III. Situation of Major Producing Countries

As mentioned before, soybean is produced in many countries, from the temperate to the tropical zones. In this section, the United States and Argentina, whose effect is large on the international market today as it will be in the future, are discussed. No description is made here on Brazil's production, although it is the second largest after US's, since the purpose of this study is to give accounts on external conditions for Brazil.

1. The United States

The origin of today's growing soybean production lies in the big increase in the 1940s. Average production from 1934 to 1938 accounted for only 9.5% of world soybean production. However, in response to the halt in imports of Chinese soybean and the increased demand for fat as a material for paint as the War expanded, the country increased domestic production from the one million ton level in 1938 to the five million ton level in 1948. During this time, area under cultivation more than quadrupled, and yield per hectare increased from 1.16 tons before the war to about 1.4 tons after the war.

In the 1960s, harvest area grew at an annual average rate of 6.3%, and yield per hectare by 1.6%, resulting in a high production growth rate of 8.2%. The production increase was brought about mainly by hectarage expansion.

The expansion of planted area resulted from the following situation: the country's stock of wheat, sorghum, cotton and corn rose rapidly, and to adjust the relation of supply and demand of these crops, the Government imposed the set-aside policy on these crops. Thus, farmers planted the allowable limit of crops for which production was regulated and grew soybean on the remaining arable land except fallow and pasture.

In the 1970s, area under cultivation of soybean increased at an average rate of 5.9% a year, yield per hectare by 2.1% and production by 8.1%. Compared with the 1960s, the growth rate of area under cultivation decreased relatively, and that of yield per hectare rose substantially.

The growth rate of area under cultivation fell because the production restriction on wheat, cotton and corn was lifted, and competition with these crops, became stronger (especially feed grains such as corn and sorghum).

The restriction of planting was lifted because the expanded

demand for grain and soybean in the world (caused by unusual weather around the world) decreased each country's farm production, raising demand for American produce, and subsequently decreasing wheat and corn stocks substantially. A symbolic event during this time was the soybean embargo imposed by President Nixon on June 28, 1973. The background to this decision was:

a. Peru, then the biggest producer of fish meal, was then catching 10-12 million tons of anchovy in an average year, and most of it was exported to Japan, Europe and the United States as a material for feed, accounting for more than 60% of the world fish meal trade. This anchovy catch slumped in 1972, mainly because of abnormal ocean currents and exhausting stocks bringing about a complete ban on exports after October 1972. As a consequence, demand for feed protein shifted massively from fish meal to soybean meal.

b. Production of sunflower, second to soybean as an oil material and consumed in large quantities in the USSR-East European bloc, decreased as a result of drought in the bloc, creating a need for a substitute supply of soybeans.

c. Production of peanut, which was the third biggest in terms of volume of the oil materials in the world, dropped sharply in 1972 in India, a major producer, and substitute demand turned toward soybeans.

d. Related to b.; Planned economy countries such as the USSR suddenly emerged in the United States grain market, which had been orderly until that time, and purchased a large quantity of grain and soybean through grain dealers (about 1 million tons from September 1972 to October 1973), contributing to a sharp price rise in the Chicago exchange.

e. The United States was at that time plagued by serious stagflation; an increased price for meat such as beef was observed, and public concern was strong. On the other hand, because high meat prices stimulated meat production and increased the demand for soybean meal, domestic extraction expanded greatly and exports of soybean shot up at the same time. As a result, soybean stock in the United States decreased and creating a need for some kind of countermeasure.

These facts naturally served as stimuli for soybean production. In the 1970s, the Chicago market price of soybean changed from a level of $2 to $3 per bushel in 1970/71, to the $12 per bushel level in June 1973, to the $8 level in October 1974 (sharp output decrease in the United States), to the $10 level in May 1977 (speculative fight between Hunt Co. and Cook Industries), and to the $8 level in August 1979 (in expectation of a massive purchase of grain by the

USSR). With these fluctuations, the price steadly took the upward trend and brought higher income to soybean growers. In the Midwest, crop rotation of corn and soybeans was begun. Furthermore, soybean cultivation attracted cotton growers in the southern cotton belt along the lower Mississippi River. Thus, soybean production spread to Texas, Louisiana, Mississippi and Arkansas, predominantly cotton growing areas.

During the 1970s, soybean production in the United States decreased twice in 1974 and 1976 as compared to the previous years, both in planted area and yield per hectare, and production slumped. Decline in planted area resulted from the cessation of the set-aside policy, and yield per hectare was reduced by drought.

Although use of high yielding varieties spread markedly in the 1970s, compared with the 1950s and 1960s yield per hectare fluctuated widely. The factors involved were: a. Soybean production had spread to marginal areas where the production are more susceptible, and was easily affected to the climatic changes; b. Cultivation spread to the south and west, where the technique of growing soybean was not fully developed; c. A boom in cultivation increased production without due regard to proper cropping rotation and caused the decrease of moisture in the soil and increased salinity.

At the beginning of 1980 area under cultivation decreased, because the set-aside policy was not in effect, and the profitability of soybean was lower than that for corn, due to the low price at the time of planting. In addition, southern soybean producing regions such as Arkansas and Missouri, where planted area had expanded recently, were hit by a heat wave, resulting in a sharp reduction in yield per hectare. As a consequence, production decreased 21% over the previous year.

However, in 1981, although planting decreased, good weather and an increase in yield per hectare raised production greatly. In 1982, the set-aside policy was applied to wheat, corn, sorghum, rice and cotton; and good weather from planting time to harvest raised the yield per hectare, resulting in record production.

Soybean production in the United States will shift in response to its profitability in comparison to competing crops, as well as farm policies such as the set-aside policy, preferential loan rates for farmers, and the farmers' holding reserve system (as well as weather). Moreover, as is generally agreed, since the soybean production in the United States is export-oriented, if the overseas demand for soybean is high, production will rise in response. Some argue about limiting land in the United States and a possible production limit resulting from soil erosion, but the USDA says the United States still has a large capacity for profitable production of agricultural products and soybean.

Also, in an attempt to increase soybean production, the American Soybean Association envisages a plant to develop, through the use of modern bio-technology, the varieties of soybean of higher yield, higher oil content or high protein content. The breeding of odorless soybean is also studied.

2. Argentina

The history of soybean growing in Argentina is short. Full-scale production of soybean started after the United States' embargo was imposed on soybeans in 1973, and increasing production was seen about 5 years later than in Brazil. According to FAO data, production in the last 10 years rose from 78,000 tons in 1972 to 1.4 million tons in 1977, and jumped to 3.77 million tons in 1981 (average annual growth rate from 1972 to 1981 was 154%).

Since 1968, the country's soybean production has fallen short of its extraction capacity; therefore soybean exports were banned and only the export of oil and meal have been permitted. In 1976, however, production exceeded extraction capacity and the country was able to export part of the 1976 crop of soybean. Since then, production in excess of extraction capacity has been devoted to exports. As production soared, soybean exports expanded from 613,000 tons in 1977, to 1.983 million tons in 1978, 2.810 million tons 1979, to 2.709 million tons in 1980 (FAO data).

The country's arable land has slowly increased from 24 million to 25 million hectares in last 10 years, but unlike Brazil, the hectarage in production has not increased each year. Expansion of hectarage planted in soybean has been done on existing farm land by converting traditional crops such as wheat, corn and milo. The growers reduce their production of disadvantageous crops and transfer to soybean growing according to the market prices and weather conditions; cultivation of land specifically for soybean growing is rarely done.

The difference in production costs between soybean and corn is considered smaller in Argentina than that in the United States. In Argentina both crops depend highly on export, and difference between international price for corn and soybean is reflected entirely in the prices farmers are offered. Until now, cultivation of soybean has been more profitable than that of corn.

Table B-6 Hectarge Planted for Oil-crops in Argentina

(1,000 ha)

	1969/71	1976	1977	1978	1979	1980	1981
Soybean	30	434	660	1,150	1,600	2,030	1,880
Peanut	255	309	367	428	393	279	200
Sunflower	1,283	1,258	1,227	2,000	1,557	1,900	1,280
Rapeseed	2	1	3	3	8	36	36
Flaxseed	692	833	950	860	978	726	831
Cottonseed	408	414	506	607	669	568	277
Total	2,670	3,249	3,713	5,018	5,205	5,539	4,504
Arable land	24,034	25,000	25,000	25,100	n.a.	25,150	n.a.

Source: FAO, Production Yearbook

Soybean producing regions are located mostly in the northwestern part of the Pampas, and major producing states are Santa Fe, Buenos Aires, Cordova and Tucuman. Production in the last few years is shown as follows:

(1,000 tons)

	1977/78	1978/79	1979/80
Santa Fe	1,600	2,180	1,677
Buenos Aires	280	520	641
Cordova	286	656	451
Tucuman	95	149	143

In these producing regions, land has been divided into many small parts by ownership, and the size has been an obstacle to commercial success.

Since the country's crop production is done by extensive agriculture using little fertilizer, even in the rich Pampas yield per hectare is said to be 50 to 70% of that in the United States, which has almost the same climate. However, yield of soybean, which is more than 2 tons per hectare, exceeds that of the United States.

Soybean production, which expanded rapidly in the mid-1970s, has not been increasing as sharply as expected since 1978, when planted area reached the 1 million hectare level and production

reached 2 million tons. Of course there have been factors to obstruct expansion, such as unusual weather and price decreases, but a future sharp increase in planted area is unlikely.

As of today, the country's total cultivated area is as much as 25 million hectares (approximately 1 hectare per person); in this sense, the country has more potential for developing as an agricultural country than does Brazil, where per capita arable land is about 0.5 hectare. However, more than 50% (70% in the case of corn) of major produce, including soybean, goes to export, and in terms of domestic demand, there is no need to increase production. Moreover, most of the growers are relatively wealthy, so thay are not forced to raise production for economic reasons. In addition, labor is in short supply in the country; therefore it is thought that producers do not have strong intentions of cultivating new land to increase soybean production.

Meanwhile, the government, burdened with enormous amounts of foreign debts, is exerting itself to enhance production of farm products (the main export) and to expand exports. In May 1981, it even devised a plan to loan producers 100% of the costs of growing grain, soybean, and oil vegetables.

Also, the Government launched a policy of exporting soybeans in the form of oil and meal, rather than as bean, and has been expanding oil extraction facilities. In July 1981, as a concrete plan to expand exports of processed soybean products, the country increased export duties on all oilseeds (except peanuts for confectionary) from 10 to 25% and duties on meal (except soybean meal) from 5 to 15%; and eliminated the emergency retention policy (1,000 pesos per $1 of export value). However, emergency retention on exports of unprocessed oilseeds was restored in May 1982.

In the case of Argentina, however, considering the fact that the domestic extraction industry is not as fully established as in Brazil, domestic demand for oil centers on sunflower oil, and demand for soybeans is small; presumably, soybeans will have to be mainly exported at least in near future. For now, geographical circumstances will force the country to export, mainly to Europe and the USSR.

As for exports, the United States established a grain embargo against USSR in January 1980, and the Soviet grain purchases were concentrated in Argentina, sharply raising the latter's soybean exports to USSR.

Several major problems hampering the country's soybean industry are described as follows:

a. The country's infrastructure is not yet organized, and there are many problems to be solved concerning shipping and storage.

b. As for storage, the combined storage capacity of private and public ownership is estimated at about 25 million tons, and is capable of holding only two-thirds of total whole grain production. Although not all the crops are harvested at the same time, insufficient storage capacity sometimes forces producers to sell when market prices are low, and this serves as an obstacle to production increases for soybean and other products.

c. A larger problem than that of storage is shipping. Means of transportation in the Pampas are trucking and rail. The network of roads is relatively well organized, and is the main means of shipping now. Although the railway covers a long distance, running efficiency is low, and the country has to resign itself to depending on costly trucking. Shipping ports in soybean producing regions are located mainly on the upper stream of the La Plata River. Since the river is shallow downstream, large ships cannot be loaded to the full capacity at the ports in the producing regions, and the "top-off" is done at the port of Buenos Aires or, if circumstances require, at soybean shipping ports in Brazil. As a result, Argentine soybeans are traded at disadvantageous prices, an obstacle to the development of the soybean industry in Argentina.

C. CONSUMPTION TRENDS

I. World Demand for Soybean

Until today, world demand for soybeans grew constantly in Japan and European industrialized countries mainly for soybean meal for feed, and in developing countries it grew as demand for oil resulted from improved diets. And recently, in the planned economy countries, particularly the USSR and Eastern Europe, the demand for soybean meal is increasing, as the meal is used to raise stock such as pigs and poultry bearing efficiency. In Asian countries such as Thailand, Indonesia, Taiwan, Korea, China and Japan, there have been demands in the area of such traditional processed foods as beancurd, soybean milk, soy sauce and tempeh. Demand for soybean from this area cannot be ignored. Basically, however, demand for soybean is strongest for feed, and the demand for soybean meal in industrialized nations is now very important. Changes in demand are determined by such conditions as economic trends and movements of foreign exchange, Chicago market prices, and demand for meat.

Based on Oil World data, world demand for soybean is observed as follows (see Table C-1):

Demand for soybeans for oil production increased from 51.014 million tons in 1976/77 to 73.450 million tons in 1981/82, at an annual rate of 7.6%, almost in parallel with the 7.7% growth rate of production. Annual growth of demand for soybean meal in the same period was 7.3%; of demand for soybean oil, 6.7%. The rate of growth of demand for meal follows the growth of extraction.

A large part of soybean meal is a protein source of compound feed. Production and consumption of compound feed are done mostly in Japan, the United States and the European industrialized nations, and a high proportion of extraction is done in these countries. Industrialized nations' (excluding planned economy countries such as the USSR and Eastern Europe) percentage share in oil extraction declined from 70.6% in 1976/77 to 65.2% in 1981/82, but they still occupy more than half, a situation completely different from other oilseed extraction.

The United States, Brazil, Argentina and Paraguay, exporting countries of soybean or its products, decreased their combined proportion in world extraction from 57.4% in 1976/77 to 55.9% in 1981/82. This was because Brazil had a reduced amount of extraction due to poor crops. The trend is, however, that these countries' shares will rise each year.

Table C-1 Supply and Demand of Soybean in the World and in Major Producing Countries

(1,000 tons)

			76/77	77/78	78/79	79/80	80/81	81/82	82/83
SUPPLY	Initial Inventory	USA	6,666	2,801	4,387	4,738	9,764	8,663	7,307
		Brazil	4,960	6,420	4,380	3,350	6,480	6,000	5,700
		Argentina	500	730	1,020	880	1,450	1,050	1,550
		Japan	249	295	273	411	279	235	300
		W. Europe	650	414	705	963	1,182	592	720
		Oth.Countries							
		Total	13,025	10,660	10,765	10,342	19,155	16,540	15,577
	Production	USA	35,071	48,098	50,860	61,723	48,772	54,435	62,584
		Brazil	12,513	10,200	10,236	15,153	14,978	12,810	13,300
		Argentina	1,400	2,750	3,700	3,600	3,600	4,000	4,500
		Paraguay	377	333	549	540	630	650	640
		China (Mainland)	6,664	7,300	7,600	7,460	7,880	9,245	9,700
		USSR	480	540	634	467	525	460	500
		Oth.Countries	2,974	3,588	3,990	4,828	4,468	4,879	5,159
		Total	59,479	72,809	77,569	93,711	80,853	86,479	96,347
DEMAND	For Oil Extraction	EC (10 ctr)	8,683	10,417	11,264	12,064	10,178	11,514	12,580
		Spain	1,840	2,120	2,127	2,970	2,888	3,231	3,400
		E.Europe (7 ctr)	599	906	1,070	1,467	1,194	1,010	1,197
		USSR	2,059	1,103	1,570	1,644	1,610	1,777	1,620
		USA	21,045	25,746	27,822	30,730	27,606	28,032	29,665
		Mexico	736	1,036	1,047	1,400	1,620	1,620	1,550
		Argentina	504	645	725	717	955	1,352	1,870
		Brazil	7,745	9,863	9,619	10,590	13,827	12,439	13,150
		China	2,088	2,820	2,925	3,302	3,434	4,603	4,576
		Japan	2,817	3,202	3,346	3,470	3,462	3,519	3,700
		Oth.Countries	2,898	3,593	4,237	4,943	5,049	4,353	4,645
		Total	51,014	61,451	65,752	73,297	71,823	73,450	77,953
	Seed,Food, Others		10,830	11,253	12,240	11,661	11,645	14,010	16,471
	TOTAL		61,844	72,704	77,992	84,958	83,468	87,460	94,424
	End Stock		10,660	10,765	10,342	19,155	16,540	15,577	17,500

Source: Oil World

Since the year 1976/77, only in 1980/81 was the amount of oil extraction from soybean below the previous year's level (in that season, 71.823 million tons, down 2%). Causes of the decrease were:

a. Since the second oil crisis, the United States and Western countries have suffered from a prolonged recession, depressed employment situation and soaring inflation which has lowered the personal consumption spending. Thus, demand for meat did not increase much, reducing demand for feed meal, (down 8.6% over the previous year in the United States; 6.6% in EC, 2.8% in Japan, and 1.3% worldwide). The main countries which showed increased demands for feedstuff were the USSR, Eastern Europe, Mexico and China, all of which were short of meat.

b. In the first half of 1980/81, United States production of soybean plunged because of a heat wave, boosting Chicago market prices and reducing consumption (United States soybean exports that year were below the previous year's levels except in March and September 1981, and the amount of oil extraction was also down, except in October 1981).

c. The money supply policy of the U.S. Federal Reserve Bank, aiming to check inflation, brought about high interest rates, driving speculative capital away from the Chicago soybean market to money market for buying the Treasury Bond and negotiable certificate of deposit, and pushed down soybean prices. But the difference in interest rates between the United States and Europe encouraged capital flow from Europe to the United States, inviting dollar appreciation and offsetting the downturn of soybean market prices.

d. In addition to c., political uncertainty in Poland and in the Middle East worked to the disadvantage of the EC, which is closely connected with these regions in various senses, bringing about dollar appreciation and making imports of United States soybeans difficult.

e. A bumper crop of rapeseed in EC nations turned oil extractors from costly soybean to the cheaper rapeseed in EC bloc (while amount of rapeseed oil extraction rose by 74% from 1.74 million tons in 1979/80 to 2.56 million tons in 1980/81, that of soybean in 1980/81 was down 15.6%, or 1.886 million tons, over the previous year).

f. Expensive materials and cheap products lowered the margins of soybean oil extractors.

Accurate statistics on demand for food soybean are not available but stable demand for 7 million to 8 million tons of soybean seems to exist in East Asia (the Asian region east of Thailand).

Soybean oil occupies the foremost position among oils and fats,

accounting for 31.0% of the food vegetable oil (including palm oils) production in 1980/81 (39.418 million tons) (Table B-1). Partly because demand for oil is growing chiefly in the developing countries, unlike the demand for soybean meal, which slumped in 1980/81, soybean oil shows a steady increase in demand.

Notable demand increases were in Mexico, China, Brazil, India and Pakistan. India and Pakistan are also conspicuous for their demands for palm oil, and considering their large populations, they seem to have still more potential for demand. Of these five countries, annual per capita consumption in 1977, (including butter) was 8.5 kg in Mexico, 4.0 kg in China, 7.6 kg in Brazil, 5.6 kg in India, and 8.0 kg in Pakistan, extremely small even compared with the 13.8 kg of Japan (1980, excluding butter), where oil consumption is relatively small for an industrialized country. This indicates that demand will increase in the future in these countries. However, their shortages of foreign currency may be one of the factors limiting consumption.

Soybean meal occupies an overwhelmingly strong position as protein feed. Of the ten major oil meals which can be used as feed (soybean, cottonseed, peanut, sunflower, rapeseed, sesame, copra, palm kernel, linseed and fish), soybean meal's percentage share increased from 59% in 1976/77 to 64% in 1981/82 because of its protein value. Although livestock products are expected to be more and more in demand in the future, production increases in fish meal and meal of vegetable oil other than soybean are unlikely, and this will raise the dependency on soybean still further. Globally, oil meal is required mostly in EC nations, the United States, Eastern Europe and China, but demand of the former three is declining yearly and instead such developing countries as Mexico, Brazil and China show increased demand. This is presumably because these countries' demands for animal products are gradually rising. Moreover, since per capita consumption is far smaller than that in developed countries, the possibility of future growth is high. However, there are countries like India which scarcely need soybean meal, so much attention is needed in estimating demand. It is also true that developed free world countries such as Japan, Europe and the United States still account for more than 60% of the world demand.

