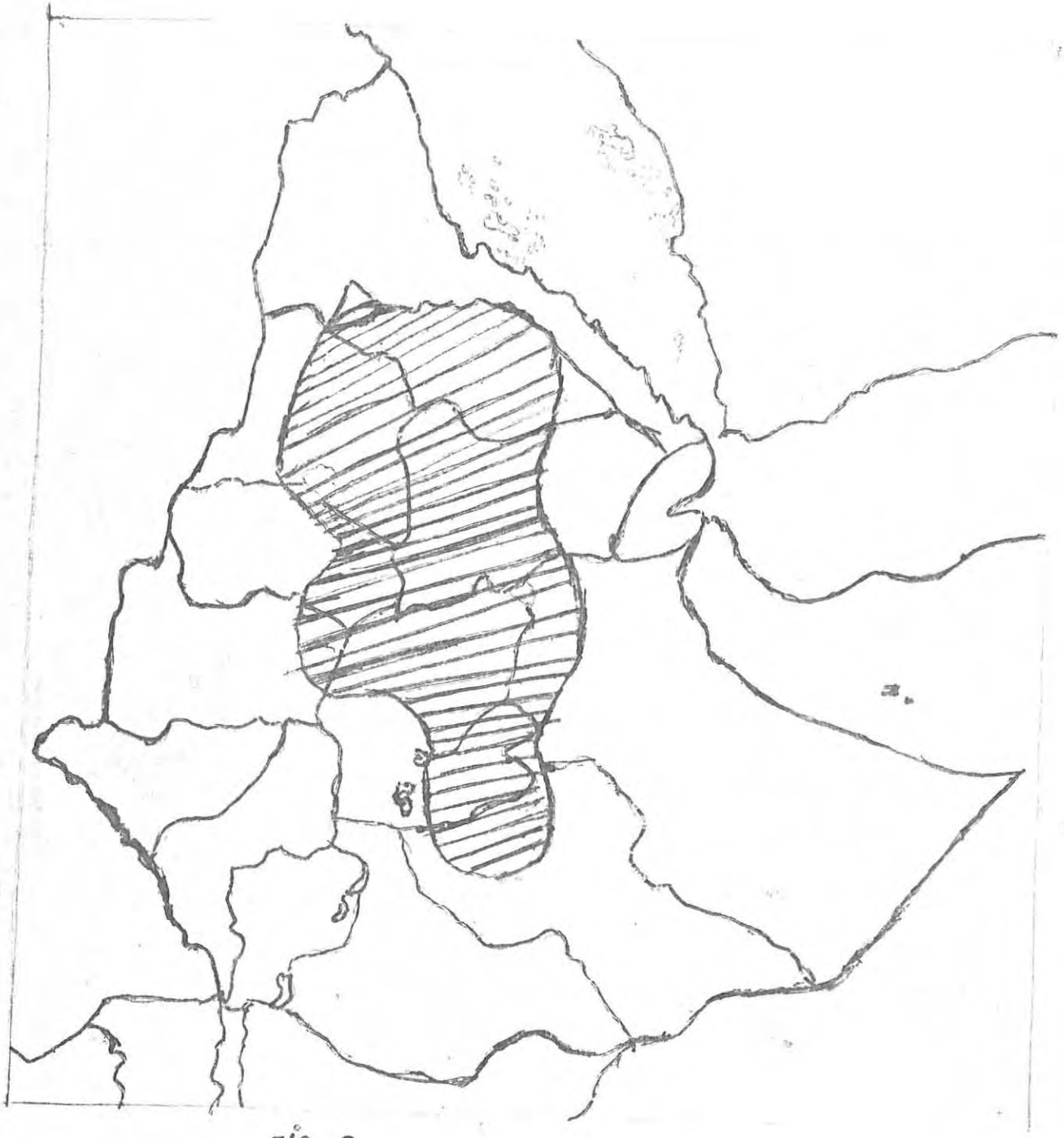

Fig. 2
LINSEED GROWING AREAS IN ETHIOPIA.

Source: see annex four.

