CHAPTER - I

OILS AND OILSEEDS ECONOMY OF INDIA

I. THE CONTEXT

Oilseeds occupy an important position in the Indian economy as they provide much needed protein and energy to the human and livestock population and also earn precious foreign exchange to the country. They form raw material -base for edible oil-producing industries that possess a large employment potential. The vegetable edible oil - a processed product of oilseeds - is one of the important protein and energy containing ingredients in the Indian food. Generally, all vegetable oils have the highest available energy value and they are the richest source of vitamin E. The oilmeal or oilcake - a joint product - meets the major energy and protein needs of the large livestock population of the country.

Oilseeds are annually cultivated over an area of 17 million hectares in India, constituting nine oilseed crops, namely groundnut, rape/mustard, sesamum, linseed, castor, safflower, niger, soybean and sunflower. Thus they claim the largest share (about 15 per cent) of agricultural land next only to foodgrains and contribute about 5 to 6 percent of the gross national product. Among the non-food crops, their share in the total acreage is more than 60 per cent. Linseed and castor come under non-edible use, while the rest are utilised for edible purposes. Besides
oilseeds, cottonseed is also being used for edible oil extraction purposes. However, the bulk of the country's edible oil production is derived from two major oilseeds, namely groundnut and rape/mustard, which together constitute about 85 per cent of the total production of oilseeds in the country.

India produces a fairly good quantity of oilseeds in the total world production (Table 1.1). The oilseeds are also considered as important source of foreign exchange earning for the country.

**Table - 1.1.**
India's Percentage Share in World Oilseeds Area and Production (Average of 1978,79,80).

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Commodity</th>
<th>Area</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Groundnut</td>
<td>38.25</td>
<td>33.02</td>
</tr>
<tr>
<td>2)</td>
<td>Rape/Mustard</td>
<td>29.70</td>
<td>15.65</td>
</tr>
<tr>
<td>3)</td>
<td>Sesamum</td>
<td>36.23</td>
<td>24.68</td>
</tr>
<tr>
<td>4)</td>
<td>Linseed</td>
<td>33.90</td>
<td>16.68</td>
</tr>
<tr>
<td>5)</td>
<td>Cottonseed</td>
<td>23.57</td>
<td>9.89</td>
</tr>
<tr>
<td>6)</td>
<td>Castorseed</td>
<td>30.20</td>
<td>26.34</td>
</tr>
<tr>
<td>7)</td>
<td>Safflower</td>
<td>49.78</td>
<td>19.94</td>
</tr>
</tbody>
</table>


The production of five major oilseeds has increased from 54.53 lakh tonnes (average of five years) in the First Plan to 89.65 lakh tonnes in Fifth Plan, showing an increase of 64.40 per cent. This increased production is
due to bringing additional area under oilseeds production and not through increased yield rates. A brief account of the performance of oilseeds sector in respect of area, production and yield is presented in Table 1.2.

**TABLE - 1.2**

Index Numbers of Area, Production and Yield of Total Oilseeds in India; 1949-50 to 1979-80.

(Base 1969-70 = 100)

<table>
<thead>
<tr>
<th>Year</th>
<th>Area</th>
<th>Percentage of variation over 1949-50</th>
<th>Production</th>
<th>Percentage of variation over 1949-50</th>
<th>Yield</th>
<th>Percentage of variation over 1949-50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50</td>
<td>67.9</td>
<td>-</td>
<td>67.2</td>
<td>-</td>
<td>108.3</td>
<td>-</td>
</tr>
<tr>
<td>1959-60</td>
<td>35.7</td>
<td>(35.7)</td>
<td>82.6</td>
<td>(23.0)</td>
<td>92.4</td>
<td>(-14.7)</td>
</tr>
<tr>
<td>1969-70</td>
<td>45.7</td>
<td>(7.0)</td>
<td>102.2</td>
<td>(23.7)</td>
<td>102.4</td>
<td>-5.4</td>
</tr>
<tr>
<td>1979-80</td>
<td>50.6</td>
<td>(3.9)</td>
<td>108.1</td>
<td>(5.8)</td>
<td>104.2</td>
<td>-3.8</td>
</tr>
</tbody>
</table>

(Figures in brackets indicate percentage variation over the decade)

Source: Agricultural situation in India, New Delhi, Ministry of Food and Agriculture, Government of India, Feb., 1981.