Soybean protein food can be made from soybean meal and the varieties produced are increasing each year. If these foods can be made at low cost, it is quite possible that they will spread to regions where protein food is in short supply.

II. The Situation in Major Soybean Oil Consuming Countries

The major soybean oil consuming countries in the world are the

United States, Brazil, China, India, Japan, EC nations and the USSR (Table C-2). In this section , soybean oil consumption in these countries (except Brazil) is described. Also, based on FAO Food Balance Sheet, consumption by use in countries where soybean oil holds a major position in vegetable oil consumption is listed in Table C-3.

1. The United States

As mentioned before, the United States is the top soybean producing country in the world, and at the same time the world's biggest consumer of soybean oil, using 4.18 million tons in 1981, or about 32% of the world total consumption (USDA, Table C-2).

The United States' consumption of soybean oil began around 1908, when the country was short of cottonseed and linseed oils and used soybean oil as a substitute for these oils as materials for soap and paint.

For some time soybean oil was used mostly for industrial purposes, but advanced refining techniques, such as deodorizaton, gradually raised consumption as food. Especially since 1935, when hard soybean oil was manufactured, soybean oil has come to be used, along with cottonseed and peanut oils, as materials for margarine, shortening and salad oil. When importing became difficult because of World War II, soybean as a material for oil was produced in larger quantities, and the amount of oil extraction increased sharply. Today use as food (including processed food) accounts for more than 90% of the total soybean oil consumption (Table C-4).

As the consumption of soybean oil as food increased, soybean oil's percentage in food oil grew each year. In 1935 soybean oil accounted for only 1.8% (or 45 thousand tons) of total food oil consumption (2.54 million tons), but the percentage increased to more than 50% in 1969 (Table C-5), and in 1980 it reportedly reached about 71%. In 1980, 81% of oil used in margarine (or about 750 thousand tons), and 63% of that used in shortening (or about 1.2 million tons) was soybean oil (Table C-6 and C-7). On the other hand, it accounted for only 5% of total industrial consumption.

Behind this increase in the United States' soybean oil consumption are: a. advanced techniques of refining and producing food made it possible to use soybean oil as a substitute for other oils; b. although substitution increased the tendency of demand to be affected by the interrelationship of prices among oils, soybean oil is a byproduct of feed soybean meal and its price was relatively low; c. restrictions on the planting of cotton limited supplies of cottonseed oil, a substitute of soybean oil. And it is obvious, as mentioned before, that postwar economic recovery raised worldwide

Table C-2 Soybean Oil Supply and Utilization, 1977/78-1982/83

(1,000 MT)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83
CONSUMPTION 3/						
BARBADOS	0	1	1	1	1	1
CANADA	152	153	168	159	162	162
COSTA RICA	1	2	7	4	4	4
DOMINICAN REPUBLIC	24	23	24	32	39	49
EL SALVADOR	0	3	1	6	6	6
GUATEMALA	1	1	5	3	17	28
HAITI	14	19	25	27	37	39
HONDURAS	0	1	1	1	1	1
JAMAICA	11	14	15	15	12	16
MEXICO	184	174	253	298	349	365
NETHERLANDS ANTILLES	1	2	2	2	2	2
NICARAGUA	8	0	11	18	13	13
PANAMA	14	19	21	15	15	28
TRINIDAD AND TOBAGO	5	0	7	7	7	6
UNITED STATES	3752	4056	4074	4135	4288	4423
ARGENTINA	48	39	45	91	95	95
BOLIVIA	11	11	15	15	28	15
BRAZIL	1060	1300	1508	1500	1550	1640
CHILE	51	50	50	80	85	85
COLOMBIA	63	97	123	115	135	145
ECUADOR	44	33	45	54	53	53
GUYANA	5	6	6	5	5	5
PARAGUAY	12	17	15	7	7	7
PERU	74	44	41	64	62	84
URUGUAY	13	6	7	4	3	5
VENEZUELA	26	49	52	64	71	79
BELGIUM-LUXEMBOURG	71	93	96	109	109	108
DENMARK	59	73	59	69	61	65
FRANCE	108	109	136	113	116	128
Germany, FR	493	477	496	484	501	526
GREECE	5	8	10	10	10	10
IRELAND	9	11	12	16	12	12
ITALY	252	302	299	267	235	230
NETHERLANDS	204	211	220	194	192	215
UNITED KINGDOM	264	236	258	246	286	262
AUSTRIA	41	45	45	39	58	58
FINLAND	15	17	11	18	17	16
MALTA AND GOZO	2	4	4	2	3	3
NORWAY	40	49	46	47	48	48
PORTUGAL	31	26	23	19	30	31
SPAIN	115	87	115	115	115	115
SWEDEN	57	54	57	65	62	5
SWITZERLAND	16	13	16	13	17	14
TURKEY	22	55	119	110	110	120
BULGARIA	15	29	26	23	23	19
CZECHOSLOVAKIA	8	9	9	9	9	9
German DR	54	63	85	63	80	85
HUNGARY	7	5	5	6	7	8
POLAND	29	66	86	57	44	44
ROMANIA	73	83	112	113	90	108
YUGOSLAVIA	85	45	126	150	175	170
USSR	224	278	269	327	515	539
BANGLADESH	19	40	51	29	36	48
CHINA						
MAINLAND	545	491	591	486	491	499
TAIWAN	148	143	139	165	160	163
HONG KONG	8	7	10	3	7	8
INDIA	486	488	767	723	628	786
IRAN	303	219	266	258	283	313
IRAQ	7	4	4	4	4	5
ISRAEL	79	77	73	74	76	78
JAPAN	594	609	616	645	685	709
JORDAN	2	2	1	1	1	1
Korea, Dem. Rep.	39	61	43	46	46	46
KAMPUCHEA	0	2	5	5	5	5
Korea, Rep. of	26	44	42	56	66	78
KUWAIT	1	2	3	3	5	6
LEBANON	9	17	13	11	17	17
MALAYSIA	1	1	2	1	3	3
PAKISTAN	181	260	173	228	254	269
PHILIPPINES	4	8	8	6	6	18
SAUDI ARABIA	4	8	17	19	22	26
SINGAPORE	7	9	14	14	14	14
SRI LANKA	6	0	1	0	1	1
SYRIA	6	5	15	13	18	19
THAILAND	21	15	18	21	22	23
AUSTRALIA	36	33	45	39	45	40
NEW ZEALAND	7	9	18	18	18	18
ANGOLA	26	12	23	26	25	25
EGYPT	43	47	53	138	122	135
KENYA	1	1	3	2	2	3
MAURITIUS AND OCP.	6	3	11	13	15	15
MOROCCO	138	154	113	117	112	126
NIGERIA	88	46	55	90	95	90
AFRICA	5	5	7	8	23	28
SOMALIA	5	7	16	13	13	14
TANZANIA	8	2	3	6	5	4
TUNISIA	34	82	82	65	59	65
UPPER VOLTA	8	2	1	3	3	3
ZAMBIA	5	8	8	19	19	10
ZIMBABWE	7	9	15	12	17	14
TOTAL	10695	11461	12929	12736	13353	13953

1/ ALL DATA ARE SHOWN ON A MARKETING YEAR BASIS.
2/ WORLD EXPORTS WILL NOT EQUAL IMPORTS AS NOT ALL TRADING COUNTRIES HAVE BEEN IDENTIFIED.
3/ CONSUMPTION DATA REPRESENT "APPARENT CONSUMPTION", AND INCLUDE ALL DISAPPEARANCE AS WELL AS SOME CHANGES IN STOCKS
4/ STOCKS DATA ARE NOT INCLUDED FOR ALL COUNTRIES, AND IN MOST CASES ARE FAS ESTIMATES. WHERE NO STOCKS DATA ARE AVAILABLE, CHANGES ARE INCLUDED IN CONSUMPTION.

SOURCE: COUNSELOR AND ATTACHE REPORTS, OFFICIAL STATISTICS
DATE: SEPTEMBER 1982

Source: USDA

Table C-3 Soybean Oil Consumption by Use in Major Consuming Countries

(1,000 MT)

		1972-1974				1975-1977			
		Manufacture		Food	Total	Manufacture		Food	Total
		Food	Non Food			Food	Non Food		
Developing	Brazil	-	-	374	374	-	514	314	828
	Argentina	-	5	5	10	-	-	40	40
	Pakistan	-	22 (26)	62 (74)	84	-	30 (30)	71 (70)	101
	India	-		66	66	-	-	183	183
Developed	USA	1,604 (52)	212 (7)	1,280 (41)	3,096	1,698 (51)	220 (7)	1,389 (42)	3,307
	Germany, FR	249 (64)	141 (36)	-	390	208 (54)	136 (35)	41 (11)	385
	UK	75 (50)	-	79 (50)	154	41 (24)	-	127 (76)	168
	France	-	-	77	77	-	-	98	98
	Italy	-	-	184	184	-	-	310	310
	Netherlands	101 (69)	17 (12)	29 (20)	147	107 (69)	-	47 (31)	154
	Japan	30 (6)	76 (15)	391 (79)	497	39 (8)	14 (3)	460 (90)	513
Centrary planned	USSR	-	-	75	75	-	126 (53)	111 (47)	237
	China	-	-	489	489	-	34 (3)	1,070 (97)	1,104

Note: Figures in parentheses show percentage share of the total.

Source: FAO, Food Balance Sheet

Table C-4 Soybean Oil Utilization by Products, 1960-80

(million lb.)

Year Beginning October	Food					Nonfood						Total Domestic Utilization
	Shortening	Margarine	Cooking and Salad Oils[1]	Other Edible	Total	Paint and Varnish	Resins and Plastics	Other Drying Oil Products	Fatty Acids	Other Inedible[2]	Total	
1960/61	1,097	1,073	793	26	2,989	96	64	4	6	30	340	3,329
1961/62	1,353	1,036	771	20	3,180	88	74	4	—	43	359	3,540
1962/63	1,222	1,069	933	15	3,239	90	78	6	1	47	385	3,624
1963/64	1,391	1,126	1,146	21	3,684	94	84	6	—	42	374	4,058
1964/65	1,404	1,107	1,100	32	3,643	94	105	5	12	45	426	4,069
1965/66	1,739	1,241	1,200	38	4,218	100	104	6	—	53	469	4,687
1966/67	1,691	1,273	1,353	58	4,375	96	97	7	—	61	462	4,837
1967/68	1,816	1,234	1,494	44	4,588	86	97	7	—	58	508	5,096
1968/69	1,978	1,290	1,967	36	5,271	87	94	7	—	61	485	5,756
1969/70	2,255	1,415	2,150	37	5,857	94	79	7	1	47	471	6,328
1970/71	2,077	1,381	2,288	34	5,780	82	65	6	3	49	472	6,253
1971/72	2,089	1,413	2,469	38	6,009	81	55	4	6	34	431	6,439
1972/73	2,230	1,491	2,469	39	6,229	81	57	4	9	35	456	6,685
1973/74	2,321	1,513	2,884	30	6,748	91	77	5	12	43	508	7,255
1974/75	1,882	1,486	2,680	22	6,070	83	58	3	16	28	448	6,518
1975/76	2,416	1,691	3,274	24	7,405	94	66	3	23	21	501	7,906
1976/77	2,189	1,568	3,221	25	7,003	85	83	4	26	32	508	7,511
1977/78	2,433	1,592	3,808	29	7,862	87	79	4	42	29	549	8,411
1978/79	2,653	1,651	3,956	38	8,298	75	88	NA	35	46	554	8,852
1979/80	2,658	1,648	4,153	35	8,493	52	80	NA	21	52	205	8,698
1980/81[3]	2,675	1,666	4,228	43	8,610	46	71	NA	23	63	202	8,813

[1]Adjusted for exports of refined and further processed salad oil. Prior to January 1965 no adjustment made for exports of undeodorized hydrogenated oil. [2]Includes soap and other miscellaneous. [3]Preliminary.

Source: Bureau of Census, USA, Fats & Oils Production, Consumption & Stocks

Table C-5 United States Food Oil Consumption by Product

(million lbs)

Year	Soybean	Cotton seed	Corn	Coconut	Peanut	Palm	Palm K.	Saf-flower	Olive	Sesame	Vegetable Oil Total	Butter	Lard	Tallow	Animal Fat Total	Total	Per Capita Con-sumption (lb)	US Population
1950	1,446	1,445	223	129	103	-	26	-	79	4	3,455	1,327	2,050	156	3,533	6,988	45.9	152.3
1951	1,536	1,043	211	142	114	-	11	-	40	*	3,097	1,205	2,059	131	3,395	6,492	41.9	154.9
1952	1,911	1,218	201	191	84	1	11	-	45	*	3,663	1,090	2,054	144	3,288	6,951	44.1	157.6
1953	2,128	1,148	235	183	47	1	20	-	46	*	3,807	1,104	2,007	187	3,298	7,105	44.4	160.2
1954	2,002	1,725	232	204	57	16	32	-	61	*	4,329	1,187	1,776	230	3,193	7,522	46.1	163.0
1955	2,309	1,341	233	194	48	-	36	-	52	1	4,214	1,237	1,986	239	3,462	7,676	46.3	165.9
1956	2,155	1,252	254	226	66	-	42	-	45	*	4,040	1,231	2,113	276	3,620	7,660	45.4	168.9
1957	2,296	1,223	272	233	66	-	47	-	49	1	4,186	1,176	1,990	302	3,468	7,654	44.5	172.0
1958	2,824	1,028	269	253	62	-	47	-	53	1	4,537	1,182	1,974	308	3,464	8,001	45.7	174.9
1959	2,912	1,064	309	180	81	3	49	-	54	*	4,652	1,145	2,065	315	3,525	8,177	46.0	177.8
1960	3,011	1,225	310	172	62	1	53	-	51	1	4,886	1,113	1,889	328	3,330	8,216	45.5	180.7
1961	3,041	1,276	326	206	94	30	59	-	59	1	5,092	1,112	1,998	424	3,534	8,626	47.0	183.7
1962	3,275	1,239	343	267	62	29	70	40	58	1	5,384	1,131	1,959	407	3,497	8,881	47.6	186.5
1963	3,258	1,169	351	224	69	17	69	52	33	1	5,243	1,083	1,871	510	3,464	8,707	46.0	189.2
1964	3,739	1,348	412	254	58	11	67	38	67	1	5,995	1,097	1,704	538	3,339	9,334	48.7	191.8
1965	3,750	1,410	427	272	70	13	80	51	44	1	6,118	1,040	1,772	529	3,341	9,459	48.7	194.2
1966	4,296	1,217	396	346	144	52	65	84	49	1	6,650	911	1,645	533	3,089	9,739	49.6	196.5
1967	4,365	1,076	403	361	173	62	108	158	56	2	6,764	881	1,757	545	3,183	9,947	50.1	198.6
1968	4,734	981	404	368	200	77	98	69	63	1	6,995	957	1,861	549	3,367	10,362	51.7	200.6
1969	5,486	958	391	401	148	128	93	123	58	2	7,788	912	1,574	519	3,005	10,793	53.3	202.6
1970	5,843	974	414	343	153	113	78	80	62	2	8,062	888	1,456	533	2,877	10,939	53.4	204.8
1971	5,816	721	392	457	183	195	82	115	62	2	7,989	860	1,560	541	2,961	10,950	52.9	207.0
1972	6,206	760	405	411	179	248	96	111	67	2	8,485	843	1,048	528	2,419	10,904	52.2	208.8
1973	6,301	902	462	234	147	375	106	3	60	2	8,592	812	1,118	452	2,382	10,974	52.2	210.4
1974	6,506	778	385	69	132	331	110	-	53	3	8,367	776	1,157	514	2,447	10,814	51.0	211.9
1975	6,441	479	358	392	198	858	168	-	48	2	8,944	819	843	479	2,141	11,085	51.9	213.5

* less than 500,000 pounds

Source: U.S. Department of Agriculture

Table C-6 Margarine: Fats and Oils Used in Manufacture, United States, 1970-80

Year	Vegetable oils				Animal fats and oils	Total[1]
	Soybean oil	Cotton-seed oil	Peanut oil	Corn oil		
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
1970	1,410	68	.....	185	99	1,792
1971	1,385	63	.....	186	169	1,831
1972	1,461	65	.....	194	138	1,885
1973	1,491	63	.....	213	80	1,889
1974	1,457	58	.....	188	167	1,905
1975	1,568	46	1	188	52	1,917
1976	1,671	51	38	218	44	2,091
1977	1,585	44	15	243	80	2,026
1978	1,593	42	.....	211	74	1,997
1979	1,643	25	.....	222	86	2,018
1980[2]	1,651	25	.....	222	104	2,036

[1] Includes small quantities of peanut oil, coconut oil, palm oil, and sunflower oil.
[2] Preliminary.

Economic Research Service. Compiled from reports of the U.S. Department of Commerce. Totals computed from unrounded numbers.

Table C-7 Shortening: Fats and Oils Used in Manufacture, United States, 1966-80

Year	Vegetable oils							Animal fats		Total primary and secondary fats and oils[1]
	Cotton-seed oil	Soybean oil	Coconut oil	Peanut oil	Corn oil	Palm oil	Other	Lard	Beef fats	
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
1966	370	1,734	38	(2)	(2)	38	8	491	491	3,192
1967	273	1,741	40	(2)	(2)	61	10	576	508	3,243
1968	248	1,842	41	(2)	(2)	72	4	601	487	3,326
1969	248	2,101	47	(2)	(2)	110	13	475	483	3,505
1970	276	2,182	45	(2)	(2)	n.a.	7	430	522	3,580
1971	168	2,047	56	(2)	(2)	171	11	529	517	3,510
1972	168	2,043	77	(2)	(2)	285	20	432	495	3,691
1973	199	2,268	86	(2)	(2)	333	29	341	442	3,719
1974	194	2,177	61	(2)	(2)	304	35	317	501	3,617
1975	154	2,025	106	(2)	(2)	758	69	165	458	3,751
1976	128	2,323	128	(2)	(2)	516	8	156	453	3,754
1977	160	2,279	78	(2)	(2)	416	9	185	548	3,700
1978	188	2,479	75	(2)	(2)	220	4	220	765	3,959
1979	168	2,680	93	(2)	(2)	222	3	316	713	4,217
1980[3]	189	2,660	103	(2)	(2)	183	n.a.	378	673	4,300

[1] Includes small quantities of corn, peanut, safflower, and sunflower oil. [2] Not included to avoid disclosure.
[3] Preliminary.
n.a. not available.

Economic Research Service. Compiled from reports of the U.S. Department of Commerce. Totals computed from unrounded numbers.

Source: USDA

Table C-8 Balance of Supply and Demand of United States Soybean and its Byproducts

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82*
(Soybean) (1 million bushels)						
Beginning Stock	245	103	161	174	359	318
Production	1,288	1,762	1,870	2,268	1,792	2,030
Total Supply	1,533	1,865	2,031	2,442	2,151	2,348
Domestic Extraction	790	927	1,018	1,123	1,020	1,060
Exports	564	700	753	875	724	850
Seed, Others	76	77	86	85	89	88
Total Demand	1,430	1,704	1,857	2,083	1,833	1,998
End Stock	103	161	174	359	318	350
(Soybean Oil) (1,000 short tons)						
Beginning Stock	355	228	243	267	226	163
Production	18,488	22,371	24,354	27,105	24,312	25,367
Total Supply	18,843	22,599	24,597	27,372	24,538	25,530
Domestic Consumption	14,056	16,276	17,720	19,238	17,597	18,100
Exports	4,559	6,080	6,610	7,908	6,778	7,200
Total Demand	18,615	22,356	24,330	27,146	24,375	25,300
End Stock	228	243	267	226	163	230
(Soybean Oil) (1 million pounds)						
Beginning Stock	1,251	767	729	776	1,210	1,736
Production	8,577	10,288	11,323	12,105	11,270	11,344
Total Supply	9,828	11,055	12,052	12,881	12,480	13,080
Domestic Consumption	7,514	8,269	8,942	8,981	9,115	9,450
Exports	1,547	2,057	2,334	2,690	1,629	2,200
Total Demand	9,061	10,326	11,276	11,671	10,744	11,650
End Stock	767	729	776	1,210	1,736	1,430

* Estimate as of March 11, 1982

Source: U.S. Department of Agriculture

demand for meat, and the resultant increase in demand for soybean meal for use in protein feed boosted oil extraction. Competing cottonseed and linseed meal are produced as byproducts of each oil, and therefore their supplies are affected by the movements of demand for their main products (i.e. oil). In the past, the increased demand made by the feed industry for high protein oil meal was met for the most part by boosting supplies of soybean meal. In 1980/81, reflecting a sharp rise in material prices caused by production cuts and a lowered demand for soybean meal resulting from the worldwide recession, oil extraction decreased by about 10% over the previous year to 27.61 million tons (Table C-8). However, the trend toward growth of demand for soybean meal as materials for protein feed is considered to continue in the future.

