Study No.84

LIKELY IMPACT OF LIBERALISED IMPORTS AND LOW TARIFF ON EDIBLE OIL SECTOR

(A Quick Study In Ujjain District Of Madhya Pradesh)

ASHUTOSH SHRIVASTAVA

AGRO-ECONOMIC RESEARCH CENTRE
FOR MADHYA PRADESH & CHHATTISGARH
J.N. KRISHI VISHWA VIDYALAYA
JABALPUR – 482 004 (M.P.)

PROJECT TEAM

PROJECT LEADER

ASHUTOSH SHRIVASTAVA

Research Officer

COMPUTATION

SHRIKANT UPADHYE

CHANDRAKANT MISHRA

COMPUTER TYPING

SIKANDAR KHAN

PREFACE

For a state of Madhya Pradesh where a large section of farmers depended on oilseed based agriculture for their livelihood any treaty like WTO may pose, serious challenges as well as some opportunities.

To counter such challenges and availing opportunities we should be well informed about the present paradigm of Indian agriculture for negotiations. In this context Government of India initiated this quick study to be succeeded by a comprehensive study in the state along with other important oilseeds growing states like Tamil Nadu, Haryana, Maharashtra, Rajasthan and Andbra Pradesh.

In this study, the author examined various aspects of soybean production, processing, disposal, consumption pattern of oils and farmer's opinions on likely impact of import of oils at cheaper rates. Author found that farmers were unable to name other crop/s which could replace soybean at that stage despite its declining production, productivity and prices. Farmers were unaware about the new economic policies w.r.t. WTO. They, however, anticipated that it would lead to unemployment and less income.

The study was possible due mainly to Directorate of Economics & Statistics, Ministry of Agriculture, Government of India which initiated it and encouraged in its conduct. I express my thanks to AER Centre Delhi which coordinated the study and provided detailed study design, etc.

I must express my sincere gratitude to our Honourable Vice-Chancellor, Director of Research Services and Dean, College of Agriculture, J.N.K.V.V. Jabalpur for extending their whole hearted support in this academic pursuit.

I wish to record my deep appreciation of the efforts made by Dr. Ashutosh Shrivastava for successfully designing this study, conducting field investigation, tabulation and analysis of data and drafting of the report. I also thank other technical and non technical staff of the Centre for their cooperation and help. Mr. Shrikant Upadhye and Mr. Chandrakant Mishra gave excellent tabulation assistance. Mr. Sikandar Khan did computer typing. All of them deserve appreciation.

I hope policy makers, researchers and others would find this quick study useful.

(M.C. Athavale)
Professor & Head
Agro-Economic Research Centre
For Madhya Pradesh and Chhattisgarh
J.N rishi Vishwa Vidyalaya,.Jabalpur (M. P.)

C O N T E N T S

……

LIST OF TABLES

.....

CHAPTER – I
INTRODUCTION

1.1 Background

Indian agricultural sector is passing through very difficult phases and facing lot of challenges such as –

.

1. it is under obligation to meet the social and economical pressure generated due to liberalisation under New Economic Policy framed in 1991.

2. agricultural trade opportunities created due to General Agreement on Trade and Tariff (GATT) or Uruguay Agreement in 1995.

3. being a welfare state, its natural responsibility to provide employment to rural unemployed youth and eliminate poverty and,

4. growing concern of deterioration in the natural resource base of our production system.

India is one of the 120 pioneer signatory countries of Uruguay round of GATT agreement. It is mandatory for India to adjust its trade and other policies as envisaged in GATT accord which also includes agriculture. The agreement relating to agriculture consists of mainly 4 aspects which seek to reform trade in agriculture and provide the framework for market oriented policies. The obligations and disciplines incorporated in **Agreement On Agriculture (AOA)** relate to 4 aspects viz.

1. Market access
2. Domestic support
3. Export competition / subsidy
4. Sanitary and phytosanitary measures

The agreement on agriculture which became the part of the final draft / act is popularly known world over as **World Trade Organisation (WTO) Act**. This act envisaged legal obligations to member countries to (i) replace non tariff barriers such as quantitative restrictions (quota import restrictions through permits, import license, etc.) to non tariff barriers that provide level playing field to all parties (ii) reduce tariffs resulting from "tariffication" process as well as other tariff on agriculture products : tariff are to be reduced by

an average 36 per cent within 6 years in the case of developed nations and 24 per cent within 10 years in the case of developing nations. Least Developed Countries (LDC) are exempted.

Being the signatory, India accepted the legal obligation and implemented the treaty which came into force on 1st January, 1995 and recently abolished the quota restrictions for importing various items and threw open almost entire spectrum of commodities barring some strategically important items.

In oil sector Government of India removed most of the import restrictions. Soybean was followed in February,1995 on temporary basis subject to meat re-export by private processors. Further exports of sunflower and rapeseed mustard were allowed in 1995. Working capital restrictions on trade and processing of oilseeds and oils under Selective Credit Control were lifted in 1996. In 1997 storage restrictions were removed. In 1998 import of oilseeds was put under Open General License (OGL)[1] . By July,1998 the import duty on edible oils was reduced to 10 per cent but political exigency recently forced Government to enhance it again.

The reduction in import duty may increase the import of edible oils and bring down the prices of domestic oils and oil seeds but ultimately will bring down the prices of domestic oilseeds and oil in the country. The dampening effect on domestic prices of oils and oilseeds will make oilseed crops less remunerative as compared to competing crops. This in consequence may change the cropping pattern, affect employment and farm income. Consumers may be deprived of some specific qualities. The poor and small farmers totally dependent on oilseed based agriculture for their livelihood will be the worst sufferers as most of the oilseeds are either in arid and semi arid areas where income levels of farmers is generally low.

Most importantly, Madhya Pradesh also known as soybean state and large section of the farmers is dependent on soybean, rapeseed and mustard and other oilseeds for its income as well as nutrition. In the absence of such crops this section will become most vulnerable.

---

1. Gopal Naik, et.al W.T.O. Competitiveness and Bound tariff requirements of Indian Agricultural Commodities, CMA, IIM, Ahmedabad, May,2001

With these views. Ministry of Agriculture, Government of India initiated this quick survey for making suitable policy adjustment within the already signed frame work for safeguarding the interest of the nation as a whole and farmer of the country in particular.

