

Vegetable Oil in the Second Plan

A C Chhatrapati

With the rapidly growing internal demand and the pressing need for stepping up exports of oils to earn foreign exchange, more energetic measures are urgently required not only to increase oilseed output but also to develop cottonseed crushing and solvent extraction industries in order to make optimum use of the available resources.

Only measures of an emergency nature can help to augment oil supply significantly within a short period; otherwise not only will there be little scope for exports but the country may face a famine of edible fat.

VEGETABLE oils are important to the Indian economy for three reasons; they constitute three-fourth of the edible fat consumption of the people; they supply the basic raw material to paints, soap and other toilet industries and they are valuable foreign exchange earners. However, unlike cereals, cotton, jute and sugar cane, increasing oilseed output has received little attention in the last decade. Consequently, exports of vegetable oils fluctuate more violently than any other major item in our export list. Their prices also fluctuate most violently causing serious hardship to consumers, industrial and others. "Despite the desperate need to step up exports to bridge the yawning gap in the foreign exchange resources, Government has been compelled to ban exports of groundnut and other major edible oils because of their shortage and high prices. In fact, between 1951-52 and 1956-57 exports of groundnut oil had to be banned in three years. As edible oils can play an important part in promotion of exports, I propose to analyse recent trends in oil supply, the adequacy of the targets in the Second Plan and discuss ways and means of augmenting vegetable oil resources of the country.

Oils In the First Plan

The First Plan envisaged an increase of 8 per cent, from 51 lakh tons to 55 lakh tons, in the output of major oilseeds, namely, groundnut, rape and mustard, sesamum,

Table I—Acreage, Output and Yield per acre of Major Oilseeds

Year	Area (acres)	Seed output per acre (tons)	Yield (lbs)
1936-37			
to 38-39	2,134,000	4,812,000	505
1947-48	2,406,500	5,117,000	478
1950-51	2,650,800	5,078,000	430
1951-52	2,887,600	4,949,000	400
1952-53	2,761,500	4,659,000	380
1953-54	2,748,200	5,462,000	445
1954-55	2,023,600	6,182,000	457
1955-56	2,920,900	5,828,000	432

castor and linseed. The total output of all vegetable oils was expected to rise by 12 per cent to 12.72 lakh tons. The export target of vegetable oils was fixed at 1.7 lakh tons. The increase in oilseed output was expected to be achieved through increase in yield per acre.

It will be seen from Table I that the target of the Plan was achieved through increased acreage rather than increased productivity. In fact, the yield per acre of oilseeds has been steadily declining and the First Plan has failed to check this trend. Thus in the last 20 years an increase of 17 per cent in output has been obtained through a 37 per cent increase in acreage.

While the target of output of oils was exceeded, during the First Plan period, total exports fell short of the target (See Table II). Net exports, i.e., exports minus imports actually declined from 1.13 to 0.79 lakh tons. The increase in net supply of oils by 18 per cent was not sufficient to meet the internal demand. This is evident from the fact that in 1956 prices of vegetable oils rose by 46 per cent over the previous year, while the wholesale price index for all commodities rose by only 13 per cent. In 1957 also, prices have continued to be firm although the output of oilseeds is expected to be slightly better. As mentioned earlier exports of major edible oils have been banned owing to the internal shortage.

In the Second Plan

The Second Five Year Plan provided for an increase in the output

	Table II—Oil Supply and its Utilisation	
	1951-52 (tons)	1955-56 (tons)
Total oil output	13,60,000	15,53,000
Imports	38,000	73,000
Exports	1,48,000	1,52,000
Net supply	12,50,000	14,74,000
Uses :		
Non-edible	1,90,000	2,24,000
Edible	10,60,000	12,50,000