Table 1.2 shows that the production of oilseeds in the country increased by 60.8 per cent during the period 1949-50 to 1979-80. This increased production is largely
because of the additional area under oilseed crops. The area under oilseed crops has increased by more than 50 per cent during the same period. Yield rate has been virtually stagnant showing a declining trend. The technological improvements in the field of agriculture have not made any significant impact on oilseeds sector to increase the production in the country. The oilseeds production fluctuates widely from year to year due to variations in seasonal conditions, since only 8 per cent of the total area under oilseed crops is irrigated against 78 per cent in respect of sugarcane, 62 per cent in wheat, 38 per cent in rice and 23 per cent in cotton. As a result the marketing of oilseeds is susceptible to uncertainties leading to large price fluctuations.

Despite large production of oilseeds in the country, there is a big gap between per capita requirement and per capita availability of edible oil. There are frequent spectacular fluctuations in their prices from one season to another, as well as within the season.

The following observations are made on the basis of preliminary analysis of the data on oilseeds and edible oil prices:

1. The production of five major oilseeds has increased from 54.53 lakh tonnes (average of

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five years) in the First Plan to 89.65 lakh tonnes in the Fifth Plan. Despite this large production of oilseeds in the country, there is a big gap between per capita requirement and per capita availability of edible oil. The per capita availability of edible oil has decreased to 15 grams as against the bare minimum requirement of 40 grams per day. According to F.A.O. Report, in the developed countries, the total per capita supply of fats available for human consumption in 1974 was 126 grams a day against only 35 grams a day in the developing countries. This has created an imbalance in India's dietary system particularly in case of the weaker sections.

2. The prices of edible oils are ruling very high even after large imports. These prices are beyond the reach of majority of people, as more than 50 per cent of the population is below the poverty line. For example the groundnut oil price shot up to a record high of ₹ 274/- per 16 kg tin in August 1981 and reached an all time record of ₹ 302/- in September 1981 at Rajkot market. These prices do not reflect costs but

reveal the outcome of demand pull forces.  

3. There are wide-spread fluctuations in the oilseeds and edible oil prices from season to season and within the season. Within a fortnight in the month of October 1981, the price of groundnut oil came down to ₹.200/- per 16 kg tin from ₹.302/-. Such violent fluctuations are undesirable to the producers, traders/oil millers and consumers. These wide fluctuations in prices disturb farmer's income thereby making agriculture an unremunerative and risky occupation. These fluctuations in edible oil prices, which are largely due to variations in quantity available for consumption, have created variations in the protein intake in the form of fats and oils at the consumer level, particularly of weaker sections. This is highly undesirable and brings into sharp focus the importance of stabilising prices of edible oil at a certain reasonable level.

4. The production of oilseeds has remained stagnant for the last so many years. The production of five major oilseeds has increased marginally from 74.26 lakh tonnes in 1970-71 to 76.38 lakh

tonnes in 1978-79. The basic requirements for raising oilseeds production are not far different from those of wheat and other cereals. M.S. Swaminathan⁴, Member, Planning Commission has pointed out that yields per hectare of most of the annual oilseeds crops can be increased by 25 per cent with the current available varieties and levels of technology. This is largely because of current negligence and improper handling of the oilseeds sector. The study group of the National Commission on Agriculture has expressed its concern that due to the existing neglected state of many of the oilseeds crops their yield standard rates are very poor and therefore there is a vast scope for effective improvement.⁵ Hence, there is need for efforts to increase the production of oilseeds, assuring farmers remunerative prices for their produce.

5. India has become a regular importer of edible oil since 1973-74. Prior to that, it was the net exporter of edible oil. From 1977 to 1981, 48 lakh tonnes of edible oil have been imported at the cost of Rs.2,400 crores of foreign exchange.

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⁵ India, Government of, Report of the National Commission on Agriculture, New Delhi, Ministry of Agriculture and Irrigation, Part VI, 1976, p.130.
The country cannot afford the heavy burden of importing edible oil because of hard earned limited foreign exchange. Had the money spent on imports been invested in the domestic oilseeds sector it would have increased oil production and generated additional employment. The current concern is on how soon India will reverse the present situation of a net importer into a net exporter of oils and oilseed products.