1.2 Objectives

The objectives were :

1. To assess changes in cropping pattern.

2. To assess the impact on farmers income due to decrease in prices of oils and oilseeds.

3. To find out the impact on employment.

4. To find out the likely changes in oil consumption.

1.3 Methodology

Ujjain district was selected for the purpose of the study because the area under soybean was highest in this district in the state. From the selected district 4 main soybean producing development blocks were selected. From each block two villages were selected and from each village 15 soybean growing farmers were selected. Thus total number of 120 farmers were selected for this study in Ujjain district.

1.4 Reference Period

The primary data pertained to the kharif season of the year 1998-99, 1999-2000 and 2000-2001.

CHAPTER – II

SOYBEAN IN INDIA AND MADHYA PRADESH

2.1 Soybean in India

The total area under soybean in the country was 6.31 million hectares during 1998-99 with a production of 6.94 million tonnes. To this Madhya Pradesh contributed 70 per cent of the total area (4.42 million hectares) and 64.4 per cent of the total production (4.47million tonnes). Other states accounted for only 30 and 36.6 per cent share in area and production respectively. However, in terms of yield, Maharashtra surpassed Madhya Pradesh with highest production per hectare (1,395 kg.) followed by Rajasthan with 1,315 kg. and Madhya Pradesh with 1,012kg. (Table 2.1).

Table 2.1 Area, production and yield of soybean in different states, 1998-99

State	Area		Production		Yield
	(m. hectare)	% of total area	(m. tonnes)	% of total production	kgs./ hectare
Madhya Pradesh	4.42	70.00	4.47	64.40	1,012
Maharashtra	1.06	16.80	1.47	21.20	1,395
Rajasthan	0.68	10.80	0.89	12.80	1,315
Uttar Pradesh	0.05	0.80	0.02	0.30	434
Karnataka	0.05	0.80	0.04	0.60	667
Others	0.05	0.80	0.04	7.00	--
All India	**6.31**	**100.00**	**6.94**	**100.00**	**1,100**

Source : Agricultural Statistics at a glance, 2000, Directorate of Economics & Statistics Ministry of Agriculture, Government of India.

2.2 Status of Soybean in Madhya Pradesh

2.2.1 Area

The total area under soybean in the state was 4.42 million hectares in 1998-99. The area increased steadily from 2.15 million hectares in 1990-91. The fluctuation was such that it was 2.65 million hectares in 1991-92 and 3.05 million hectares in 1992-93 and 3.41 million hectares in 1993-94. However it dipped suddenly to 3.22 million hectares in 1994-95. In subsequent 3 years it increased from year to year so that it was 3.85 million hectares in 1995-96, 3.95 million hectares in 1996-97 and 4.47 million hectares in 1997-98. In 1998-99 it decreased to 4.42 million hectares.(Table 2.2)

2.2.2 Production

The production of soybean in 1998-99 was 4.47 million tonnes. It was 2.18 million tonnes in 1990-91. It increased to 3.60 million tonnes in 1993-94 with some fluctuations in between. As in the case of area the production dropped down suddenly to 2.87 million tonnes in 1994-95. Thereafter, it generally increased from year to year like area and was 4.84 million tonnes in 1997-98. In the next year i.e. 1998-99 it decreased to 4.47 million tonnes (Table 2.2).

Table 2.2 Area, production and yield of soybean in Madhya Pradesh, 1990-91 to 1998-99

Year	Area (m. hectares)	Production (m. tonnes)	Yield (kg. / ha)
1990-91	2.15	2.18	1,016
1991-92	2.65	2.09	790
1992-93	3.05	2.60	851
1993-94	3.41	3.60	1,054
1994-95	3.22	2.87	890
1995-96	3.85	3.89	1,011
1996-97	3.95	3.76	952
1997-98	4.47	4.84	1,084
1998-99	4.42	4.47	1,012

Source : Agricultural Statistics, Directorate of Agriculture, Government of Madhya Pradesh

2.2.3 Yield

The yield of soybean was 1,012 kg./ hectare in 1998-99. It was 1,016 kg./ hectare in 1990-91. In the subsequent 3 years it declined in the first two years but increased in the third year to 1,054 kg./ hectare. Like area and production, yield increased in the first four years and was highest in 1993-94. However, 1994-95 seems to be bad year as in that year like area and production, yield dropped suddenly to 890 kg./ hectare. Like area and production yield was at its highest in 1997-98 (1,084 kg./ hectare). In 1998-99 like area and production yield showed a decline and was 1,012 kg./ hectare.

2.3 Soybean in Selected District

In the following paragraphs status of soybean in selected Ujjain district has been described.

In Ujjain district area under soybean increased from year to year. It was 186.1 thousand hectares in 1989-90. It increased to 414.6 thousand hectares in 1998-99.

The production of soybean was 156.6 thousand tonnes in 1989-90. It showed generally an increasing trend till 1998-99 with some fluctuations in between.

The yield of soybean was lowest (842 kg./ hectare) in 1989-90 and was highest (1381 kg./hectare) in 1998-99. In between, yield did not show any trend and varied from year to year with several fluctuations.

Thus it is observed that in Ujjain district the area and production generally increased from 1989-90 till 1998-99. The yield of soybean, on the other hand showed large fluctuations between 842 kg./hectare to 1,381 kg./hectare. (Table 2.3).

Table 2.3 Area, production and yield of soybean, Ujjain district, Madhya Pradesh (1989-90 to 1998-99)

Years	Area ('000 hectares)	Production ('000 tonnes)	Yield (kg. / ha)
1989-90	186.1	156.6	842
1990-91	241.9	282.4	1,168
1991-92	313.0	313.6	1,002
1992-93	335.8	283.1	843
1993-94	343.3	413.6	1,205
1994-95	373.3	435.5	1,167
1995-96	386.5	422.9	1,094
1996-97	401.5	357.3	890
1997-98	407.6	424.4	1,041
1998-99	414.6	572.6	1,381

Source : Agricultural Statistics, 1999, Directorate of Agriculture, Government of Madhya Pradesh

.....

CHAPTER III

RESULTS & DISCUSSION

As mentioned earlier, a sample of 120 soybean growers was selected from Ujjain district. The sample was spread equally (30 each) in four blocks. Further in every block two villages were selected from where 15 soybean growing farmers were selected each.

