THE MARKETING STRUCTURE AND PERFORMANCE OF THE OLIVE OIL INDUSTRY IN TUNISIA

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A Plan B Paper

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

Department of Agricultural Economics

1977

ACKNOWLEDGMENT

I would like to express my sincere thanks and appreciation to Dr. Vernon Sorenson my major professor, who provided valuable guidance and counceling throughout this study.

Appreciation is also expressed to Dr. J.C. Seutz in providing information needed by this study.

Acknowledgments are also due to Mr. Elsayed Zaki and Abdullah Bakhashwein for their moral support before and throughout this study.

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INTRODUCTION

1. The Need for the Study

In terms of value added, olive oil is one of the most important agricultural commodities in Tunisia. It is also the most important agricultural export commodity. Tunisia ranks second to Spain in world olive oil exports. Currently these exports account for about 20 percent of total export earnings of Tunisia. This is equivalent to about 40 percent of total agricultural export earnings. Tunisia is by far the largest olive oil producing country in North Africa and the Middle East and ranks sixth among the world's producers of olive oil.

Considering the adaptability of the olive tree to the climate and soil conditions of Tunisia, olive culture is expected to maintain its importance in Tunisian agriculture. However, the economic benefits which could be derived from the olive oil sector will be directly affected by national policy regarding marketing and pricing of the commodity. In particular the role that prices play in providing necessary incentives to induce technological change in production and marketing should not be underestimated.

2. Objective of the Study

The main objectives of this paper can be defined as follows:

1. To identify the most important socio economical factors

that affect the marketing of olive oil.

2. To describe the most important market channels and examine their shortcomings.

3. Analyze the current structure and conduct of the Tunisian olive oil industry.

4. Outline the principal ideas which may permit an evaluation of the efficiency of olive oil price policy with respect to its impact on production consumption and export of this commodity.

The problem will be defined using the structure conduct performance schema.

3. Plan of the Study

Chapter I presents a background of the country's economic and structural potential with emphasis on agriculture.

Chapter II is a description of the factors affecting the market structure and performance.

Chapter III is a descriptive analysis of the current structure and conduct of the olive oil industry.

Chapter IV represents a tentative to evaluate the performance of the current structure and the efficiency of olive price policy.

Chapter V develops the most important possibilities for better performance.

Chapter VI is a conclusion and implication for further research.

CHAPTER I

BACKGROUND CONDITIONS IN TUNISIA

For one to acquire a better insight into the actual and the potential strength of the Tunisian economy, a brief exposition of the economic framework, which determines market operation and government policy is provided.

1. Location and Climate

Tunisia, the northern most prolongation of the African continent, is a half peninsula jutting out into the Mediterranean almost halfway between Gibraltar and Suez. It is bounded on the north and the east by the Mediterranean Sea, on the southeast by Libya and on the west by Algeria. Tunisia's double exposure of the sea, and its eight hundred miles of coastline have given it a Mediterranean orientation and excellent access to the European markets.

Although Tunisia lies in the Mediterranean climate region, its climate ranges from Mediterranean in the north to steppe-like in the center, to drastically saharan in the south. The proximity of the sea and desert as well as the variation in altitude explain these modifications in climate.

Because of its geographical position, Tunisia receives only a limited share of the Atlantic rains from the west. These rains often reach only the northern part of the country and are prevented from

penetration further south by the mountain barrier of the Dorsal highland.

2. Economic Background

By the middle of the nineteenth century, Tunisia internally was in a state of political decay and economically was in a state of stagnation, which made it an obvious field for European expansion. Thus in 1881, France occupied Tunisia and took charge of foreign, military and internal affairs. As a result of the French occupation, Europeans began to pour into the country. The French administration favored the establishment of extensive European settlements which were the origin of a modernized agriculture.

A long and sometimes bloody struggle resulted in French recognition, in July 1955, of the right of Tunisia to complete autonomy. Less than one year later, March 20, 1956, a protocol was signed in Paris by which the French government recognized the complete independence of Tunisia.

3. Economic System

During the first few years following independence in 1956, the economy did not grow by very much. In 1961 deliberate attempts were made to accelerate development of the economy and to transform its structure through a program of massive investment, industrialization, and institutional changes. A ten-year perspective plan for the years 1962-1971 was published while at the same time a detailed three-year plan for the years 1962-1964 was worked out, followed by a four-year plan 1965-1968 and a three-year plan for 1969-1971. During this period, a policy of forced cooperation of agriculture and small trade

was implemented; however, this was reversed in 1969 as the economy went back to the originally announced aim of coexistence of public and private sectors.

Even though the Tunisian economy is a small economy, planning was also inwardly directed, with exports being the left overs, and imports what obviously couldn't be produced at home.

Emphasis was on investments, and outputs were expected to result automatically and depend on assumed capital ratios or on optimistic project analysis. Even the period of forced cooperation can be interpreted not merely as "ideological," but as a belief that if farmers and small traders were grouped in sufficiently large units investments would become possible that would raise output. However, with the new planning period that started in 1973, economic policy was given more adequate space.

4. Demography

The population of Tunisia estimated at 5 million in 1975 is rapidly becoming even more homogeneous, ethnically and religiously. Ninety-eight percent of Tunisians are a mixture of Arab and Berber stock, and two percent distinguishable ethnic minorities made of Europeans and Jews. Tunisia displays a population and labor force pattern typical of developing countries. A high rate of growth of 2.2 percent per annum, a low level of labor skills, surplus man power and insufficient capital to provide employment for the jobless. The extensive traditional sector of the Tunisian economy based on subsistance and handicrafts, has not been able to absorb this surplus into its ranks of already underemployed workers. In consequence,

labor has followed from the rural areas into the cities, where it has remained on the outskirts of the modern sector which is similarly unable to abosrb it.

5. Agricultural Sector

Agriculture is very important in the Tunisian economy. The agriculture sector contributed on the average about 27 percent of the country's gross domestic product. This fact explains why fluctuations in agriculture production have their repercussion on all sectors of the economy. Agriculture in Tunisia, however, is characterized by two agricultural methods and by a heavy reliance on rainfall for irrigation.

For many centuries, traditional agriculture has dominated the country. Modern agriculture, however, was introduced to Tunisia by the European settlers who started pouring into the country during the French protectorate.

At the present time, the two sectors coexist. The method of production used in the traditional agriculture involve the use of animal power, primitive equipment and defective techniques usually associated with small holding of land. By contrast the modern sector applies scientific cultivation techniques and high degree of mechanization. Moreover, large-scale production, good marketing channels and easy access to credit means this sector farms are commercial in nature and are not on or close to subsistance level of most of the traditional farms.

The reliance on natural conditions in particular rain is obvious. Out of 12.1 million acres of arable land in the country,

only 75,000 acres of land in the northern part are irrigated. The possibility for expansion of irrigation land is very small and required heavy investments. Another characteristic of agriculture production in Tunisia is its limitation to a few crops. In other words, agriculture production in the country lacks diversification; this explains why the failure of one crop contributes materially to the wide fluctuation in income from agriculture. Moreover, it explains the great emphasis of the ten-year plan of 1962-1971 on the importance of diversification of agriculture production for the country. At present, the major crops are not many. They consist of grains, olives and grapes for wine.

6. Role of Olive Oil

Olive oil is one of the most important commodities in Tunisia. It is also the most important agricultural export commodity. Tunisia ranks second to Spain in world olive oil export. Currently these exports account for about 20 percent of total export earnings of Tunisia. This is equivalent to about 40 percent of total agricultural export earnings. Tunisia ranks sixth among the world's producers of olive oil.

Considering the adaptability of the olive tree, olive culture is expected to maintain its importance in Tunisian agriculture. The first ten-year plan expected the production to reach 115,000 tons by 1971 and 200,000 tons by 1985.

7. Characteristics of Production and Consumption

a. Production

An important characteristic of olive oil production is its instability, which is caused mainly by the irregular pattern of the olive tree, which results in large fluctuations in olive oil supplies from one year to the next. This production irregularity displays a two-year cycle, that is, a high production year is usually followed by a low production year or visa versa (Table 1, Figure 1).

The second important characteristic is that production is predetermined mainly from the existing olive plantations and the climatic conditions affecting their productivity in any given year, that is, under normal circumstances it takes about seven years for an olive tree to start producing the olive fruit. Commercial production, however, is usually attained after 15 years. This is reflected in the market place in the form of an inelastic supply which of course, reinforces price variability from year to year, depending on the given size of production. This variability is often aggravated by the biennial cycle of olive production.

b. Consumption

A country's consumption of food fats and oil is closely associated with its stage of economic development and the size of domestic and/or imported supplies of these products available to consumers.

Tunisia's production of food fats is constituted mainly of olive oil. Production of other vegetable oil is lacking. Butter and slaughter fat production is very low. Vegetable oil remains the main fat diet in the country. Olive oil consumption provides 130 calories per

day and per capita. Other fat sources as butter and slaughter fats provide only 30 calories/day/per capita.

The average per capita consumption of edible oil had increased from 9 kilos in the first half of the 1960 to 12 kilos in the last half, which means that the consumption will continue to increase as the country gets developed.

Table 1. Olive Oil Production in Tunisia

Compagne	Production in Thousand Metric Ton
1949/50	105
1950/51	40
1951/52	43
1952/53	35
1953/54	79
1954/55	52
1955/56	21
1956/57	90
1957/58	49
1958/59	132
1959/60	32
1960/61	124
1961/62	34
1962/63	45
1963/64	89
1964/65	95
1965/66	53
1966/67	20
1967/68	60
1968/69	61
1969/70	34
1970/71	94
1971/72	170
1972/73	68
1973/74	141
1974/75	100

Source: Revue Tunisieen de science social and U.N. Publication.