A small portion of the oilseeds is consumed directly while the bulk of the oilseeds (more than 85 per cent) goes for crushing to yield oil which is used in the preparation of food articles as cooking medium, in vanaspati preparation and also in soap, paints and varnish industries. Some quantities of oil and oilseeds are exported to earn foreign exchange for the country. Thus, the nature of demand for oilseeds is a derived demand i.e., demand for oilseeds depends on demand for edible oils and their oilseed products for various purposes.

Production of oilseeds depends on a number of factors like farmer's decision to allocate land; the price that he is likely to receive for the produce; rainfall; availability of improved seeds; water facilities in the summer season; government subsidy programmes; prices of fertilizer and pesticides and above all relative profitability of oilseeds.
over different competing crops. Production of oilseeds is a periodical activity (annual basis) and farmers sell most of their produce soon after the harvest. This is largely because of lack of storage facilities and withholding power etc. On the other hand, the edible oil supply is continuous throughout the year and its flow in the market depends on various factors like oilseeds production, traders' profit margin, their speculative operations and government's indirect measures to control prices etc. The edible oil is a more essential commodity than oilseed and it is the edible oil price that determines the oilseed prices in the market. Thus, from the point of view of consumers it is edible oil economy which is of great concern rather than oilseeds economy. Presently, the system of marketing, processing and distribution of much of the oils is done largely through the private sector.

In the markets of the real world, price is determined by many market participants involved in buying, selling, processing and storing the commodity as it moves through the marketing system from primary producer to the final consumer. The inadequate growth of oilseeds production to meet the growing demand for fats and oils and consequent price instability and highly sensitive/speculative nature of oils and oilseeds market are the major concern which have affected both the consumer and the producer in the country. Thus the understanding of oils and oilseeds economy requires the knowledge of interrelationships of market forces, viz., supply, demand, price and price variations.
II. AN OVER-VIEW OF THE MAJOR STUDIES

Relatively few studies have been carried out to investigate the factors that affect the behaviour of demand, supply, price and price variations and their inter­relationships regarding oils and oilseeds economy. Here, a brief review of notable past studies done in foreign countries as well as in India is presented with a view to summarise significant methodological details and conclusions.

Studies in Abroad:

Vandenbore developed a simultaneous equation model of the soybean economy for United States for the period 1948-1964. This study was mainly concerned with an analysis of the soybean sector through an econometric study of prices, quantities demanded and exported. The estimates of the structural parameters of the model were obtained by the two-stage least squares method. Supplies of meal and oil for all uses were assumed to be fixed at harvest time. Stock relationship for meal and oil were introduced to remove this assumption with respect to the availabilities for domestic consumption and exports. The estimated domestic demand for oil and meal was observed to be inelastic, the estimates of elasticities being -0.45 and -0.28 respectively. However, the price elasticities of demand for meal were less reliable than those of demand for oil. The

author concluded that annual increase of more than 30 million bushels is necessary to cover the needs of the United States, Western Europe, Japan and Canada if prices are to remain relatively constant. The supply behaviour and supply responses of producers to various factors which could have given a more realistic picture of the soybean economy were not analysed in the study.

Al-Zand and Hassan\(^7\) have constructed a simultaneous equation model for estimating the demand for fats and oils in Canada based on time series data covering the period 1950–72. They have specified the nature of the demand for fats and oils, namely margarine, lard, shortening and butter and have estimated income elasticities of demand for individual fats and oils. The study has adopted the approach of expressing the per capita retail demand for four types of fats and oils as functions of their own price, the prices of other fats and oils, the per capita income of the consumer and a trend variable designed to capture effects of time related changes in tastes and preferences. Three alternative methods of estimation were used in the analysis. A first order autoregressive scheme was specified and estimates of the autoregressive co-efficients were obtained by the Hildreth–Hin Method. The original observations were transformed and then OLS,

ZSUR and FIML were used to obtain estimates of demand parameters. The FIML parameters were found to be more efficient than the other two methods. Specifically, the range of price elasticities of demand for fats and oils yielded under OLS and ZSUR techniques remained almost unchanged. The price elasticity of demand ranged from -0.51 for lard to -0.84 for butter. All income elasticities obtained were positive (except for lard) with value less than 1.0 which indicates that margarine, shortening and butter are considered normal goods in the consumption pattern of Canada. The study has indicated that price is the primary factor in the utilization of and substitution between fats and oils. The effect of the price of product and the price of its substitute, measured in terms of direct and cross price elasticities of demand, appeared highly significant in both magnitude and direction.