2. India

India is a major soybean oil consuming country after the United States and Brazil, and recent consumption has been around the 700,000 ton level (Table C-2). Only 10% of India's consumption is produced domestically; the rest is imported (Appendix Table 1). Major trade partners are the United States and Brazil. These two exporting countries compete in Indian market. The share of the United States decreased drastically in 1981 due to the defeat in price competition and the share of Brazil rose to 83% of the total import.

Table C-9 United States and Brazilian Soybean Oil Shipments to India

(1,000 MT)

	1981	1980	1979
USA	91.7	366.4	225.2
Brazil	561.0	250.3	240.2

Source: Oil World

India is a major producer of such oilseeds as peanut, rapeseed and cottonseed, but the recent faltering production of these crops has made the country the biggest importer of vegetable oil. Sharp increases in the imports of vegetable oil such as soybean oil and palm oil began in 1976/77, and facts explaining this are: a. an improved foreign currency situation, brought about by remittances

Table C-10 Indian Vegetable Oil Supply and Utilization, 1977-82

(1,000 tons)

	1977	1978	1979	1980	1981 Preliminary	1982 Forecast
PRODUCTION						
Soybean	22	26	33	46	70	78
Cottonseed	180	180	200	200	200	232
Peanut	1,319	1,366	1,441	1,340	1,169	1,349
Sunflowerseed	0	0	56	51	57	54
Rapeseed	564	578	558	430	674	800
Coconut	219	222	207	197	219	214
TOTAL	2,304	2,372	2,495	2,264	2,389	2,727
EXPORTS						
Palm	1	2	4	0	0	0
Peanut	3	5	3	0	0	0
TOTAL	4	7	7	0	0	0
IMPORTS						
Soybean	440	510	555	690	675	650
Peanut	35	10	0	0	0	0
Rapeseed	225	260	167	150	150	100
Coconut	5	10	5	3	70	50
Palm	460	486	398	555	450	425
Cottonseed	0	0	0	0	25	0
TOTAL	1,165	1,276	1,125	1,398	1,370	1,225
UTILIZATION *						
Soybean	462	536	588	736	745	728
Cottonseed	180	180	200	200	225	232
Peanut	1,351	1,371	1,438	1,340	1,169	1,349
Sunflowerseed	0	0	56	51	57	54
Rapeseed	789	838	725	580	824	900
Coconut	224	232	212	200	289	264
Palm	459	484	394	555	450	425
TOTAL	3,465	3,641	3,613	3,662	3,759	3,952

* Stock date are included in domestic utilization.

Source: Counselor and Attache reports, official statistics.

USDA, Foreign Agricultural Service Oilseeds Products

from overseas Indians; b. a policy aimed at a stable food supply in which the Government began emergency imports of food oil.

Soybean oil is highly substitutable with peanut, rapeseed and cottonseed oils, which are consumed in large quantities in India; most is used for eating, chiefly in vanaspati [1] (a mixture of 3 to 4 kinds of vegetable oils; solid at ordinary temperatures and used for frying). Since 1977, when imports increased substantially, soybean oil's percentage in vegetable oil consumption has been rising each year (Table C-10).

India's per capita oil consumption is estimated at about 6.4 kg [2] in 1982, extremely low compared with the level of over 25 kg of industrialized nations. Considering the size of its population (700 million), potential demand for oil is great. Increases in income levels, and increases in foreign currency revenue (which accelerate income increases) seem to be the prime factors affecting demand. The structure of consumption is different at each income level [3], and it is likely to take some time to raise the consuming power at the low income level, which represents the bulk of the population.[4]

3. Japan

Japan is a soybean oil consuming country, comparable to India, and recent consumption there has been around 650,000 tons (Table C-2). While India imports about 90% of its soybean oil consumption in the form of oil, nearly all of Japan's consumption is imported in the form of bean and is extracted in the country; about 5% of consumption is imported in the form of oil (Appendix Table 2).

Japan uses as much as 4.5 million tons of soybean, and most of it is made into oil; about 3.5 million tons, or about 80% of the total demand for soybean (Table C-12). Recently, however, the growth rate of demand for soybean for extraction has been decreasing. The growth of demand for soybean for extraction had been due to the demand for soybean meal for use in compound feed. Since 1980, however, production of compound feed has been declining, and the

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1) Composition of oils used in vanaspati is decided by the STC (State Trading Corporation) taking into consideration production and prices of major oils. Recently the government has banned the use of major domestic oils (peanut oil, rapeseed oil, etc.) for vanaspati production, and some vanaspati contains 80 to 90% imported soybean oil or palm oil. The kinds of oils used, the mixture ratio and the characteristics of vanaspati (or vegetable ghee) differ somewhat in each country (see Table C-11).

2) USDA, Foreign Agriculture Circular, FOP 13-81, July 1981, p. 18

(cont'd. on p.[1]-281)

Table C-11 Technical Specifications of Vanaspati/Vegetable Ghee

Country	Composition	Melting Point	Iodine value	Other
INDIA	5% sesame oil 95% hydrogenated vegetable oils	33°C—37° max.	—	Firm granular texture, no supernatant liquid
PAKISTAN	Hydrogenated vegetable oils	33°C—37°C (2°C tolerance)	—	Soft granular texture, some supernatant liquid
IRAN	Vegetable oils hydrogenated	37°C max.	70 min.	Smooth texture
IRAQ	Hydrogenated vegetable oils	37°C—42°C	—	Smooth texture
AFGHANISTAN	Vegetable oils	42°C	—	Granular
SINGAPORE	Vegetable oils with or without hydrogenation	31°C—55°C	—	—
MIDDLE EAST	One oil or mixture partly hydrogenated	36°C—42°C	—	Coarse or smooth
BAHRAIN	Palm oil/palm stearin	42°C—44°C	—	—

Source: PORIM (Palm Oil Research Institute of Malaysia), Food Uses of Palm Oil, 1981

percentage of soybean meal in feed has been reduced as well, resulting in a sluggish demand for meal. Consequently, soybean oil extraction has been stagnating. Perhaps, because of this, imports of soybean oil have been increasing since 1981.

As for uses of soybean oil, in 1981 food use accounted for 95% (or 620,000 tons) of the total and non-food (industrial) use was only 35,000 tons. In terms of food use, the uncombined oil (used for frying) was 456,000 tons, accounting for about 74% (Table C-13).

Table C-12 Japan's Supply and Demand of Soybean and Consumption by Use

(1,000 tons)

	1977	1978	1979	1980	1981	(Planning) 1982
Supply						
Beginning stock	(20) 340	(38) 301	(70) 529	(70) 501	(70) 660	(70) 603
Release from national stock	66	133	134	126	163	163
Imports	3,602	4,260	4,132	4,401	4,197	4,221
Loss (-)	-36	-43	-41	-44	-42	-42
Total	(38) 3,954	(70) 4,619	(70) 4,754	(70) 4,984	(70) 4,978	(80) 4,935
Demand						
Soy sauce	2,878	3,297	3,401	3,453	3,495	3,482
Food	552	565	572	578	585	589
Brewing	193	188	205	208	200	201
Feed	30	40	55	55	55	55
Exports	-	-	20	30	40	20
Total	3,653	4,090	4,253	4,324	4,375	4,347
End stock	(35) 301	(70) 529	(70) 501	(70) 660	(70) 603	(80) 588

Note : The figures in the parentheses in the upper part of Stock and Supply sections are stockpiled soybean in rounded figures.

Source: Ministry of Agriculture, Forestry and Fisheries, Food Oil Section, Government of Japan

Table C-13 Japan's Soybean Oil Consumption

(tons of crude)

	1971	1976	1977	1978	1979	1980	1981
Food	424,529	486,630	502,788	560,316	572,662	581,026	620,765
Unmixed oils	332,382	376,935	387,231	433,256	458,925	443,899	456,350
Margarine Shortening	42,599	51,702	52,592	58,047	51,062	64,326	69,616
Other Process	49,548	57,993	62,955	69,043	62,665	72,301	94,799
Non-food	20,000	25,000	30,000	30,000	35,000	35,000	35,000
Total	444,529	511,630	532,788	590,316	601,632	615,630	655,765

Source: Ministry of Agriculture, Forestry and Fisheries, Food Oil Section, Government of Japan

4. USSR

The USSR's soybean oil consumption has increased rapidly since 1976. It had been as low as 100,000 tons until 1975, but rose to 320,000 tons in 1976 and reached 500,000 tons in 1981 (Appendix Table 3).

In the USSR, soybean is the most important oilseed after sunflower and cottonseed, but recently production of these three oilseeds has been stagnating, increasing dependency on imports to meet the domestic demand for oil and oil meal. In the country's oilseed

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(footnote cont'd. from p.[1]-278)

3) Purchasing situation classified by income levels is shown below. (Some parts are assumed.)

Edible Oil Consumption by Income Level

Monthly income (rupee)	Job level	Place of oil purchase (assumed)
1. 1,000-5,000-	Management, Engineer, Skilled worker	Open market (peanut, sesame, mustard oil, ghee, butter) 12-30 rupee/kg
2. 500-700	College graduate initial wage earner, Unskilled worker, Driver	Open market (vanaspati - primarily made from imported palm, soybean and rapeseed oil) 12.5 rupee/kg
3. around 300	Menial worker, Maid, Sweeper	Fair price shop (chiefly imported palm oil, palm olein, rapeseed) 8.5 rupee/kg
4. 30-60	Low-level worker (e.g. prawn sheller), Unemployed	Unable to buy?

Source: JETRO, Oil in India

4) Sustaining the purchasing levels of the low income group, as well as providing consumers with food oil at a fair price, is the main task of food oil consumption policy in India. The organization called the STC (State Trading Corporation), mentioned before, implements policies on import and export and distribution of oil. The STC and the Fair Price Shop, which takes care of peripheral distribution, have been criticised for not functioning fully, but it is possible that their authority will be maintained.

imports, soybean (of which the meal can be used for making high-protein feed) holds an overwhelmingly high percentage. Although the volume of soybean imports varies from year to year, it accounts for more than 90% of total oilseed imports (Appendix Table 4). Major suppliers are Brazil, Argentina and the United States, but these countries' shares vary according to political circumstances (Table C-14): in 1980 when the United States set an embargo against the USSR, Argentina became the biggest supplier; and in July 1981 Brazil signed a five-year trade agreement (1982-1986) to export soybean, soybean oil and soybean meal in exchange for the USSR's petroleum.

Table C-14 USSR Imports of Soybean by Supplying Coutnty

(1,000 tons, %)

	1972	1973	1974	1975	1976	1977	1978	1979	1980
USA	400	500	0	15	425	795	844	1,698	317
	(100.0)	(78.0)		(3.9)	(24.0)	(58.3)	(92.2)	(96.2)	(29.2)
Brazil	0	156	0	349	1,344	569	30	68	101
		(22.0)		(96.1)	(76.0)	(41.7)	(3.2)	(3.8)	(9.3)
Argentina	0	0	0	0	0	0	33	0	667
							(3.6)		(61.5)
Total	400	705	0	363	1,769	1,364	906	1,765	1,085
	(100.0)	(100.0)		(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Note : Calender years

Source: USDA, USSR Agricultural Trade, 1972-1977
ISTA, Oil World, 1978-1980

Also, until 1977 the USSR's imports of soybean products were negligible, but in 1978 the country imported about 110,000 tons of soybean oil, and in 1979, 50,000 tons of soybean meal for the first time. It is estimated that the volume of soybean oil imports reached 200,000 tons in 1981, and soybean meal about 1 million tons. The trend of increasing imports of the three soybean products is likely to continue.

Behind the increase in soybean oil imports is the production decrease of oilseeds which resulted from unusual climatic conditions. Therefore, the Government has recently been trying to stabilize the vegetable oil supply by increasing imports. The volume of vegetable oil imports of 1980/81 was three times that of 1976/77. Now, more than 15% of the total supply of vegetable oil in the USSR depends on

import either of oilseeds or oils. Among these imports, that of soybean is dominant. More than half of the supply of soybean oil is by imports, either of soybean oil or soybean as the material. Considering that the USSR's soybean oil extraction capacity is limited, if production of sunflower continues to be sluggish and if vegetable oil supply policy is not changed substantially, imports are expected to expand as consumption increases. Since the USSR, like China, purchases soybean and soybean oil in large quantities at one time, such purchases often give confusion on the world market price.

Recent use of soybean oil in the USSR is not articulated by reports, but according to the FAO Food Balance Sheet (1975/1977), of the total consumption (237,000 tons) 47% (or 111,000 tons) was used for food and 53% (126,000 tons) was used for industrial purposes (Table C-3).

5. China

Soybean oil consumption in China is estimated to have been at the level of about 500,000 tons; about 100,000 tons is imported in the form of oil and 50,000 to 100,000 tons as beans (Appendix Table 5).

Today China produces around 8 million tons of soybean: much of this is used to make such foods as paste, curd and fermented beans, and 2-3 million tons is used for making oil. Soybean oil produced domestically, together with imported oil, is primarily consumed as food (Table C-3).

The Government is reportedly restricting consumption of soybean oil for cooking in an attempt to increase soybean's use as food and soybean exports (Appendix Tables 5 and 6).

6. EC Countries

Soybean oil consumption in the ten EC countries was about 1.5 million tons in the last 2-3 years. It grew at an annual rate of 7% for the 6 years from 1973 to 1979, increasing its share in the total oil consumption (excluding animal oil) from 20 to 27%. However, growth has slowed down recently (Appendix Table 8). The main reason for this is said to be that demand for livestock products was lowered by the recession and as a result demand for soybean meal decreased, bringing down the amount of oil extraction. Furthermore, EC nations tried to increase production of oilseed such as rapeseed and sunflower seed with a view to raising self-sufficiency in major oil materials (Appendix Table 7). In 1981 total imports of oil decreased by 5% over the previous year (Appendix Table 8).

The EC's soybean imports fell by 12% from 12.15 million tons in 1979 to 10.64 million tons in 1981. Even if re-exports are excluded, the decrease in this period was 11-12%. The reasons for this are, as mentioned before: a. production of oilseeds such as rapeseed increased substantially, from 16.57 million tons in 1979 to 25.69 million tons in 1981, and oil extraction from oilseeds produced in the bloc expanded sharply; b. import prices of the United States soybean became relatively high because of the dollar's appreciation; c. increase of export of soybean meal by Brazil and a rise in the price of soybean slashed extractors' margins. This situation is expected to continue, considering economic movements and the upward trend of rapeseed production.

As for suppliers of soybean and its products, EC purchases soybean from the United States, and the United States and Brazil are competing fiercely for sales of soybean oil and meal. The Netherlands and the Federal Republic of Germany serve as European distributors of soybean and soybean products imported from the United States and South America. Soybean oil extracted in factories in cities such as Rotterdam, and soybean meal imported from such countries as the United States, are shipped to Eastern Europe and the USSR.

As for uses of soybean oil, the FAO Food Balance Sheet shows that soybean oil is used for food in the United Kingdom, France and Italy; and that the Federal Republic of Germany also consumes most of its oil as food, and only a small quantity as non-food (industrial). Especially in the Federal Republic of Germany, soybean oil use in processed food accounts for more than half of the total consumption; soybean oil is used chiefly to make margarine (Table C-3).

Since eating habits and tastes vary with each country in the EC, the proportion that soybean oil occupies in each country's oil consumption differs. The major oil consumer in each country is different, depending on the kinds of oilseed produced there, but generally, olive oil and sunflower seed oil are consumed in the south; in the north, butter, rapeseed and fish oils are used because stock raising has historically been a major industry. Until the mid-1970s, while consumption of vegetable oil rose and that of animal oil declined, margarine showed a marked increase in the north. In countries such as Italy, olive oil is still favored. Since per capita consumption of margarine has been steadily decreasing recently, soybean oil consumption in the EC is considered to have reached the level of saturation (Table C-15).

Table C-15 Per Capita Consumption of Margarine in Major Countries

(Unit: kg)

	1977	1978	1979	1980*
UK	6.6(4.6)	6.9(4.9)	7.1(5.0)	7.7(5.7)
Netherlands	17.2(14.0)	16.8(13.7)	16.5(13.4)	16.1(13.1)
France	3.4(1.7)	3.4(1.8)	3.5(1.9)	3.6(2.0)
Germany, FR	8.7(6.8)	8.6(6.7)	8.3(6.5)	8.2(6.4)
Italy	1.2(0.5)	1.3(0.5)	1.3(0.5)	1.3(0.4)
Sweden	17.7(13.9)	17.4(13.5)	19.5(15.5)	19.1(15.3)
USA	5.2(4.0)	5.2(4.0)	5.2(4.0)	5.2(4.0)
Australia	7.9(6.3)	8.4(6.9)	8.3(6.8)	8.5(6.8)
Japan	1.7(0.6)	1.8(0.6)	1.9(0.7)	1.9(0.7)
Philippines	0.2(0.1)	0.2(0.1)	0.2(0.1)	0.2(0.1)
India**	0.9	1.0	1.0	1.1
USSR**	4.5	4.7	4.8	4.8

* Preliminary
** Oil World (per capita production)

Note : Figures in the parentheses are for home use.

Source: Japan Margarine Industrial Association Yearbook

7. Other Countries

Soybean oil consumption is increasing chiefly in such semi-developed countries as Taiwan and the Republic of Korea and in developing countries such as Egypt and Pakistan (Table C-2).

D. INTERNATIONAL TRADE AND PRICES

I. Situation of International Trade

After World War II, as the economies of Japan and European countries recovered and as diet diversified, world soybean trade expanded sharply, chiefly between these countries and the United States. In the early stages of the postwar soybean trade, the major exporting countries were the United States and China. However, while China continued to decrease its exports, Brazilian soybean entered the world market in the early 1970s, and the volume of world exports of soybean reached 20 million tons in 1977. In the late 1970s Brazil became an exporter of soybean oil and meal, reducing its exports of bean sharply; on the other hand, Argentina boosted its production of soybean and replaced Brazil as a major soybean exporting country. In the 1970s, Paraguay also increased production and exports of soybean (Table D-1). Meanwhile Brazil, with a policy of developing its oil processing industry, became an exporter, chiefly of soybean products (Table D-3).

Oilseed, especially soybean, is generally produced as a cash crop. Since the United States and South America produce soybean with the international market in mind, the proportion of exports in production is high for both producers. Exports of soybean and meal account for 63% (or 30.792 million tons) of production in the United states, 66% (or 9.987 million tons) in Brazil, and 93.5% (or 3.272 million tons) in Argentina (FAO data). Thus the percentage of exports is extremely high.

The world total of soybean exports was 26.747 million tons in 1981, and when EC nations' exports of 160,000 tons, regarded as re-exports, are subtracted, 26.587 million tons are actual exports. Combined exports from 4 nations (the United States, Brazil, Argentina and Paraguay) account for 98.3% (26.127 million tons) of the actual world total. It may be said that these 4 nations dominate world soybean exports (Table D-5). World exports of soybean oil in 1981 was 3.563 million tons (Table D-6), and soybean meal, 20.419 million tons (16.220 million tons when Western Europe is excluded, Table D-6). World soybean production in 1981 was about 87.9 million tons (FAO data), so world exports of soybean and its products accounted for about 60% of production. World soybean trade grew at an average of 8% a year from 1976 (19.757 million tons) to 1980 (26.880 million tons), but production growth (9% a year) scarcely changed. Export value of soybean also expanded from $4.3 billion in 1976 to $7.1 billion in 1980.

The export situation in each country is observed as follows: The United States exports more soybeans than oil and meal, and in the last three years, while exports of soybean have been increasing, those of oil have been on the decline (Appendix Table 10).

