

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Vol XLVIII No. 3 ISSN

0019-5014

CONFERENCE NUMBER

JULY-SEPTEMBER 1993

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS





INDIAN SOCIETY OF AGRICULTURAL ECONOMICS, BOMBAY

Production Performance, Potentials and Prospects for Oilseeds in India

A.J. Singh and Sarbjit Dhaliwal*

India holds a premier position in the world not only in terms of rich diversity of oil crops but also in terms of area as well. In 1990, an area of as much as 21.60 million hectares out of the current world's area of 123.40 million hectares under important oilseed crops was from India alone (FAO, 1991). India accounted for more than 65 per cent of the world area under safflower, 53 per cent under castor bean, 40 per cent under groundnut, 37 per cent under sesamum, 29 per cent under rapeseed, 26 per cent under linseed, 7 per cent under sunflower and only 4 per cent under soyabean. It is interesting to note that in respect of several oilseed crops the country ranks either first (groundnut, sesamum, caster, linseed and safflower) or second (rapeseed) or third (sunflower) in the world in terms of area. Although India has a share of more than 18 per cent in the total area under oilseeds at the world level, its share in world output of oilseeds is less than 10 per cent. One of the principal reasons for such a paradoxical situation is the predominant cultivation of oilseeds under conditions of scanty rainfall/moisture and input starvation with poor management and their concentration in regions characterised by low and uncertain rainfall (Rao, 1991a). Thus between the early fifties and the sixties while the area under irrigation went up by two to five fold in crops like wheat, rice and cotton, the country's much neglected group of oilseeds continued to be exposed to the vagaries of monsoons even after more than four decades. As a result of such hostile crop growing environment and the uncertainties associated with their production, the per hectare yield of oilseeds at 741 kg in India compared unfavourably with the average yield of 1,492 kg at the world level (FAO, 1991).

Despite the fact that oilseeds account for more than 15 per cent of the country's gross sown area, indigenous production has fallen short of requirements. So India has been a major importer of edible oils during the last decade. Its annual imports of edible oils averaged 1.30 million tonnes valued at Rs. 801.17 crores during 1980-81 to 1985-86. In view of the heavy strain on the balance of payments, Government of India appointed in May 1986, a Technology Mission on Oilseeds which has been implementing an integrated policy on oilseeds with a four-pronged strategy to improve oilseeds crop technology, to improve post-harvest technology, to strengthen services to the farmers and to ensure remunerative prices to the farmers. The Technology Mission designated the National Dairy Development Board as the Market Intervention Agency for procurement of oilseeds and oil for building a buffer stock so as to ensure an incentive price to the farmers and release the same during the lean season at moderate prices to the consumers. Further, oilseed producers are being provided with all necessary incentives for adopting improved technology for increasing production. For achieving this objective special measures are being taken for the transfer and demonstration of suitable technology and supply of requisite inputs as also for improving storage and oilseed processing infrastructure.

In order to accelerate oilseeds production, two centrally sponsored schemes, namely,

^{*} Senior Economist and Research Fellow, respectively, Department of Economics and Sociology, Punjab Agricultural University, Ludhiana.

National Oilseeds Development Project (NODP) and Oilseeds Production Thrust Project (OPTP) which were operated by the Technology Mission on Oilseeds during the Seventh Plan were merged into a single scheme named as Oilseeds Production Programme (OPP) during 1990-91. The scheme provides for financial assistance to the states for almost all the basic key inputs. The pattern of assistance under this programme was 75:25 sharing basis between Government of India and State Governments, except for production of foundation seeds where central assistance is 100 per cent. The strategy currently adopted for increasing oilseeds production under this programme includes increasing production and availability of seeds, distribution of seed minikits, distribution of plant protection chemicals and equipments and improved farm implements, organising frontline demonstrations of improved technology on farmers' fields and distribution of rhizobium culture for groundnut and soyabean. During 1991-92, OPP continued to be implemented covering all the nine major oilseeds with a financial provision of Rs. 60 crores as against Rs. 54 crores in 1990-91 (Government of India, 1991; Agrawal, 1991).