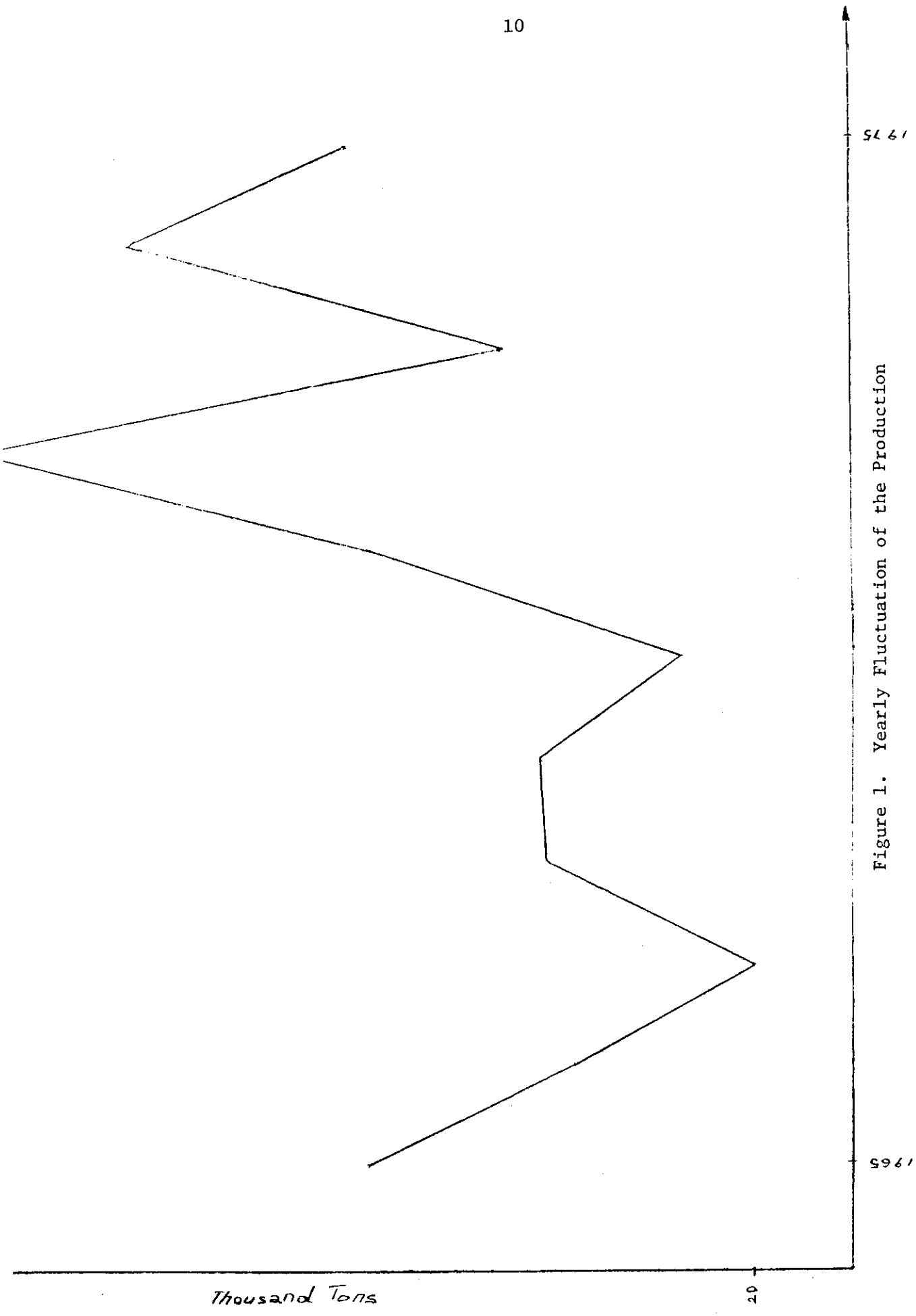

Figure 1. Yearly Fluctuation of the Production

CHAPTER II

FACTORS THAT AFFECT THE MARKET STRUCTURE AND PERFORMANCE

1. Social and Traditional Behavior

Having in mind the rural low per capita income 38.5 Dinars,[1] with 50 percent of the rural population remaining below 16 Dinars and that 63.5 percent of Tunisian active population engaged in agriculture, we can say that Tunisia is predominantly agricultural. However, the rural population is very poor and this may be interpreted as an important barrier to change and development. Their revenue is so small that their impulse to take a chance and apply new and untried techniques is inhibited by the anxiety over losing what they are sure of getting with their old practices. Operating at a bare subsistance level, a crop failure or a failure to cover the borrowed money would be calamitous. The second barrier is rural population's lack of knowledge of improved methods of meeting their felt wants. This requires a very tremendous teaching job.

Traditional families and village ties dominate the rural population. Most transactions take place on an individual basis between a single buyer and seller often on the basis of a long traditional established clientelle relationship.

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[1] Dinar ≃ $2.00

2. Land Tenure

> Policies affecting numbers and sizes of farms have social, and political as well as economic implications for the developing countries. They influence the numbers of farm workers. They affect equity in the distribution of farm income as well as the economic efficiency of resource use and progress in improving resource productivity.[1]

The collectivization of small farms was seen as the only way to achieve rapid progress in improving agriculture productivity and the organization of market channels in Tunisia. Such policy was not welcomed by most farmers of different size and was abolished in 1969.

The existing system of land tenure in Tunisia is very complicated and extends far back to ancient time. We will just discuss the situation since the independence. By 1957, land holdings in Tunisia consisted in addition to collective ownership of four categories of farm properties. First, there are the smallest size properties, where the number of peasants (fellahs) owners, or lessees is very large. The average size of such holdings ranges between 25 and 50 acres. Secondly, there are the holdings of the Italian settlers, whose average holdings range between 250 and 350 acres. The third category includes the plantations, chiefly owned by Europeans with an average size of about 2,500 acres. Finally, there are the proprietors of very large land holdings of above 10,000 acres. These consist of either individuals or large companies that are almost entirely French.

However, the liquidation of the colonial sector and the distribution of state-owned lands among the landless Fellah, of course, results in a wide spread of small land holdings in the country.

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[1] The Economics of Farm Size, Kenneth L. Bachman and Raymond P. Christensen (Agricultural Development and Economic Growth, Southworth and Johnson).

> In many regions of the country the complex land laws are responsible for the progressive break down of properties and the formation of a virtual maze of complex olive grove holdings. One family could thus own trees located several miles apart. Several families could also share one single tree as a result of the multiplication of the number of descendants or original owners over a number of years. This situation greatly hampers any improvements in olive groves and sometimes results in complete lack of care for trees.[1]

A study of the ownership pattern in the Sahel (region) shows the following Tables 2 and 3.

Table 2. Distribution of Land in the Sahel Region

Area in Hector	Owners Number
Less than 5 ha	28.300
From 8 to 10 ha	10.960
From 10 to 20 ha	7.123
From 20 to 50 ha	3.561
From 50 to 100 ha	.393
From 100 to 200 ha	.156
From 200 and more ha	.65

Source: "Production Et Commercialization de L'huile eu Tunisie Publie par C.E.R.E.S., Vol. No. 9, 4 Eme Annee p. 117.

Within the same region a sample of 650 ha is distributed in the following manner:

Table 3. Distribution of Tree Per Owner

Number of Trees	1 to 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 60	60 to 100	100 to 200	200 to 300	300 to 400
Number of Owners	64	74	39	34	51	35	57	43	17	7	1

Source: "Production Et Commercialization de L'huile eu Tunisie Publie par C.E.R.E.S., Vol. No. 9, 4 Emie Annee p. 117.

[1]Economic Development in Tunisia, Ghazi Duwaji, pg. 113.

From Table 3 we notice that people who own 1 to 10 trees represent 30 percent, those who own 10 to 60 trees represent 58 percent and both of them represent 88 percent, which constitutes the majority of farmers.

3. Perishability of the Primary Product

Olives are a higly perishable product. The harvested crop requires immediate processing since the quality and consequently the value of the derived oil product depend on the time which elapses between actual harvesting and processing. In Tunisia these are crucial factors where appropriate storage facilities such as refrigeration or quality preserving chemicals or technology are lacking. The perishability of olives makes farmers at the mercy of processors and the market channel which receive their product immediately after harvesting, i.e., olive producer without an immediate market outlet or a processing facility to purchase or transform his crop would be subject to great risk. This situation is more complicated because harvesting has to be done within a limited period of product maturity and during the winter (rainy season of Tunisia).

4. Importance of Financial Endowment

A sizeable amount of capital, labor and management inputs at the farm level are required to transform the raw olive corp into a commercial valuable olive oil product, which can be traded over an extended period of time. Producers with sufficient amounts of these inputs to undertake production and marketing of olives or olive oil, are in a better position to subscribe to the most profitable market outlets, in contrast to those with only limited inputs. Consequently,

small or subsistance producers of olives who do not have access to these marketing inputs can only rely on the most immediate market to sell their product as a cash crop.

5. Communication Problem

An important factor, which normally affects olive marketing in Tunisia, is the location of the farm with respect to the comodity's marketing and processing centers. Problems associated with road accessibility to farms, particularly during rainy seasons or in areas which are exposed to frequent flooding are often cited as a major factor limiting the marketing choices available to these farmers. Olive farmers in isolated areas with no adequate transportation facilities of their own obviously are more restricted to those who have a close access to nearby marketing or processing centers.