Annex – 3

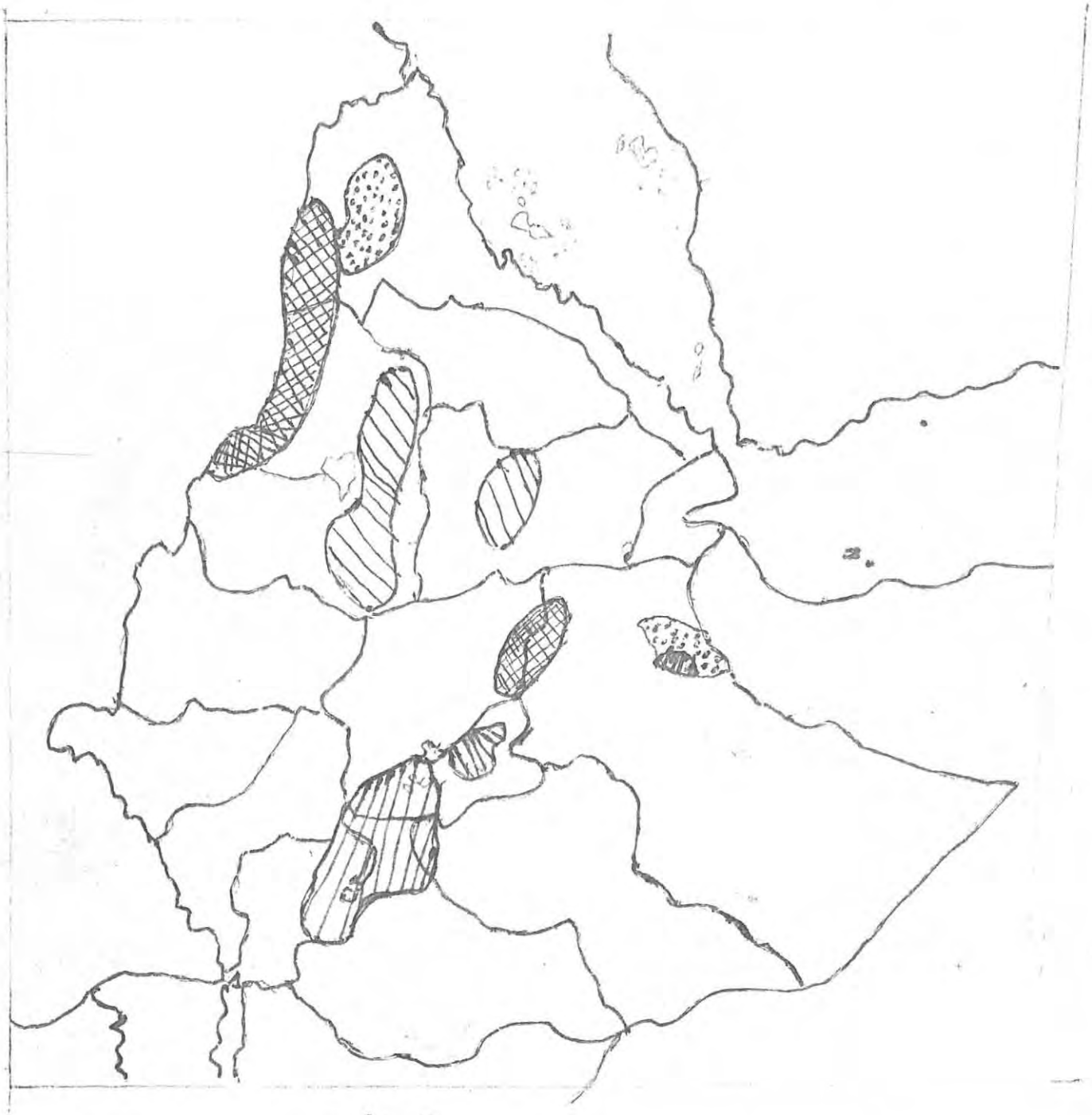

Fig. 3

key

= RAPESEED GROWING AREAS IN ETHIOPIA.

= SESEME GROWING AREAS IN ETHIOPIA.

= GROUNDNUTS GROWING AREAS IN ETHIOPIA.

= CASTOR BEAN GROWING AREAS IN ETHIOPIA.

Source: see annex four.