Viewed against this perspective, the present study has been undertaken with the following specific objectives: to examine (i) the growth performance of individual oilseed crops across states and over time, (ii) the impact of Technology Mission on growth performance of oilseeds, (iii) the production potentials of different oilseeds and (iv) the demand and supply prospects for oilseeds.

GROWTH PERFORMANCE

Long-term Performance

Table I shows the growth performance of different oilseeds across states over the period 1965-66 to 1990-91 disaggregated into two sub-periods 1965-66 to 1975-76 and 1976-77 to 1990-91.

TABLE I. COMPOUND GROWTH RATES OF AREA, PRODUCTION AND YIELD OF OILSEEDS IN INDIA, 1965-66 TO 1975-76 AND 1976-77 TO 1990-91

(per cent) Period II Period I State Production Yield Production Area Yield Area (1) (2)(3) (4) (5) (6) (7) (a) Groundnut Andhra Pradesh 6.65* 2.58* 4.06** 7.69* 5.67* 1.89 Bihar 2.73 1.33 1.40 -1.701.07 -0.63 -2.78** -1.61** -5.57** 4.02** 0.56 3.35 Gujarat -2.79 -0.59 -10.93* -7.94* -3.27** Haryana -2.19 3.25** 1.51** 5.42* 2.79* 2.50* 4.77* Kamataka Kerala -2.85*** -5.37* -5.16* -0.79*5.03** 4.46*** -2.78* Madhya Pradesh 2.97* 0.85 3.75 Maharashtra -1.60 4 20* 2.69 -0.52 12.09* 10.31* 4.95* 3.99* 1.71 Orissa 8.94* -1.08 3.59 Punjab -2.60-1.52-16.92 -16.68 2.51*** 3.93 Rajasthan 3.98 1.47 3.26 -0.66 -0.81 -7.68 1.05 Tamil Nadu 1.33 1.41* -0.081.88 Uttar Pradesh -0.63 -0.12 -0.55-5.17 -0.47 2.59 2.90*** 1.50 India -0.312.68 1.18

(Contd.)

TABLE I (Concld.)