Table D-1 Volume and Value of Soybean Exports by Major Exporting Countries: 1966-1980

(1,000 MT, US$ million)

	USA	Argentina	Brazil	Netherlands	Paraguay	China	Canada	Singapore	Germany, FR	Belgium-Luxemburg	World Total
Exports											
1966	6,688	0	121	0	4	550	89	7	0	0	7,521
1967	7,170		305	0	1	565	65	9	0	0	8,142
1968	8,012	0	66	0	3	571	42	8	2	0	8,755
1969	8,473		310	2	1	488	20	7	0	4	9,332
1970	11,839		290	6	1	410	29	5	11	0	12,622
1971	11,521		213	5	12	460	34	7	10	0	12,332
1972	11,993		1,037	248	41	370	42	7	20	0	13,788
1973	13,222	1	1,786	66	53	321	27	8	45	0	15,622
1974	13,940	0	2,730	3	101	375	13	5	12	1	17,232
1975	12,496	0	3,333	95	102	355	10	5	14	0	16,459
1976	15,332	78	3,639	187	208	190	28	20	2	0	19,757
1977	16,196	613	2,587	116	241	122	38	30	0	0	20,004
1978	20,710	1,983	659	218	192	146	83	18	18	0	24,054
1979	20,904	2,810	638	332	347	305	47	14	3	16	25,471
1980	21,786	2,709	1,549	299	235	140	96	20	10	7	26,880
Value of Exports											
1966	760	0	13	0	0	72	10	1	0	0	861
1967	771		29	0	0	72	7	1	0	0	884
1968	810	0	6	0	0	73	4	1	0	0	900
1969	823		29	0	0	56	2	1	0	0	915
1970	1,216		27	1	0	49	3	1	1	0	1,301
1971	1,325		24	1	1	56	4	1	1	0	1,420
1972	1,508		128	33	4	48	6	1	3	0	1,733
1973	2,757	0	494	12	10	62	6	1	10	0	3,367
1974	3,537	0	586	1	15	88	4	1	2	0	4,246
1975	2,865	0	685	21	17	90	3	1	4	0	3,700
1976	3,315	16	788	36	32	38	7	4	0	0	4,253
1977	4,393	182	710	31	56	28	10	7	0	0	5,438
1978	5,210	455	170	54	38	31	21	4	4	0	5,998
1979	5,708	725	180	94	81	68	13	4	1	4	6,898
1980	5,883	650	394	84	42	32	30	6	3	2	7,133

Source: FAO, Trade Yearbook

Table D-2 Volume and Value of Soybean Imports by Major Importing Countries: 1966-1980

(1,000 MT, US$ million)

	Japan	Germany, FR	Netherlands	Spain	China	Italy	UK	USSR	Belgium-Luxemburg	Mexico	World Total
Imports											
1966	2,168	1,690	428	638	165	530	286		178	5	7,682
1967	2,158	1,601	443	813	351	594	253		232	5	8,278
1968	2,421	1,447	629	923	385	623	241		255	12	8,346
1969	2,591	1,398	917	1,027	472	607	323		256	16	9,378
1970	3,244	2,074	1,105	1,230	618	845	365		324	102	12,295
1971	3,212	2,096	1,209	1,311	525	858	307		349	68	12,701
1972	3,396	2,237	1,609	1,428	712	819	538	297	337	11	13,846
1973	3,635	2,837	1,269	835	756	888	780	705	447	42	14,675
1974	3,244	3,715	1,590	1,588	1,179	1,226	797		745	435	17,503
1975	3,334	3,464	1,282	1,737	854	1,217	754	349	698	22	16,313
1976	3,554	3,430	1,759	1,941	830	1,148	1,106	1,769	864	348	19,982
1977	3,602	3,372	1,691	1,835	985	1,179	1,131	1,384	813	520	19,621
1978	4,260	3,613	2,635	2,179	1,071	1,279	1,238	906	1,061	681	23,303
1979	4,132	3,673	3,288	2,237	1,664	1,706	999	1,765	1,004	519	26,009
1980	4,401	3,901	3,495	3,208	1,525	1,393	1,159	1,085	910	896	27,546
Value of Imports											
1966	272	197	49	79	20	60	35		21	1	919
1967	272	183	51	97	43	71	29		26	1	977
1968	274	154	66	103	44	69	26		26	2	916
1969	281	147	94	111	52	63	34		26	3	990
1970	366	223	129	140	74	88	41		35	12	1,360
1971	426	261	152	166	69	106	40		44	10	1,611
1972	475	287	210	198	97	107	72	39	44	2	1,853
1973	769	561	289	194	193	229	158	101	102	13	3,120
1974	881	913	397	438	325	330	202		194	99	4,569
1975	942	830	312	429	228	312	182	89	168	7	4,201
1976	842	755	376	427	191	256	243	429	191	114	4,568
1977	1,106	979	486	523	294	340	338	349	233	154	5,706
1978	1,144	909	666	562	273	339	334	230	270	174	6,056
1979	1,266	1,011	930	655	466	489	298	505	286	140	7,510
1980	1,321	1,114	995	911	462	394	346	311	262	255	7,990

Source: FAO, Trade Yearbook

Table D-3 Volume and Value of Soybean Oil Exports by Major Exporting Countries: 1966-1980

(1,000 MT, US$ million)

Country Year	Japan	Brazil	Spain	Netherlands	Germany, FR	France	Argentina	Belgium-Luxemburg	Portugal	Japan	World Total
Exports											
1966	387		0	14	20	3				3	510
1967	512		1	17	34	2		18		5	670
1968	427		4	21	37	1		21		4	608
1969	397		49	56	43	0		22	3	2	666
1970	674	2	86	86	69	29		27	5	13	1,120
1971	778	1	108	94	76	42		29	6	18	1,333
1972	587	60	58	125	63	59		29	1	4	1,103
1973	436	91	60	118	134	68	22	39	0	9	1,053
1974	758	2	59	197	241	81	38	78	0	3	1,546
1975	353	264	40	162	294	80	21	85	0	0	1,365
1976	506	498	125	164	226	80	64	101		2	1,836
1977	768	502	134	176	234	82	40	85		1	2,104
1978	914	504	273	291	216	127	66	131	3	1	2,607
1979	1,100	534	311	347	212	147	74	118	15	3	2,949
1980	1,067	744	369	345	198	132	100	85	19	17	3,197
Value of Exports											
1966	126		0	5	5	1		2		1	160
1967	143		0	5	9	1		5		1	182
1968	97		1	4	8	0		4		1	134
1969	95		9	11	10	0		5	0	0	150
1970	192	1	21	23	18	7		7	0	4	311
1971	245	2	32	30	24	13		10	1	6	422
1972	174	15	16	37	18	15		9	2	1	318
1973	150	33	15	47	51	22	11	16	0	3	377
1974	519	2	52	141	166	57	26	58	0	2	1,084
1975	266	154	25	124	204	56	10	62	0	0	948
1976	238	196	53	83	110	40	26	49	0	1	836
1977	440	283	76	109	146	48	23	53		0	1,232
1978	559	295	160	194	138	83	36	82	2	1	1,609
1979	747	334	204	242	148	107	45	82	11	2	1,991
1980	666	421	226	230	137	87	58	59	13	13	2,001

Source: FAO, Trade Yearbook

Table D-4 Volume and Value of Soybean Oil Imports by Major Importing Countries: 1966-1980

(1,000 MT, US$ million)

Country Year	India	Iran	Germany, FR	Pakistan	China	Morocco	Turkey	France	E.Germany	Colombia	World Total
Imports											
1966	33	30	8	30	1	10	9	3	33	20	519
1967	52	12	5	28	5	5	0	8	31	7	557
1968	36	29	10	29	1	30	0	13	21	5	553
1969	84	32	33	53	1	6	0	19	19	5	680
1970	79	97	43	118	6	39	8	37	16	7	1,037
1971	77	95	42	121	7	65	26	44	21	5	1,308
1972	66	117	27	45	15	34	33	40	72	7	1,118
1973	73	93	23	62	86	44	2	47	26	7	1,046
1974	19	179	37	124	1	64	6	85	19	7	1,490
1975	4	148	25	63	21	77	69	90	9	7	1,374
1976	53	219	33	102	16	85	63	93	38	32	1,633
1977	300	205	52	161	149	131	11	91	52	40	2,107
1978	370	288	96	134	134	126	29	110	50	48	2,45
1979	567	251	96	210	106	150	81	109	64	93	2,89
1980	681	319	146	134	125	107	102	94	89	79	3,19
Value of Imports											
1966	12	10	2	10	0	3	2	1	8	6	162
1967	20	3	1	7	2	2	0	2	7	2	165
1968	12	8	2	6	0	6	0	3	5	2	168
1969	24	7	6	9	0	1	0	4	4	2	157
1970	28	31	11	13	2	11	2	10	4	3	286
1971	28	35	13	28	2	21	9	15	7	2	426
1972	26	40	8	20	5	10	11	13	20	3	356
1973	31	42	9	19	30	17	1	19	10	4	389
1974	11	161	27	63	1	49	6	61	12	5	1,050
1975	3	157	18	46	22	49	51	72	6	4	1,079
1976	34	108	15	44	14	38	36	46	22	14	841
1977	202	142	30	86	113	71	7	57	34	23	1,280
1978	227	203	60	88	108	77	22	72	35	26	1,618
1979	454	191	66	141	93	100	65	77	48	57	2,137
1980	510	223	90	94	105	69	67	64	61	52	2,239

Source: FAO, Trade Yearbook

Table D-5 Soybean: World Exports and Imports

(1,000 tons)

Exports	1982	1981	1980	1979
Belgium-Lux.	12*	1	7	16
Denmark	1*	.	3	.
France	. *	.	6	1
Italy	. *	.	.	.
Netherlands	164*	153	299	332
U.K.	. *	.	.	.
West Germany	29*	6	10	3
EEC	206	160	327	353
Austria	. *	.	.	.
Sweden	. *	.	.	.
West Europe	206	160	327	353
Bulgaria	5*	5*	5	30
Romania	- *	- *	- *	- *
Canada	84*	120	96	47
U.S.A.	25523*	21860	21787	20905
Argentina(a)	1968*	2207	2700	2810
Brazil	491*	1450	1550	638
Paraguay(b)	540*	610	307	392
Uruguay	22*	22	10	6
China,PR	300*	280*	290*	288*
Hong Kong	8*	2	2	3
Japan	. *	-	.	-
West Malaysia	2*	9	-	-
Singapore	15*	13	20	14
Thailand	4*	3*	3	10
Australia	3*	-	.	.
Other ctrs	8*	7*	5*	8*
Total	29177	25747	27101	25594

Imports	1982	1981	1980	1979
Belgium-Lux.	1599*	1221	913	1004
Denmark	185*	210	299	466
France	907*	564	868	859
Greece(c)	176*	157*	202*	134*
Ireland	5*	4	4	1
Italy	1471*	1184	1393	1706
Netherlands	2997*	3050	3495	3288
U.K.	1263*	1151	1159	999
West Germany	3752*	3034	3902	3673
EEC	12355	10575	12234	12150
Austria	1*	1	.	1
Finland	117*	94	112	96
Norway	298*	345	332	316
Portugal(c)	487*	258*	260	229
Spain	3185*	2970	3214	2237
Sweden	4*	3	3	3
Switzerland	57*	62	82	66
West Europe	16505	14309	16237	15097
Bulgaria	- *	22*	.	.
Czechoslovak	29*	19	37	18
GDR/E Germany	20*	31*	95*	46*
Poland	111*	108	278	202
Romania(e)	252*	81*	273*	329*
Yugoslavia	168*	228	205	243
U.S.S.R.	1555*	1396	1085	1765
Egypt(e)	53*	19*	- *	53*
Morocco	39*	11	24	29
Canada	440*	374	477	351
U.S.A.	6*	8	6	.
Jamaica	78*	53	73p	72
Mexico	649*	1477	997	578
Brazil	1275*	933	461	214
Venezuela	68*	60*	44	42
China,PR(e)	332*	628*	576*	560*
Hong Kong	28*	21	22	21
Indonesia	325*	336*	195	177
Iraq(e)	- *	- *	10*	24*
Israel	380*	470	402	383
Japan	4373*	4197	4401	4132
Korea,South	600*	494	543	428
Lebanon(e)	40*	65*	65*	89*
West Malaysia	180*	176	87	25
Philippines(e)	17*	47*	25*	. *
Singapore	36*	26	83	62
Taiwan	1180*	1113	939	1104
Thailand	14*	-	15	.
Australia	11*	41	23	.
Other ctrs	55*	50*	48*	35*
Total	28816	26793	27729	26080

(a)Junta Nacional de Granos data. (b)Incl. unregistered shipments to Brazil (70 000 T in 1980 and 388 625 T in Jan/Dec. 1981). (c)An asterisk indicates an estimate of this office, as the official data are obviously too small. (e)Exports of known supplying countries, considering one month shipping time.

Source: Oil World

Table D-6 Soybean Oil: World Balance

(1,000 tons)

	Jan Dec 1982F	Jan Dec 1981	Jan Dec 1980	Jan Dec 1979	Jan Dec 1978
Opening stocks					
EEC	170*	244*	221*	131*	152*
Oth.W.Europe	93*	125*	71*	82*	69*
U.S.S.R.	9*	12*	10*	7*	11*
Canada(b)	8	11	5	3	3
U.S.A.	918	788	467	440	390
Argentina(b)	38	30	11	19	13*
Brazil(c)	320*	457*	300*	310*	215*
India	100*	95*	80*	90*	75*
Japan(b)	17	12	26	17	14
Oth.countries	243*	271*	204*	178*	157*
Total	1916	2025	1395	1277	1098
Production					
EEC	2102*	1824*	2075*	2062*	1924*
Oth.W.Europe	760*	698*	681*	529*	514*
East Europe	182*	198*	219*	211*	159*
U.S.S.R.	304*	255*	293*	253	221
Canada	172*	149	170	138	125
U.S.A.	5051*	5126	5487	5218	4918
Mexico	245*	262*	256*	199*	180*
Argentina(d)	234*	172	135	114	107
Brazil(e)	2385*	2655*	2323	1701	1703
China,PR	795*	645*	557*	518*	481*
India	77*	68*	57*	39*	25*
Japan	651*	634	618	621	598
Taiwan	179*	173	161	175	148
Oth.countries	403*	368*	348*	289*	238*
Total	13541	13226	13412	12066	11241
Imports					
EEC	506*	455	477	449	437
Oth.W.Europe	113*	110*	122	130	121
East Europe	155*	201*	205*	106*	112*
U.S.S.R.	215*	101*	83*	24*	3
Morocco	150*	120*	107	149	126
Canada	5*	4	12	22	28r
U.S.A.	.*	.	.	.	6
Mexico	97*	5*	42	.	38r
Brazil	12*	-	50	77	-
China,PR(f)	31*	54*	120*	116*	134*
India(f)	500*	635*	658*	556*	488*
Iran(f)	229*	302*	255*	249*	279*
Japan	51*	29	.	.	.
Pakistan(g)	245*	242*	219*	279*	203*
Taiwan	- *	.	.	.	-
Oth.countries	1154*	1177*	1020*	823*	707*
Total	3462	3437	3330	2981	2662
Exports					
EEC	878*	849*	876	918	839
Oth.W.Europe	515*	481	407	343	284
East Europe	16*	18*	18*	16*	7*
Canada	23*	11	14	10	1
U.S.A.	1056*	819	1096	1129	929
Argentina	178*	70	92	81	66
Brazil	658*	1281r	744r	534r	504
China,PR(h)	- *	. *	- *	4*	6*
Japan	2*	1	17	3	1
Oth.countries	43*	34*	37*	11*	12*
Total	3370	3363	3301	3049	2650
Disappearance (a)					
EEC	1754*	1505*	1653*	1503*	1543*
Oth.W.Europe	382*	350*	341*	327*	337*
East Europe	321*	381*	435*	300*	265*
U.S.S.R.	502*	359*	374*	274*	228*
Morocco	150*	120*	107	149	126
Canada	151*	145	162	148	152r
U.S.A.	4372*	4177	4070	4062	3844
Mexico	342*	267*	298*	199*	218*
Argentina	70*	94	24	42	36*
Brazil	1658*	1501*	1492*	1254*	1105*
China,PR	826*	599*	678*	630*	609*
India	627*	699*	711*	605*	499*
Iran	229*	302*	255*	249*	279*
Japan	699*	657	615	609	594
Pakistan	245*	242*	219*	279*	203*
Taiwan	179*	173	161	175	148
Oth.countries	1495*	1538*	1254*	1075*	912*
Total	14001	13209	12666	11680	11095
Ending stocks	1548	1916	2025	1395	1277

(a)Residual of the balance. (b)At mills only. (c)Mill stocks as reported by the Syndicates plus estimated stocks outside mills. (d)All numbers with "*" for past periods are estimated as official data are obviously incomplete. (e)Reported output of Syndicate members plus about 0.8% for non-members plus est'd. output from imported beans. (f)Exports of known supplying countries, considering one month shipping time. (g)Since Jan 1978 estimated on the basis of the exports of the known supplying countries, considering one month shipping time. (h)Imports into known importing countries, considering one month shipping time.

Source: Oil World

Table D-7 Soybean Meal: World Exports and Imports

(1,000 tons)

Exports	1982	1981	1980	1979
Belgium-Lux....	957*	746	478	481
Denmark.....	1*	2	26	48
France.....	21*	11	9	9
Greece.....	8*	7	- *	2*
Ireland.....	1*	6	8	1
Italy.....	45*	15	45	13
Netherlands....	1616*	1721	1740	1535
UK	10*	7*	8	18
West Germany(a)	1795*	1381	1255	1010
EEC.....	4454	3895	3567	3116
Norway.....	140*	148	169	141
Portugal.....	31*	.	.	.
Spain.....	278*	152	15	2
Sweden.....	- *	4	1	3
West Europe....	4902	4199	3752	3262
GDR/E Germany(b)	4*	1*	3*	12*
U.S.S.R.(b)....	- *	- *	1*	- *
Canada.....	48*	51	78	23
U.S.A.....	6359*	6344	7024	6087
Argentina.....	939*	521	290	347
Brazil(c).....	7884*	8904	6582	5176
Paraguay.....	18*	18	73	34
Uruguay.....	3*	3	19	9
China,PR(b)....	118*	111*	26*	12*
India.....	127*	110*	95*	44
Israel.....	31*	38	41	39
Japan.....	8*	.	1	1
Korea,South....	9*	5*	25	5
Singapore.....	35*	35	111	124
Other ctrs.....	90*	80*	92*	67*
Total.....	20575	20419	18213	15241

Imports	1982	1981	1980	1979
Belgium-Lux....	666*	601	652	471
Denmark.....	1151*	1063	846	716
France.....	3492*	3261	2765	2558
Greece(d).....	19*	7	6	11
Ireland.....	255*	226	214	254
Italy.....	1218*	1405	1190	1226
Netherlands....	1403*	1371	1157	839
U.K.....	966*	719	626	555
West Germany...	2214*	2298	1969	1813
EEC.....	11384	10560	9425	8441
Austria.....	438*	393	388	360
Finland.....	- *	-	-	.
Norway.....	- *	.	12	1
Portugal.....	114*	289	220	171
Spain.....	127*	110	53	380
Sweden.....	268*	225	209	235
Switzerland....	33*	34	15	32
West Europe....	12365	11612	10322	9621
Bulgaria.....	199*	230	184	136
Czechoslovak...	640*	720*	680*	585*
GDR/E Germany..	990*	920	806	890*
Hungary.....	500*	618	618	620
Poland.....	670*	1148	1144	938
Romania.....	180*	645*	385*	320
Yugoslavia.....	189*	178	148	90
U.S.S.R.(a)....	1558*	1071*	346*	52*
Algeria(e).....	93*	67*	50*	61*
Egypt.....	100*	40*	38	8
South Africa(e)	82*	12*	- *	- *
Tunisia(e).....	153*	93*	77*	44*
Canada.....	387*	390	404	465
Cuba.....	140*	135*	125*	75*
Dominican Rep..	52*	50*	38	31
El Salvador(e).	30*	32*	18*	21*
Guatemala ...	25*	28*	21*	15*
Mexico(e).....	33*	132*	172*	151*
Trinid/Tobago..	47*	33	30	32
Chile.....	38*	38*	40*	27
Peru(e).....	29*	33*	25*	- *
Uruguay.....	6*	4	4	-
Venezuela(e)...	519*	402*	329*	272*
India(e).....	1*	9*	- *	- *
Indonesia(e)...	130*	170	27	28
Iran(e).....	251*	175*	150*	119*
Iraq(e).....	75*	93*	31*	78*
Israel(e).....	- *	1*	- *	5*
Japan.....	76*	214	326	283
Korea,South....	140*	56*	5	152
West Malaysia..	65*	31	121	137
Pakistan(e)....	- *	1*	- *	- *
Philippines....	355*	244	227	114
Saudi Arabia(e)	51*	58*	42*	36*
Singapore.....	158*	131	208	201
Syria(e).....	86*	40*	35*	41*
Taiwan	- *	. *	10*	. *
Thailand.....	190*	143	155	59
Australia.....	10*	5	19	5
Other ctrs.....	350*	240*	210*	180*
Total.....	20954	20243	17568	15872

(a)Including deliveries to the GDR. (b)Imports into known importing countries, considering one month shipping time. (c)From Jan 1982 : revised series, now representing SGS actual data (up to Dec 1981 : CACEX data of export licenses). (d)Refers to all oilseed meals, but imports of meals other than soya are small. (e)Exports of known supplying countries, considering one month shipping time.