FAO has made world demand and supply projections of oilseeds, fats, and oils for 1975-86 in two stages. In the first stage production and demand were projected at constant prices which resulted in an excess of world supply over demand. In the second stage, the responsiveness of supply and demand to the changes in international prices

were taken into account to obtain the final adjusted projections of supply and demand that are in balance at the world level. The adjusted production of fats and oils rises from 47 million tons in 1972-74 to 67 million tons in 1985 which means a growth rate of 2.9 per cent a year. This was observed in the previous decade. Production in developing countries is expected to grow faster i.e. by 4.4 per cent against 2.7 per cent in the past decade. But in developed countries it is expected to taper down from 3.1 per cent to 1.8 per cent a year. Like production, the adjusted world demand for all fats and oils is expected to rise from 47 million tons in 1972-74 to 67 million tons in 1985. Demand in the developing countries is expected to grow at 4.9 per cent per year, nearly three times than that of the developed countries. The study concluded that average per capita intake in developing countries would increase by 30 per cent over the projection period (that comes about 6.4 kg), which would be even less than one-third of that of the developed countries.

George Stojkovic\(^9\) constructed a pure causal chain model and applied it to agricultural products, with


Although this study does not specifically deal with oilseeds and oils sector, it is included here because of methodological considerations having applicability for our model formulation.
a number of concrete illustrations on the ways of
determining supply, demand and price in a market for
agricultural products. Five commodities namely onions,
tomatoes, potatoes, beef and pork were considered for
U.S.A. covering the period 1930-1951. The model
included three equations, namely (i) the supply equation
explained by the lagged price, (ii) demand relation
explained by real price and real per capita income and
(iii) price mechanism explained by the gap between
lagged demand, supply and real per capita income to
measure short term and long term oscillations of price.
The number of explanatory variables is very low and
the model is intended only as an approximation to the
true model. The parameters of these equations were
fitted by the ordinary least squares method. The level
of explanation of the model is measured by the residual
variance ratio. In general, the goodness of fit for
the supply relation was not as satisfactory as for the
demand and the price mechanism relations. The author
pleaded for the change of direction test and held the
opinion that it should be used as a complement to the
residual variance ratio to judge the reliability of
the model. For the model applied here, this additional
test gave a favourable results as the calculated values
mostly followed the same changes or direction as the
observed ones. The study also attempted to compare the
pure casual chain models and interdependent systems.
The comparison was made for two commodities only, (for onions and tomatoes). Though the choice of the variable determines the type of model, the study concluded that the results obtained by the casual chain model for the above two commodities may be considered as slightly superior to the results obtained by corresponding interdependent system from the point of view of goodness of fit.

Studies in India:

The studies reviewed here refer to the various aspects of oils and oilseed economy of India. Madhoo Pavaskar's study attempts to estimate demand for oils and oilseeds for the years 1980 and 1985. His estimates of demand for major oils and oilseeds in India are essentially in the nature of projections based on time-series data covering the period 1960-61 to 1974-75. The study aims at projecting the demand for domestic consumption, vanaspati production and industrial purposes under various assumptions relating to changes in population, income and prices.

The population assumption is based on the medium population projections of the Registrar-General which yielded a population of 655 million for 1980 and

720 millions for 1935. In the absence of reliable data on consumer expenditures, incomes series have been used on the assumption that in India expenditures of most of the families are not much different from their incomes. The third assumption is about the prices. The author has taken constant five year average price, namely 1971-75 period's average price for projections. He has not attempted to study the impact of changes in prices on demand. Alternatively, a linear trend in real prices measured over the period 1961-75 could also have been tried. At wholesale level, prices do influence and in turn are influenced by consumers, producers and traders/oil millers, therefore it is more realistic to take price as endogenous variable to be determined within the model instead of assuming constant. Girshick and Haavelmo\textsuperscript{11} have concluded in their statistical analysis of the demand for food, that it is impossible to derive statistically the demand functions from the market data without specification of the supply functions involved. The simple reason for this is that the actually observed economic variables are determined jointly in the system but not individually.