6. Economic Characteristics of Close Substitutes in the World Market

Olive oil is one of the soft or liquid edible oils which include soybean, cottonseed, ground nut, sunflower, rapeseed, seasame-seed, and corn oil. Except for olive oil, which has a distinct, fruity flavor and is normally used for special edible uses, all of these oils are technically perfect substitutes for edible purposes. Several characteristics distinguish olive oil from oil seed trade and commerce. 1) Oil seeds have very favorable prices compared to olive oil (see Tables 4 and 5). 2) Almost all oil seeds are joint-product commodities. That is, two basic products can be obtained from oil seeds, which are meal and cake for animal feeding. 3) Most oil seeds can be stored over a relatively extended period of time

Table 4. Import Prices of Olive Oil and Its Close Substitutes

Commodity and Country	Prices in U.S. Cents/kg				
	1969	1970	1971	1972	1973
LINSEED					
United Kingdom	13.6	12.6	11.6	14.4	26.5
PALM KERNELS					
European Ports	15.3	16.8	14.5	11.4	22.8
RAPESEED					
United Kingdom	11.0	13.7	14.2	14.2	25.2
SOYBEAN					
United Kingdom	10.7	11.9	13.1	14.4	22.3
CASTOR OIL					
European Ports	27.8	30.1	34.3	54.6	113.2
COCONUT OIL					
European Ports	32.4	35.9	32.2	27.3	33.0
COTTON SEED OIL					
European Ports	-	35.8	39.9	32.9	43.7
GROUND NUT OIL					
United Kingdom	33.2	37.8	44.3	42.3	54.3
LINSEED OIL					
United Kingdom	24.1	22.7	19.5	20.3	54.1
OLIVE OIL					
European Ports	-	70.8	70.8	97.7	141.8
United States	85.3	88.2	89.7	94.1	112.9

Source: F.A.O. Production Yearbook - 1974.

Table 5. Export Prices of Olive Oil and Its Close Substitutes

Commodity and Country	Prices in U.S. Cents/kg				
	1969	1970	1971	1972	1973
LINSEED OIL					
Netherland	23.2	23.3	22.4	20.7	34.0
U.S.	26.2	21.4	19.6	22.7	83.3
OLIVE OIL					
Spain	66.6	69.9	73.2	93.2	136.7
Tunisia	66.1	66.1	68.3	74.4	-
PALM-KERNEL OIL					
Netherland	28.5	31.0	32.2	25.3	36.0
United Kingdom	33.5	39.2	52.8	28.2	46.9
PALM OIL					
Cameroon	17.4	25.2	25.5	21.0	-
Netherland	24.7	31.8	31.9	27.2	40.9
SOYBEAN OIL					
Netherlands	18.4	24.4	29.5	27.3	40.9
Untied States	26.7	30.6	27.8	35.9	69.0

Source: F.A.O. Production Yearbook - 1974.

without risking quality deterioration or loss. 4) Oil seeds production and marketing are very responsive to the market price of the product and its substitute. As an annual crop, production plans are usually influenced by the most immediate prices and price perspectives. 5) Most edible seed oils are very homogenous and have recognized commercial standards.

Finally, almost all oil seeds produced in the world are ecomomically self-sustained in terms of achieving remunerable prices for agricultural producers without governmental subsidy or control program.

On the other hand, olive and olive oil don't have these qualities

and are in a great disadvantage in terms of their international trade.

7. Supply and Demand Within the Producing Countries

Spain, Italy, Greece, Turkey, Tunisia, Algeria and Morroco produce and consume about 90 percent of the world's olive oil. However, all of these countries have a deficit in edible oils--that is, total domestic demand for edible oils substantially greater than domestic supplies given international market prices.

A per capita level of oil consumption relatively low in comparison with surplus oil producing countries at the same stage of economic development.

In countries which rely on olive oil as an important source of foreign exchange earning, such as Tunisia, Turkey and Morroco, exports market outlets normally compete with domestic market needs. This implies that although a country might be considered as a "surplus" country in olive oil, supplies in view of international market demand and price of the product in comparison with the domestic market situation, it can also be considered at the same time, as a "deficit" country in edible oil supplies, given the market situation and prices of oils and oil seeds. See Tables for Production, Export and Import #6, #7, #8 and #9.

Table 6. Production of the Major Olive Oil Producing Countries

	Quantity Produced in Metric Tons						
	1968	1969	1970	1971	1972	1973	1974
World	1585278	1376866	1604612	1662796	1611416	1688643	1520919
Algeria	19290	15390	14570	19930	22800	18000	18000
Libyan A Rep.	23900	6417	13404	940	20000	26000	20000
Marocco	57840	29578	97074	33430	47300	38000	40000
Tunisia	61420	34640	94480	170000	68184	141200	100000
Argentina	19595	9831	20733	8908	23000	15000	12243
Chile	2000	1400	1000	1000	1000	750	800
Cyprus	2159	2235	1061	20021	3048	203	3000
Iran	1000	1000	1000	1000	1000	1000	1000
Israel	2600	300	800	3200	0	2000	5300
Jordan	2945	4694	1931	3000	7500	1000	5000
Lebanon	7000	9000	8500	11000	8000	5000	11000
Syrian A Rep.	21871	25600	15600	22200	83400	13700	28000
Turkey	159000	54000	118000	51500	176000	53300	140000
Albania	3820	4000	4000	4150	5000	5000	3000
France	1631	3796	497	3384	1136	2340	1830
Greece	228000	175000	208000	218000	288968	235000	250000
Italy	429000	520700	463700	670000	370000	595000	500000
Portugal	53240	72457	67347	41961	54000	42298	32100
Spain	492000	393000	480000	330000	491000	481000	340000
Yugoslavia	1797	1137	1283	2557	1952	2292	2300

Source: F.A.O. Production Yearbook, 1974.

Table 7. Olive Oil Major Producing Countries

	Quantity Exported in Metric Tons						
	1968	1969	1970	1971	1972	1973	1974
World	163943	247906	258136	351691	326046	363203	269210
Algeria	5581	6786	2923	1051	3733	1496	5000
Marocco	2630	36858	7044	7894	34525	25304	23441
Tunisia	33346	30249	24994	69458	130956	51763	81600
Argentina	5248	13484	3450	7205	7661	12764	8700
Cyprus	1015	868	369	82	103	216	86
Israel	247	43	55	50	28	125	130
Jordan	938	1264	486	798	872	278	280
Lebanon	110	79	58	192	136	1410	2000
Syria A Rep	365	740	383	20	0	0	0
Turkey	1406	22234	310	1366	3413	44390	11100
France	3432	2365	3522	11083	21100	19578	4586
Greece	35501	16763	7720	9534	19009	21029	19583
Italy	18099	15345	15503	17600	17993	18125	14306
Portugal	10451	10292	11663	10151	8415	6829	4288
Spain	44018	90140	178862	214608	77372	155407	87674

Source: F.A.O. Production and Export Yearbook, 1974.

Table 8. Value of the Export of the Major Exporting Countries in 1,000 Dollars

	1968	1969	1970	1971	1972	1973	1974
World	113711	157943	172395	241058	254694	405940	453711
Algeria	3396	3797	1782	845	2918	1644	6000
Marocco	1476	19326	3783	4532	22000	26000	36600
Tunisia	22893	19997	16510	47638	97440	59650	142000
Argentina	3749	7697	2555	4493	5640	13891	13500
Cyprus	590	500	264	122	166	327	132
Israel	181	44	61	55	36	294	290
Jordan	620	957	374	771	775	258	260
Lebanon	72	71	55	224	128	1586	2500
Syria	222	448	212	7	0	0	0
Turkey	798	12681	243	950	3119	45355	13000
France	2553	1834	2664	7890	17117	21123	8317
Greece	25978	10439	4658	5681	12943	16683	27486
Italy	13280	12481	12951	15517	17347	24078	27966
Portugal	7083	7595	8365	8845	8490	9236	8711
Spain	29894	59829	117489	142941	66084	182553	161133

Source: F.A.O. Production and Export Yearbook, 1974.

Table 9. Imports of Olive Oil in Metric Tons

	1968	1969	1970	1971	1972	1973	1974
World	168290	234996	257208	341683	303506	364119	332241
Angola	4447	4708	4907	6048	2520	1888	2098
Comeroun	20	29	22	16	0	19	0
Cap Verde	201	340	182	283	223	306	350
Egypt	2	171	31	0	80	103	0
Ethiopia	261	163	156	140	89	89	89
Ghana	355	210	60	36	39	27	30
Guin Bissau	49	49	60	75	75	75	80
Ivory Coast	37	64	35	32	43	40	40
Kenya	41	31	22	40	52	38	15
Liberia	26	39	31	39	29	62	70
Libya	6806	15452	18627	22440	9878	24954	13000
Mozambique	1682	1729	1576	1456	919	1096	600
Sao Tome Etc	91	78	117	75	77	100	100
South Africa	237	250	340	362	280	505	515
Tunisia	0	1000	0	0	0	0	0
Zaire	100	73	82	100	122	120	120
Canada	1820	2275	2126	2174	2903	2087	2409
Costa Rica	55	72	51	91	31	44	45
Dominican RP	355	431	388	552	300	320	340
Guatemala	117	142	119	116	136	125	130
Haiti	446	510	183	68	208	116	120
Panama	161	200	170	233	182	275	300
Trinida	159	123	99	124	172	88	70
U.S.A.	28819	26208	28507	28203	30588	27773	24542
Brazil	10344	13229	11499	13301	14080	11394	17000
Colombia	236	195	150	187	155	180	200
Ecuador	219	216	108	484	800	153	150
Venezuela	682	796	980	665	1035	724	600
Iran	262	807	1889	411	807	634	1000

Table 9. (Continued)

	1968	1969	1970	1971	1972	1973	1974
Iraq	23	58	41	72	31	1	0
Yugoslavia	70	15	2275	1043	989	1117	1190
Japan	672	677	831	748	718	724	437
Switzerland	2530	2639	3082	3024	3208	7130	8766
Kuwait	1117	1383	815	1656	1654	1171	1500
United Kingdom	3109	2827	2989	3181	3044	3363	2401
Saudi Arabia	811	868	667	1411	1230	1400	1500
Syria	737	442	20	240	965	1267	1532
Austria	364	271	314	331	331	341	246
Belgium	361	396	752	630	695	849	724
Bulgaria	310	300	152	300	33	182	441
Czechoslovakia	1335	800	346	300	300	300	200
Denmark	131	118	193	212	204	230	210
France	18264	24239	14956	35536	37707	42345	25622
German DR	290	181	200	200	400	400	400
Germany Fed	2417	3070	3203	4728	4152	3937	3104
Italy	58533	112983	132796	176590	124210	187522	183731
Netherlands	260	379	431	518	533	557	697
Norway	673	935	1188	808	851	1054	339
Poland	3158	547	450	496	4640	434	2969
USSR	7400	6900	8500	9000	7000	3700	9600

Source: F.A.O. Yearbook, 1974.