Source: Oil World

The United States' exports of soybean expanded by 4.5% from 20.89 million tons in 1979 to 21.83 million tons in 1981. Geographically, the growth of exports to North America (especially Mexico), to Europe (the Benelux countries and the Federal Republic of Germany grew sharply) and to Asia (Japan and China are increasing) is marked. The Netherlands is the biggest importer of United States soybeans: exports to the Netherlands were 4.235 million tons in 1979, 5.392 million tons in 1980 and 4.394 million tons in 1981 (Appendix Table 10).

Figures for imports to the Netherlands from the United States, released by the former are: 2.678 million tons in 1979, 2.902 million tons in 1980 and 2.803 million tons in 1981; the differences between these and American figures (1.557 million, 2.490 million and 1.591 million) are too large even if time lag is taken into account. The cause of this is thought to be the grain export watchdog system used in the United States.

Japan is the most stable market for the United States' soybean. Recently, 3.7 to 4 million tons of soybean have been exported annually; 600,000 to 700,000 tons of that is food soybean. There are differences between the Federal Republic of Germany's imports of the United States' soybean (1.3 to 2.0 million tons in the last 3 years, USOA data) and the export figures released by the United States, but contrary to the case of the Netherlands, the United States' figures are lower (1.482 million, 1.441 million and 1.279 million). The reason seems to be that bean is unloaded at oil extraction mills along the Rhine River via the Netherlands. Spain is the fourth biggest importer of United States' soybean, buying 1.7-1.9 million tons every year. Countries that import more than 1 million tons of United States' soybean are the Benelux countries and Taiwan; exports to Mexico have been also increasing recently. United States' exports to the USSR grew from 310,000 tons in 1975 to 1.817 million tons in 1979, but in 1980, due to export restrictions, they fell to 179,000 tons, and in 1981 to 34,000 tons because of the USSR's effort to reduce dependency on the United States for agricultural products. The export price of the United States' soybean rose by 3.8%, from $272.91 per ton in 1979 to $283.35 per ton, but considering inflation, the real price is thought to have gone down.

United States' exports of soybean oil decreased by 27.5% in the last three years, from 1.129 million tons in 1979 to 818,000 tons in 1981. This is because of the decline of exports to Asia. Exports to Asia accounted for 56% (630,000 tons) of the United States' soybean oil exports in 1979, and 59% (648,000 tons) in 1980. In 1981, however, they fell to 371,000 tons, down 277,000 tons from the previous year, and their percentage share of the United States' soybean oil exports dropped to 45%. Exports to Pakistan and Japan rose over the last three years, but those to India fell and there have been no exports to Iran since 1980 (Appendix Table 10).

The export structure of Brazil, the world's second biggest producer, is the reverse of that of the United States: the country exports less soybean than soybean products. Brazilian soybean and soybean products are competing with those of the United States in the export markets. Brazil's volume of soybean exports fluctuates widely, depending on harvest. The destination of exports is mostly Europe, and since the United States effected an embargo against the USSR, Brazil's exports to the USSR increased more than tenfold, from 45,000 tons (7.1% of the country's total soybean exports) in 1979 to 497,000 tons (34.3%) in 1981. Brazil's soybean exports increased from 639,000 tons in 1979 to 1,450,000 tons in 1981. The soybean oil (including refined oil) is exported mainly to Asia, especially Iran and India; exports to Iran tripled from 68,000 tons (or 12.7% of the total soybean oil exports) to 228,000 tons (or 17.8%) in 1981, and India more than doubled its purchases from 241,000 tons (45.1%) to 561,000 tons (43.8%). It should be noted that the increase in Brazil's exports to both Iran and India resulted from political friction between these two countries and the United States (Appendix Table 11).

Argentina's exports of soybean fell, chiefly because its soybean oil extraction industry has developed, from 2.810 million tons in 1979 to 2.207 million tons in 1981 (a 21.5% decrease). Due to the country's geographic location soybean is mostly exported to Europe. However, after the United States effected an embargo against the USSR, exports to the USSR increased, from zero in 1979 to 747,000 tons in 1980 (27.6% of the total soybean exports). Although they dipped slightly to 717,000 tons in 1981, their share of exports rose to 32.5%. In addition, the premium placed on Argentine soybean shipped to the USSR was reported to be considerably higher than that on bean shipped from the United States. Despite the increased volume of domestic processing, soybean oil exports declined from 81,000 tons to 70,000 tons (by 13.6%) over the 3 year period between 1979 and 1981, since domestic consumption has recently been rising sharply (Appendix Table 12). The proportion of bean in exports should decline further in the future while soybean products, especially meal, will be the main exports.

Meanwhile, world soybean imports grew by 2.7%, from 26.08 million tons in 1979 to 26.793 million tons in 1981, but when re-exports from Western Europe are excluded, the growth rate is a little higher (3.5%) (Table D-5). The major soybean importing regions are Western Europe and Japan. According to Oil World data, the two regions account for 69% (or 18.506 million tons) of world soybean imports in 1981. The percentage share of developing countries, including Mexico and Brazil, is 20.6%, and increasing; the USSR and Eastern Europe account for 7% and the rest (3.4%) goes to such developed countries as Canada. This illustrates that soybean is a product consumed mostly in industrialized nations, which consume a large quantity of livestock products.

II. Prices

According to Oil World, the price of soybean oil is determined by a. price of soybean, b. demand for soybean meal and soybean oil, and c. stocks of soybean meal and soybean oil.[1] The price of soybean oil is also affected by the movement of the prices of substitute oils, but basically, the factors mentioned above, especially the price of soybean (the material for soybean products) determines the price. The same can be said of the price of soybean meal. It is assumed that as far as the Chicago market price is concerned, where world soybean prices are standardized, price movements of soybean oil and soybean meal nearly equal those of soybean.[2] Appendix Table 13 shows price relationships of the three soybean products at the Chicago exchange, and general price levels of soybean oil and soybean meal can be derived from the table (the list does not include extraction margin, so generally 15 to 20 cents per bushel, or per 27 kg, should be added to the price of soybean to obtain the price of soybean oil and soybean meal). When the shifts in price of the three soybean products in the Netherlands are compared, a similar trend can be seen for all three.

The Chicago market is affected by a wide variety of factors such as economic and political situations, natural conditions and speculation. However, it can be said that balance of supply and demand of soybean is the prime factor that regulates price levels. Nevertheless, both supply and demand are affected by price levels; hence their behavior is complex.

In the United States the proportion of stock [3] to disappearance

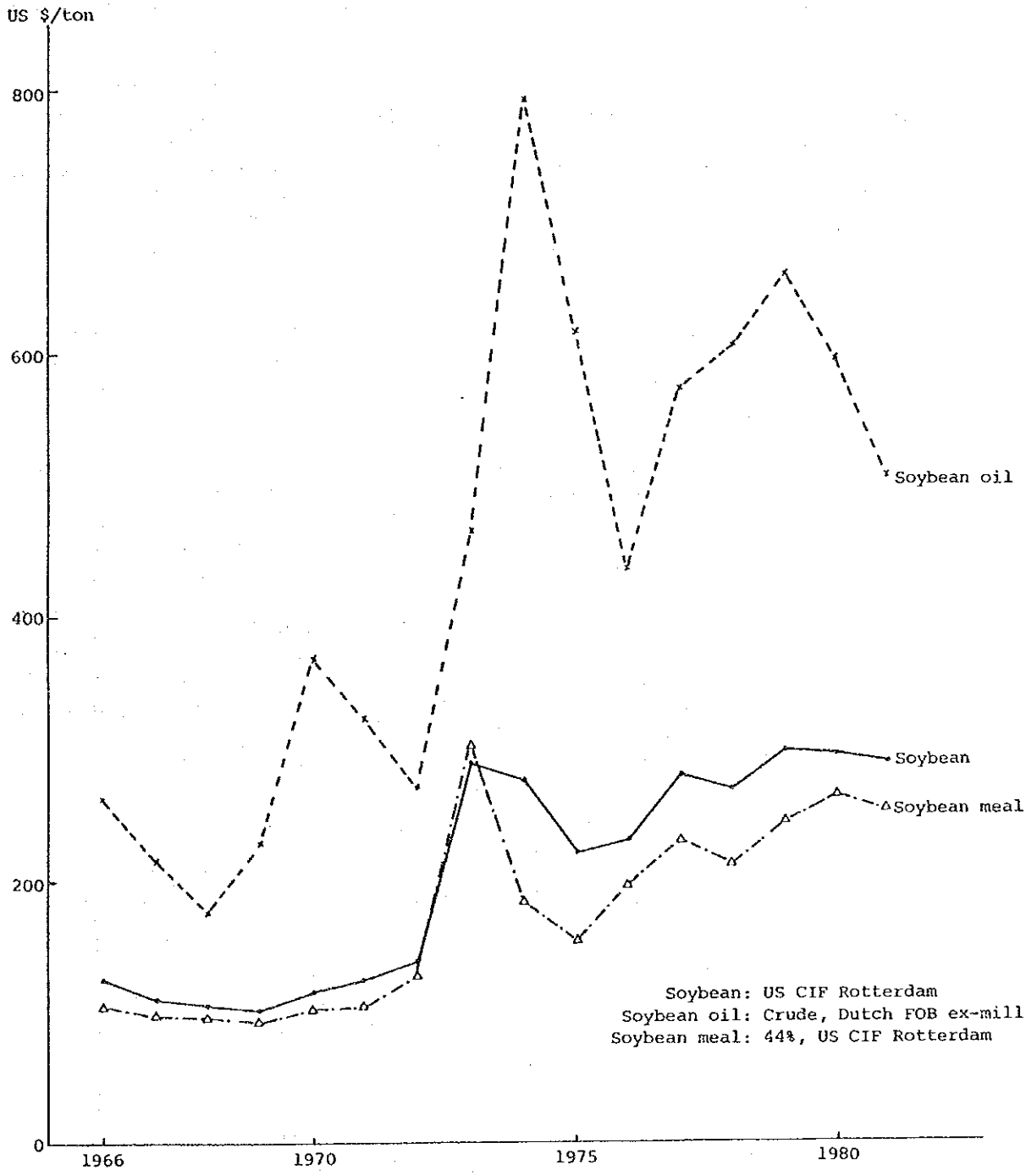
1) Oil World, October 29, 1982
2) Tozo Tsuchiya, Analyzing Method of Chicago Soybean Market, 1981 (in Japanese)
3) Stocks of United States soybean are surveyed four times each year by USDA (on Jan. 1, Apr. 1, June 1 and Spt. 1) and data is released for "stocks in all positions".

Stocks of US soybean (1,000 tons)

	Jan. 1	Apr. 1	June 1	Sept. 1
1970	28,739.5	19,976.1	18,967.8	6,259.5
1971	25,718.6	16,764.7	7,647.5	2,694.3
1972	24,194.5	15,022.9	6,341.9	1,959.5
1973	23,595.8	13,716.6	4,871.6	1,632.9
1974	31,569.9	20,057.7	9,307.7	4,653.8
1975	26,943.2	17,826.1	9,715.9	5,116.5
1976	34,209.8	23,623.0	15,104.5	6,667.8
1977	28,086.3	16,819.1	9,144.4	2,803.2
1978	36,114.8	23,133.1	13,771.0	4,381.7
1979	37,883.8	23,949.6	14,315.3	4,735.5
1980	48,198.5	32,195.8	21,091.9	9,770.3
1981	41,612.3	28,140.7	18,615.3	

Source: USDA

Fig. D-1 Price Shift of Soybean, Oil and Meal
(Current price, 1966 - 1981)



Source: Oil World

is used as an indicator of the supply-demand balance. When ending stocks (production minus consumption) are used, the minimum proportion the indicator requires is, by general consensus, 5%; more than 5% indicates a tight balance, more than 10% a sufficient supply, and more than 15% an oversupply.[1)]

When this stock disappearance proportion and the shift of Chicago's actual soybean price are compared, it can be seen that the market price of United States soybean correlates highly with the supply-demand balance over both long and short terms. As far as the soybean price is concerned, the proportion of ending stock to yearly consumption is more important than the absolute figures for production, consumption and stocks, and is said to be the prime factor affecting price.

As described above, the prime factor regulating price levels is the supply-demand balance; and supply and demand, which determine the balance, are affected by various factors. Each factor influences the price levels of soybean.

1) An indicator considered effective in forecasting the price levels in the Chicago soybean market is the ratio of stocks on April 1 (the middle of the soybean crop year) to disappearance (including exports) from September to March. A ratio under 80 indicates short supply, under 90 means supply and demand is tight, over 90 means supply and demand is soft, and over 100 indicates an oversupply (see the table). This is because the ending stocks/yearly disappearance ratio cannot be used in forecasting because it may become zero or negative. Raising any such proportion likely to become zero or less than zero to almost 5% is the function of price in supply and demand adjustment. This process is called "rationing", which means the restriction of each customer's share of the limited supply by the expedient of high prices.

United States Soybean Stocks (Apr. 1) /Disappearance (Sept.-Mar.)

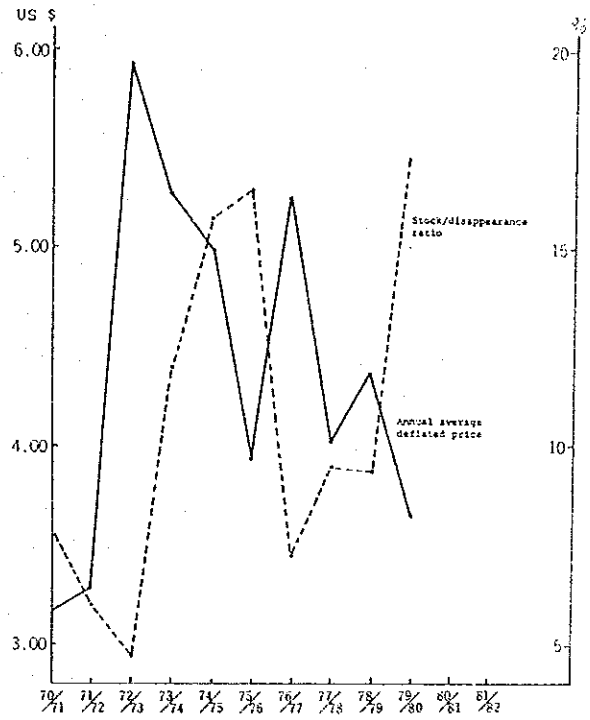
(1,000 tons)

	Stocks as of Apr. 1	Extraction and exports (Sept.-Mar.)	Proportion %
1970/71	16,764.7	19,459.0	86
71/72	15,022.9	18,805.8	80
72/73	13,716.6	21,772.3	63
73/74	20,057.7	22,289.4	90
74/75	17,826.1	18,941.9	94
75/76	23,623.0	23,214.7	102
76/77	16,819.1	24,004.0	70
77/78	23,133.1	26,072.4	89
78/79	23,949.6	30,481.2	79
79/80	32,195.8	33,801.5	95
80/81	28,140.7	30,318.0	93

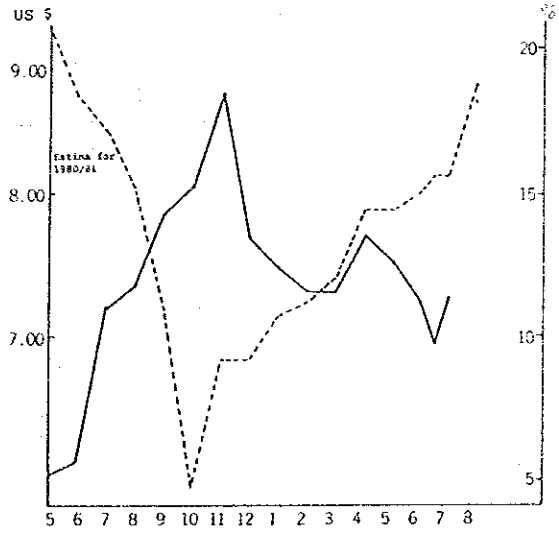
Source: Calculated from figures released by USDA.

Fig. D-2 US Soybean: Ending Stock/Disappearance and Chicago Price

a. Shift of Ending Stock/Disapperance and Average Yearly Price of Actual Chicago Soybean



b. Actual Chicago Average Monthly Price (full line) and Forecast of US Soybean Ending Stocks/Disappearance (dotted line)



Note: Ending stocks/yearly disappearance forecast (Fig. b) is calculated with the supply-demand forecast of every crop year released each month by USDA

Source: Tozo Tsuchiya, Analysis Methods of Chicago S ean Market, 1981 (in Japanese)

Concerning the Chicago market, the following are the primary factors affecting supply: a. planted area (farmers decide the planted area according to price levels (see Fig. D-3) —— if the soybean price per bushel is more than 2.5 times that of corn, a competing crop, soybean, is profitable; b. weather; c. production cost; d. soybean production in South America; e. production movement of substitute oil materials (mainly, sunflower seed in the USSR and Eastern Europe, rapeseed in Canada, palm oil in Malaysia), and oil meal materials (peanut in India and anchovy in Peru); f. farm policy (policies affecting soybean are the price support program carried out in the 1960s, and the export subsidy system for soybean oil under PL 480; but other factors such as the production adjustments of competing crops like corn, wheat and cottonseed, the shortage payment system, and the farmers' stockpiling system, also have indirect effects).

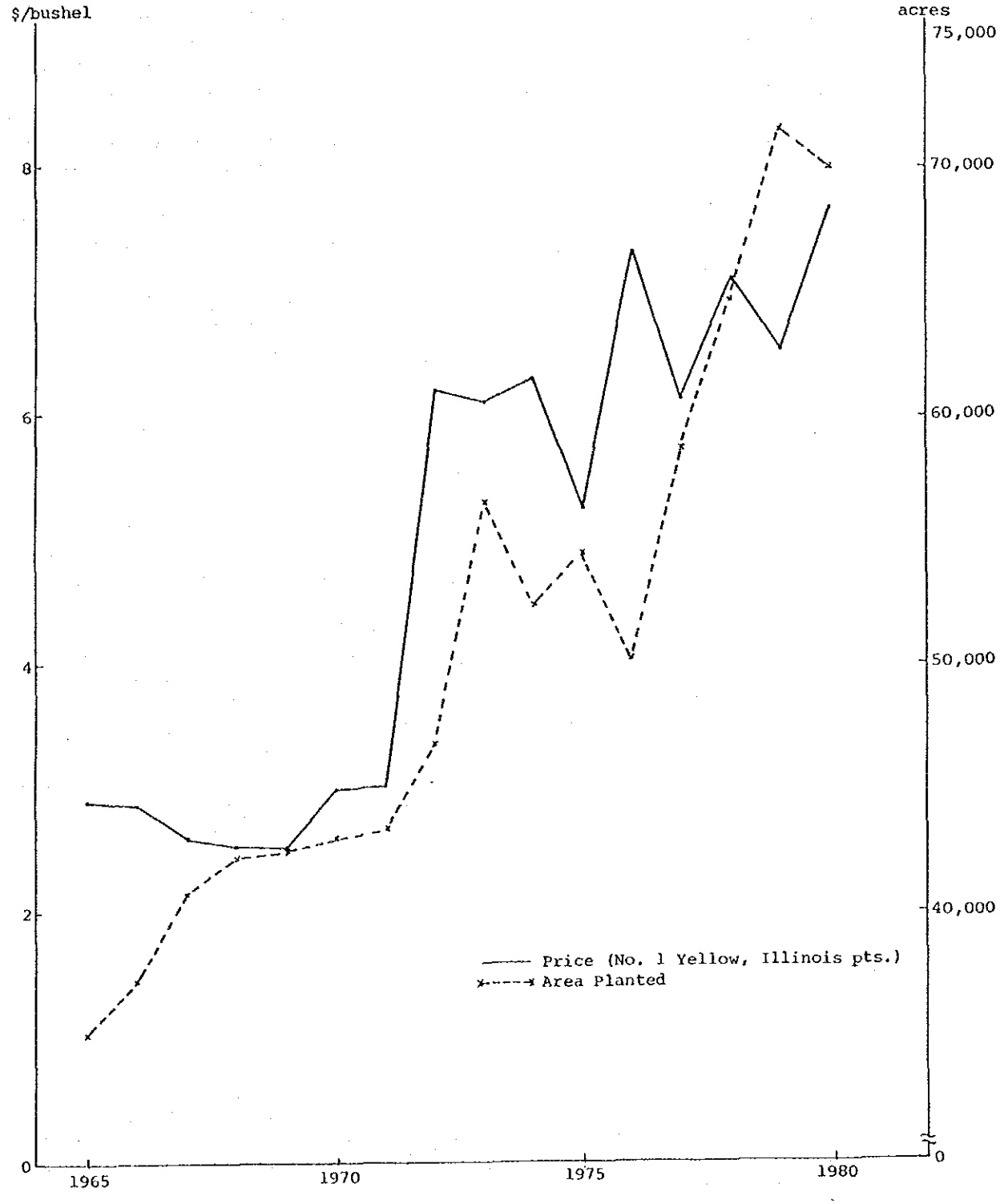
Factors influencing demand are: a. movements of the prices of substitute oil materials and grain; b. production and imports of grain and oilseeds by the planned economies [the USSR's poor crop in 1972 and subsequent mass purchase doubled the soybean price in 1973 (see Fig. D-1), since then, buying periods by the planned economies bloc, including China and Eastern Europe have become a prime factor in the price change]; c. flow of speculative funds and the periods of speculation (as symbolized by the Hunts' buying in 1977 and the financial power that fueled it, and the recent large scale Arab speculation using US dollars); d. world economy (an active role in the demand for soybean is played by the demand for soybean oil and meal, and generally demand for livestock products grows when the economy is vigorous; each country's volume of imports changes according to the balance of international payments); e. political situations (the United States' embargo against the USSR after her intrusion into Afghanistan is a case in point).