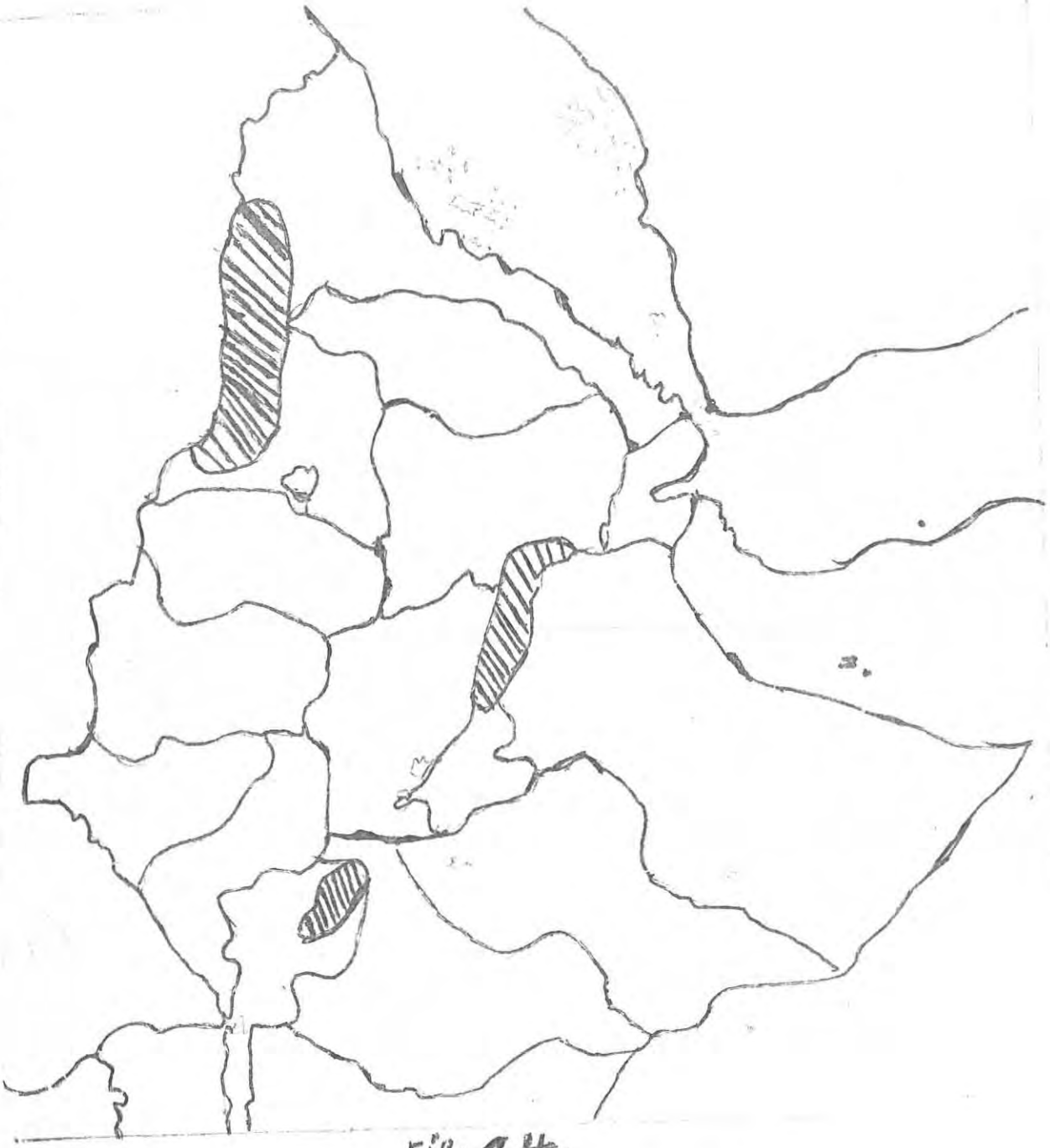

Fig. 04.
COTTON SEED GROWING AREAS.

SOURCE :- EPID, Preliminary survey of research, production, marketing and processing of oil seeds in Ethiopia. EPID publication No. 43, Addis Ababa, July 1977.

Annex - 5

Oilseeds Output Projections.