3.1 Family Size and Occupation

The average size of family was 6.92. This comprised 4.42 adults and 2.50 children. Average earning member per farm was 3.65. Of these 2.23 were males and 1.42 females. The largest number (1.98) of earning members were dependent on agriculture. The next important occupation was agricultural wages on which 1.15 of the earning members were dependent. Other occupations were dairy, service and other business. It was observed that the average number of members dependent on agriculture increased with the size of farms and that of members dependent on agricultural wages decreased with the size of farms. It was also noted that larger number of family members of larger size of holdings were dependent on dairy (Table 3.1).

3.2 Family Income

The average per farm income was Rs. 59,620. It increased from Rs. 21,365 in the marginal size group to Rs. 2,11,800 in the large size group with the increase in size of farms. Of the total income the largest share (78.53 per cent) was of agriculture. Services (9.25 per cent) came next. Other sources of income in that order were agricultural wages (4.76 per cent), dairy (3.97 per cent) and other (3.49 per cent). The income from agriculture increased with the increase in size of farms and that from agricultural wages decreased with the size. It was also noted that income from dairy was higher on larger farms than the smaller farms. Income from other businesses was also higher on larger farms. However, there was no direct relationship between income from service / profession and size of farms (Table 3.2).

Table 3.1 Family size and occupations, selected farms, Ujjain district, M.P., 1999-2000

S. No.	Size of farm	Average family members per farm			Average earning members per farm			Members dependent upon different occupations per farm					
		Adult	Children	Total	Male	Female	Total	Agri.	Agril. wages	Dairy	Service/ profession	Other business	Total
1	Marginal (40)	3.90	2.72	6.62	1.85	1.45	3.30	1.18	1.73	0.27	0.05	0.07	3.30
2	Small (32)	4.22	1.84	6.06	2.28	1.50	3.78	1.94	1.59	0.19	0.03	0.03	3.78
3	Semi Medium (26)	4.35	2.50	6.85	2.23	1.61	3.84	2.61	0.69	0.38	0.08	0.08	3.84
4	Medium (14)	4.86	2.71	7.57	2.36	1.14	3.50	2.43	--	0.86	0.07	0.14	3.50
5	Large (8)	7.25	3.75	11.00	3.63	0.87	4.50	3.38	--	0.75	0.12	0.25	4.50
Total (120)		4.42	2.50	6.92	2.23	1.42	3.65	1.98	1.15	0.38	0.06	0.08	3.65

Table 3.2 Per farm family income, selected farms, Ujjain District, M.P., 1999-2000

(Figures in Rs.)

S. No.	Category	Source of Income					
		Agriculture	**Agril. wages**	**Dairy**	**Service / Profession**	**Other Business**	**Total**
1	Marginal	9,870	4,870	1,625	3,625	1,375	21,365
2	Small	35,700	3,125	1,250	5,875	1,150	47,100
3	Semi-Medium	48,600	1,750	3,135	8,269	1,692	6,3446
4	Medium	97,850	--	4,550	4,285	2,143	1,08,828
5	Large	1,90,300	--	4,250	6,750	10,500	2,11,800
Total Per Farm		**46,818**	**2,836**	**2,368**	**5,516**	**2,082**	**59,620**
Percentage to total		**78.53**	**4.76**	**3.97**	**9.25**	**3.49**	**100.00**

3.3 Land Holdings

The average operated area on the selected farms for the years 1998-99, 1999-2000 and 2000-2001 was 2.86, 2.86 and 2.84 ha. respectively. This was arrived at by adding leased in area and deducting leased out area from net cultivated area. Incidentally there was no leased out area in any of the groups in any reference year. For arriving net cultivated area, fallow land area was deducted from owned land area. Net cultivated area could be either irrigated or unirrigated. It was observed that the irrigated area per farm increased with the size of holdings (Table 3.3).

3.4 Cropping Pattern

The kharif crops on the selected farms were soybean, maize, *jowar*, *urad*, *arhar*, groundnut and fodder. The total kharif cropped area on the selected farms was343.59 hectares, 343.59 hectares and 340.77 hectares in the three reference years respectively. Soybean was the most predominant crop of kharif season and accounted for 96.04, 94.92 and 94.65 per cent of the cropped area in three reference years respectively. Maize was another crop worth mentioning although the percentage area under it was only 1.88, 2.29 and 2.13 in the three reference years respectively. Other crops occupied insignificant percentage of the cropped area. It was observed that there was not much difference in the proportion of area under different crops in different reference years and also no difference in different size of holdings (Table 3.4).

Table 3.3 Land details, selected farmers, Ujjain district, M.P.

(Average per farm in hectares)

Particulars	**Owned Land**		Net	**Fallow**	**Leased**						Operated
Category/ year	Irrigated	Un irrigated	cultivated land	**land**	In			Out			area
					Irrigated	Un irrigated	Total	Irrigated	Un irrigated	Total	
Marginal 2000-2001	0.61	0.25	0.86	--	0.01	--	0.01	--	--	--	0.87
99-2000	0.61	0.25			0.03	--	0.03	--	--	--	0.89
98-99	0.61	0.25			0.03	--	0.03	--	--	--	0.89
Small 2000-2001	1.02	0.55	1.57	--	--	--	--	--	--	--	1.57
99-2000	1.02	0.55			0.06	--	--	--	--	--	1.63
98-99	1.00	0.57			0.06	--	--	--	--	--	1.63
Semi Medium 2000-2001	2.16	0.93	3.09	0.06	--	--	--	--	--	--	3.03
99-2000	2.16	0.93			--	--	--	--	--	--	3.03
98-99	2.16	0.93			--	--	--	--	--	--	3.03
Medium 2000-2001	4.51	2.00	6.51	0.53	--	--	--	--	--	--	5.98
99-2000	4.32	2.19			--	--	--	--	--	--	5.98
98-99	4.32	2.19			--	--	--	--	--	--	5.98
Large 2000-2001	7.46	5.23	12.69	0.06	--	--	--	--	--	--	11.63
99-2000	7.46	5.23			--	--	--	--	--	--	11.63
98-99	7.31	5.38			--	--	--	--	--	--	11.63
Total 2000-2001	1.97	1.01	2.98	0.14	Neg.	--	Neg.	--	--	--	2.84
99-2000	1.94	1.04		0.15	0.03	--	0.03	--	--	--	2.86
98-99	1.93	1.05			0.03	--	0.03	--	--	--	2.86

Table 3.4 Area under kharif crops, selected farms, Ujjain district, M.P.