Other influences on the soybean market, such as interest rates, inflation, exchange rates, and the USDA forecast of supply and demand, cannot be ignored. Furthermore, there is a psychological factor created by rumor; in total there are a tremendous number of factors that affect the market.

Therefore the price of soybean oil, which is a byproduct of soybean, is affected by all the above factors that determine the price of soybean. However, the three soybean products affect each other in terms of supply and demand relation, and in terms of price movement as well.

A factor that determines the price of soybean oil (other than those mentioned above) may be the balance of supply and demand of soybean oil itself. In observing the balance of supply and demand of soybean oil, as in the case of soybean, stocks must be taken into account. However, as far as the world balance of supply and demand of soybean oil is concerned, the correlation between the international

Fig. D-3 Area under Cultivation and Price Shift of US Soybean (1965 - 1980)



Source: American Soybean Association, '82 Soybean Bluebook

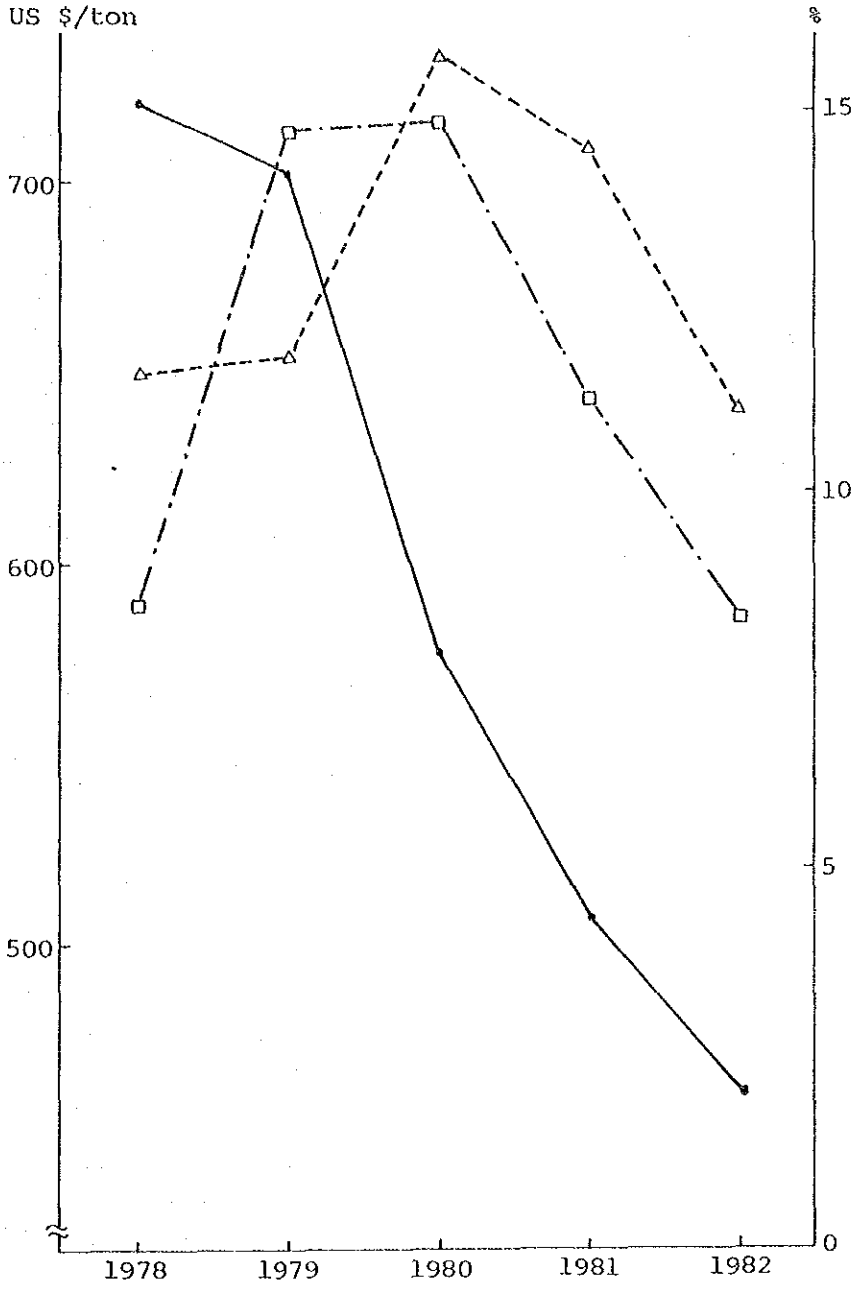
price of soybean (crude, Dutch, FOB ex-mill) and the stocks/disapearance proportion is not so noticeable as the case of soybean. It is about the same as that of EC (Fig. D-4). This is thought to be because the price of soybean oil is greatly affected not only by the supply-demand balance of soybean oil but also by that of oils and fats as a whole. Recently, in particular, the supply and demand of oils and fats has been low, oils and fats prices are on the decline.

It has been mentioned that the price of soybeans is affected by the production movement of oil seeds such as rapeseed and sunflower seed, and their oils. The price movement of soybean oil keep pace with that of soybean, but on the other hand, it is presumably affected still more greatly by the production movement of substitute oils. In 1970, although the price of soybean and soybean meal rose only slightly over the previous year, the price of soybean oil alone went up about 1.6 times over that of the previous year (from $228 per ton to $367) (Fig. D-1). This is considered to be because in 1969 (the previous year), production of substitute vegetable oils which compete intensely with soybean oil (e.g. rapeseed oil, peanut oil, sunflower oil, sesame oil and palm oil) decreased (Table B-1) and the prices of these oils rose substantially (Appendix Table 3 of [1-1] General Description).

Finally, the price of soybean oil is observed in time series, compared with that of soybean meal: the proportion of the price per unit weight of soybean oil to that of soybean meal decreased from as much as 4.3 times in 1948 to 3.4 times in 1958 to 1.8 times in 1968. This trend has continued recently, fluctuating at around 2 times (Fig. D-5). This shows that supply and demand of soybean meal has continuously been tight than that of soybean oil.[1] It is said that the recent worldwide recession has decreased the demand for soybean meal. Nevertheless, if production of palm oil, which does not accompanied with the production of meal as byproduct, the world supply of oils and fats will increase without proportional increase in meal production, and the price ratio of soybean oil to soybean meal will further decrease.

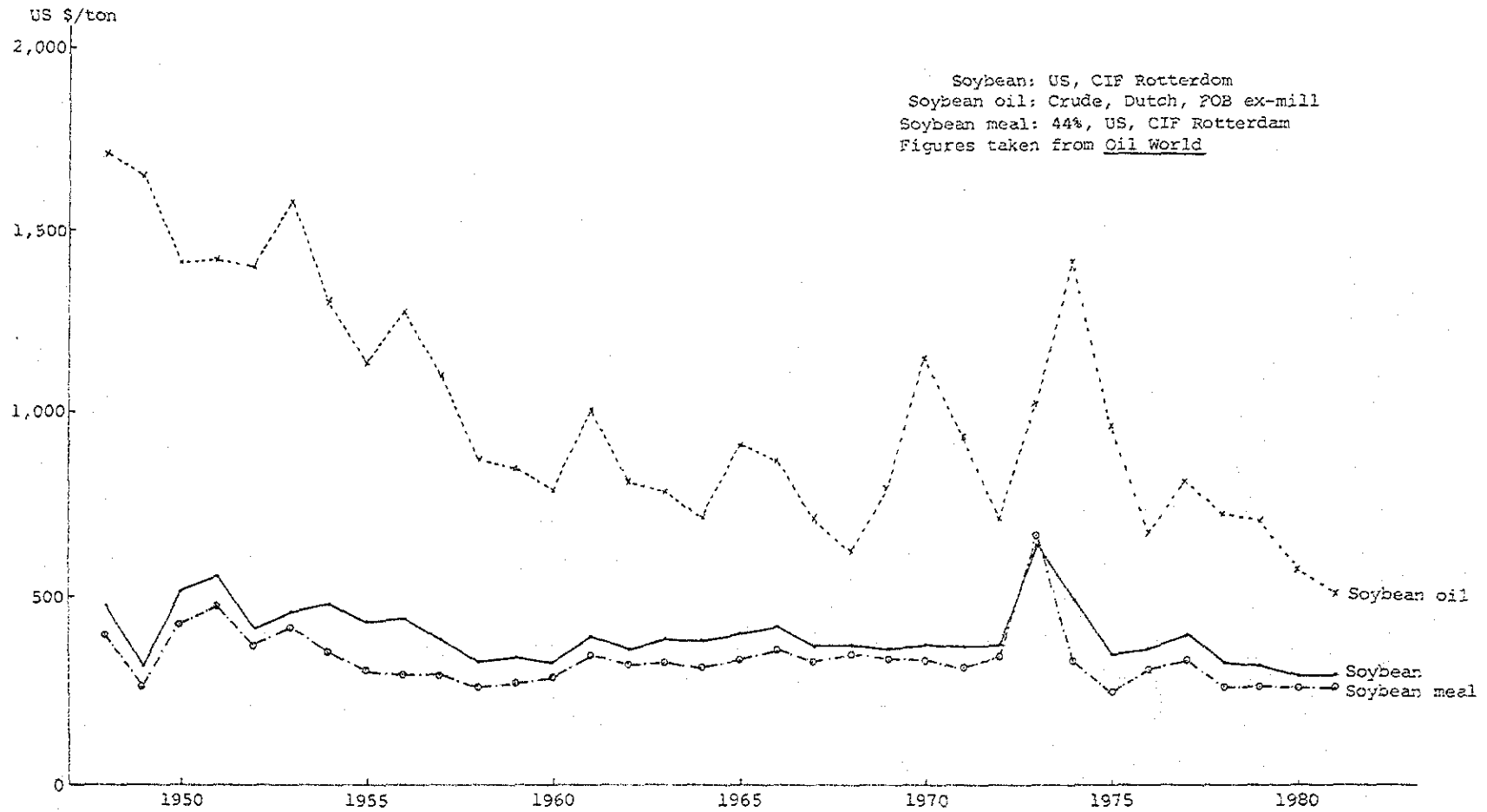
1) The trend is especially strong in the United States, and as a result, since 1954 soybean oil has been designated as a surplus crop and exported to developing countries by means of government subsidy under PL 480.

Fig. D-4 Soybean: Yearly Average Price and Ending Stocks/Disappearance



Source: Oil World

Fig. D-5 Prices of Soybean, Soybean Oil and Soybean Meal (1981 constant US$)
(1948 - 1981)



Reference for Section D.

Export of Soybean Products under PL480

This program provides three procedures of implementation, called Title I, II and III respectively, in the order of articles as they appear in the Law.

a. Title I — Concessional Sale

This is the export of surplus agricultural products [stock held by the Commodity Credit Corporation (CCC)] at low interest rates and on long-term credit bases, the repayment of which is made, as a rule, in U.S. dollars, although some payments are permitted in local currencies (in the case the U.S. Government uses the currency of the country concerned). The term of repayment is normally 20 years, but countries with solvency difficulties may be given a 10 year period of grace before the repayment period of 40 years commences.

b. Title II — Donations for the Needy

These are donations for disaster and starvation relief in the least developing countries.

c. Title III — Food for Development

This is the grant in aids of agricultural goods to assist the development of the recipient countries, which may pass on the goods to workers engaged in development projects as wages in kind, or sell them within the country and use the subsequently acquired local currency for development projects. Importance is attached to projects for rural development, especially those aiming to improve the lives of small farmers and the poor. For a project to be assisted, the advanced agreement between the applicant country and the U.S. Government is required.

As regards agencies for such procedures, long-term credit exports under Title I are handled by exporters in the private sector. In the case of grant in aids, there are three cases: 1) bilateral negotiation with a recipient country; 2) donations to the U.N.'s WFP (World Food Program) which distributes agricultural goods; and 3) distribution through voluntary relief agencies.

Items supplied (on credit or grant) under PL480 are mainly food, as suggested by the programs called Food for Peace Program, Food Aid, Food for Development, but non-food items such as tobacco and cotton are also included.

The tables below show the quantities and monetary values of major items under PL480 in the fiscal years 1981 and 1982 (October to September of the U.S. fiscal year), based on the data of USDA, Foreign Agriculture Service. The column titled AID Mutual Security refers to

the program conducted by AID (Agency for International Development) as an American aid agency separate from PL480, although it is regarded to have the same character as PL480 in the sense that the export of agricultural products under the program are funded by the Government.

As shown in the following tables, items under PL480 include soybean oil, corn-soya-milk, soya-sorghum-grits and defatted soy flour. Oilcake and meal may include soybean meal.

Soybean oil is most important of all soybean products in terms of quantity and monetary value. Looking at the main export items under the total Government Programs in the following table for fiscal 1982, of the approximate $1 billion representing the total of all items, wheat is the largest with $420 million, followed by wheat flour ($147 million), soybean oil ($138 million), and rice ($100 million). As such, soybean oil ranks third among all items.

Soybean oil exports through Government Programs represent a considerable proportion of total soybean oil exports from the United States. For example, United States soybean oil exports in fiscal 1982 were 941,993 tons, of which 246,065 tons (or 26%) were exports under long-term credit, or as donations through Government Programs. The proportion of Government Program exports to total exports was 6.2% in wheat, 65.7% in wheat flour, and 12.3% in rice.

According to the statistics on world soybean oil exports (Table D-6) on page [1]-292, the average annual total of world exports of soybean oil, based on the 1981 and 1982 calendar years, was 3,469,999 tons, of which 937,500 tons or 27%, were Unites States exports. Government Program exports account for about 26% of these United States exports, which is equivalent to nearly 7% of total soybean oil distributed in the world.

The impact of concessional exports through international markets may vary according to the above procedures of PL480 (Titles I, II and III). In the case of soybean oil in fiscal 1982, 64% of concessional exports were Title I (long-term credit export), and the remaining 36% were grant in aids under Titles II and III and the AID Program, and thus the proportion of the grant of soybean oil is higher than in the case of wheat and rice.

Almost all soybean products except for oil (defatted soy flour, wheat-soy flour, corn-soya-milk, and soya-sorghum-grits) are supplied gratuitously, with exports on credit being few. These products, used as cheap new protein food for improving nutrition in developing countries, have not as yet established an ordinary international market of their own, and therefore their supply in this way may be taken as a creation of additional demand for soybean products without influencing the normal international market of the other soybean products.

Reference Table 1 U.S. Exports of Major Agricultural and Soybean Products: Concessional Government-Financed Programs and Commercial, Fiscal Year 1981

Commodity	PUBLIC LAW 480				AID mutual security	Total Govt. programs	Commercial	Total agric. exports
	Long-term credit sales	Govt. - Govt.	World Food Program	Voluntary relief agencies				
(MT)								
Wheat	2,256,648	43,007	164,732	73,065	4,174	2,541,626	39,704,747	42,246,373
Wheat flour	493,529	497	54,648	121,756	0	670,430	278,646	949,076
Rice	247,185	23,025	48,786	40,525	0	359,521	2,812,291	3,171,812
Corn	553,132	112,639	56,102	21,311	443,778	1,186,962	58,181,228	59,368,190
Wheat-flour-soya	0	460	3,191	30,132	0	33,783	4,276	38,059
Corn-soya-milk	320	19,160	32,117	120,956	0	172,553	-6,985	165,568
Soya-sorghum-grits	0	3,078	2,193	15,370	0	20,641	0	20,641
Oil soybean	133,570	36,134	26,805	65,397	0	261,906	476,834	738,740
Oilcake and meal	-	-	-	-	-	-	-	-
Soy flour (defatted)	0	0	0	266	0	266	15,137	15,403
($1,000)								
Wheat	375,256	8,592	27,550	12,585	789	424,772	7,282,052	7,706,824
Wheat flour	133,514	143	14,228	32,043	0	179,928	78,043	257,971
Rice	119,811	10,736	22,726	18,682	0	171,955	1,365,432	1,537,387
Corn	77,191	20,073	10,306	3,843	68,199	179,612	8,786,812	8,966,424
Wheat-flour-soya	0	164	1,255	11,821	0	13,240	1,648	14,888
Corn-soya-milk	134	7,760	12,792	48,223	0	68,909	-3,078	65,831
Soya-sorghum-grits	0	885	627	4,366	0	5,878	0	5,878
Oil soybean	72,667	26,489	22,388	55,824	0	177,368	279,299	456,667
Oilcake and meal	-	-	-	-	-	-	-	-
Soy flour (deffated)	0	0	0	101	0	101	6,221	6,322

Source: USDA, FATUS (Foreign Agricultural Trade of the U.S.), Jan./Feb. 1983

Reference Table 2 U.S. Exports of Major Agricultural and Soybean Products: Concessional Government-Financed Programs and Commercial, Fiscal Year 1982

Commodity	PUBLIC LAW 480				AID mutual security	Total Govt. programs	Commercial	Total agric. exports
	Long-term credit sales	Govt. - Govt.	World Food Program	Voluntary relief agencies				
(MT)								
Wheat	2,555,579	20,603	89,308	100,332	0	2,765,892	41,841,339	44,607,231
Wheat flour	437,991	1,632	74,485	72,004	0	586,112	305,551	891,663
Rice	299,485	30,155	17,121	12,568	0	359,329	2,551,919	2,911,248
Corn	296,486	25,146	11,804	22,919	323,306	679,661	48,929,186	49,608,847
Wheat-flour-soya	0	0	2,163	22,622	0	24,785	8,409	33,194
Corn-soya-milk	398	4,046	9,946	88,974	0	103,364	38,372	141,736
Soya-sorghum-grits	0	4,122	3,575	14,123	0	21,820	0	21,820
Oil soybean	159,561	6,129	24,863	51,952	3,560	246,065	695,928	941,993
Oilcake and meal	0	0	0	0	15,540	15,540	6,539,382	6,554,922
Soy flour (defatted)	0	82	0	546	0	628	7,492	8,119
($1,000)								
Wheat	386,827	3,424	13,838	16,206	0	420,295	7,014,026	7,434,321
Wheat flour	110,812	354	17,522	17,997	0	146,685	34,538	181,223
Rice	92,551	8,479	5,225	3,764	0	109,979	1,038,543	1,148,522
Corn	36,050	3,614	1,790	3,623	38,853	83,930	5,877,885	5,961,815
Wheat-flour-soya	0	0	782	8,285	0	9,067	3,303	12,370
Corn-soya-milk	157	1,400	3,162	27,802	0	32,521	13,179	45,700
Soya-sorghum-grits	0	1,066	803	3,471	0	5,340	0	5,340
Oil soybean	75,810	4,039	17,600	38,679	1,882	138,010	360,064	498,074
Oilcake and meal	0	0	0	0	3,603	3,603	1,494,357	1,497,960
Soy flour (deffated)	0	33	0	200	0	233	3,260	3,493

Source: USDA, FATUS (Foreign Agricultural Trade of the U.S.), Jan./Feb. 1983

Reference Table 3 U.S. Agricultural Exports by Country:
Concessional Government-Financed Programs and Commercial, Fiscal Year 1981

($1,000)

Country	PUBLIC LAW 480				AID mutual security	Total Govt. programs	Commercial	Total agric. exports
	Long-term credit sales	Govt. - Govt.	World Food Program	Voluntary relief agencies				
Guatemala	0	0	336	7,297	0	7,633	77,458	85,091
El Salvador	17,047	3,212	2,037	2,416	0	24,712	37,445	62,157
Honduras	5,096	0	1,228	3,188	0	9,512	35,206	44,718
Nicaragua	1,558	0	596	334	0	2,488	36,344	38,832
Costa Rica	0	0	194	700	0	894	47,225	48,119
Panama	0	0	0	1,644	0	1,644	81,341	82,985
Jamaica	15,022	0	4	0	0	15,026	90,313	105,339
Haiti	8,887	0	2,007	11,868	95	22,857	47,730	70,587
Dominican Republic	13,872	0	0	3,153	0	17,025	215,139	232,164
Leeward and Windward Is.	0	0	0	0	13	13	44,944	44,957
Barbados	0	0	54	0	0	54	28,687	28,741
Guyana	0	24	0	0	0	24	23,216	23,240
Ecuador	0	0	632	604	0	1,236	123,308	124,544
Peru	20,000	3,647	2,902	14,990	0	41,539	388,615	430,154
Bolivia	0	276	525	5,563	0	6,346	7,007	13,371
Chile	0	0	0	6,393	0	6,393	339,360	345,753
Brazil	0	0	545	0	0	545	842,845	843,390
Paraguay	0	0	618	0	0	618	2,521	3,139
Portugal	14,318	0	0	0	0	14,318	749,880	764,198
Poland	31,977	0	0	0	0	31,977	667,742	699,719
Turkey	0	0	42	0	0	42	87,442	87,484
Syria	0	0	2,014	0	0	2,014	31,649	33,663
Jordan	0	0	81	2,138	0	2,219	88,610	90,829
Gaza Strip	0	0	0	1,409	0	1,409	-1,214	195
Yemen (Sana)	0	0	320	0	0	320	15,963	16,283
India	0	19,577	14,223	99,708	0	133,508	190,521	324,029
Pakistan	48,748	0	29,463	0	0	78,211	68,821	147,032

Reference Table 3 (cont'd.)