State	Period I			Period II		
State (1)	Production (2)	Area (3)	Yield (4)	Production (5)	Area (6)	Yield (7)
			ed and Mustar	d		
Assam	2.54***	2.77*	-0.22	6.40*	4.85*	1.53
Sihar	7.40*	2.42*	4.98**	4.84*	0.36	4.47
Gui arat	11.66*	11.11*	0.55	20.02*	9.88*	9.22*
Harvana	1.83	0.80	1.03	16.94*	10.07*	6.24*
Madhya Pradesh	17.50*	6.56*	10.95*	15.80*	6.84*	8.40*
Orissa	5.26	0.34*	-0.08	6.42*	2.53	1.81
Punjab	5.68	-0.03	5.71*	6.79*	2.19	4.49*
Rajasthan	12.54*	7.33*	5.21*	21.50*	16.04*	3.82
Uttar Pradesh	2.85**	0.41	2.44*	-1.63	-6.25	4.92*
West Bengal	0.56	-0.01	0.58	20.13*	12.89*	6.24*
ndia	4.96*	1.97*	2.99***	8.96	4.50	4.25
		(c) Castor			
A	10.004	, ,	e an e	* * * *	0.1044	0.074
Andhra Pradesh	12.22*	2.95	9.27*	5.61*	2.48**	2.97*
Bihar	10.22***	-0.71	10.93**	-15.19	-12.09	-3.53
Gujarat	16.23*	2.06	14.56*	7.02*	6.56*	0.42
Karnataka	12.11*	-0.16	12.27*	4.23*	0.82	4.09
Madhya Pradesh	:-	1.83	-1.83*	-8.24	-9.24	0.96
Maharashtra	7.00+	-3.35	3.35	3.56*	1.48	2.08
Orissa Tamil Nadu	7.80* -5.92*	1.18 -0.40	6.61* -5.51*	1.24 5.99*	-0.11 8.06*	1.38 -1.91
India	9.58*	2.50***	7.01*	10.86	3.81	6.89
		(d)	Linseed			
A . B . B . L .					0.70	0.50
Andhra Pradesh Bihar	-1.02	-5.95*	4.93	-5.31	-2.70	-2.78
Jammu and Kashmir	7.11** -8.04*	3.32	3.79	-0.70	-2.16	1.52
Karnataka	3.02	-6.05 2.60	-1.99 0.62	-9.80 -6.84	-5.65	-6.60 -0.85
Madhya Pradesh	8.84*	5.64*	3.20	1.24	-5.99 -2.58	2.17
Maharashtra	4.47**	3.92*	0.55	-1.53	-1.85	0.34
Orissa	-0.09	-1.04	0.95	3.04	2.59**	0.44
Punjab	-6.88**	-7.84***	0.96	-6.87	-7.23	3.74
Rajasthan	12.49	5.58**	6.92*	-3.32	-4.47	1.18
Uttar Pradesh	1.97	-1.90**	3.87**	-5.66	-8.77	3.44
West Bengal	4.78***	6.01*	-1.22	-12.32	-12.14	0.27
India	4.73*	2.29*	2.44*	-1.66	-3.66	2.24
		(e)	Sesamum			
Andhra Pradesh	-10.60	-1.76	-8.93**	-0.67	0.31	-1.01
Gujarat	-0.80	-2.60**	1.80	0.41	3.94	-3.47
Jammu and Kashmir	1.89	0.70	1.19	6.75*	5.13*	1.55
Karnataka	1.86**	4.78*	-2.93*	5.08*	3.37	1.64
Madhya Pradesh	0.16	-3.94*	4.09	3.65	-1.19	4.81
Maharashtra	0.07	1.97***	-1.89	4.34	4.59*	-0.09
Orissa Dominh	4.09**	-0.44	4.53*	9.40*	7.22*	2.02
Punjab Pajasthan	5.76*	5.37*	0.39	1.62	0.83	-0.79
Rajasthan Tamil Nadu	-4.22 -0.89	-5.40	1.18 -1.68	0.73	0.31	0.42
Uttar Pradesh	-0.89 -1.89	0.82 -0.61		-0.51 -13.92	0.62	0.21
West Bengal	14.21*	-0.61 13.42*	-1.28 0.79	-13.92 6.75	-8.01 5.16	-6.43 1.52
India	0.20	-1.64*	1.84	4.91	1.31	3.56

Source: Based on Government of India, Area and Production of Principal Crops in India, Directorate of Economics and Statistics, Department of Agriculture and Co-operation, Ministry of Agriculture, New Delhi (Various Issues).

* Significant at 1 per cent. ** Significant at 5 per cent. *** Significant at 10 per cent.

It would be seen that the compound growth rates of production of groundnut accelerated for Andhra Pradesh, Karnataka, Orissa and Tamil Nadu. In the case of rapeseed and mustard the production performance improved for Assam, Gujarat, Haryana, Orissa, Punjab, Rajasthan and West Bengal and deteriorated for Bihar, Madhya Pradesh and Uttar Pradesh. The production performance of linseed improved only for Orissa. The compound growth rates of production of sesamum improved for Jammu and Kashmir, Karnataka, Madhya Pradesh Maharashtra, Orissa and Rajasthan.

Thus although the production performance improved in the recent period 1976-77 to 1990-91 as compared to the earlier period 1965-66 to 1975-76 in the case of groundnut, rapeseed and mustard, castor and sesamum, it deteriorated for linseed. The production performance of total oilseeds improved but mainly due to improvement in growth in acreage while growth in yield decelerated.