of the major oilseeds from 56 lakh tons to 70 lakh tons by 1960-61. Subsequently, in the light of the inflationary tendencies and the rapid growth in demand for consumer goods, the targets for agricultural outputs were revised upward. Accordingly, the target for major oilseeds was revised to 76 lakh tons, i.e., an increase of 37 per cent. Although a year has passed since then, the break-down of the revised target in terms of different categories of oilseeds has not yet been given out. This target is to be achieved largely through distribution of improved varieties of seeds and improved cultivation practices. No information is yet available in regard to the progress made by the State Governments for achieving these targets. The Indian Central Oilseeds Committee has recently decided to start regional research stations and an oilseed extension scheme on the lines of the cotton extension scheme of the Cotton Committee. Considering that multiplication of improved seeds, training of extension staff and research at the research institutions will take considerable time, it is extremely doubtful whether the targets of oilseeds output can be achieved by 1960-61 unless good monsoons and increased acreage through the initiative of the farmers produce the desired result.

The Programmes of Industrial Development, 1956-61, have estimated the supply and utilisation of vegetable oils by 1960-61 in comparison with 1954-55 as follows (the figure of total output in 1960-61 has been revised in light of the revised target):

	1954-55 ('000 tons)	1960-61 ('000 tons)
Total production	17.60	22.80*
Consumption :		
For edible uses	11.39	13.58
For vanaspathi	2.59	4.30
For industrial & miscellaneous uses	2.24	2.78
Exports	1.38	2.14

* based on output of 76 lakh tons

These estimates give a very distorted picture of the oil supplies not only because statistics regarding carry-over of stocks from one season to another, uses of seeds, output of oils and uses of 'Oils except by the organised industries,' are not available, but because some of these figures relate to different periods. Output of oils based on crop estimates naturally relates to crop years, i.e., October-September, and the figures of exports, industrial consumption, etc., should also relate to this period, but the figures of exports, consumption for vanaspati manufacture and industrial uses for 1954-55 seem to relate to the financial year (April-March). In fact, in the calendar year 1955, the nearest period to the crop year, exports of oils, oilseeds and vanaspati amounted to 3,11,000 tons in terms of oil. The quantity of oil consumed in vanaspati manufacture totalled 2,98,000 tons. Therefore, the availability of oils in 1954-55 for edible purposes, which is a residual figure, was about 9.27 lakh tons and not 11.39 lakh tons. On this basis the per capita availability of oils for edible purposes was only 7.4 lbs per annum and not 8.2 lbs per annum as indicated in the Programmes.

Demand Under-estimated

The forecast of uses of oils in 1960-61, however, seems to be an under-estimate. In the Second Plan the output of soap is expected to increase by 1,00,000 tons, paints and varnishes by 20,000 tons and lubricants by 6,000 tons. On the basis of the Planning Commission's own estimates, these industries will thus require 70,000 tons more oil. But the estimate for industrial and miscellaneous uses indicates a rise of only 54,000 tons. This implies a decrease in the uses of oils for hair oil, massage, and other miscellaneous purposes from 93,000 tons in 1954-55 to 78,000 tons in 1960-61! It may be noted that the National Sample Survey has recently estimated the quantity of oils used for hair and massage only at 2,00,000 tons or 1.5 ounces per head per month. This is not an unreasonable estimate. Therefore, even at present either the oil available for edible purposes is less than what is estimated or the total output of oils is higher than is assumed. In any case, it should be obvious that the quantity of oil required for non-edible uses will be much larger in 1960-61 than envi-

saged in the Programmes. '

It is nearly impossible to estimate the likely demand for edible oils after four years with little reliable information of the consumption pattern in the past. Nevertheless, it is desirable to test whether the expected improvement of 30 per cent in oil output will be sufficient to meet the internal demands and leave a surplus for exports as envisaged in the Plan. This entails a forecast of increase in demand for oil on account of (i) Increase in population. (ii) increase in urbanisation, (iii) increase in purchasing power and (iv) changes in consumption habits affecting oils.