CHAPTER III

DESCRIPTIVE ANALYSIS OF THE CURRENT STRUCTURE AND CONDUCT

1. Market Channels

Olives and their oil products are generally marketed through one or more of five different marketing outlets. These market outlets are as follows:

a. Sale of Olive Crop on the Tree (Khadara)

A unique marketing system is frequently used in Tunisia for selling important tree crops, such as olives, citrus fruits, apricots, and almonds; that is a special category of middlemen called (Khadar), which buy an important part of the crop before the harvesting season; their experience allows them to estimate the yield two or three months before the harvest season. They take in charge of all the operations of the harvest, transportation and processing. Some of them are owners of processing factories. They enter such practice to acquire the necessary amount of olive (input) for their factories to run efficiently. The reliance on the Khadara market system might be explained by various economic, management and technical factors.

The immediate need for cash by small farms seeking to secure their revenue and avoid the risk of climate and market operations.

The relatively large labor and capital requirements essential

in undertaking a timely commercial harvesting.

The management needs required to coordinate the harvesting operations with assembly, transportation and processing.

Khadara is presently used by a large number of owners, controllers, and/or producers of olives who are either unable or unwilling to undertake further steps in marketing their crop beyond the point of maturity. Khadara is heavily used by absentee or multiple owners of olive production units in order to avoid management problems and responsibilities, which might be encountered when attempting to reach alternative markets.

b. Sale of Harvested Olives on the Farm

Some family farms are endowed with enough labor to harvest the crop, but enable to engage in transportation and processing cost sell their product just after the harvest to processors or middleman.

c. Sale of Olive in the Product Market

Due to the perishable nature of olives, the lack of transportation and the location of the farms, there is no uniform market for olives traded at the regional and national level. Regional olive market centers used to exist in some city (Sousse-Sfax). These centers were completely eliminated.

d. Sale of Olive Oil the Processed Product, to the National Office of Oil (NOH) for Domestic and Export Marketing by the NOH

Processors of olives that get their olive (input) from dealers or farmers sell their olive oil (output) to the national office of oil at a predetermined price. Some processors are owners of farms

and form an agro-industrial integration. Thus, their final product is olive oil, which is sold to the NOH.

e. Sale of Olive Oil Via Traditional Arrangements for Local and Family Consumption

Olive oil is supplied at the retail level only by the NOH at a price much higher than the farmer's price. However, producers of olive oil can substract their consumption need before selling their product. Most of the time this practice complicates the manner because there is no limitation on the quantity consumed by the producers. The latter use part of their purposely overestimated consumption to channel for friends and relatives.

As a result of these established characteristics of the Tunisian olive market, fresh olives for oil processing continue to be sold at the farm level under various and largely unknown price arrangements. These sales usually take place between olive producers and olive oil processors on an individual basis. It is estimated that at least 50 percent of the olives produced in Tunisia are sold, as such, to processors; the rest are presumably processed for the account of primary producers.

2. The Development of Marketing and Pricing Practices in Recent Years

a. Supply and Demand

Difficulties experienced in satisfying domestic demand for edible oils at reasonable prices and at the same time maintaining an olive oil export necessitated the government intervention.

Increase in demand was due to the rising income and the populations growth. This associated with an adverse trend of the production

Market Channels Open to Different Farmers

Kind of Farmers \ Market Outlets	Prices Trend → Khadar	Processor	Exporter
Financial Endowment → Farmers not able to harvest	XX		
Farmers just harvest	XX	XX	
Farmers harvest and transport	XX	XX	
Farmers harvest, transport & store	XX	XX	XX

have prevented the maintenance of self-sufficiency and an export surplus of the commodity.

Commercial marketing and pricing up to the 1960's were largely determined by the size of annual olive production and the export market situation. Domestic consumption was satisfied through domestic olive oil supplies and import of other soft edible oil was nil.

In 1959, a government floor price of 180 Dinars per ton was established to favor collection and export; however, it was of little effect, since the wholesale price realized was higher.

Aggregate supplies for domestic and export markets were allocated by relatively few middlemen.

b. Competitiveness of the Market

Dealers, processors, and exporters of the commodity with financially strong bargaining power to purchase, process, transport, and store olive oil in large quantities are in a better position than

primary producers.

The share of the market in olive oil controlled by those few traders was believed to be high. This was in sharp contrast with the characteristics of the Tunisian olive growers where production was in the hands of a large number of small growers utilizing traditional processing and storage facilities and producing for home consumption as well as for the market. These conditions resulted in a dual pricing system for olive oil.

Olive prices are function of the domestic supply, distance of the farm to the processing facilities, and the olive grower's bargaining power. However, olive oil prices were functions of the international and domestic commercial supply and demand conditions.

Dealers and processors were able to pay very low prices to farmers at harvest time for various reasons as the producer's need for cash, credit repayment, the perishability of fresh olives, the oligopolistic nature of the large-scale marketing and processing system and insurance against the risk of total loss from crop damage. Dealers and processors were able to pay very low prices to farmers at harvest time. (See Table 10).

For a comparison purpose, we assume the concentration of olive in oil is five to one--i.e. five tons of fresh olives give one ton of oil.

The average selling price of one ton of oil, equivalent of fresh olives on the tree was approximately 104 Dinars, by comparison with the average wholesale price realized of 230 Dinars per ton. Even after subtracting a reasonable amount for the cost of harvesting, processing, handling and taxes, which would amount to about 76 Dinars per

Table 10. Estimates of Farm Price and Direct Cost of Processing Olive Oil

Production Factor	Cost Range 1 Ton Olives	Average Cost 1 Ton Olives	Average Cost 1 Ton Oil
Farmer price (operation de Khadara)	18,000 - 25,000	20,900	104,500
Marketing costs:			
Harvesting	6,200 - 7,100	6,600	33,000
Tax on Harvest	2,100	2,100	10,500
Transportation	1,200 - 1,500	1,400	7,000
Crushing	4,500 - 7,000	5,000	25,000
Total marketing cost	14,000 - 17,700	15,100	75,000
Producer price of oil	32,000 - 42,700	36,000	180,000
Wholesale price	-	-	320,000
Wholesale profit margin	-	-	50,000

Source: Olive Oil Price Policy in Tunisia, Osama A. Al-Zad.

ton of oil, this would still leave about 50 Dinars margin at the wholesale level.

Such prices and profit margins were apparently maintained by the extreme institutional inequality in bargaining power between the subsistance and commercial olive sector.

c. Substitution

The population growth and the increase in the standard of living made the Tunisian olive oil production no longer adequate to satisfy increasing domestic demand at a reasonable price and to maintain a sizeable export surplus.

In 1962 massive imports of other cheaper edible oils to satisfy

domestic consumption were perceived as a means of maintaining or increasing export of higher priced olive oil. This policy was made feasible by importing substantial quantities of soybean oil (at about half of the international price of olive oil) from the U.S. under concessional trade agreement.

These imports have enabled Tunisia to increase its consumption of cheap soybean and other seed oils to an average of 31,000 tons in 1962 - 1968, compared with only 1,000 tons in the preceding six years. The new level of seed oil consumption now accounts for about 60 to 70 percent of total edible oil consumed in the country. (Table 11)

3. Government Role

a. Regulatory Role

Following the urgent need of maintaining the export of olive oil, the increased demand of the commodity and the feeling of market discrepancies as a discentive for production increase, the government stepped into the olive oil market in 1962 - 1963 issuing a decree to create an independent government agency, which has the following functions:

1. To collect, study and publish all types of information relating to the production, processing and sales of products of the olive tree.

2. To grant subsidies, where appropriate, to bodies concerned with olive oil production.

3. To recommend to the government measures to protect the interests of olive oil producers and, where appropriate to combat fraudulent practices by acting as plaintiff in legal proceedings involving

Table 11. Production, Consumption and Export of Olive Oil and Seed Oil in Tunisia--1957 - 1968[1]

Season	Thousand Metric Tons					
	Prod Olive Oil	Consumption Olive Oil	Consumption Seed Oils	Cons'n. Edible Oil	Export Olive Oil	Export % of Prod.
1957	90	34	1	35	30	33
1958	50	35	1	36	36	72
1959	132	36	1	37	70	53
1960	12	36	1	37	23	192
1961	125	40	1	41	42	34
1962	34	36	2	38	56	165
1963	45	18	24	42	29	64
1964	89	23	19	42	43	48
1965	95	25	19	44	53	56
1966	52	25	34	59	43	83
1967	20	15	48	63	18	90
1968	51	20	42	62	32	63
1957/62 average	74	36	1	37	43	58
1963/68 average	59	21	31	52	36	61
average change	-15	-15	+30	+15	-7	+5

Source: Page 38, Short and Medium-Term Prospects of Manufacturers from selected developing countries, "Tunisia," United Nations (New York) 1969.