($1,000)

Country	PUBLIC LAW 480				AID mutual security	Total Govt. programs	Commercial	Total agric. exports
	Long-term credit sales	Govt. - Govt.	World Food Program	Voluntary relief agencies				
Nepal	0	0	3,866	0	0	3,866	-651	3,215
Bangladesh	52,370	0	1,010	12,389	789	66,558	8,378	74,936
Sri Lanka	17,830	0	0	3,986	0	21,816	26,709	48,525
Kampuchea	0	0	17,903	0	0	17,903	-5,054	12,849
China Mainland	0	0	1,356	0	0	1,356	2,116,296	2,117,652
Indonesia	54,497	0	7,289	6,307	0	68,093	314,066	382,159
Philippines	0	0	4,346	18,189	0	22,535	315,149	337,684
Southern Asia (NEC)	0	0	311	0	0	311	-209	102
Republic of Korea	27,576	0	0	0	0	27,576	2,108,895	2,136,471
Morocco	24,533	0	1,512	16,323	0	42,368	117,807	160,175
Tunisia	3,345	0	1,298	1,995	0	6,638	73,171	79,809
Egypt	287,485	0	6,434	15,515	151,095	460,529	489,846	950,375
Sudan	33,837	0	3,224	1,178	7,058	45,297	38,075	83,372
Mauritania	0	3,600	179	2,016	0	5,795	-424	5,371
Cameroon	0	1,277	494	930	0	2,701	5,355	8,056
Senegal	6,998	3,234	1,807	6,510	0	18,549	12,067	30,616
Guinea	6,994	0	2,670	0	0	9,664	3,654	13,318
Sierra Leone	3,494	0	0	1,411	0	4,905	2,111	7,016
Ivory Coast	0	0	9	0	0	9	24,451	24,460
Ghana	13,435	0	918	5,365	0	19,718	25,912	45,630
Gambia	0	0	272	1,065	0	1,337	-642	695
Niger	0	0	1,193	0	0	1,193	825	2,018
Togo	0	0	639	0	0	639	11,450	12,089
Upper Volta	0	1,768	903	12,710	0	15,381	-1,004	14,377
Benin	0	0	1,126	485	0	1,611	8,165	9,776
Angola	0	2,935	851	0	0	3,786	32,230	36,016
Congo (Brazzaville)	0	0	277	0	0	277	1,238	1,515
Western Africa (NEC)	0	7,335	1,282	0	0	8,617	-300	8,317
Liberia	12,535	0	135	0	0	12,670	29,244	41,914

Reference Table 3 (cont'd.)

($1,000)

Country	PUBLIC LAW 480				AID mutual security	Total Govt. programs	Commercial	Total agric. exports
	Long-term credit sales	Govt. - Govt.	World Food Program	Voluntary relief agencies				
Zaire	12,894	0	455	2,456	0	15,805	24,443	40,248
Burundi	0	0	766	1,999	0	2,765	-200	2,565
Rwanda	0	0	668	3,459	0	4,127	-219	3,908
Somalia	16,904	22,997	10,290	0	0	49,581	668	50,249
Ethiopia	0	3,948	1,629	2,920	0	8,397	801	9,198
Djibouti	0	0	0	1,825	0	1,825	4,786	6,611
Uganda	0	0	2,417	5,949	0	8,366	-1,653	6,713
Kenya	15,830	1,171	1,769	7,671	0	26,441	7,497	33,938
Seychelles	0	0	0	356	0	356	-82	274
Central African Republic	0	0	320	0	0	320	-313	7
Tanzania	7,500	3,466	2,122	2,685	0	15,773	19,337	35,110
Mauritius	3,495	0	797	0	0	4,292	7,855	12,147
Mozambique	0	1,984	523	0	0	2,507	4,634	7,141
Malagasy Rep.	0	2,432	38	1,126	0	3,596	3,135	6,731
Comoros	0	0	436	0	0	436	-436	0
Botswana	0	0	5,175	0	0	5,175	-2,343	2,832
Zambia	9,872	3,384	0	0	0	13,256	-743	12,513
Swaziland	0	0	407	0	0	407	-230	177
Zimbabwe	0	0	834	0	0	834	783	1,617
Malawi	2,329	0	737	0	0	3,066	-2,155	911
Lesotho	0	0	6,937	3,445	0	10,382	-4,269	6,113
Total	789,668	86,167	155,445	301,670	159,050	1,492,000	10,186,224	11,678,224
Other countries							32,101,919	32,101,919
Grand total							42,288,143	43,780,143

Source: USDA, FATUS (Foreign Agriculture Trade of the U.S.), Jan./Feb. 1983

Reference Table 4 U.S. Agricultural Exports by Country:
Concessional Government-Financed Programs and Commercial, Fiscal Year 1982

($1,000)

Country	PUBLIC LAW 480				AID mutual security	Total Govt. programs	Commercial	Total agric. exports
	Long-term credit sales	Govt. - Govt.	World Food Program	Voluntary relief agencies				
Guatemala	0	0	306	3,414	0	3,720	61,256	64,976
El Salvador	22,936	519	2,518	1,535	0	27,508	37,935	65,443
Honduras	5,004	0	337	2,094	0	7,435	29,571	37,006
Nicaragua	0	0	457	0	0	457	26,004	26,461
Costa Rica	17,197	0	205	1,308	0	18,710	35,162	53,872
Panama	0	0	28	1,048	0	1,076	83,942	85,018
Jamaica	16,937	0	8	0	0	16,945	81,675	98,620
Haiti	12,684	0	1,297	6,578	0	20,559	47,859	68,418
Dominican Republic	14,794	0	0	2,392	0	17,186	157,256	174,442
Barbados	0	0	49	0	0	49	29,134	29,183
Guyana	0	72	0	0	0	72	9,668	9,740
Ecuador	0	0	944	638	0	1,582	100,412	101,994
Peru	17,000	952	1,522	10,775	346	30,595	279,263	309,858
Bolivia	9,728	0	517	5,146	0	15,391	3,346	18,737
Chile	0	0	0	1,678	0	1,678	246,785	248,463
Brazil	0	0	308	0	0	308	576,386	576,694
Paraguay	0	0	82	0	0	82	1,717	1,799
Poland	15,332	0	0	15,223	0	30,555	150,696	181,251
Turkey	0	0	70	0	0	70	103,332	103,402
Lebanon	0	0	210	0	0	210	59,353	59,563
Jordan	0	0	0	1,743	0	1,743	58,404	60,147
Gaza Strip	0	0	0	814	0	814	-741	73
Yemen (Sana)	0	0	578	0	0	578	14,675	15,253
India	0	0	4,949	59,327	0	64,276	245,582	309,858
Pakistan	49,989	0	23,716	0	0	73,705	144,256	217,961
Nepal	0	0	901	0	0	901	1,286	2,187
Bangladesh	63,867	0	0	10,434	0	74,301	47,386	121,687

Reference Table 4 (cont'd.)

($1,000)

Country	PUBLIC LAW 480				AID mutual security	Total Govt. programs	Commercial	Total agric. exports
	Long-term credit sales	Govt. - Govt.	World Food Program	Voluntary relief agencies				
Sri Lanka	17,536	0	23	3,391	0	20,950	30,719	51,669
Kampuchea	0	0	3,603	0	0	3,603	-921	2,682
Indonesia	17,421	989	1,005	3,487	0	22,902	409,159	432,061
China Mainland	0	132	0	0	0	132	1,800,887	1,801,019
Philippines	0	0	1,018	8,614	0	9,632	310,509	320,141
Southern Asia (NEC)	0	0	439	0	0	439	-245	194
Morocco	34,660	529	0	6,599	0	41,788	124,943	166,731
Tunisia	16,173	0	0	916	0	17,089	72,490	89,579
Egypt	274,410	0	15,674	9,388	70,260	369,732	513,251	882,983
Sudan	24,881	0	29	125	9,766	34,801	17,093	51,894
Mauritania	0	732	187	1,441	0	2,360	2,158	4,518
Cameroon	0	94	759	371	0	1,224	6,032	7,256
Senegal	3,476	0	351	1,909	0	5,736	3,466	9,202
Mali	0	0	692	0	0	692	-129	563
Guinea	5,000	0	71	0	0	5,071	2,330	7,401
Sierra Leone	3,000	0	0	1,075	0	4,075	2,227	6,302
Ghana	0	0	1,807	2,235	0	4,042	6,570	10,612
Gambia	0	0	433	657	0	1,090	224	1,314
Niger	0	2,121	260	0	0	2,381	3,492	5,873
Togo	0	0	777	599	0	1,376	11,404	12,780
Central African Republic	0	0	252	0	0	252	161	413
Chad	0	0	965	1,303	0	2,268	-497	1,771
Equatrial Guinea	0	0	15	0	0	15	261	276
Upper Volta	0	0	1,425	2,780	0	4,205	1,168	5,373
Benin	0	0	268	561	0	829	16,720	17,549
Angola	0	2,531	179	0	0	2,710	14,615	17,325
Congo (Brazzaville)	0	0	478	0	0	478	2,216	2,694
Western Africa (NEC)	0	3,927	561	0	0	4,488	1,439	5,927
Liberia	16,676	0	125	0	0	16,801	22,255	39,056

Reference Table 4 (cont'd.)

($1,000)

Country	PUBLIC LAW 480				AID mutual security	Total Govt. programs	Commercial	Total agric. exports
	Long-term credit sales	Govt. - Govt.	World Food Program	Voluntary relief agencies				
Zaire	9,940	0	234	18	0	10,192	22,147	32,339
Burundi	0	0	632	1,181	0	1,813	3	1,816
Rwanda	0	0	283	1,354	0	1,637	-297	1,340
Somalia	14,494	4,270	805	0	0	19,569	1,395	20,964
Ethiopia	0	0	0	1,711	0	1,711	7,957	9,668
Djibouti	0	0	0	1,115	0	1,115	3,136	4,251
Uganda	0	0	0	344	0	344	244	588
Kenya	13,685	0	0	2,072	0	15,757	5,435	21,192
Seychelles	0	0	0	164	0	164	50	214
Tanzania	5,000	0	761	549	2	6,310	6,956	13,266
Mauritius	3,498	1,415	224	0	1,882	7,019	4,820	11,839
Mozambique	0	1,703	530	0	0	2,233	257	2,490
Malagasy Rep.	10,000	5,736	23	1,003	0	16,762	909	17,671
Comoros	0	0	401	0	0	401	84	485
Botswana	0	752	1,661	0	0	2,413	-317	2,096
Zambia	6,983	0	0	0	0	6,983	-60	6,923
Malawi	0	0	135	0	0	135	-114	21
Lesotho	0	0	772	2,920	0	3,692	-181	3,511
Total	722,301	26,474	76,859	182,029	82,256	1,089,919	6,058,021	7,147,940
Other countries							31,946,537	31,946,537
Grand total							38,004,558	39,094,477

Source: USDA, FATUS (Foreign Agriculture Trade of the U.S.), Jan./Feb. 1983

E. SHORT-TERM OUTLOOK

As mentioned before, the demand for soybean is strong for feed. The increase in demand for soybean in the United States and European developed countries has been due mainly to the increasing demand for soybean meal. In the USSR and Eastern Europe, demands for greater efficiency in the rearing of pigs and poultry are increasing the demand for high protein meal. In developing countries and the Middle East too, as commercial stock raising develops, consumption of soybean meal has been showing a steady increase, although it is small in absolute quantity compared with that of developed nations.

Competition with palm oil (production of which has expanded sharply), has recently made the price of soybean oil lower than that of palm oil, and consumption growth was marked in such developing countries as India, Pakistan and Mexico, and planned economy countries such as the USSR and China.

The demand for soybean has followed the demand for high protein meal, and considering past movements, this basic structure should not change in the foreseeable future. Consequently, although the increase in demand for livestock products will be affected by economic movements, its future is highly promising. Moreover, production of fish meal and oil meals other than soybean meal, cannot be expected to increase much, partly because of low yields. Thus it is thought that soybean meal will continue to hold an important position as a protein feed in the future.

Meanwhile, consumption of soybean oil, in the United States and Brazil, the major producing countries, will continue to grow. In Mexico, China, India and Pakistan, which have been expanding their consumption markedly, growth depends on their foreign currency situations, but considering the countries' low per capita consumption, there is a possibility of further growth.

India is importing soybean oil and palm oil to supplement scarce domestic oil, and unless it makes extra efforts to increase domestic production, it is expected to continue importing soybean oil. Since the country's demand for meal is small, its imports are mostly oil, and there should be no major change. In the case of soybean oil imports, competition with imported palm oil is anticipated, but currently soybean oil is shifting to a lower price in the international market.

The USSR's production of oilseeds such as cottonseed is sluggish, and the country is importing soybean, soybean oil and soybean meal. Domestic production of oilseeds and the foreign currency situation required to import may change, but for the time being, the country has no choice but to continue to import the three soybean products.

The EC countries cannot help but depend on imports for the three soybean products, since their domestic production is small. Although imports of soybean have recently decreased due to the increased production of oilseed in the countries in the bloc, imports of oil and meal are steady, and the USSR's status as a big consumer is not likely to change.

As for the soybean oil market in developing countries, it should be especially noted that, with the help of the United States Government (through such means as PL 480), soybean can be imported cheaply even if the foreign currency situation is not favorable.

Concerning soybean exports and related matters, it can be said that oil extraction in soybean importing countries will continue in the future. In the case of soybean, different from that of coconut (copra producing countries are strengthening the policy of exporting oil rather than copra), there are countries among the major soybean producers, such as the United States that will continue to export bean in the future. Therefore, concerning oil extraction from imported soybean (chiefly the developed countries import beans and extract oil), since each country wants to maintain its own oil extraction industry, this situation is expected to continue.

Production of soybean is thought to rise in response to increased demand. In the United States, Brazil and Argentina (major producers), expansion of area under cultivation, including hectarage conversion, and increases in yield per hectare can be expected.

Soybean is an annual plant, different from perennial plants such as oil palm and coconut in that planting is determined by the producers every year. In free market countries, profitability is the most important determinant in the decision to plant. Basically, profitability reflects the movement of international prices, but it also depends on guarantees of purchasing price and on low interest loan systems of the national farm policies.

Regarding costs of soybean production, recently emerged soybean producing and exporting countries such as Argentina and Paraguay are thought to have an advantage with their rich soil. However, considering infrastructure and storage facilities, they are not necessarily in a position to be able to export cheaply. As for infrastructure, in the United States, the movement of exporting soybean from the west coast using railway transportation can be seen, and this will be an advantage in shipping to Asian countries and will increase the competitive power of U.S. products.

Here, using data from 1966 to 1979, a short-term projection is attempted. The method used is a linear regression formula, the same as in the projection for palm oil. The figures for soybean oil were estimated by multiplying soybean supply (production + imports - exports) by

extraction yield rate [1] in each regional blocs. The past figures for consumption of oil were obtained by adding actual oil imports to and sutracting oil exports from estimated oil production.

According to these projections, world production of soybean will be 99.693 million tons in 1985 (17.701 million tons in oil equivalent), and consumption of soybean oil will be 17.229 million tons [2] (97.615 million tons in soybean equivalent), with production exceeding consumption slightly.

Consumption by area will grow everywhere including North America, the biggest consuming area, but areas where growth will be especially large are the developing countries, chiefly Latin America: the average annual growth rate from 1980 to 1985 in all developing countries will be 6.2%.

Soybean production in North America, the biggest producing area, will be 65.487 million tons in 1985 with an average annual growth rate of 3.8% from 1980 to 1985. On the other hand, the production growth rate in Latin America will be 6.8% a year, still high, but only half of the area's record growth of 16-17% a year. By 1985, soybean production in Latin America will reach 23.022 million tons, 35% of North America's production.

The projection shows that in Asian countries with centrally planned economies, including China, production will decrease while consumption will increase slightly. In the East European planned economies, including the USSR, growth of consumption will exceed that of production and an increase in imports is expected.

The projection also shows that, as a result of fluctuations in production and consumption in these areas, trade volume will grow substantially. The basic pattern of trade, in that North America and Latin America account for most of the world exports, will not change, but Latin America's share will grow, with the rapid growth of surpluses for export there.

The above results coincide for the most part with the future outlook obtained by analyzing market movements in that the demand for soybean will not exceed supply within the short period projected. An increase in imports is expected to accompany growth in demand in developing countries in the Far East and Middle East, and in the East European planned economies bloc.

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1) Average rates obtained from the FAO, Food Balance Sheet, 1980.
2) The consumption projection was done in terms of oil. It naturally includes beans consumed as food, seed beans, etc.