(Area - hectares)

Particulars		Crops															
		Soybean		Maize		Jowar		Urad		Arhar		Groundnut		Fodder		Total	
Category	Year	Area	% to total	Area	% to total	Area	% to total	Area	% to total	Area	% to total	Area	% to total	Area	% to total	Area	% to total
Marginal	**2000 - 2001**	33.00	94.82	0.60	1.72	1.20	3.45	--	--	--	--	--	--	--	--	34.60	100.00
	1999 -2000	35.00	98.31	0.60	1.69	--	--	--	--	--	--	--	--	--	--	35.60	100.00
	1998- 1999	35.00	98.31	0.60	1.69	--	--	--	--	--	--	--	--	--	--	35.60	100.00
Small	2000 - 2001	48.73	96.80	0.40	0.80	--	--	--	--	--	--	--	--	1.21	2.40	50.34	100.00
	1999 -2000	50.54	96.52	0.81	1.55	--	--	--	--	--	--	--	--	1.01	1.93	52.36	100.00
	1998- 1999	50.54	96.52	0.81	1.55	--	--	--	--	--	--	--	--	1.01	1.93	52.36	100.00
Semi	**2000- 2001**	72.64	92.07	3.03	3.84	--	--	3.03	3.84	--	--	--	--	0.20	0.25	78.89	100.00
Medium	1999 –2000	72.23	91.56	3.43	4.35	--	--	3.03	3.84	--	--	--	--	0.20	0.25	78.89	100.00
	1998- 1999	76.07	96.43	2.02	2.56	--	--	0.60	0.76	--	--	--	--	0.20	0.25	78.89	100.00
Medium	**2000 - 2001**	78.58	93.86	2.02	2.41	--	--	1.11	1.32	0.40	0.48	0.81	0.97	0.80	0.96	83.72	100.00
	1999 –2000	78.58	93.86	2.02	2.41	--	--	1.11	1.32	0.40	0.48	0.81	0.97	0.80	0.96	83.72	100.00
	1998- 1999	78.58	93.86	2.02	2.41	--	--	0.30	0.37	0.40	0.48	0.81	0.97	1.61	1.91	83.72	100.00
Large	**2000 - 2001**	89.59	96.31	1.21	1.30	--	--	1.21	1.30	0.40	0.43	--	--	0.61	0.66	93.02	100.00
	1999 –2000	89.79	96.53	1.01	1.08	--	--	1.21	1.30	0.40	0.43	--	--	0.61	0.66	93.02	100.00
	1998- 1999	89.79	96.53	1.01	1.08	--	--	1.21	1.0	0.40	0.43	--	--	0.61	0.66	93.02	100.00
Total	**2000 - 2001**	322.54	94.65	7.26	2.13	1.20	0.35	5.35	1.57	0.80	0.23	0.81	0.24	2.82	0.83	340.77	100.00
	1999 –2000	326.14	94.92	7.87	2.29	--	--	5.35	1.56	0.80	0.23	0.81	0.24	2.62	0.76	343.59	100.00
	1998- 1999	329.98	96.04	6.46	1.88	--	--	2.11	0.61	0.80	0.23	0.81	0.24	3.93	1.00	343.59	100.00

3.5 Production of Soybean

The total production of soybean in the year 1998-99 was 5,681.00 quintals. It decreased to 4,409.00 quintals in 1999-2000 and further declined to 2,843.00.00 quintals in 2000-2001. The production of groundnut, maize and fodder also declined from year to year during the three reference years (Table 3.5).

Table 3.5 Total production, selected farms, Ujjain District, M.P.

(Unit – Quintal)

S.No	Size	Year	Soybean	Groundnut	Jowar	Fodder	Maize	Urad	Arhar
1	Marginal	2000-2001	292.00	--	10.00	--	6.80	--	--
		1999-2000	441.00	--	--	--	10.50	--	--
		1998-1999	617.00	--	--	--	12.50	--	--
2	Small	2000-2001	446.00	--	--	88.00	4.50	--	--
		1999-2000	666.00	--	--	88.00	11.50	--	--
		1998-1999	893.00	--	--	88.00	12.25	--	--
3	Semi – medium	2000-2001	630.00	--	--	15.00	25.25	25.00	--
		1999-2000	948.00	--	--	15.00	32.25	24.00	--
		1998-1999	1300.00	--	--	18.00	28.75	7.00	--
4	Medium	2000-2001	640.00	8.00	--	42.50	30.00	9.00	4.00
		1999-2000	1204.00	6.00	--	54.00	28.00	9.00	2.50
		1998-1999	1434.00	9.00	--	98.00	30.50	3.25	3.00
5	Large	2000-2001	785.00	--	--	40.00	17.00	8.75	3.60
		1999-2000	1150.00	--	--	40.00	15.00	9.00	4.00
		1998-1999	1437.00	--	--	45.00	15.00	12.00	4.00
Total		2000-2001	2843.00	8.00	10.00	185.00	83.55	42.75	7.60
		1999-2000	4409.00	6.00	--	197.00	97.25	42.00	6.50
		1998-1999	5681.00	9.00	--	249.00	99.00	24.00	7.00

As mentioned in earlier table soybean was the most important kharif crop on the selected farms. The yield of this crop was 17.22 quintals / hectare in 1998–99. It came down to 13.52 quintals / hectare in 1999–2000. In 2000-2001 it abruptly came down and was 8.81 quintals / hectare. This phenomenon was observed on all the size groups of holdings. The yield of maize in 1998-99 was 15.33 quintals / hectare. It decreased to 12.36 quintals / hectare in 1999-2000. It further slumped to 11.57 quintals / hectare in 2000-2001. In this crop also the phenomenon was noticed in almost all the size groups with extent of decrease varying in different groups. In other crops there was no definite relationship between yield per hectare in different reference years (Table 3.6).

Table 3. 6 Per hectare production, selected farms, Ujjain District, M.P.