[1]Massive imports of soybean oil started in 1963. As a result of low production, Tunisia's olive oil exports did not increase, but have actually declined by an average of 7,000 metric tons in the 1963 to 1968 period in comparison with earlier six years. Nevertheless, average olive oil exports as a percent of production have increased by about 5 percent.

the purity of Tunisian olive oil.

4. To help and promote by all possible means the export of products of the olive tree, find new markets for olive oil and supervise exports.

5. To rationalize, in the national economic interest, the marketing of olive oil; all fluid food and non-food fats; for this purpose, it may make loans and provide bank guarantees.

6. To recommend, as appropriate, to the government, the fixing of prices for food and non-food fats at all stages of marketing.

7. To acquire shares in any undertaking directly or indirectly concerned with production or processing of trade in fluid food fats.

8. In general to engage, at the request of the government, in any activity at the national or international level which contributes to the development, improvement and organization of the olive oil economy.

The name of this agency is The Office National de l'huile placed under the Secretariat of State of Planning and National Economy.

During the first five years of its creation, attention was mainly given to maintain the export and encourage the import of other edible oil.

Olive oil marketing and export continued to remain essentially "free" except that the exporter was obliged to deliver to the National Office of Oil 30% of the quantity of olive oil they exported (reduced to 20% after September, 1966). Quantities received under this provision were used for blended oil sold in the domestic market. The producer's floor price for oil remained fixed at the previously established 1959

level of 180 Dinars per ton for super and extra oil. The National Office of Oil became controller of the retail marketing operation. The oil blend is sold through retail outlets in urban centers at a fixed price of 200 millimes per litre and the pure olive oil is sold at a fixed price of 400 millimes per litre.

b. Marketing Role

Beginning in 1964, attention was given to the marketing system as means to increase production and to raise the producer's price and to eliminate discrepancies in the market. Two important actions were taken to achieve this purpose:

1. A fixed producer's price (which is comparable to the wholesale price) was to be announced by the government each marketing year in order to maintain a guaranteed price for producers (Table 12). The wholesale "bourse" price determined in the free market prior to 1967 was replaced by a fixed producer price. Part of this price was to be paid to the producer as an advance at the beginning of the olive harvest season and then supplemented with the remaining price margin at the end of the marketing season.

2. The purchasing of fresh olives on the tree was made illegal. Presumably this new regulation was designed to eliminate unequitable pricing methods in the traditional olive growing sector. Also, the producer price was fixed at a somewhat higher level than the free wholesale market price achieved before regulation (Table 12). Both of these measures were subsequently reversed on October, 1970, that is the ban was only temporary.

Table 12. Production of Olive Oil in Tunisia, Domestic Wholesale Price, International Price, and Trade Price, and Trade Margin, 1961/62 - 1968/69. Extra Quality Oil of Maximum 1 Percent Acidity

Season	Production	Tunisian Diners/Ton		
		Wholesale Price "Bourse"[2]	International Price	Trade Price Margin
1961/62	34	202	331	129
1962/63	45	295	457	162
1963/64	89	194	309	115
1964/65	96	226	348	122
1965/66	53	240	346	106
1966/67	20	286	362	76
1967/68[1]	51	295	357	62
1968/69	55	270	355	85

Source: Olive Oil Price Policy in Tunisia, Asma A. Al Zaud, June 1970, Et Politique de Prix de l'huile d'olive.

[1]Domestic wholesale pricing of olive oil in Tunisia was taken over by National Office of Oil as of June, 1967, wholesale price became producer price.

[2]The wholesale "bourse" price is comparable to market exchange price in the U.S.A.

CHAPTER IV

PERFORMANCE OF THE CURRENT STRUCTURE

This chapter deals with the performance of the olive oil market in Tunisia. An operational definition of market performance can be derived from our soci-political perspective of the Tunisian olive oil market. That is performance in terms of the realization of the society development goal.

The olive oil industry in Tunisia should perform in a manner to augment the production at a rate higher than the demand increase to allow saving and investment. The role of the market to achieve the development objective of the olive oil industry is important; that is, it creates incentives for production increase and insures an efficient allocation of the natural resources. Thus, our performance criterias are stated in terms of (1) How efficient is the coordinative role of the market, i.e. the form and adequacy of the market as a system of incentives. (2) How efficient are the infrastructure and the institutions in the national resources allocation.

1. Equity of Distribution Through the Market Channels and Price Stability

One of the basic requirements for enabling market demand to provide production incentives is a reasonably stable intra or inter-seasonal changes, at a remunerative level. Unless farmers have confidence that prices will bear some minimum relationship

> to costs, they will hesitate before incurring additional work or expense to increase their output or raise its equality.[1]

Although data does not exist at present to verify the most predominantly used market outlets by producer of oil olives in Tunisia, it is quite evident that selling of olives by farmers while the fruit is still ripening on the trees continues to be one of the most popularly used traditions in olive culture. This conclusion is based on the fact that: (1) Farmers continue to rely on this type of marketing institution despite the temporary ban placed on it during the 1968/69 crop year and (2) other intermediate and final market outlets are largely used by non-farmers, i.e., middleman, agents and/or owners and operators of olive oil processing facilities. Prices received or paid by these non-farmers are not considered as an adequate measure of farm price.

a. Quality Price Relationship

The efficiency as well as the adequacy of olive prices can be evaluated in various ways. First, using oil yield as a major quality index, one would expect that a positive correlation must exist between prices of olives and oil yield; that is, the higher the oil yield, the higher the price. Such a relationship between olive prices and yield in Tunisia is not evident.

Table 13 shows the average prices and the corresponding oil yields of olives sold in major producing regions during 1967/68 and 1968/69. The attachment of oil yield to the price of oil is rather important as the value of olives is almost entirely derived from the

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[1] The Development of Marketing Instututions, J.C. Abbot.

value of their oil content. Further, there is considerable variability in the oil content of olives, depending on their variety, degree of ripeness and various other factors. Oil yield can vary between a minimum of 12% and a maximum of about 30%.

Table 13. The Relationship Between Farm Prices of Olives and Oil Yields in the Most Important Olive Producing Region of Tunisia 1968 and 1969.

Regions[1]	1968[2]		1969[2]	
	Olives, Farm Prices Dinars/Ton	Yield of Oil %	Olives, Farm Prices Dinars/Ton	Yield of Oil %
Tunis	48	19	-	19
Beja	35	19	40	19
Habeul	35	16	30	21
Sonsse	29	19	34	20
Sfax	59	24	46	26
Tunisia Weighted Average	50	22	39	22

Source: Service statistique Agricole, Tableau de depouillement, Olives Trailes Parles Huileris Au Cours De La Compagne, 1968/1969.

[1]The regions cited above produce about 80 percent of the olives grown in Tunisia.

[2]The 1968 and 1969 crop were chosen because the production of both years is the same. That is, we can avoid price fluctuation due to supply increase or decrease.

Despite the fact that oil yield and National production remained the same the price of olives which is the average farm price dropped 22 percent in 1969, by comparison with the previous year. This can be

very harmful to incentives for equality amelioration through agricultural practices, i.e., farmers that are not guaranteed a higher price when producing a higher quality of olives will abstain from improving the yield, which usually required extra care and expenses for varieties selection.

b. Stability of the Market Share

The efficiency of olive prices in Tunisia can also be examined by considering the wholesale value of the olive oil extracted and the value of by-products together with processing and marketing costs. The olive and olive oil price relationship during two consecutive years, and the corresponding marketing and processing margins are shown in Table 14.

Table 14. Average Olive and Olive Oil Prices and Marketing and Processing Margins in Tunisia 1968-69

	Items	1968	1969
1	Farm price of one ton of whole olives (dinars) (weighted by regional olive production)	50	39
2	Oil Yield (percent)	22	22
3	Wholesale price of oil (Millimes/Kilo)	245	239
4	Value of oil per one ton of whole olives (Dinars) = (220 kilos x price/kilo)	54	53
5	Value of grignon per ton whole olives/dinar	2	2
6	Total of oil and Grignon (Dinars)	56	55
7	Marketing and processing margin 6 - 1	6	16
8	Marketing costs as a percent of value of oil 7/4 (percent)	11	29

Source: Politique de prix de l'huile d'olive eu Tunisie.

The data in Table 14 shows that average farm price dropped 22 percent in 1969 by comparison with that of 1971. This reduction occurred despite the fact that oil yield, its value and the total Tunisian production remained almost unchanged during both years. Consequently, the share of marketing and processing margins calculated as a percent of average farm prices went up from 12 to 41 percent. These data also show the national farm price level for olives is highly unstable in comparison with that for olive oil. This inconsistency can only be explained by lack of an adequate relationship between the farm price of olives and the corresponding value of olive products.

c. Regional Price Distortion

Considerable difference in the overall price level of olives, which are sold in each region, is shown as either the medium (P^*) or the simple average of the Khadara prices reported in different regions ($\overline{P}$) Table 15.

Since these prices are shown without their corresponding yield they cannot be very significant to prove regional price distortions. However, when comparing average regional prices corrected by corresponding yield $\frac{\overline{P}}{R}$, the corresponding oil equivalent price can be considered as the standardized price of all olives. This is possible because the final price of oil is fixed at the national level. Consequently, the olive prices (farm prices) are expected to be uniform all over the nation.