Admittedly the increase in availability of oils of 18 per cent in the First Plan was insufficient to meet internal needs. This deficit will have to be made good from the increase in output during the Second Plan. Secondly the consumption of cereals in good monsoon years is considered to have reached the optimum level according to nutritional standards. Therefore, future increases in expenditure on food will be more in the direction of supplementary foods like fats. Since the proportion of expenditure on fats is at present extremely low, even a small increase in expenditure will bring about a substantial increase in their demand. Thirdly the production of ghee may not increase significantly because the consumption of milk is rising and increase in milk output will be used to meet this more remunerative demand for milk. Hence the future increases in fat consumption will have to be in the form of oil and vanaspati. Taking into account all these factors and considering the recent trends in the consumption of cloth and sugar, it is my surmise that the increase envisaged in the Plan may not be sufficient.

In view of the poor progress in measures to improve output, it is to be feared that the country may face a veritable shortage of vegetable oils unless concerted efforts are made not only to increase output of oilseeds but also to augment supply of vegetable oils from existing resources quickly.

Cottonseed Crushing

Two important existing sources for augmenting vegetable oil supply are cottonseed crushing and solvent extraction of oil cakes produced by ghanis and oil mills.

Although India is the third largest

producer of cottonseed, it allows cottonseed to go waste in the form of cattle-feed. In USA and even Uganda more than 80 per cent of the cottonseed is crushed to produce substantial quantities of good edible oil. At the present rate of output of 14 lakh tons of cottonseed, in India, the total vegetable oil supply can be increased by 1.4 lakh tons, if 80 per cent of the crop is crushed.

Cottonseed crushing requires special equipment for delinting and dehulling the seed. Raw cottonseed oil being dark in colour and unpleasant in taste is unpalatable. Consequently cottonseed crushing did not interest the industry, especially when other good edible oils were available in sufficient quantities; and a market was developed for cottonseed as cattle-feed. In view of the impending shortage of edible oils, the need for cottonseed crushing has been felt, but being in infancy it has to face a number of difficulties.

The most difficult problem is the frequent disparities between the prices of cottonseed and its oil. Cottonseed prices are determined by its demand as cattle-feed from farmers. On the other hand, cottonseed oil prices fluctuate with world price when exports are free and prices of other edible oils, when the oil has to find sellers within India. The risk of loss on account of such disparities is further increased by the fact that for continuous crushing the crusher will have to arrange to purchase and store large stocks of seed during the ginning season of 6 to 7 months. Owing to the high incidence of railway freight, transport of cottonseed from distant surplus areas is not economical. Thus the existing crushers have to close down frequently because of disparities in seed and oil prices and non-availability of seed locally.

The second major difficulty faced by crushers relates to disposal of the by-products. Cottonseed contains only 13 to 22 per cent oil. In addition, it yields 4 to 6 per cent linter (if the seed is of American variety) which is the basic raw material of the acetate rayon industry, 30 to 35 per cent hulls which are good for feeding cattle as roughage and 45 per cent oil cake. The decorticated oil cake has an extremely limited market in Ahmedabad and Bombay cities,

For Precision

Stampings

and Laminations for the Electrical Trade



Enquire of

Sankey Electrical Stampings Private Limited

Calcutta.

Bombay.

while undecorticated cake has a larger market in Punjab and some other regions. But generally, the marked preference of farmers for feeding whole cottonseed to cattle causes great difficulties in disposing of cottonseed cake economically.

The third difficulty in cottonseed crushing is the absence of technical know-how for producing good quality oil and linters. Special care and facilities are required for storing cottonseed and special skill is required to produce good quality products. At present the linter produced by the crushers is frequently unacceptable to the only acetate rayon factory in India owing to its poor quality. The vanaspati factories are reluctant to use cottonseed oil because it is difficult to bleach owing to defects in the technique of its production and washing.

How to Reduce Risks

Obviously in the face of such serious difficulties rapid development of cottonseed crushing can take place only if Government makes cottonseed crushing less financially hazardous through fiscal and other measures along the lines enumerated below. It is a pity that the Planning Commission has not recommended any measures to develop cottonseed crushing rapidly although it has expressed a fear that the oil supply might not be sufficient. Further it has recommended increase in cottonseed oil output from 9000 tons to 30,000 tons only, perhaps due to the opposition to cottonseed crushing from rural interests who continue to hold the belief that whole cottonseed is the best cattle feed. The prolonged experiments at the Izzatnagar Research Institute have proved that there is no significant difference in the nutritive values of cottonseed and its cake as cattle feed. There is now no rational objection to encouraging cottonseed crushing.