\textsuperscript{12} Shepherd, G.S. Agricultural Price Analysis. Iowa, Iowa State University Press, 1968 (Sixth Edn.), p.164.
of the elasticity of demand for agricultural products may be obtained by using least squares multiple regression analysis, for which price is the dependent variable while supply and some demand shifters are used as independent variables.

The estimated demand functions yielded income elasticity of demand of 1.14 for edible oils and 1.28 for edible oils and vanaspati together. As expected, the demand for food oils was price inelastic, the price elasticity of demand was as low as -0.45 for edible oils and -0.44 for edible oils and vanaspati together. The aggregate annual demand for edible oil for direct consumption is projected and it is expected to rise from two million tonnes in 1971-75 to a maximum of 2.75 million tonnes in 1980 and 3.33 million tonnes in 1985.

No attempt has been made to assess the likely supply gap and supply responses of producers in the face of increasing demand.

George, Srivastava and Desai\(^\text{13}\) have analysed the supply projections of major as well as minor oilseeds for 1980-1985 based on past performance covering the period 1954-55 to 1973-74. The supply of oilseeds in 1980 and 1985 were determined by the area under oilseeds.

and the yield levels achieved. In projecting the area under the crop and the yield levels, three broad approaches were used: (i) trend method (ii) analytical models (iii) judgements based on the current developments. To estimate the trends, linear, semi log, log inverse and double log functional forms were used.

In analytical models, it was assumed that the area under oilseeds was determined on the basis of the relative profitability of oilseeds and the total cultivable area at the farmer's disposal. In the absence of expected relative profitability, past experience through lagged variables was used. The general models used for estimating acreage responses were explained by gross return of the oilseed, gross return of the major competing crops, price of competing crops, net cultivable land, irrigated area under the crop, rainfall and trend variable. Yield responses were projected by taking into account the availability of improved technology and the use of intensive cropping practices.

In the case of newly introduced crops such as sunflower, soybean and minor oilseeds of tree origin, the projections were made on the basis of an assessment of factors like current development activities, the chance of success in these activities etc.
Since there have been violent fluctuations in prices as well as yield levels of oilseeds, price risk and yield risk could have been included in explaining the acreage response relations. Market clearance and price variation aspects are also not covered in the study.

Jhala\(^\ref{14}\) has attempted to explore quantitatively the supply and demand relations pertaining to edible oilseeds and oils economy of India in a classical supply-demand framework. The analysis was done for groundnut, rape/mustard, sesamum, coconut oils and vanaspati on the basis of time series data covering the period 1951 to 1971. The study examined both single equation approach and simultaneous recursive type model at a specific edible oil level. It was assumed that acreage response was the same as the output response and Nerlovian partial adjustment model was used to explain the supply response of acreages for oilseeds. This was explained by farm harvest price, lagged yield, rainfall during sowing period and lagged acreage under the crop. In the case of groundnut, for many states the negative price response was found despite groundnut being a commercial crop. The agro-climatic factors, especially yield and rainfall, were found influencing the groundnut acreage in the country.

The static demand relation linear in logarithm has been used to explain the per capita consumption of individual oil. This was explained by the real wholesale price index, per capita real income and trend variable. The time series data on per capita consumption were derived on the basis of the production approach. It was assumed that the supply of oilseeds was predetermined and was not likely to be different from demand. This assumption, however, is not warranted by the actual market functioning. Since oil traders/millers are few in number having considerable influence over market, they have a somewhat upper hand in determining the prices of oils and oilseeds. That is, oil millers/traders play a role which brings the supply and demand into contact and thereby regulate the prices of oils and oilseeds.