The prices of each region shown in Table 15, however, show great degree of incompatibility, particularly when comparing

Table 15. Estimated Khadara Olive Prices Achieved in Tunisia During 1971/1972 Crop Year

Regions	Prices Received by Individual Farmers Dinars Per Ton							
	Sfax	Sousse	Kairouan	Tunis	Nabeul	Jendouba	Benja	Bizerte
	90	53	60	65	41	40	50	50
	87	41	30	62	38	37	50	50
	84	30	17	60	33	36	48	44
	77	26	14	51	32	36	46	41
	67	25		41	31	35	46	39
	66			40	31	31	45	37
	65			39	31	22	45	35
	64			37	30		45	35
	63			35	30		38	35
	58			33	29		35	33
	54			32	28		35	32
	52			32	28		31	30
	50			32	27		31	29
	49			31	25		28	28
	48			31	18		24	
	46			31			9	
	41			30				
	40			27				
	37			25				
	39			24				
	27			24				
	26			21				
P^* =	53	30	24	32	30	36	36	35
$\overline{P}$ =	55	35	39	36	30	34	37	38
R =	26%	23%	20%	19%	20%	20%	19%	18%
$\frac{\overline{P}}{R}$ =	212	152	150	189	150	170	195	211

Table 15. (Continued)

P^* = Median price which is the middle value of the price distribution
P = Simple average price of olives in dinars
R = Reported percent of average yield of oil
$\frac{P}{R}$ = Price equivalent of olives in terms of corresponding oil yield, dinars per ton

[1]Table 15 shows the final estimates of Khadara prices of olives sold in Tunisia during the 1971/1972 crop year. These estimates were made from the state farm sales between the office des terres domaniales (OTD) and private buyers contracted as Khadara. Each price estimate is based on an individual sale of an entire olive crop on a fram. That is, the price is calculated using the final sales value of the crop, including taxes, insurance and other expenses, divided by the best estimate of the total expected volume of harvested olives crop estimates of individual farms were made by the (OTD) prior to the time of sale. The resulting prices shown in Table 15, which are based on an actual national survey of contract sales of olives, are considered the best indicative approximation of farm or producer prices achieved in Sfax with those in other producing regions.

standardized average prices achieved in Sfax with those in the producing regions.

Communication efficiency in terms of how effectively, how rapidly and how freely price information spreads around the country and in terms of how easy product can move from one region to the other may be lacking in the olive market. Table 15 can be used to support that the actual communication performance lack such efficiency criteria. That is, such price differential would not exist if farmers possess full market information and were able to move their product where they can obtain the higher price.

d. Market Imperfections

Market imperfections and inequalities are believed to exist between primary producers of olives and private traders of olive oil. This was considered as a principal factor, which lead to temporary overall marketing control and producer price fixing by the National

Office of Oil. However, there is no solid evidence to support the theory of market exploitation and/or inefficiencies in the marketing of olive oil. Additional information about marketing channels, cost of processing and marketing services and price margins are needed to be able to confirm that the wide margins are not due to realistic expenses and risks undertaken by middlemen. The sizable difference, shown in this paper between the prices paid to primary producers for olives on the tree and the wholesale price of olive oil produced, may provide some evidence of imperfect competition and unequal bargaining power among producers and dealers of the commodity.

Two important factors of the current structure and conduct are difficult to evaluate in terms of their impact on the market equity performance. These two factors are speculation and traditional relationships.

* Kharara speculation or risk

A high degree of speculation is attached to the Kahdara system of marketing. Speculation is usually induced by the lack of sufficient and reliable information concerning the size of the olive crop, its oil yield and the corresponding market value of the final olive oil product.

An estimate of the size of the olive harvest at the time when the fruit is still ripening on the tree, on each farm offered for Khadara is arrived at only through visual inspection of the trees. The accuracy of the estimates made either by the farmer or the Khadar (Middleman) cannot be verified.

Consequently, an unknown margin of error always remains between

the actual yield of olives after harvest and the corresponding estimate made before harvesting prior to the time of sale. In most cases, the estimate of olives yield are made on an individual basis resulting in a wide range of estimates depending on the skill and objectivity of the estimators.

* Traditional Relationship

The question of whether middlemen maintain larger margins than would be expected under full competition because of their strong bargaining power need to be supported by evidence, which are not available at the present time.

However, some argue that Khadara (middlemen) are obliged to offer to farmers a price reflecting the full market value of their produce, even if the farmers are insufficiently informed to know what it is for fear that the farmers will turn to another wholesale outlet.

On the other hand, some argue that the power of tradition and group recognition of mutual interest stands out clearly. For example, there is evidence in the olive market in Tunisia that middlemen provide some needed services to the farmers such as credit during the agricultural sesson.

2. Availability of Edible Oil to the Consumers

One of the principle objectives of the National Office of Oil is to facilitate and encourage a continuous and stable flow of olive oil exports. This has been difficult to achieve in face of the increasing domestic demand for edible oil and especially in low olive oil production years. However, olive oil generates far larger earnings as an

export commodity than it does for domestic consumption, since the internal price of olive oil in Tunisia is significantly lower than the world price. (See Chapter 5.)

The large imports of soybean oil have brought significant changes in the edible oil economy in Tunisia. These imports were sold in the retail market as a new blended oil at a price equal to one half of that fixed for pure olive oil.

Apparently, this considerably lower price for edible oil has enabled large numbers of low-income consumers to increase their individual consumption of total oil. This is particularly relevant among urban consumers to whom illegal market supplies of olive oil have become unavailable. Consequently, total consumption of edible oil, including olive oil, has risen from an average of 37 thousand metric tons in 1956-61 period to 52 thousand metric tons in 1962-67 period. This was realized despite an average decline in olive oil production of 15 thousand metric tons during the same perid. Hence, the increase in the use of imported oils not only offset this decline in domestic olive oil production, but actually raised the level of total edible oil consumption by a further 15 thousand tons. At the same time, a reduction in average total consumption of olive oil has been achieved, which has permitted somewhat stable exports despite the production decrease of recent years.

The retail price relationship between blended oil and pure olive oil was fixed on a somewhat arbitrary basis. That is, it was not based on any firm knowledge of the nature of supply and demand for these interchangeable commodities. Prices were set, instead, at certain levels intended to separate the olive oil market from that of

imported oil which were allocated for domestic consumption. On one hand, blended oil price was set at a rather low level (200 millims per litre). This resulted in almost doubling the total quantities of edible oil consumed over a 10-year period. On the other hand, the retail price of pure olive oil was set at a significantly higher level than domestic wholesale and export prices (400 millims per liter in sealed bottles). This price has effectively banished pure olive oil from the commercial retail outlets. It is estimated by the National Office of Oil that only 2 percent of total edible oils utilized in Tunisia is distributed from commercial outlets as pure olive oil.

This indicates that almost all pure olive oil consumed domestically is marketed through unregulated market and wholesale channels at lower prices. It is estimated that at least 60 percent of total olive oil consumed in Tunisia is marketed through these channels. The remainder is marketed as a blended oil, which is sold only by the National Office of Oil.

a. Price Discrimination

This exported oriented policy has given some interior problems as the expansion of unregulated market channels, which are in my point of view not in the benefit of either the consumer or the farmer.

Consumers, with strong preference for olive oil consumption and incomes too low to afford the retail price of olive oil, acquire their need through the black market where prices are lower than the retail prices. But subject to price discrimination and unknown quality, farmers that are not able to process their olives cannot benefit from this prosperious market outlet, which rest controlled by processors, middlemen and farmers with processing ability.

In summary, the price fixing development outlined above have given the greatest benefit to low income consumers by providing them with low priced edible oil. This has been achieved through the importation of cheaper edible oils. It was thought that olive oil supplies could be easily released for the export market if the consumer price at the retail level is fixed at a considerably higher level. This was not realized since olive oil was available in the wholesale and unregulated retail market outlets at a considerably lower price. It is recongnized that the basic direction of the Tunisian policy of increasing producers prices was appropriate. However, the price increase could have been higher taking into account the value of the commodity in the export market. Such higher producer prices may release more olive oil for commercial and export markets.

3. Physical Infrastructure and Institutions

"Any system of marketing, including market exchange, invariably embraces both the necessary physical facilities including a network of transport and supporting institutional structure."

a. Transportation Problem

Olive oil, is processed in over 2,000 factories with 2,550 presses. Almost all of the factories operate with machinery, but only some ten establishments have the most modern facilities. Nearly 21,000 tons of olives could be processed daily.

The Sfax region is the most equipped in processing facilities. The local production of olives is not enough to supply these factories even in peak periods. Processors of the region are obliged to transport olives from other regions to run their processing facilities

especially in low production years. Every year these processors buy an important quantity of olives from all over the country. This practice first has the advantage to standardize quality and the amalgame of different characteristics of the olive oil produced. Second, these operations narrow the regional price distortion and give opportunity to farmers in the insufficiently equipped region to dispose of their perishable product when the local processing factories are unable to absorb it.

On the other hand, this practice presents a number of disadvantages: It inflates the processing margin due to transportation expenses which can be avoided if more concordance exists between regional production and processing potential all over the country. In some low production years, the purchase of the Sfaxian processors of olives from other regions creates underemployment of local processing factories and cause an unnecessary transportation of olives, which is usually frequent in the northern regions. This situation results from the Khadara practice when sale of olive occurs months before the harvest, while the olives are still on the trees. Another shortcoming of the transportation of olives from one region to another is their deterioration during their handling and transport. Consequently, the alteration of some quality indices (indice diode, de saponification, de belier) which make the olive oil produced not proper for export especially to Italy which requires a very low indice d'iode.