(Unit – Quintal per hectare)

S. .No.	Size	Year	Soybean	Maize	Jowar	Urad	Arhar	Groundnut	Fodder
1	Marginal	2000-2001	8.85	11.33	10.00	--	--	--	--
		1999-2000	12.60	17.50	--	--	--	--	--
		1998-1999	17.62	20.83	--	--	--	--	--
2	Small	2000-2001	9.15	11.25	--	--	--	--	72.72
		1999-2000	13.17	14.20	--	--	--	--	87.13
		1998-1999	17.67	15.12	--	--	--	--	87.13
3	Semi – medium	2000-2001	8.67	8.33	--	8.25	--	--	75.00
		1999-2000	13.12	9.40	--	7.92	--	--	75.00
		1998-1999	17.09	14.23	--	11.66	--	--	90.00
4	Medium	2000-2001	8.14	14.85	--	8.11	--	9.88	55.12
		1999-2000	15.32	13.86	--	8.11	--	7.40	67.50
		1998-1999	18.25	15.10	--	10.83	--	11.11	60.87
5	Large	2000-2001	8.76	14.04	--	7.23	9.00	--	65.57
		1999-2000	12.80	14.85	--	7.44	10.00	--	65.57
		1998-1999	16.00	14.85	--	9.91	10.00	--	73.77
Total		2000-2001	8.81	11.57	8.33	7.99	9.50	9.88	65.60
		1999-2000	13.52	12.36	--	7.85	8.12	7.41	75.19
		1998-1999	17.22	15.33	--	11.37	8.75	11.11	72.59

One of the objectives of the study was to know the impact of new economic policy on the oilseed crops cultivation due to likely slashing of imported oil prices. It is presumed that decrease in imported oil prices will result in sudden drop in prices of indigenous oils. With this view, the opinion and views of the selected farmers were gauged. However, no such impact was visible on the selected farms nor there was intentional replacement of soybean area by other crops by the selected farmers. This was mainly due to the reason that in the present circumstances soybean was the most profitable crop of kharif season. Although, the production and productivity and prices received for soybean were all declining in the recent past years, the farmers were not able to find out a substitute to soybean. Other kharif crops viz. groundnut, *jowar*, fodder, maize, *urad* and *arhar* were not at all competing crops or more remunerative crops than soybean, even with the currently declining area, production and productivity of soybean.

3.6 Area Replaced by Soybean

The data on area under soybean replaced by other crops showed that there was no replacement of soybean area in 1998-99. In 1999-2000, 1.41 hectares were replaced by maize and 2.43 hectares by *urad*. In 2000-2001, 1.20

hectares of soybean area was replaced by *jowar* It may also be noted that this replacement of area occurred on marginal and semi medium farms only. There was no replacement on medium and large farms. On the other hand in 2000-2001, 0.20 hectares of maize area on small size group was replaced by soybean (Table 3.7).

Table 3. 7 Area replacement by other crops and soybean, selected farms, Ujjain district, M.P.

S.No.	Category	Year	Area under soybean replaced by crops (hectares)			Area under other crops replaced by soybean (hectares)
			Jowar	Maize	Urad	Maize
1.	**Marginal**	2000 - 2001	1.20	--	--	--
		1999 - 2000	--	--	--	--
		1998 - 1999	--	--	--	--
2.	**Small**	2000 - 2001	--	--	--	0.20
		1999 - 2000	--	--	--	--
		1998 - 1999	--	--	--	--
3.	**Semi- Medium**	2000 - 2001	--	--	--	--
		1999 - 2000	--	1.41	2.43	--
		1998 - 1999	--	--	--	--
4.	**Medium**	2000 - 2001	--	--	--	--
		1999 - 2000	--	--	--	--
		1998 - 1999	--	--	--	--
5.	**Large**	2000 - 2001	--	--	--	--
		1999 - 2000	--	--	--	--
		1998 - 1999	--	--	--	--
Total		2000 - 2001	1.20	--	--	0.20
		1999 - 2000	--	1.41	2.43	--
		1998 - 1999	--	--	--	--

3.7 Cost of Production

The total paid out cost per hectare in 1998-99 was Rs. 5,250.42. It increased to Rs. 5,390.13 in 1999-2000 and to Rs. 5,570.23 in 2000-2001. The increasing trend of cost per hectare from year to year from 1998-99 to 2000-2001 was noticed in all the size groups. It was also noted that in general the paid out cost per hectare was higher on the smaller farms than the larger farms. This was true in all the reference years (Table 3.8).

Table 3.8 Total paid out cost, selected farms, Ujjain district, M.P.

S. No.	Category	Year	Rs. Per hectare
1	**Marginal**	2000 – 2001	5,835.00
		1999-2000	5,475.00
		1998-99	5,275.00
2	**Small**	2000 – 2001	5,775.00
		1999-2000	5,680.00
		1998-99	5,500.00
3	**Semi Medium**	2000 – 2001	5,675.00
		1999-2000	5,385.00
		1998-99	5,165.00
4	**Medium**	2000 – 2001	5,435.00
		1999-2000	5,325.00
		1998-99	5,145.00
5	**Large**	2000 – 2001	5,395.00
		1999-2000	5,255.00
		1998-99	5,265.00
Total		200 – 2001	5,570.23
		1999-2000	5,390.13
		1998-99	5,250.42

3.8 Irrigation in Soybean

Soybean being a kharif crop is generally rainfed. It needs only protective irrigations numbering one or two at the flowering and pod formation stages. The number of irrigations to be given depends on the stage of the crop and water availability. On the selected farms one irrigation was given by 32 (27 per cent) farms in 1998-99. In 1999-2000 only 16 (13 per cent) farms provided one irrigation. In the year 2000-2001 the number of such farms was 23 (19 per cent).

The percentage number of farms applying one irrigation was higher on small and semi medium farms as compared to marginal farms. The percentage was highest on large farms. The number of farms applying two irrigations was only one in 1998-99. It increased to three in 1999-2000 and further increased to 6 in the year 2000-2001 (Table 3.9).

Table 3.9 Frequency distribution of number of irrigations in soybean, selected farms, Ujjain district, M.P.