Thus, it is not the equality of supply and demand that explains fully the pricing mechanism of oils and oilseeds in the market. This requires a separate price equation which is a behavioural relation incorporating oil millers'/traders' role thinking that they have two-fold economic function viz., to bring the supply and demand into contact and to use their market influence to regulate prices of oils and oilseeds.
Sharma has formulated a simultaneous equation model containing eleven relations for Indian vegetable oils economy on the basis of time series data covering the period 1947-64. Three relations were constructed for each component of demand of peanut oil, namely demand for direct liquid consumption, demand for vanaspati and export demand. The demand for peanut oil for food was hypothesized as negatively related to the prices of peanut oil and positively related to the price of mustard oil, sesame oil price and disposable income. The demand for peanut oil in vanaspati production was postulated to be inversely related to the prices of peanut oil and positively related to the prices of competing oils like sesame and cottonseed oils and to the price of vanaspati. The export demand function of peanut oil was hypothesized as negatively related to Indian peanut oil price and positively related to oils prices in foreign countries.

In the supply relationship, the quantity of peanut oil was postulated as a function of the prices of joint products—oil and oilmeal, and the level of technology characterized by the industry. Similar equations were described for sesame, mustard and cottonseed oils.

The relations were estimated by OLS, 2 SLS, unrestricted least squares reduced form and 2 SLS reduced form methods in log linear forms. The price elasticity of demand for peanut, sesame and mustard oil was -0.45, -0.53 and -0.39 respectively and income elasticity was 1.42, -0.03 and 1.40 respectively. The results of supply analysis revealed that mustard oil had the highest price elasticity of supply (0.65), followed by peanut oil (0.60), cottonseed oil (0.39) and sesame oil (0.18). The results of demand and supply analysis indicated that both demand and supply were price inelastic. Liquid consumption of vegetable oils was more responsive to changes in income than to changes in prices. On the basis of these results, it was concluded that in times of short supply of oils, the sufferer will be the low income householder.

NCAER\(^{16}\) has attempted long term projections of demand for and supply of selected agricultural commodities based on time series data as well as cross-section data on consumer expenditures collected by the National Sample Survey. Specifically, the objectives of the study were to make an estimate of aggregate domestic supply of important agricultural commodities including oilseeds, cotton and pulses etc., for the period 1961 to 1976. The projections of demand in this study were

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based on the co-efficients of income elasticities, the likely changes in per-capita income and expected increase in population over the projected period. The changes in relative price as well as changes in price elasticities were not considered while arriving at the projected demand. The study concluded that demand for oilseeds appeared to be more than doubled during the projected period, increasing from 6 million tons in 1960-61 to 13 million tons in 1975-76.

The supply projections presented in this study were obtained primarily on the basis of projected yield rates and acreages of the different crops. The acreage under each crop was projected and then multiplied by the corresponding yield per acre in order to arrive at the estimated production of that crop over the projected period. The gross area sown under different crops over the projected period was estimated on the assumption that the cropping pattern in the base period (1955-56) would change only to the extent that additional area could be made available for farming by way of land reclamation and multiple cropping. The additional acreage under any particular crop was assumed to be directly proportional to (a) its corresponding monetary returns per acre valued at 1955-56 farm harvest prices,
(b) the relative gap between the base period supply and projected demand for the crop.

It was assumed that yield rates were influenced by land, labour, capital and entrepreneurship. Thus, the domestic supply relation was explained by land, labour (number of man-days), capital (irrigation, fertilisers, improved seeds) and entrepreneurship. The production of oilseeds was expected to have more than doubled from 5.6 million tons in 1955-56 to 10 million tons in 1970-71 and 14 million tons in 1975-76. Thus the study optimistically concluded self sufficiency in the case of oilseeds.

NCAER\textsuperscript{17} has also initiated a study on export prospects for vegetable oils and oilseeds as these items form an important part of India's export and are significant in India's agriculture. Though the world conditions generally suggest good scope to expand exports, the actual performance will depend mainly on domestic factors specially on exportable surplus. The study has revealed that if the present trend in productivity and utilization of cottonseed, rice bran and minor oils continued by 1970-71 supplies could be

insufficient even for domestic demand by 1.2 ± 0.6 million tonnes, ignoring the rise in demand due to better distribution of income. The study suggests that in order to achieve the objective of price stabilization and to maintain exports, especially in the years when production is low, there is a great need of creating a buffer stock, re-orientation of production and consumption policies and many of the foreign trade decisions such as restrictions on exports of oils, import of oilseeds etc. The exports which are residuals after meeting domestic demand, create the problem of continuity in supplies in world market and make India an undependable source of supply. Despite such limitations, the study has indicated good scope to expand India's exports of oilseeds and vegetable oils particularly groundnut and castor oils, provided supplies are made available and price is kept competitive.