The processing of olives in its production region increases the quality due to less handling and produces a very homogenous regional quality that are easy to pass the export requirement than when they are mixed from different locations. Table 16 shows regional

quality differentiation.

Table 16. Regional Quality Variation (Indice D'Iode et de Belier)

Origine	Indice d'iode	Indice de Belier
El Alia	87	15 1/2
Mornag	92.5	15
Souk El Arba	92.1	14 1/2
Enfida	87	16
Msaken	84	17 1/3
Speitle	86.9	16
Domaine du Chaal	85	15
Gafsa	83.8	16 3/4
Zarzis	85.1	17 1/2

Source: C.E.R.S.

b. Institution

The primary emphasis of current olive oil prices and marketing policies has been on maintaining a higher degree of control over the olive oil economy in order to maintain the flow of olive oil exports and to supplement the domestic needs for edible oils. This very export oriented institutional set up didn't achieve any significant increase in the commercial marketing of the commodity. This can be explained by the lack of skilled marketing staff which is usually formed of civil servants. The second explanation is the instability of the institution itself, ie.e seasonal institutional changes are frequent from one year to the other. Olive tree expansion is a very

long-term imvestment and requires a stable institution to provide the necessary insurance to farmers and investors.

CHAPTER V

HOW CAN THE MARKET PERFORM BETTER?

Based on the previous information in this paper, we will try in this chapter to expose the main barriers for improvement of the current performance and formulate some suggestions for changes or additions.

For the purpose of comparison we will examine in summary the producer prices for olives and olive oil in Spain as the first producer and exporter in the world.

1. Access to Credit

Owing to the large pressure of population on land and consequently to the small size of farm holdings, a large proportion of olive farmers cannot manage from one harvest to the next without recourse to borrowing. However, the factor largely responsible for the limited accessibility to credit is the prevailing land tenure system.

Until recently the great majority of small Tunisian cultivators had access only to userers and middlemen who charged them high rates of interest. Once debts of this type are contracted they tend to accumulate and soon become beyond the paying ability of the moneyless small farmer. The vicious circle resulting from poverty and debt put the farmer at the mercy of the userer whom is usually involved in the

the olive and olive oil marketing.

The reform introduced recently to facilitate accessibility to credit included measures such as the establishment of a sort of specialization among the financial institutions and the responsibility of the government to guarantee loans to small farmers who cannot provide sufficient securities to the financial institutions.

The lack of technical skills in the financial area, the low educational level of farmers in dealing with administrative matters and the strong attachment to traditional practices are rendering the task very difficult for the government.

Contrary to the belief that the financial abilities of some less developed countries are the limiting factor, it seems that the more critical problems are the distribution and collection of loans and the cost of such an operation.

Government Role

Our concern with credit in this paper is its role in the process of commercialization of the rural economy and its impact on output and income of small farmers.

The need for short term credit is particularly great among small olive farmers, where the commercialization is very costly, if they are to produce a marketable surplus and thereby contribute to the development process.

The task of the government is to provide credit for small farmers, even though the difficulties of distribution and risk involved are enormous.

* The government can help illiterate farmers to know about the

economic opportunities that are available, or how to take advantage of them through the development of an extension service independent of any political ties.

* Small farmers are usually penalized by the cumbersome and time consuming procedures involved in applying for loans, which are due to the highly centralized system. The government can ensure a better performance of such an operation if a more flexible village society structure is created, where the operating decisions are made at the local level.

* The provision of subsidized credit to small farmers should not be open to corruption, and political abuse. Subsidized credit intended for small farmers has often been used for financing nonagriculture ventures. The locally powerful farmers use their influence to acquire these subsidized credit; political pressure is used to avoid repayment and the default is usually blamed on small farmers as a class of high risk borrowers.

* One way of lending to small farmers is through the National Office of Olive Oil since the latter can provide a guaranteed market for olive oil and is in a position to ensure a profitable return. The National Office of Oil can facilitate the delivery of credit in kind as transportation and processing facilities. This approach combines support and supervision by a technical marketing staff with collection of repayments by deduction from returns. Clearly, this is an effective means of delivering seasonal credit to small holders. However an adequate product standardization is necessary if different varieties and qualities are going to be collected and processed by the National Office of Olive Oil to ensure an equitable return to

these small farmers (see product standardization).

* Credit institutions must commit themselves to continuity of operations, recognizing that performance, in the initial stages, may be inadequate. It will take time and discipline to develop effective credit programs for small farmers.

* Information about the noninstitutional credit channels is nonexistent at the current time. Such informatin and data collection can be very useful in policy formulation because in some cases such channels have proven to be effective. In some places merchants, middlemen, and moneylenders compete with each other and charge rates which are roughly equivalent to the high cost of lending to small rural borrowers including a realistic risk premium and the opportunity cost of the funds. Other moneylenders have a monopoly position and are able to charge rates greatly in excess of the competitive market level.

2. Product Standardization

A key observation can be drawn when evaluating the general level and distribution of the price data shown in Table 15 (page 40). The observed range of these prices can be related to the feasible price boundaries allowed under the present system of market and price control for oil. The boundaries of olive prices can be easily established when sufficient knowledge concerning oil yields and prices is specified. Oil yields of olives sold under the reported Khadawa system ranged between a minimum of 17 percent to a maximum of 28 percent, while the range of the quaranteed wholesale price of olive oil was between 250 and 280 Dinars per ton. Given these ranges of oil

yield and prices, along with reasonable estimates of the cost of olive transformation, feasible price boundaries of olives can be shown in the following diagram.

Oil Yield Percent	Guaranteed Wholesale Price of Oil (Dinars/ton) 250 255 260 270 280
17	37.5 = x → x + 5
28	x + 28 → x + 36

Feasible boundaries of Olive prices under specific wholesale prices of oil, oil yields and the cost of olive transformation.[1]

[1]These prices are calculated at the farm level assuming the following average cost and revenues of olive oil processing industry (1) 1.500 dinars cost of transportation one ton of fresh olives from the farm to the crusher, (2) 5.000 cost of processing one ton of olives, (3) 1.500 revenue from the sale of 300 kilos of grignon (olive by-product)--taxes on olive harvested (2.620 dinars per ton) are paid by the olive grower.

The above diagram shows the maximum feasible price disparity of olives should not exceed 36 dinars per ton. This price difference is between the value of olives which have the lowest oil yield (17%) of the lowest quality (Lampante at 250 dinars per ton) and the value of olives which have the highest oil yield (28%) of the highest quality super (280 dinars per ton). It is obvious that the maximum feasible price disparity between olive prices of extreme oil yield and quality indexes is significantly lower than the actual price disparity shown in Table 15.

For example, an interregional comparison between the highest price achieved in Sfax and the lowest price reached in individual

regions reveals a minimum disparity of 62 dinars per ton (highest price in Sfax minus the lowest price in Bizert) and a maximum disparity of 81 dinars per ton (highest price in Sfax minus lowest price in Beja). The overall average of these price disparities is about 70 dinars per ton, or about twice the maximum disparity allowed for olives for extreme quality differences. At the regional level, Sfax prices show the maximum disparity among producing regions of 64 dinars per ton.

Below is a suggestion for a price linkage formula which, if introduced, will allow estimation of fresh olive prices that reflect the value of the oil content of the olive sold, its by-products, and reasonable cost of processing.

This formula is conceived as follows:

$$p^{o} = (p^{oo} \cdot y) - C + G$$

where p^{o} = price of one ton of fresh harvested olives

p^{oo} = minimum wholesale price of one ton of olive oil

y = percent oil yield

C = Total cost of processing and transporting one ton of olive

G = The value of by-product (grignon) which results from processing one ton of olives.

A similar formula is applied in Spain. (See producer prices for olives in Spain.)

Government role in the standardization of the commodity is almost nonexistent and even if grade is used at the wholesale market, it is not applied to serve the farmer when setting the primary product.

Government Role in the Implementation

Specific policy measures need to be taken in order to implement a new pricing system.

First, the re-establishment of an organized market center for olive trading might provide a better medium for reaching a realistic pricing in all producing regions. The purpose of this market, in addition to commodity trading, would be to (a) bring a maximum number of buyers and sellers of olives together to assure an adequate degree of competition, (b) enhance the farmers' bargaining power and consequently achieve higher olive prices and regulate, over time and space, the flow of olives for oil processing, and (c) collect and disseminate relevant market information on prices achieved, quantities and qualities of olives traded and terms of trading. This market could be jointly supervised by parties representing the government, olive producers and processors.

Second, in order to ensure equitable pricing, reliable olive testing procedures, techniques and supervision can be introduced to achieve results useful for both buyers and sellers of olives at a nominal cost. The results of testing can be used to estimate a minimum producer's price according to a formula such as that proposed in this section.

3. Vertical Integration

Although it might be desriable to link primary producers of olives with the ultimate market (for olive oil) by making them process their own olives and sell them as oil, this linkage cannot be achieved in Tunisia for various economic and structural reasons.

The majority of the numerous small olive producers, who have limited financial resources, and a need for quick cash income, prefer to sell their olive production as a cash crop. The marketing for olive oil requires considerable cash expenses, time, and storage facilities which are beyond the means of most Tunisian olive farmers. Only a small number of the more prosperous producers can afford to undertake processing and marketing of the final product. Hence, it is expected that the Tunisian olive production and processing industry will continue to have two distinct markets for the product, i.e., one for olives and the other for oil.

Steps toward a sort of cooperative organization that will allow the small farmers to process olive and market the final product will shift a big portion of the marketing margin from the middleman and/or the processors to the farmers. Policy favoring integration of the small farmers with the processing industry will have its effect on the cost of the final product. This can be explained by the elimination of the shortcomings of the current channels of olive from the farm to the processing facilities.