S.No.	Category	Years	No. of irrigations in soybean			
			No. of farms applying 1 irrigation	% to total number of farms	No. of farms applying 2 irrigation	% to total number of farms
1	Marginal	2000-2001	5	12.50	--	--
		1999-2000	4	10.00	--	--
		1998-1999	8	20.00	--	--
2	Small	2000-2001	6	18.75	2	6.25
		1999-2000	6	18.75	1	3.12
		1998-1999	12	37.50	--	--
3	Semi Medium	2000-2001	6	23.08	--	--
		1999-2000	5	19.23	1	3.85
		1998-1999	10	38.46	--	--
4	Medium	2000-2001	3	21.42	2	14.28
		1999-2000	1	7.14	1	7.14
		1998-1999	1	7.14	1	7.14
5	Large	2000-2001	3	37.5	2	25.00
		1999-2000	2	--	--	--
		1998-1999	1	12.50	--	--
	Total	2000-2001	23	19.16	6	5.00
		1999-2000	16	13.33	3	2.50
		1998-1999	32	26.66	1	0.83

3.9 Family Consumption of Oils

Consumption of a particular commodity in a household depends on many factors. The important among these are ready availability, cheapness, consumption habits of the members, etc. The selected region for the study was known for production of groundnut in the past. However with the introduction of soybean, the popularity of groundnut got reduced. With the increase in production of soybean both availability and price of soybean suited the consumer. Therefore, the proportion of quantity consumed of soybean in the household increased and that of groundnut decreased. It was observed that in the three reference years the percentage of quantity of soybean oil consumed per household varied between 62 to 67. With the percentage of oil of rapeseed

and mustard being constant (4) the percentage of oil of groundnut inversely varied between29 to 34. It was also observed that the proportion of soybean oil in the total oil consumption was larger on smaller farms than the larger farms. Inversely, the proportion of groundnut oil consumed in the total oil consumption was smaller on the smaller farms and increased with the increase in the size of holdings. This shows that larger and affluent farmers among the selected farmers can still afford to purchase costlier oil than compromising with the old eating habits. Whereas the small farmers shift to cheaper oil. It was noted that per capita per year consumption of total oil increased from about 5.25 litres in the marginal size group to about 7.25 litres per capita per year in the large size of holdings (Table 3.10).

Table 3.10 Per household per year edible oil consumption, selected, household, Ujjain district, M.P.

(Unit- litre)

S. .No.	Category	Year	Soybean	Groundnut	Rapeseed & Mustard	Total oil	Per capita
1	Marginal	2000-2001	30.13	2.60	2.63	35.23	5.32
		1999-2000	29.85	2.58	2.60	35.03	5.29
		1998-1999	29.50	2.53	2.60	34.63	5.23
2	Small	2000-2001	29.50	4.38	1.00	34.88	5.75
		1999-2000	29.25	3.00	0.93	33.18	5.47
		1998-1999	29.00	2.95	0.90	32.85	5.42
3	Semi Medium	2000-2001	26.92	19.31	0.85	47.08	6.97
		1999-2000	25.00	19.25	0.80	45.05	6.58
		1998-1999	26.00	19.30	0.50	45.80	6.69
4	Medium	2000-2001	15.00	30.00	3.00	48.00	6.34
		1999-2000	13.50	28.00	2.85	44.35	5.86
		1998-1999	13.00	28.85	2.75	44.60	5.89
5	Large	2000-2001	11.57	68.00	1.87	81.44	7.40
		1999-2000	10.96	66.90	1.80	79.66	7.24
		1998-1999	10.90	66.88	2.00	79.78	7.25
	Total	2000-2001	26.26	14.25	1.80	42.41	6.11
		1999-2000	26.53	11.22	1.74	39.49	5.69
		1998-1999	25.44	11.30	1.67	38.41	5.55

3.10 Disposal of Soybean

In the case of soybean, processing of seed is not done at the household level. It is sold in the market in the seed form only. The soybean seed is taken to big cities where solvent extraction plants are located. The soybean seed is

processed in these plants. While soybean oil is for internal consumption in the country the soybean oil cakes (De Oiled Cakes – D.O.C.) are for export.

Therefore, the entire quantity of soybean produced by selected farmers was sold in the form of seed. No quantity of it was crushed for oil or any other purpose (Table 3.11).

Table 3.11 Utilisation of soybean seed, oil and cakes, selected farms, Ujjain district, M.P.

S. N	Category	Years	Seed sold		Crushed for oil	Extracted (Qty.)		Oil sold	
			Quantity (qtls.)	Value (Rs.)	Qty.	Oil	Meal / cake	Qty.	Value
1	**Marginal**	2000-2001	292.00	2,68,640	NIL	NIL	NIL	NIL	NIL
		1999-2000	441.00	3,83,670					
		1998-1999	617.80	4,93,600					
2	**Small**	2000-2001	446.00	4,05,860					
		1999-2000	666.00	5,80,800					
		1998-1999	893.00	7,14,400					
3	**Semi medium**	2000-2001	630.00	5,60,700					
		1999-2000	948.00	8,20,020					
		1998-1999	1,300.00	10,40,000					
4	**Medium**	2000-2001	640.00	5,56,800					
		1999-2000	1,204.00	10,41,460					
		1998-1999	1,434.00	11,64,408					
5	**Large**	2000-2001	785.00	6,84,520					
		1999-2000	1,150.00	10,00,500					
		1998-1999	1,437.00	11,49,600					
	Total	2000-2001	2,793.00	24,76,520					
		1999-2000	4,409.00	38,26,450					
		1998-1999	5,681.00	45,62,008					

3.11 Opinion of Farmers about Impact of WTO

The sample survey included the opinion poll among the selected farmers about the knowledge of the ensuing impact of economic policies about the edible oil imports. None of the selected farmers knew about reduction in import duties on edible oils. All of them said that the reduction in import duties in edible oils would lead to more imports and subsequently reduction in domestic prices of edible oils. They knew that all these factors would lead to less income from the production of oilseeds. To the question whether they would opt for other crops if soybean became unremunerative the response of 85 per cent farmers was in the positive and remaining 15 per cent said that they

would still stick to growing soybean. About the alternative crops that they might grow urad was the choice of largest number (63.33 per cent) of farmers. jowar was the choice of 42.50 per cent farmers. Next came maize with choice of 30 per cent farmers. To the question whether that would be remunerative, larger percentage (61.66 per cent) farmers agreed that it would not be so. About the technological change in the cultivation of soybean that would result 66.66 per cent farmers said that they would use lesser inputs. Another 30 per cent farmers said that they might shift to new varieties of soybean. All of them agreed that it would lead to increase in unemployment. To the question as to what oil they would use in lieu of soybean oil, all of them opted for groundnut oil. In addition 38.33 per cent would use mustard oil and 25.83 per cent would additionally use sunflower oil (Table 3.12).