Performance since the Inception of Technology Mission

Table II shows the impact of Technology Mission on the production performance of oilseeds over the period 1985-86 to 1992-93. It would be seen that sunflower recorded the maximum growth rate of 22.81 per cent, followed by soyabean (16.38 per cent), castorseed (12.11 per cent), rapeseed and mustard (11.66 per cent), groundnut (6.20 per cent), sesamum (4.71 per cent), safflower (1.93 per cent). Nigerseed recorded zero growth rate while linseed recorded a negative growth rate of 3.32 per cent. The overall compound growth rate for oilseeds was estimated at 9.16 per cent. The *rabi* component recorded a growth rate of 9.98 per cent compared to 8.45 per cent for *kharif* oilseeds. It is interesting to note that the major contribution in the incremented output is that of rapeseed and mustard (34.02 per cent), followed by groundnut (29.22 per cent), soyabean (21.05 per cent) and sunflower (9.81 per cent).

TABLE II. GROWTH PERFORMANCE OF DIFFERENT OILSEEDS SINCE THE INCEPTION OF TECHNOLOGY MISSION, 1985-86 TO 1992-93

Com	Production (n	Compound growth			
Crop (1)	1985-86 (2)	1992-93 (3)	rate (per cent) (4)		
Groundnut	5.12	7.80	6.20		
Kharif	3.76	5.60	5.86		
Rabi	1.36	2.20	7.11		
Castorseed	0.31	0.69	12.11		
Sesamum	0.50	0.69	4.71		
Linseed	0.38	0.30	-3.32		
Rapeseed and mustard	2.68	5.80	11.66		
Nigerseed	0.19	0.19	-		
Safflower	0.35	0.40	1.93		
Sunflower	0.28	1.18	22.81		
Kharif	0.17	0.38	12.18		
Rabi	0.11	0.80	32.77		
Soyabean	1.02	2.95	16.38		
Total	10.83	20.00	9.16		
Kharif	5.95	10.50	8.45		
Rabi	4.88	9.50	9.98		

Source: Government of India, Economic Survey, Ministry of Finance, New Delhi (Different Issues).

Table III shows the statewise impact of Technology Mission on area and production of oilseeds from 1985-86 to 1990-91. It would be seen that the sharpest increases in area have been recorded for Rajasthan (78.2 per cent), Karnataka (54.6 per cent), Andhra Pradesh (41.1 per cent), Haryana (40.3 per cent), West Bengal (38.2 per cent) and Maharashtra (25.9 per cent). Moderate increases have been recorded for Orissa (9.8 per cent) and Gujarat (14.9 per cent). Assam and Bihar recorded insignificant growth, while Tamil Nadu, Punjab and Uttar Pradesh recorded decline in area under oilseeds. The scrutiny of the details of growth of absolute area under individual oilseeds reveals that rapeseed and mustard accounted mainly for growth of area in Haryana (90.34 per cent), Gujarat (63.07 per cent) and Rajasthan (91.30 per cent). Groundnut accounted mainly for growth in area under oilseeds in Andhra Pradesh (78.46 per cent), Maharashtra (24.69 per cent) and Karnataka (37.43 per cent). Sesamum recorded sharp increases in area in Gujarat, Karnataka, Maharashtra, Orissa, Punjab, Rajasthan and West Bengal, while castorseed in Andhra Pradesh, Gujarat, Maharashtra and Tamil Nadu. Linseed recorded decline in area in all the states except Karnataka, Orissa and Uttar Pradesh. Thus there was a tendency for concentration of rapeseed and mustard and groundnut in specific regional belts although sesamum and castorseed were relatively widespread over space.