Let $Y = f(X)$ ..... (1)

1. Which says that oilseeds output is the function of area of land under oilseeds evltivation. Assumining linear relationshiplde have.

$$Y_t = B_o + B_1 X U_t \quad \ldots\ldots\ldots \quad (2)$$

2. True relation ship. Where,

Y_e = actual output of oilseeds.

x_t = area if land under oilseeds eultivation .

U_t = disturbanceterm.

Bo & B, are parameters.

Bo = Outonomous oilseeds output.

B_1 = Marginal product of land.

$$\hat{Y}_t = \hat{B}_o + \hat{B}_1 X_t + \hat{U}_t \quad \ldots\ldots\ldots \quad (3)$$

3. Estimated relationship. Where,

$\hat{Y}_t$ = Estimated cretput.

$\hat{B}_o$ and $\hat{B}_1$, estimated of Bo and B, respeetively.

$\hat{U}_t$ is estimator of U_t

$$\hat{Y}_t = \hat{B}_o + \hat{B}_1 X t \quad \ldots\ldots\ldots\ldots \quad (4)$$

4. Estimated regrection line.

Year	Y(in mill qunt)	X(in mill hat)	Yx	Y^2	X^2
1971/72	5.13	0.9965	5.112558	26.3169	0.9932116
1972/73	2.0991	0.5005	1.0505955	4.4062208	0.25055025
1973/74	2.1936	0.5292	1.16085312	4.81188096	0.2800526
1974/75	1.3364	0.145	0.193778	1.78596496	0.021025
1975/76	1.0605	0.308	0.326634	1.12466025	0.094864
1976/77	0.451	0.173	0.078023	0.203401	0.029929
1977/78	0.8565	0.212	0.181578	0.73359225	0.044949
1978/79	0.8344	0.236	0.1969184	0.69622336	0.055696
1979/80	1.2332	0.2758	0.34011656	1.52078224	0.0760656
1980/81	0.9909	0.233	0.2308797	0.98188881	0.05429
TOTAL	16.1856	3.6091	8.87193833	42.58150865	1.9005779

$\bar{Y} = 1.61856$

$\bar{X} = 0.36091$

Sources:- 1. CSO, Statistical Abstract 1972 and 1975

2. NBE, Annual Report, 1981

Using the above data and model we can derive the values of the parameters.

$$\hat{B}_1 = \frac{n\Sigma X_t Y_t - \Sigma X_t \Sigma Y_t}{n\Sigma X_t^2 - (\Sigma X_t)^2} = \frac{10(8.87193833) - 16.1856\ (3.6091)}{10(1\text{-}90057709 - (3.6091)^2}$$

$$= 5.06740511$$

$$\hat{B}o = \bar{Y} - \hat{B}_1 \bar{x} = 1.61856 - 5.06740511\ (0.36091)$$

$$= -\ 0.210317178$$

$$R = \frac{n\Sigma XY - \Sigma X \Sigma Y}{\sqrt{[n\Sigma X^2 - (\Sigma X)^2][n\Sigma Y^2 - (\Sigma Y)^2}}$$

$$R = \frac{30 - 30\ 393434}{31.30\ 174669} = 0.96812279$$

$$R^2 = 0.933\ 7\ 26\ 17\ 36 = 93.7\ ./.$$

$$SSE = (1 - R^2)\ (\Sigma Y^2 - n\bar{Y}^2) = 0.062738264 \times 16.38414391$$

$$= 1.027912746$$

$$\hat{\delta}u = \frac{SSE}{n-2} = \frac{1.027912746}{8} = 0.128489093$$

$$Var(\hat{B}_1) = \frac{\hat{\delta}^2}{\Sigma x_t^2 - n\bar{x}^2} = \frac{0.128489093}{(3.6091)^2 - 10(0.36091)^2}$$

$$S.E\ (\hat{B}_1) = 0.104691871$$

$$Var\ (\hat{B}_o) = \hat{\delta}^2\left[1/n + \frac{\bar{X}^2}{\Sigma X^2 - n\bar{X}^2}\right] = 0.014276558$$

$$S.E\ (\hat{B}_o) = 0.11948\ 4\ 551$$

$$Y_t = 0.21 + 5.0674x6 \qquad R^2 y.X = 93.7./.$$

$$0.1195 \quad 0.105\ )$$

Annex - 7

Oilseeds Export Projection.