Table 3.12 Opinions of the selected farmers, Ujjain District, M.P. 2000-2001

(Percentages)

S. No.	Particulars	Category					
		Marginal	Small	Semi Medium	Medium	Large	Total
1.	Do you know any thing about reduction in import duties in edible oils.						
	Yes	--	--	--	--	--	--
	No	100.00	100.00	100.00	100.00	100.00	100.00
2.	What in your view will be its impact						
	a) Will it lead to more import. Yes	100.00	100.00	100.00	100.00	100.00	100.00
	No	--	--	--	--	--	--
	b) Will it lead to reduction in domestic prices of edible oils. Yes	100.00	100.00	100.00	100.00	100.00	100.00
	No	--	--	--	--	--	--
	c) Therefore, less income for you. Yes	100.00	100.00	100.00	100.00	100.00	100.00
	No	--	--	--	--	--	--
	d) Will you opt for other crops if prices of soybean become un-remunerative. Yes	80.00	84.38	92.30	92.85	87.50	85.83
	No	20.00	15.62	7.70	7.15	2.50	14.17
	e) What alternative crop you would no grow.						
	1. Urad	65.00	65.62	50.00	71.43	75.00	63.33
	2. Jowar	45.00	53.13	23.08	42.86	50.00	42.0
	3. Maize	32.50	34.37	19.23	35.71	25.00	30.00
	4. Groundnut	12.50	15.63	7.70	3.85	3.85	11.66
	5. Chilli	12.50	6.25	--	7.14	--	6.60
	f) Will that be remunerative. Yes	45.00	50.00	23.08	28.57	25.00	38.34
	No	55.00	50.00	76.92	71.43	75.00	61.66
	g) Will you change technology of cultivation to reduce costs. Yes	100.00	100.00	100.00	100.00	100.00	100.00
	h) If yes, will it be - (Multiple response)						
	1 Capital intensive	--	--	--	--	--	--
	2 Less inputs	80.00	65.62	65.38	57.14	50.00	66.66
	3 New seed variety	22.50	34.37	23.07	42.86	37.50	30.00
	4 Any other	--	--	--	--	--	--
	i) Will it lead to increase in unemployment. Yes	100.00	100.00	100.00	100.00	100.00	100.00
3	What other oil you use in lieu of soybean oil - (Multiple response)						
	1 Groundnut	100.00	100.00	100.00	100.00	100.00	100.00
	2 Mustard	30.00	34.37	50.00	42.86	50.00	38.33
	3 Sunflower	12.50	18.75	26.92	42.86	87.50	25.83
	4 Palm oil	--	--	--	--	--	--

.....

EXECUTIVE SUMMARY

BACKGROUND

Being the signatory of the GATT it was mandatory for India to abolish all import quota restrictions in a given period of time. Therefore, Government of India threw open almost entire spectrum of commodities including oils and oilseeds.

However, looking to the security of the vulnerable Indian agriculture and minimise the adverse impact of mighty MNC's on farm economy due to their onslaught in near future Ministry of Agriculture initiated this quick study for making suitable policy adjustment within the already signed frame work. The main objective of the study was to examine the likely impact of libralised import and low tariff on edible oil sector at the farmers' level.

Since Madhya Pradesh contributed 70.0 per cent to the total area and 64.4 per cent to the total production in the country Soybean was selected for this study.

METHODOLOGY

Study was conducted in Ujjain district of the Madhya Pradesh because the district had highest acreage under this crop. A total of 120 soybean growing farmers were interviewed for this study. The primary data pertained to kharif season of the years 1998-99,1999-2000 and 2000-2001.

MAIN FINDINGS

The average size of family was 6.92 (4.42 adults and 2.50 children). Average earning members per farm was 3.65 (2.23 males and 1.42 females). Agriculture was the main occupation. Others were agricultural wages, dairy, service etc.

The average farm income was Rs. 59,620. Of the total income, agriculture shared 78.53 per cent followed by service (9.25 per cent), agricultural wages (4.76 per cent) and dairy (3.97 per cent).

The average operated area during the 3 years of reference period was 2.86,2.86 and 2.84 hectares respectively.

Soybean was the most predominant crop of kharif season and accounted for almost 95 per cent of the gross cropped area. Maize was another crop worth mentioning although its percentage contribution was nearly 2 per cent only.

The total production of the soybean in the year 1998-99 was 5,681.00 quintals. It decreased to 4,409.00 quintals inl999-2000 and further declined to 2,843.00 quintals in 2000-20001 (Table 1).

Table 1 Total production, selected farms, Ujjain District, M.P.

(Unit – Quintal)

S. No	Size	Year	Soybean	Groundnut	Jowar	Fodder	Maize	Urad	Arhar
1	Marginal	2000-2001	292.00	--	10.00	--	6.80	--	--
		1999-2000	441.00	--	--	--	10.50	--	--
		1998-1999	617.00	--	--	--	12.50	--	--
2	Small	2000-2001	446.00	--	--	88.00	4.50	--	--
		1999-2000	666.00	--	--	88.00	11.50	--	--
		1998-1999	893.00	--	--	88.00	12.25	--	--
3	Semi – medium	2000-2001	630.00	--	--	15.00	25.25	25.00	--
		1999-2000	948.00	--	--	15.00	32.25	24.00	--
		1998-1999	1300.00	--	--	18.00	28.75	7.00	--
4	Medium	2000-2001	640.00	8.00	--	42.50	30.00	9.00	4.00
		1999-2000	1204.00	6.00	--	54.00	28.00	9.00	2.50
		1998-1999	1434.00	9.00	--	98.00	30.50	3.25	3.00
5	Large	2000-2001	785.00	--	--	40.00	17.00	8.75	3.60
		1999-2000	1150.00	--	--	40.00	15.00	9.00	4.00
		1998-1999	1437.00	--	--	45.00	15.00	12.00	4.00
Total		2000-2001	2843.00	8.00	10.00	185.00	83.55	42.75	7.60
		1999-2000	4409.00	6.00	--	197.00	97.25	42.00	6.50
		1998-1999	5681.00	9.00	--	249.00	99.00	24.00	7.00

The yield of this crop was 17.22 quintals / hectare in 1998-99. It came down to 13.52 quintals / hectare in 1999-2000. In 2000-2001 it came down to 8.81 quintals /hectare (Table 2).