TABLE III. SHIFTS IN AREA AND PRODUCTION OF OILSEEDS IN DIFFERENT STATES SINCE THE INCEPTION OF TECHNOLOGY MISSION

State		Area (000 ha)		Production (000 metric tonnes)			
	1985-86	1990-91	Change (per cent)	1985-86	1990-91	Change (per cent)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Andhra Pradesh	2,199.1	3,103.9	41.1	1,429.5	2,683.5	87.7	
Assam	317.4	319.7	0.72	150.1	169.3	12.8	
Bihar	239.9	241.4	0.6	138.3	149.4	8.0	
Gujarat	2,363.6	2.714.8	14.9	883.5	2,106.2	138.4	
Haryana	354.2	497.0	40.3	282.3	659.6	133.6	
Kamataka	1,614.2	2,495.8	54.6	1.283.1	1,323.8	3.2	
Madhya Pradesh	2,740.6	3.770.8	37.6	1.368.7	2,984.5	118.1	
Maharashtra	2,259.6	2.845.9	25.9	1.090.6	1.892.7	73.5	
Orissa	1,048.0	1,151.2	9.8	850.0	900.4	5.9	
Punjab	207.2	116.2	-43.9	198.4	110.8	-44.1	
Rajasthan	1,727.9	3,079.1	78.2	841.7	2,354.7	179.8	
Tamil Nadu	1,321.8	1,126.1	-14.8	1,125.6	1,206.1	7.2	
Uttar Pradesh	1.937.9	1,832.9	-5.4	1.056.3	1,329.8	25.9	
West Bengal	371.6	513.7	38.2	233.8	453.8	94.1	
India	18,871.1	24,018.7	27.3	11,153.9	18,464.0	65.5	

Source: As in footnote to Table I.

PRODUCTION POTENTIALS

The establishment of All India Coordinated Research Project on Oilseeds in the late sixties provided a momentum to organised and sustained research in oilseeds and led to a plethora of improved high-yielding varieties/hybrids in different oilseed crops and development of matching crop production and protection technologies required to harness their full potentials under diverse agro-climatic environs. During the last two decades, the network of research centres from central and state sectors engaged in oilseeds improvement has developed around 240 improved cultivars of different annual oilseed crops of specific regional and multi-regional importance. As compared to their traditional counterparts, the

new generation of currently recommended varieties and hybrids of various oilseed crops recommended for different regions and situations not only possess superior genetic yield potentials but are also endowed with one or the other desirable features such as mono/multiple resistance/tolerance to one or more biotic and abiotic stresses which make them a better choice (Rao, 1991 b, pp. 53-54).

The valuable data available for more than 2,300 demonstrations covering diverse oilseed growing areas/agro-ecological situations/regions/seasons/ over the period 1988-89 to 1990-91 in the country for the first time highlighted the existence of vast untapped yield potential in the oilseed crops even with the crop varieties and the technologies that are currently available. Under purely rainfed conditions, plots that received full package of improved technology on an average registered extra yields to the tune of 31 to 92 per cent in groundnut, 40 to 193 per cent in rapeseed and mustard, 84 to 175 per cent in sunflower, 14 to 130 per cent in sesamum, 16 to 18 per cent in castor, 16 to 89 per cent in linseed and 11 to 128 per cent in niger when compared to the corresponding state average yields. The yield gaps between improved plots and the corresponding state average was much wider if one considers the highest yield recorded from demonstration plots in each of the above crops and regions (Rao, 1991 b).

It is also interesting to note that the currently suggested improved technologies for different oilseed crops and regions are not only high-yielding but also require very low to moderate initial investments over and above what the farmers otherwise normally incurred for their traditional practices. When compared to the extra amount the farmers had to spend towards cash inputs such as fertilisers, plant protection and seed, more than 75 per cent of the farmers involved in the demonstrations realised on an average extra monetary returns ranging from 2 to 5 times under rainfed conditions and from 3 to 12 times in areas with assured irrigation, as can be seen from Table IV.

TABLE IV. CROPWISE ECONOMICS OF IMPROVED TECHNOLOGIES

Стор	Additional costs (v on improved techno per cent of the farm ing farmers' pr	Incremental benefit-cost ratio			
(1)	Rainfed (2)	Irrigated (3)	Rainfed (4)	Irrigated (5)	
Kharif					
Groundnut	909	1,121	2.71	3.23	
Sesamum	603	NT	3.70	NT	
Castor	849	669	2.61	5.41	
Niger	375	NT	1.93	NT	
Rabi/summer	272 1940-04249	Distriction of the Control of the Co	90. 15000	NATI ESPOTIN	
Rapeseed and mustard	1,005	543	2.17	5.85	
Toria	1,184	622	2.42	4.86	
Groundnut		974	NT	5.04	
Safflower	479	323	5.04	12.24	
Sunflower	-	1,439		3.57	
Sesamum	-	783	÷*	3.49	
Linseed	609	849	2.84	3.91	

Source: Rao (1991 b). NT = No trial.