Let $Z_t = f(x_{1t}, x_{2t})$ ..... (1)

1. Which means export is the function of output produced and consumption.
where Z_t = total oil seeds Export in time t.
x_{1t} = total oilseeds output in year t.
x_{2t} = total domesticoilseed consumption in year t.
Assuming linear relation ship betwe oilseed exports, and production and consumption we have.

$$Z_t = B_o + B_1 X_{1t} + B_2 X_{2t} + U_t \quad \ldots\ldots\ldots\ldots (2)$$

2. Thisis true relation ship between export, and production and consumption B_o, B_1 and B_2 are parameters.

$$E(Z_t) = B_o + B_1 X_{1t} + B_2 X_{2t} \quad \ldots\ldots\ldots\ldots (3)$$

3. True regration line .

$$Z_t = B_0 + B_1 X_{1t} + B_2 X_{2t} + U_t \quad \ldots\ldots\ldots\ldots (4)$$

4. Estimated relation ship of export with domestic consumption and production .

$$\hat{Z}_t = \hat{B}_0 + \hat{B}_1 X_{1t} + B_2 X_{2t} \quad \ldots\ldots\ldots\ldots (5)$$

5. Estimated regration line . our model is basedon the following data.
(Valume in 000, quintals) Table VIII

	Oilseeds Export	Oilseeds Output	Oilseeds domestic consumption
1972	884.36	5130	3347.8
1973	966.59	2099.1	765.2
1974	1092.8	2193.6	776.9
1975	793.51	1336.4	309.0
1976	321.2	1066.5	553.9
1977	216.24	451.00	155.9
1978	138.35	856.5	615.3
1979	48.96	834.4	639.4
1980	102.77	1233.2	914.6
1981	167.27	990.9	650.2
Total	4672.05	16185.6	8728.2

Source : 1 N B E, annual report, 1981, 1978,
2 N B E, Quarterly bulletin, 1977, Vol.3. No 2 and 1
3 Statiestical abstract, 1972 and 1975

$\bar{x}_1 = 1618.56 \quad \bar{z} = 407.205 \quad \bar{x}_2 = 872.82$

$\Sigma (z_t - \bar{z})^2 = \Sigma z^2 = 1439925.585$

$\Sigma (x_{1t} - \bar{x}_1)^2 = 16384143.9$

$\Sigma (x_{2t} - \bar{x}_2)^2 = \Sigma x_2^2 = 7251992.636$

$\Sigma x_{1t} \; x_{2t} = 10260894.93$

$\Sigma z x_{1t} = 3219729.11$

$\Sigma z \; x_{2t} = 1200821.977$

$$\begin{bmatrix} \hat{B}_1 \\ \hat{B}_2 \end{bmatrix} = (x^1 x)^{-1} \; xz = \frac{1}{|x^1 x|} \begin{bmatrix} x^2_{2t} & -x_{1t} x_2 \\ x_{1t} x_{2t} & x^2_{1t} \end{bmatrix} \begin{bmatrix} x_{1t} z \\ x_{2t} z \end{bmatrix}$$

$$= \frac{1}{1353.081} \begin{bmatrix} 72.519 & -102.608 \\ -102.608 & 163.841 \end{bmatrix} \begin{bmatrix} 32.197 \\ 163.008 \end{bmatrix}$$

$$\begin{bmatrix} \hat{B}_1 \\ \hat{B}_2 \end{bmatrix} = \begin{bmatrix} 0.815 \\ 0.987 \end{bmatrix}$$

$\hat{B}_0 = \bar{z} - \hat{B}_1 \bar{x}_1 - \hat{B}_2 \bar{x}_2 = 467.205 - 0.815(1618.56) - 0.987(872.82$

$= \underline{9.61}$

There fore our estimating model is

$\hat{z}_t = 9.61 + 0.815 X_{1t} + 0.987 X_{2t} \quad R^2 z_t \cdot x_1 \; x_2 = 99.85 \%$

(0.318) (0.0130) (0.0195)