Table 2 Per hectare production, selected farms, Ujjain District, M.P.

(Unit – Quintal per hectare)

S. No	Size	Year	Soybean	Maize	Jowar	Urad	Arhar	Ground-nut	Fodder
1	Marginal	2000-2001	8.85	11.33	10.00	--	--	--	--
		1999-2000	12.60	17.50	--	--	--	--	--
		1998-1999	17.62	20.83	--	--	--	--	--
2	Small	2000-2001	9.15	11.25	--	--	--	--	72.72
		1999-2000	13.17	14.20	--	--	--	--	87.13
		1998-1999	17.67	15.12	--	--	--	--	87.13
3	Semi – medium	2000-2001	8.67	8.33	--	8.25	--	--	75.00
		1999-2000	13.12	9.40	--	.92	--	--	75.00
		1998-1999	17.09	14.23	--	11.66	--	--	90.00
4	Medium	2000-2001	8.14	14.85	--	8.11	--	9.88	55.12
		1999-2000	15.32	13.86	--	8.11	--	7.40	67.50
		1998-1999	18.25	15.10	--	10.83	--	11.11	60.87
5	Large	2000-2001	8.76	14.04	--	7.23	9.00	--	65.57
		1999-2000	12.80	14.85	--	7.44	10.00	--	65.57
		1998-1999	16.00	14.85	--	9.91	10.00	--	73.77
		2000-2001	8.81	11.57	8.33	7.99	9.50	9.88	65.60
		1999-2000	13.52	12.36	--	7.85	8.12	7.41	75.19
		1998-1999	17.22	15.33	--	11.37	8.75	11.11	72.59

This study revealed that no significant area of soybean was replaced by any crop and very minor adjustments took place during the 3 years of reference period.

The total paid out cost per hectare was Rs.5,250.42 in 1998-99. It increased to Rs.5,390.13 in 1999-2000 and to Rs.5,570.23. It was noted that the total paid out cost per hectare was higher on smaller farms than the larger farms (Table 3).

Table 3 Total paid out cost, selected farms, Ujjain district, M.P.

S.No.	Category	Year	Rs. Per hectare
1	**Marginal**	2000 – 2001	5,835.00
		1999-2000	5,475.00
		1998-99	5,275.00
2	**Small**	2000 – 2001	5,775.00
		1999-2000	5,680.00
		1998-99	5,500.00
3	**Semi Medium**	2000 – 2001	5,675.00
		1999-2000	5,385.00
		1998-99	5,165.00
4	**Medium**	2000 – 2001	5,435.00
		1999-2000	5,325.00
		1998-99	5,145.00
5	**Large**	2000 – 2001	5,395.00
		1999-2000	5,255.00
		1998-99	5,265.00
Total		200 – 2001	5,570.23
		1999-2000	5,390.13
		1998-99	5,250.42

Ujjain district was known for groundnut production in the past. However with the increase in soybean production both availability and price of soybean oil suited consumer's budget. Therefore, its consumption increased substantially over the period and that of groundnut oil decreased. In the 3 reference years the average per household annual consumption varied between 62 to 67 litres (Table 4).

In the case of soybean processing is not done at the household level. It is sold in the market. No quantity of it was crushed in the household or at the village level for oil or any other purpose.

Study further revealed that none of the selected farmers knew about the reduction in import duties on edible oils. All of them said that this would lead to more and more import and less income and increased unemployment.

Table 4 Per household per year edible oil consumption, selected, household, Ujjain district, M.P.

(Unit- litre)

S. No.	Category	Year	Soybean	Groundnut	Rapeseed & Mustard	Total oil	Per capita
1	Marginal	2000-2001	30.13	2.60	2.63	35.23	5.32
		1999-2000	29.85	2.58	2.60	35.03	5.29
		1998-1999	29.50	2.53	2.60	34.63	5.23
2	Small	2000-2001	29.50	4.38	1.00	34.88	5.75
		1999-2000	29.25	3.00	0.93	33.18	5.47
		1998-1999	29.00	2.95	0.90	32.85	5.42
3	Semi Medium	2000-2001	26.92	19.31	0.85	47.08	6.97
		1999-2000	25.00	19.25	0.80	45.05	6.58
		1998-1999	26.00	19.30	0.50	45.80	6.69
4	Medium	2000-2001	15.00	30.00	3.00	48.00	6.34
		1999-2000	13.50	28.00	2.85	44.35	5.86
		1998-1999	13.00	28.85	2.75	44.60	5.89
5	Large	2000-2001	11.57	68.00	1.87	81.44	7.40
		1999-2000	10.96	66.90	1.80	79.66	7.24
		1998-1999	10.90	66.88	2.00	79.78	7.25
	Total	2000-2001	26.26	14.25	1.80	42.41	6.11
		1999-2000	26.53	11.22	1.74	39.49	5.69
		1998-1999	25.44	11.30	1.67	38.41	5.55

Thus it can be concluded that 1) oilseed growing farmers especially soybean farmers did not face any adverse impact due to low tariff and libralised import at this stage and 2) although the production and productivity and price received for soybean were all declining in the recent past years the farmers were not able to find out a substitute to soybean.

ACTION POINTS

To sustain the production of soybean Government should intervene and offer better price. This would act as encouragement to farmers in the face of declining production and productivity of soybean.
(Govt. of India/ CACP)

The agricultural scientists particularly entomologists and pathologists should look in to the problems of farmers and should evolve suitable IPM measures.
(Ministry of Agriculture, Govt of India/Agriculture University)

The farmers should be educated on the possible repercussions due to ensuing changes in the economic policies with respect to international agreements such as WTO.
(Agricultural extension services of Govt.of India and the State Government.)

.....