The comparison of realisable yield from improved technology with the national averages for different oilseeds provides an idea of the yield gaps. It also provides estimates of additional production with realisation of 25 per cent, 50 per cent, 75 per cent and 100 per

cent exploitable yield gaps. It would be seen from Table V that the tapping of the yield potential to the extent of 25, 50, 75 and 100 per cent could augment production to the tune of 28.5, 57.03, 85.55 and 114.06 lakh tonnes of oilseeds respectively.

TABLE V. POTENTIALS OF CURRENTLY AVAILABLE PRODUCTION TECHNOLOGIES FOR STEPPING UP OILSEEDS PRODUCTION IN INDIA

Crop	National average (1988-90)	•	Yield gap (kg/ha)	Current area (lakh ha)	Current production (lakh	Additional production possible in lakh tonnes with realisation of exploitable yield gaps under real farm situations by			
	(kg/ha)	improved techno- logy (kg/ha)			tonnes)	100% 75%	75%	50%	25%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Groundnut	,					Surposek	1 1350		
Kharif	948	1,347	399	73.81	61.21	29.45	22.09	14.72	7.36
Rabi/summer	1,463	2,161	698	13.26	19.67	9.25	6.94	4.62	2.31
Rapeseed	866	1,645	779	49.89	41.22	38.86	29.15	19.43	9.71
Safflower	556	1,044	486	8.60	4.91	4.18	3.13	2.09	1.04
Castor (irrigated)	1,478	2,818	1,340	2.43	3.50	3.26	2.44	1.63	0.81
Castor (rainfed)	317	1,093	776	4.56	1.58	3.54	2.65	1.77	0.88
Sesamum	291	625	334	23.61	7.15	7.88	5.91	3.94	1.97
Linseed	295	671	376	11.80	3.42	4.44	3.33	2.22	1.11
Niger	288	422	134	6.23	1.75	0.83	0.63	0.42	0.21
Sunflower									
Rabi/summer	367	1,575	1,208	6.61	2.72	7.98	5.99	4.00	2.00
Kharif	376	913	577	7.61	3.20	4.39	3.29	2.19	1.10
Total				208.40	150.35	114.06	85.55	57.03	28.51

Source: Rao (1991 b, p. 106).

DEMAND AND SUPPLY PROSPECTS

According to the National Commission on Agriculture 1976, the demand for edible oils was expected to increase to 8.3 million tonnes on low income assumption and 10.2 million tonnes on high income growth assumption by the year 2000 A.D. Against this, the expected availability of oils from oilseeds worked out to 6.4 million tonnes. Adding to this the expected availability of oils to the tune of 3.3 million tonnes from exploitation of cottonseed, rice bran, maize, bajra, oil palm, etc., the total availability of oils in 2000 A.D. was estimated at 9.7 million tonnes (Government of India, 1976).

We have prepared alternate estimates of demand and supply for edible oils in 2000 A.D., as indicated in Table VI. For estimating demand we have assumed the rate of growth in income at 2.4 per cent per annum and the rate of growth of population at 2 per cent. Income elasticity for edible oils has been assumed at 0.92. Per capita demand in 2000 A.D. is estimated by the formula used by NCAER (1962, pp. 60-61):

$$C_t = C_o (i + R/100)^E$$

where $C_t = per capita consumption in period t$,

 $C_o = per capita consumption in period o,$

R = percentage increase in income over the period and

E = income elasticity of demand for the commodity.

Year	Demand (lakh tonnes)	Supply - indigenous production (lakh tonnes)	Gap (lakh tonnes)	Per capita availability (kg/year)
(1)	(C)	(3)	(4)	(5)
1970-71	25.30	25.00	0.3 (1.2)	4.60
1975-76	34.20	33.40	0.8 (2.4)	5.60
1981-82	42.20	32.20	10.0(31.1)	6.10
1986-87	45.20	30.50	14.7(48.2)	5.90
1990-91	53.70	52.80	0.9 (1.7)	6.50
2000-01	79.90	83.21*	-	8.25
(Projected)		80.89**		8.02
(J)		75 67***		7.51

TABLE VI. DEMAND AND SUPPLY OF EDIBLE OILS IN INDIA

Source: Estimated by the authors.