Alagh, Subrahmanian and Desai have made use of price, cost and productivity data at the regional level to estimate econometric price formation systems for the edible oil and vanaspati industries of the Indian economy and traced the impact of fluctuations in the agricultural sector on prices in these industries. The study made

use of the data collected from Annual Survey of Industries for the period 1960-64. The study has concluded that unless the implementation of price control at the retail level is strict, the consumers are liable to be soaked more in shortage situation. Hence, it has suggested the shifting of the official pricing policy to keep input prices stable through buffer stock, imports, etc. to meet the growing demand.

III. THE PRESENT STUDY

The studies conducted so far have focussed on partial aspects of the oils and oilseeds economy. A review of the salient characteristics and evaluation of various studies related to this sector clearly indicate the need for a detailed study of oils and oilseeds economy of India, having an integrated view of supply responses on the one hand and market behaviour on the other to analyse the economic aspects of fluctuations in production, consumption and prices of the important oils and oilseeds grown in the country. The present study attempts to undertake this task. The specific objectives of the present study are:

(i) To develop a conceptual model of the functioning of the oils and oilseeds
economy and to hypothesize the major
variables affecting various relationships
like supply, demand and market clearance
relations etc;

ii) To estimate the model using suitable econome-
tric techniques and compute the relevant
elasticities;

iii) To study the extent of price variation from
wholesale level to farm level as well as from
wholesale to retail level and shares of farmer
and intermediaries in the consumers' rupee
spent on oil and movements there-in to ascer-
tain scope for improvements in the marketing
system and;

iv) To test the predictive performance of the model
in projecting the endogenous variables for
future and to derive analytical and policy
implications.

The Conspectus:

The present study is organised into ten chapters.
The contents of each of these chapters are briefly
outlined here.
The present Chapter (Chapter I) outlines the objectives and scheme of the study after presenting a review of the salient features of the oils and oilseeds economy of India, consisting of supply, demand, prices, exports and imports of major oils and oilseeds and critical appraisal of the studies relating to oils and oilseeds economy of India and abroad. Chapter II presents a simple theoretical background within the framework of a competitive market economy. This framework helps in providing an understanding of the effects of price control on producer's income and consumer's gain. The analysis also examines the possibility of collusive action by traders/oil millers in such a market economy. The model for oils and oilseeds economy is presented in Chapter III. The rationale for the hypothesised relations is also discussed using the results of the theoretical analysis and existing empirical evidence. Chapter IV discusses the nature and sources of data used and the measurement of variables included in each of the relations of the model. The results of some preliminary calculations undertaken to derive the measurement of the relevant variables is also presented in this chapter. An attempt is made in Chapter V to give some detailed information regarding time trends and regional spread of area, production and yield of the major oilseeds grown in India. Besides, a review of various schemes
to boost oilseeds production is also outlined briefly in this chapter. In Chapter VI, the results relating to three relations, viz., two behavioural relations, namely acreage response and production behaviour relations and a definitional (identity) relation determining domestic supply of each of these oilseeds and oils, are presented. Chapter VII presents the estimates and interpretation of demand functions for each of these oils. In Chapter VIII, the estimates of the market clearance relation and farm harvest and retail price relations are discussed. Chapter IX analyses the aspects relating to market structure of this sector. This is done by analysing the movements in the farm harvest, wholesale and retail prices and changes in the shares of farmer and intermediaries in the consumer rupee spent on the purchase of oil. This analysis is confined to groundnut which is the dominant component of the oils and oilseeds sector. Chapter X presents the conclusions and policy implications of the study. An attempt is made here to analyse the performance of the model, summarise the basic conclusions drawn in chapters VI through IX and projections of the endogenous variables for the period 1979-1990. An appendix at the end provides statistical data used in the study.