(1) An active educational propaganda among farmers to use cottonseed cake and hulls in place of whole cottonseed as cattle-feed: This will create a remunerative market for cake and hulls and reduce disparities in seed and oil prices. The National Extension and Community Development staff may undertake this activity to begin with in Punjab, Saurashtra

and Rajasthan which not only consume cottonseed produced in their territories but also import from long distances.

(2) Provision of financial incentives to make cottonseed crushing attractive: The existing oil mills in cotton growing areas may be offered low interest loans for installing delinters and millers. Cottonseed crushing may be included among industries exempted from payment of Income tax on profits and dividends upto 6 per cent on paid up capital under Section 15 C of the Income Tax Act. The Central Excise duty on cottonseed oil may be abolished. At present the net revenue from this duty must be hardly in excess of Rs 1 lakh. The loss of revenue to Government therefore will not be of any consequence, but it may induce entrepreneurs to undertake cottonseed crushing.

(3) Technical assistance in producing good quality cottonseed products: It is necessary to disseminate existing knowledge on storage and processing of cottonseed and institute research in these problems with special reference to Indian conditions.

(4) Permission to cottonseed crushers to crush other seeds: At present licences are issued under the Industries Development & Regulation Act for establishing cottonseed oil mills on the condition that they will not crush other oilseeds. For economic operation it is necessary that these crushers should be permitted to crush other seeds in the off season for cottonseed or when cottonseed supply is inadequate to maintain production.

Solvent Extraction of Oil cake

The Planning Commission has recommended increase in the capacity of solvent extraction from 4 lakh tons to 8 lakh tons during the Second Plan in order to produce 64,000 tons of oil from oil cake produced by ghanis and oil mills containing 6 to 8 per cent oil. However, solvent extraction is economical only when fresh oil cake containing 15 to 18 per cent oil is put through the solvent extraction process. Only this way good quality oil can be produced economically. Therefore, to encourage solvent extraction it is necessary that owners of solvent extraction plants should be permitted to purchase and instal

expenter near the solvent extraction plants of crushers situated in a locality may be induced to put up a solvent extraction plant on a cooperative basis to which they can feed fresh oil cake containing 15 to 18 per cent oil. The suggestion of the Planning Commission that solvent extraction of ghani oil cake should receive special attention in view of the emphasis given to ghani crushing in the Plan is impracticable as collection of the cake in sufficient quantities from widely dispersed ghanis within a reasonable time is impossible.

To sum up, with the rapidly growing internal demand and the pressing need for stepping up exports of oils to earn foreign exchange, more energetic measures are urgently required not only to increase oilseed output but also to develop cottonseed crushing and solvent extraction industries in order to make optimum use of the available resources. Only measures of an emergency nature can help to augment oil supply significantly within a short period; otherwise not only will there be little scope for exports but the country may face a famine of edible fat.

New Railway Yards and Workshops

Two new railway marshalling yards are to be constructed at Bhilai and at Bondamunda, near Rourkela, at a total estimated cost of Rs 6.38 crores.

The construction of these marshalling yards has been found necessary to cope with the heavy traffic in connection with the two new steel plants under construction at Bhilai and Rourkela, and also with traffic from other subsidiary industries which are expected to develop in the vicinity of the steel plants.

The railway Board has given its approval to the construction of a new locomotive shed at Yashwantpur, three miles from Bangalore City at an estimated cost of Rs 14.5 lakhs.

The Railway Board has also sanctioned the expansion of the railway workshop at Dohad, on the Western Railway, to increase its locomotive repair and overhaul capacity. The expansion is likely to cost nearly Rs 28 lakhs.