The vertical integration will (a) link small olive producers directly with the final and more organized market for olive oil, (b) eliminate all risks associated with Khadara market channel, (c) coordinate harvest operations with processing operations and thus eliminate the risk of quality losses due to the perishability of olives, (d) eliminate middlemen profits, and (e) eliminate illegal marketing of olive oil.

4. Seasonal Variation

A major feature of olive oil economy is its instability. Market instability is caused mainly by the irregular production pattern of the olive tree which results in large fluctuations in olive oil supplies from one year to the next. Although it may be possible to lessen the yearly variations in olive yields by improving cultivation and tree selection, it is expected that the cyclical olive production pattern of the past will continue to repeat itself in the foreseeable future.

For the reasons mentioned above a buffer-stock mechanism seems to be an attractive scheme for achieving market stability. The usual mechanism of a buffer-stock scheme is to stock the commodity when the production is unusually high and/or the price is unusually low, and to dispose of the commodity when the situation is reversed. A national or regional buffer-stock agency could be established to perform stocking (buying) and disposal (selling) operation. These operations could be carried out under the supervision of an administration responsible for market stability. The magnitude and timing of stocking and disposal of the commodity would have to be determined in the light of previously established marketing and pricing objectives.

Probably such a stabilization scheme may increase or decrease the market prices but the main role it will play is to assure the continuity of the foreigner market. The current fluctuations in market supply have placed olive oil at a disadvantage in competition with other cheaper oils which are abundantly supplied. In this respect, it is argued that a substantial share of olive oil markets have been lost to other oil substitutes in years when olive oil supplies were

unusually low or prices were unusually high. This process of substitution has tended to be irreversible. In other words, the continuous instability in olive oil price over time has caused a shift in the consumption pattern in the direction of other soft oils. This situation has been intensified by the fact that other soft oil have been available at stable prices.

The second benefit that will occur to the Tunisian economy of olive oil is the possibility of entering long term contracts with importers of olive oil. Importers (private or government) prefer to engage in a stable operation of supply and quality over a long period of time.

This may not increase the price to the farmers during low production years, when they usually get higher prices, but it will assure them a secure market for their product in the long run.

5. Comparative Advanteage and Specialization

Data from Table 12 have shown that both freely determined and controlled wholesale prices of olive oil in Tunisia have been considerably lower than those in internatinal markets. In this sense Tunisia has a distinct comparative advantage in the production and export of this commodity.

Furthermore, Table 4 and 5 show that olive oil prices are about two and a half times that of other substitute soft oils available in the internatinal market. This price difference will probably be continued in view of the high cost of olive production and the strong preference for it among Mediterranean consumers.

Thus the advantages of export and specialization seem obvious

seen from both the comparative advantage or the factor endowment approach and the availability of substitutes at a lower price.

However the parts of the ten year plan for 1962-71 and 72-81 devoted to agricultural development have one major objective which is the diversification of the agricultural produce. It is believed that the emancipation of the Tunisian economy from its complete dependence of a few agricultural crops will help in saving, though partially, the serious problem of unemployment which results mainly from the dependence on the production of few winter crops. The positive aspect of the diversification of agricultural production in the country is that it will provide employment for the agricultural workers during the year. One further advantage that might result from a greater diversification of agriculture production in Tunisia will be milder fluctuations in the agricultural production and, consequently, less severe fluctuations in the income of the agricultural population.

The introduction of enterprise other than olive oil such as livestock, pistachio, almonds and apricot, and the substantial trade margin may explain the aim of the government in maintaining export of olive oil through import of cheap substitues and not through the expansion of olive culture which enjoy a comparative advantage in the world market, and where the opportunities for increasing producer prices through the reduction of marketing margin as well as of taxes and costs, are considerable.

The question becomes very political in the sense that a higher seasonal unemployment may cause problems to the government.

This argument is in contradiiction with the classical approach

of specialization. According to Adam Smith, exports are a means of expanding the market, which would permit further specialization and economies in production.

Additional information about the benefit and cost of the new introduced enterprise and the benefit of the seasonal dispersion of employment are needed to judge the government policy of diversification versus specialization.

6. Producer Prices for Olives and Olive Oil in Spain

Spanish olive and oil marketing regulations are perhaps the most comprehensive and effective among the olive oil producing countries of the Mediterranean region. Prices and price determination techniques are well specified to maintain a minimum guaranteed price for olive producers and reasonable returns to processors and traders of this commodity. At the wholesale level, minimum producers' prices and maximum marketing and processing margins are fixed in accordance with the value of the final products, mainly oil, in domestic and international markets. A maximum retail margin is also fixed for olive oil sold in small and bulk quantities. This margin also applies for residue olive oil and other seed oils. These extensive price regulations have probably helped Spain in maintaining an equitable pricing policy for olive oil and in preserving its position as the primary exporter of this special commodity despite rising costs and increasing competition.

Olive Pricing Regulations

Municipal yield committees are formed each year in olive producing regions in order to supervise and enforce specific standards for

the determination of oil yields and corresponding minimum farm-level olive prices. The nature and role of these committees in organizing the Spanish olive marketing can be summarized as follows:

(1) The Provincial Agronomic Directions of the Ministry of Agriculture are authorized to establish Municipal Yield Committees. A committee is normally composed of the chief of the local farmers union who acts as president, one representative of the sellers and one representative of the buyers of olives.

(2) The main functions of a committee are (a) to decide appropriate olive production zones in accordance with differences in oil yielding varieties produced within the municipality, (b) to indicate the farm level price for each olive category which are traditionally produced in the municipality and (c) to indicate the farm-level price for each olive category--defined in terms of oil yield, quality and the corresponding minimum wholesale price of olive oil.

(3) The oil yield is determined by either (a) unanimous agreement between buyers and sellers of olives, (b) an oil yield test undertaken under the supervision of the committee or (c) the Agronomic Direction when it is not possible to conclude an agreement within the committee.

(4) The price of each category of olives is determined every two weeks by the committee in terms of its corresponding oil yield and by applying the following formula:

$$P = A R - 51$$

where p = price per metric quintel of olives,

A = minimum guaranteed price of one kilo of olive oil,

prescribed by the government according to quality (i.e., free fatty acid content).

r = yield of oil per metric quintel olives

51 = miximum difference between crushing margin, including profits, and the value of by-products obtained from crushing one quintel of olives (51 peseta = 3.825 Tunisian dinars).

Olive prices fixed in this manner by the committee are considered as a minimum. Processors (buyers) can grant producers extra bonuses depending on other quality factors such as taste and cleanness.

The general commissariat's purchasing prices of olive oil (a) are set for each month of the production season. The fixed prices increase each month by fixed increment in order to encourage the storage of olive oil over the marketing year. Often the general commissarial has paid a higher price for olive oil purchased than the indicated minimum announced in the beginning of the production year.

Table 17. The Minimum Price Fixed for Different Qualities of Olive Oil in Spain from 1963/64 to 1968/69 (Price Dollars Per Metric Ton)

Quality	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69
Virgin extra	450	500	542	558	500	510
Virgin fine	442	494	533	545	495	500
Virgin ordinary (max acid 2.5%)	417	467	520	475	481	493
Virgin ordinary (max acid 3%)	408	458	520	475	481	493

Source: Olive Oil Market Stabilization Scheme for the Mediterranean region. Osama A. Al Land.

CHAPTER VI

CONCLUSION AND IMPLICATION FOR FURTHER RESEARCH

The objective of this paper has been to analyze Tunisian olive oil marketing and pricing practices and policies and to evaluate their possible impact on production, commercial marketing and exports of this commodity. The study describes the development in the market operation and organization experienced in recent years. The implications of changes in market organization pricing of olive oil and imports of cheaper edible oils for domestic consumption are analyzed.

Although the merit of a price policy can only be judged within the context of the overall economic policy followed in the country the general principles and factors which affect price determination are examined. The primary emphasis of current olive oil price policy has been on maintaining a higher degree of control over the olive oil economy in order to maintain the flow of olive oil export and to supplement the domestic needs for edible oils.

While the basic direction of the Tunisian edible oil policies appear to be economically appropriate, the specific policies with regard to market organization and price levels are not likely to achieve further significant changes in the pattern of consumption and/or export surplus potentials particularly if olive oil production continues to be low.

It appears that Tunisian olive oil policies did not achieve any

significant increase in the commercial marketing of the commodity. This could be explained by the retail-wholesale price relationship which maintained a considerable margin above what would seem a reasonable return for marketing services. As a result almost all olive oil consumed in Tunisia was apparently marketed through unregulated and largely unknown marketing channels. In order to assess the likelihood of alternative policies, we need to know more about the commodity's distribution channels, marketing margins and the response of both producers and consumers to market prices.

Indications are that Tunisia has a comparative advantage in olive oil production, as Tunisian producer prices remained considerably lower than export prices. This situation should allow the implementation of a favorable producer price policy without a great financial burden to the government.

Imports of cheaper oils as a substitute for olive oil in domestic consumption appears to be a continuing feature of the Tunisian oil economy. In this case the need for an appropriate long term price policy for the two substitute commodities is urgent. That is, if domestic utilization and export of olive oil are to be further manipulated there is need to establish price policies for seed oil, olive oil and seed oil/olive oil blends to achieve the desired objectives. Such a study could lead to the conclusion that further revision of the price fixing, oil blended practices and the market structure is needed.

Finally, the potential conflict between price policy objectives must be recognized. This potential could be minimized by a skillful pricing and marketing technique based on pricniples of economic gains to the industry and to the nation.

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