* On the basis of the growth rate of 5.76 per cent recorded over 1976-91.

The projected total demand for oilseeds has been estimated at 79.90 lakh tonnes.

We have estimated the supply of edible oils in 2000 A.D. on the basis of two methods: firstly, on the basis of the growth rate of oilseeds at 5.76 per cent already observed over the last 14-year period 1976-91. This gives a conservative estimate of 83.21 lakh tonnes as the growth rate recorded for the recent seven-year period 1985-86 to 1992-93 is estimated at 9.16 per cent. Secondly, we have estimated the supply of edible oils on the basis of yield gap approach indicated in Table V. If 100 per cent of the yield gaps are exploited, then the supply of edible oils will be 80.89 lakh tonnes and if only 75 per cent of the yield gaps are closed up, then the supply is estimated at 75.67 million tonnes. Adding to this the availability of oils from cottonseed, rice bran, etc., the total availability will be much more than effective demand. However, there is no room for complacency and the research efforts need to be strengthened to evolve better technologies, and extension efforts need to be intensified to realise the production potentials.

Further, there is enough evidence to show that acreage allocation decisions in respect of oilseed crops have been governed by their relative profitability vis-a-vis competing crops. The relative profitability, in turn, seems to have been influenced more by non-price factors such as technology and availability of irrigation than by relative prices (Kapila, 1982; Ninan, 1989). Although the farmers should continue to be ensured remunerative prices, yet the major emphasis should be on technological parameters. It may also be underlined that the market prices of oilseeds have generally been much higher than the support prices. So the government has to resort to procurement at competitive prices. The recent decision of the Government of India to allow gift imports of soya oils from U.S.A. is not likely to depress the prices of oilseeds provided these imports are used to build up the buffer stock and not put on the market.

REFERENCES

Agrawal, P.K. (1991), "Indian Oilseeds and Edible Oils Economy during Last Decade (1981-91) - An Analytical Study", Agricultural Situation in India, Vol. 46, No. 6, September.

Anonymous (1991), "Commodity Reviews - Annual: Oilseeds and Vegetable Oils", Agricultural Situation in India, Vol. 46, No. 5, August, pp. 360-361.

Food and Agriculture Organization of the United Nations (FAO) (1991), FAO Production Yearbook, 1990, Rome.

^{**} On the basis of 100 per cent realisation of yield gap from available technology.

*** On the basis of 75 per cent realisation of yield gap from available technology.

Figures in parentheses in col. (4) denote gap as a percentage of indigenous production.

- Government of India (1976), Report of the National Commission on Agriculture 1976, Part HI: Demand and Supply, Ministry of Agriculture and Irrigation, New Delhi.
- Government of India (1991), Agricultural Statistics at a Glance, Directorate of Economics and Statistics, Department of Agriculture and Co-operation, Ministry of Agriculture, Masch.
- Government of India, Economic Survey, Ministry of Finance, New Delhi (Various Issues).
- Kapila, Uma (1982), Oilseeds Economy of India: A Case Study of Groundnut, Agricole Publishing Academy, New Delhi.
- National Council of Applied Economic Research (NCAER) (1962), Long Term Projections of Demand for and Supply of Agricultural Commodities, New Delhi.
- Ninan, K.N. (1989), Edible Oilseeds: Growth. Area Response and Prospects in India, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
- Rao, V. Ranga (1991 a), "What Catapulted the Vegetable Oilseeds Sector from Out of Its Decade Old Inertia? Two Successive Monsoons or Wonder Technologies?", Journal of Oilseeds Research, Vol. 8, No. 1, June.
- Rao, V. Ranga (1991 b), "Improved Technologies in Oilseeds, Performance and Promise under Real Farm Situations", Indian Council of Agricultural Research, Hyderabad, November.