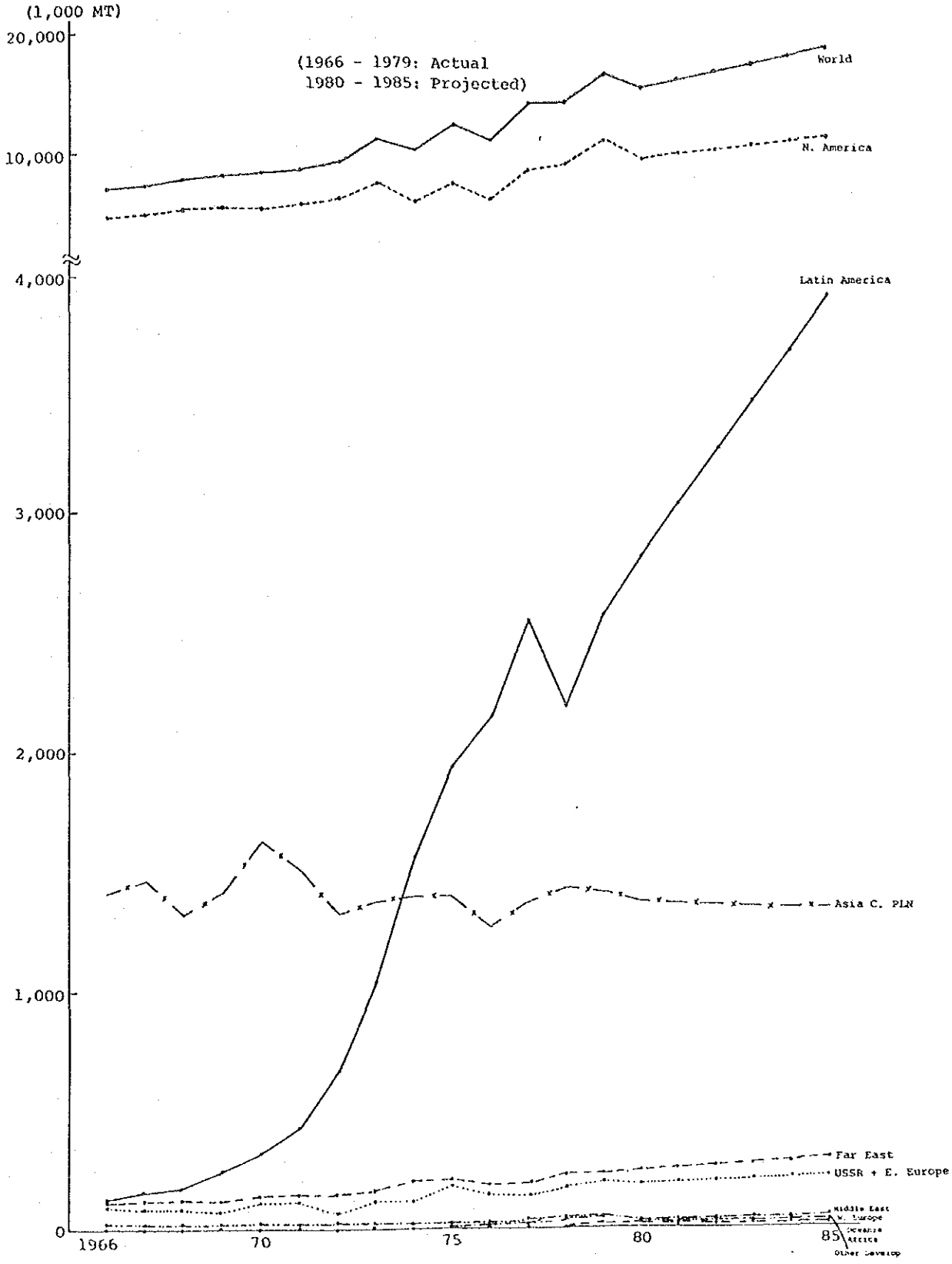
Table E-1 Short-term Projection of Production and Consumption of Soybean

(1,000 MT)

Year	N. America	W. Europe	Oceania	Other Dev'd	Dev'd Total	Africa	L. America	Middle East	Far East	Other Dev'ping	Dev'ping Total	Asia Cent.Plan.	USSR & E.Europe	Cent.Plan. Total	World
Consumption of Oil															
1973	4,889	1,247	12	776	6,924	111	787	117	356	0	1,371	1,581	298	1,879	10,174
1980	5,319	2,076	50	904	8,349	311	1,819	434	888	4	3,456	1,751	578	2,329	14,134
1985	6,234	2,556	69	1,055	9,914	418	2,494	580	1,169	5	4,666	1,890	759	2,649	17,229
	(3.2)	(4.2)	(6.7)	(3.1)	(3.5)	(6.1)	(6.5)	(6.5)	(5.7)	(4.6)	(6.2)	(1.5)	(5.6)	(2.6)	(4.0)
Soybean Production															
1973	42,514	26	37	123	42,700	74	6,099	29	925	0	7,127	7,620	711	8,331	58,158
1980	54,374	97	93	170	54,734	94	16,530	196	1,337	0	18,157	7,613	1,065	8,678	81,569
1985	65,487	137	131	177	65,932	107	23,022	280	1,603	0	25,012	7,474	1,275	8,749	99,693
	(3.8)	(7.1)	(7.1)	(0.8)	(3.8)	(2.6)	(6.8)	(7.4)	(3.7)		(6.6)	(0.4)	(3.7)	(0.2)	(4.1)
Soybean Oil Production															
1973	7,653	4	7	22	7,686	13	1,037	5	167	0	1,222	1,372	121	1,493	10,401
1980	9,787	16	17	31	9,851	17	2,810	35	241	0	3,103	1,370	181	1,551	14,505
1985	11,788	23	24	32	11,867	19	3,914	50	289		4,272	1,345	217	1,562	17,701
	(3.8)	(7.5)	(7.1)	(0.6)	(3.8)	(2.2)	(6.9)	(7.4)	(3.7)		(6.6)	(0.4)	(3.7)	(0.1)	(4.1)
Exportability of Oil															
1973	2,764	-1,243	-5	-754	762	-98	250	-112	-189	0	-149	-209	-177	-386	227
1980	4,468	-2,060	-33	-873	1,052	-294	991	-399	-647	-4	-353	-381	-397	-778	371
1985	5,544	-2,533	-45	-1,024	1,953	-399	1,420	-530	-880	-5	-394	-545	-542	-1,087	472
	(4.4)	(4.2)	(6.3)	(3.2)	(5.4)	(6.3)	(7.5)	(5.8)	(6.3)	(4.6)	(2.2)	(7.4)	(6.4)	(6.7)	(4.9)

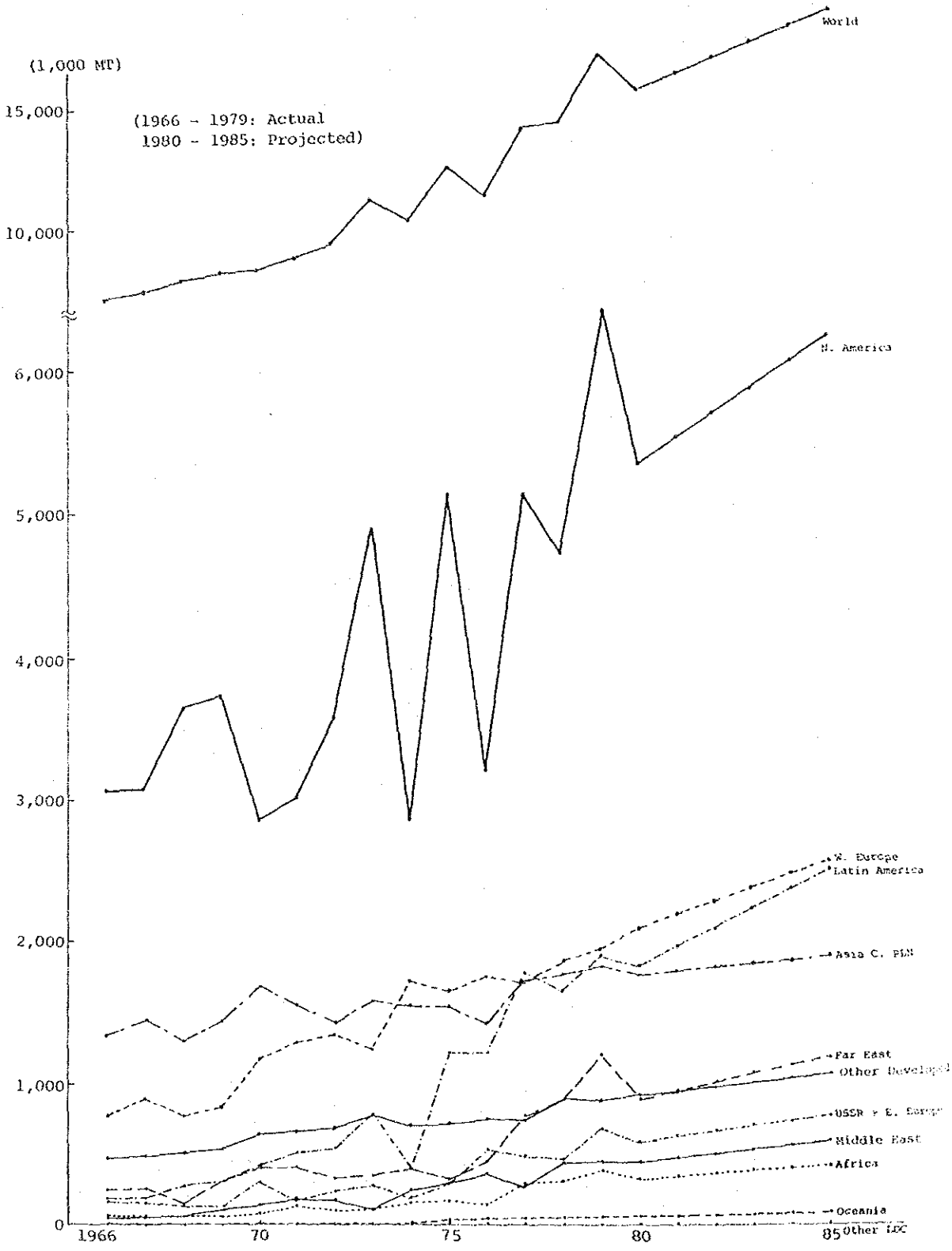
Notes: 1) Figures in 1973 and 1979 are actual (FAO data).
2) Figures in parentheses are average growth rates from 1980 to 1985.

Fig. E-1 Soybean Oil Production by Region



Source: FAO, Production Yearbooks

Fig. E-2 Soybean Oil Consumption by Area



Source: FAO, Production and Trade Yearbook

Appendix Table 1 India's Soybean and Soybean Oil Production, Trade and Consumption

SOYBEAN

ANALY YEAR	MKT.YR BEGIN.	HARV. AREA	YIELD	PRO-DUCTION	BEGIN. STOCKS	MKT.YR. IMPORTS	TOTAL SUPPLY/ DISTRIB	MKT.YR. EXPORTS	CRUSH	FOOD USE	FEED SEED WASTE	TOTAL DOMES-TIC USE	END. STOCKS
		000 HA.	KG/HA	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT
INDIA			533										
1965	10-1964	---	---	---	---	12	12	---	6	---	6	12	---
1966	10-1965	---	---	---	---	---	--	---	---	---	---	---	---
1967	10-1966	---	---	---	---	---	--	---	---	---	---	---	---
1968	10-1967	---	---	---	---	---	--	---	---	---	---	---	---
1969	10-1968	---	---	---	---	---	--	---	---	---	---	---	---
1970	10-1969	21	458	11	---	---	11	---	5	---	6	11	---
1971	10-1970	30	600	18	---	---	18	---	9	---	9	18	---
1[illegible]	10-1971	32	625	20	---	---	20	---	10	---	10	20	---
1[illegible]	10-1972	35	714	25	---	---	25	---	12	---	13	25	---
1974	10-1973	90	333	30	---	---	30	---	15	---	15	30	---
1975	10-1974	90	389	35	---	---	35	---	17	---	18	35	---
1976	10-1975	130	700	70	---	---	70	---	48	10	12	70	---
1977	10-1976	200	750	150	---	---	150	---	120	10	20	150	---
1978	10-1977	225	800	180	---	---	180	---	147	10	23	180	---
1979	10-1978	235	800	220	---	---	220	---	183	10	27	220	---
1980	10-1979	400	750	300	---	---	300	---	255	10	35	300	---
1981	10-1980	550	818	450	---	---	450	---	390	10	50	450	---

SOYBEAN OIL

ANALY YEAR	MKT.YR. BEGIN.	CRUSH	PRODUCT YIELD	PRO-DUCTION	BEGIN. STOCKS	MKT. YEAR IMPORTS	TOTAL SUPPLY/ DISTRIB.	MKT. YR. EXPORTS	TOTAL DOMESTIC USE	END STOCKS
		000 MT	%	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT
[illegible]A			533							
1[illegible]5	10-1964	6	16.66	1	--	41	42	--	42	--
1966	10-1965	--	---	--	--	33	33	--	33	--
1967	10-1966	--	---	--	--	52	52	--	52	--
1968	10-1967	--	---	--	--	36	36	--	36	--
1969	10-1968	--	---	--	--	84	84	--	84	--
1970	10-1969	5	20.00	1	--	79	80	--	80	--
1971	10-1970	9	22.22	2	--	77	79	--	79	--
1972	10-1971	10	20.00	2	--	66	68	--	68	--
1973	10-1972	12	16.66	2	--	73	75	--	75	--
1974	10-1973	15	20.00	3	--	19	22	--	22	--
1975	10-1974	17	17.64	3	--	4	7	--	7	--
1976	10-1975	48	18.75	9	--	53	62	--	62	--
1977	10-1976	120	18.33	22	--	440	462	--	462	--
1978	10-1977	147	17.68	26	--	510	536	--	536	--
1979	10-1978	183	16.33	33	--	555	588	--	588	--
1980	10-1979	255	18.03	46	--	690	736	--	736	--
1981	10-1980	390	17.94	70	--	600	670	--	670	--

Source: USDA, Oilseeds and Products, March 1981

Appendix Table 2 Japan's Soybean and Soybean Oil Production, Trade and Consumption

SOYBEAN

ANALY YEAR	MKT.YR. BEGIN.	HARV. AREA	YIELD	PRO-DUCTION	BEGIN. STOCKS	MKT.YR. IMPORTS	TOTAL SUPPLY/ DISTRIB.	EXPORTS	CRUSH	FOOD USE	FEED SEED WASTE	TOTAL DOMES-TIC USE	END STOCKS
		000 HA.	KG/HA	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT
JAPAN			588										
1965	01-1965	184	1,250	231	131	1,847	2,209	---	1,460	519	10	1,989	219
1966	01-1966	169	1,178	199	219	2,169	2,585	4	1,577	595	132	2,304	279
1967	01-1967	141	1,348	190	278	2,170	2,639	1	1,626	642	113	2,381	256
1968	01-1968	122	1,377	169	256	2,420	2,844	---	1,803	679	112	2,594	250
1969	01-1969	103	1,320	136	250	2,591	2,777	---	2,144	635	20	2,799	174
1970	01-1970	96	1,313	126	174	3,244	3,548	---	2,565	709	81	3,295	253
1971	01-1971	100	1,220	122	253	3,212	3,587	---	2,521	726	89	3,336	251
1972	01-1972	89	1,427	127	251	3,396	3,774	---	2,636	758	102	3,496	278
	01-1973	83	1,341	114	278	3,635	4,031	---	2,739	796	95	3,630	401
1974	01-1974	93	1,453	135	401	3,244	3,778	---	2,720	726	112	3,558	222
1975	01-1975	87	1,448	125	220	3,334	3,680	---	2,620	716	96	3,432	248
1976	01-1976	83	1,325	110	248	3,554	3,912	---	2,701	730	121	3,552	360
1977	01-1977	79	1,405	111	360	3,602	4,073	---	2,878	745	111	3,734	339
1978	01-1978	127	1,486	190	339	4,260	4,789	---	3,236	753	141	4,190	599
1979	01-1979	123	1,486	190	599	4,132	4,921	---	3,598	776	179	4,553	563
1980	01-1980	130	1,477	192	568	4,250	5,010	---	3,500	790	180	4,470	540
1981	01-1981	130	1,438	174	540	4,306	5,014	5	3,500	800	185	4,485	524

SOYBEAN OIL

ANALY YEAR	MKT.YR. BEGIN.	CRUSH	PRODUCT YIELD /	PRO-DUCTION	BEGIN. STOCKS	MKT. YEAR IMPORTS	TOTAL SUPPLY/ DISTRIB.	MKT. YR. EXPORTS	TOTAL DOMESTIC USE	END STOCKS
		000 MT	%	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT
JAPAN			588							
1965	01-1965	1,460	16.57	242	11	4	257	6	241	10
1966	01-1966	1,577	17.62	278	10	1	289	5	268	16
1967	01-1967	1,626	17.83	290	16	4	310	5	292	13
1968	01-1968	1,803	17.69	319	13	2	334	7	324	3
1969	01-1969	2,144	16.65	357	3	1	361	3	343	15
1970	01-1970	2,505	17.68	443	15	4	462	14	426	22
1971	01-1971	2,521	17.81	449	22	2	473	20	427	26
1972	01-1972	2,636	18.01	475	26	--	501	4	472	25
1973	01-1973	2,739	17.63	483	25	6	514	9	485	20
1974	01-1974	2,720	18.12	493	20	20	533	3	510	22
1975	01-1975	2,620	17.48	458	20	14	492	--	445	47
1976	01-1976	2,701	17.95	485	47	12	544	2	512	30
1977	01-1977	2,878	18.48	532	30	--	562	1	547	14
1978	01-1978	3,296	18.14	598	14	--	612	1	594	17
1979	01-1979	3,398	18.27	621	17	--	638	3	609	26
1980	01-1980	3,500	18.00	630	26	--	656	6	630	20
1981	01-1981	3,500	18.00	630	20	--	650	10	615	25

Source: USDA, Oilseeds and Products, March 1981

Appendix Table 3 USSR Soybean and Soybean Oil Production, Trade and Consumption

SOYBEAN

ANALYST YEAR	MKT.YR. BEGIN.	HARV. AREA	YIELD	PRODUCTION	BEGIN. STOCKS	MKT.YR. IMPORTS	TOTAL SUPPLY/ DISTRIB.	MKT.YR. EXPORTS	CRUSH	FOOD USE	FEED SEED WASTE	TOTAL DOMES- TIC USE	END. STOCKS
		000 HA.	KG/HA	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT
U.S.S.R.			461										
1965	01-1965	893	329	293	---	93	386	---	285	---	101	386	---
1966	01-1966	853	494	421	---	---	421	---	321	---	100	421	---
1967	01-1967	854	686	586	---	---	586	---	486	---	100	586	---
1968	01-1968	959	639	543	---	---	543	---	443	---	100	543	---
1969	01-1969	834	618	528	---	---	528	---	428	---	100	528	---
1970	01-1970	851	516	434	---	---	434	---	334	---	100	434	---
1971	01-1971	860	701	603	---	---	603	---	548	---	55	603	---
1972	01-1972	868	616	535	---	297	832	---	747	---	85	832	---
1973	01-1973	905	285	258	---	705	963	---	888	---	75	963	---
1974	01-1974	838	506	424	---	20	444	---	359	---	85	444	---
1975	01-1975	830	434	360	---	---	360	---	275	---	85	360	---
1976	01-1976	819	963	780	---	1,769	2,549	---	1,814	50	85	1,949	600
1977	01-1977	762	630	480	600	1,364	2,444	---	2,068	50	85	2,203	241
1978	01-1978	786	693	545	241	906	1,692	---	1,304	55	85	1,444	248
1979	01-1979	815	784	639	248	1,765	2,652	---	1,486	55	87	1,628	1,024
1980	01-1980	838	557	467	1,024	1,065	2,556	---	1,730	55	90	1,845	711
1981	01-1981	876	615	540	711	1,500	2,751	---	1,900	60	90	2,050	701

SOYBEAN OIL

ANALYST YEAR	MK.YR. BEGIN.	CRUSH	PRODUCT YIELD	PRO- DUCTION	BEGIN. STOCKS	MKT. YEAR IMPORTS	TOTAL SUPPLY/ DISTRIB.	MKT. YR. EXPORTS	TOTAL DOMESTIC USE	END STOCKS
		000 MT	%	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT
U.S.S.R.			461							
1965	01-1965	285	16.14	46	--	--	46	--	46	--
1966	01-1966	321	15.88	51	--	--	51	--	51	--
1967	01-1967	486	16.04	78	--	--	78	--	78	--
1968	01-1968	443	16.02	71	--	--	71	--	71	--
1969	01-1969	428	15.88	68	--	--	68	9	59	--
1970	01-1970	334	15.96	53	--	--	53	--	53	--
1971	01-1971	548	16.05	88	--	--	88	3	85	--
1972	01-1972	747	17.00	127	--	--	127	3	124	--
1973	01-1973	888	17.00	151	--	--	151	5	146	--
1974	01-1974	359	16.99	61	--	--	61	2	59	--
1975	01-1975	275	17.09	47	--	--	47	--	47	--
1976	01-1976	1,814	17.80	323	--	1	324	--	324	--
1977	01-1977	2,068	17.74	367	--	--	367	--	367	--
1978	01-1978	1,304	16.94	221	--	107	328	--	328	--
1979	01-1979	1,486	17.02	253	--	144	397	--	397	--
1980	01-1980	1,700	17.00	289	--	50	339	--	339	--
1981	01-1981	1,900	17.00	323	--	200	523	--	523	--

Source: USDA, Oilseeds and Products, March 1981

Appendix Table 4 Production and Trade of Oilseed, Oil and Meal in the USSR

(1,000 tons)

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82 Estimate
Oilseed Production						
Sunflower seed	5,277	5,904	5,333	5,414	4,650	5,000
Cottonseed	4,511	4,693	4,804	4,510	5,300	5,000
Soybean	480	540	634	467	540	560
Linseed	337	290	250	254	250	250
Castor bean	41	45	43	62	59	67
Rapeseed	16	9	12	5	12	20
Total	10,662	11,481	11,076	10,712	10,811	10,897
Imports						
Soybean	1,364	906	1,765	1,065	1,300	1,500
Peanut	40	37	30	40	20	30
Copra	20	10	10	15	20	20
Sesame	5	8	7	11	10	10
Rapeseed	0	0	0	25	25	25
Linseed	3	1	0	0	0	0
Palm kernel	2	4	2	3	3	3
Total	1,434	966	1,814	1,159	1,378	1,588
Exports						
Cottonseed	72	47	43	25	20	20
Total	72	47	43	25	20	20
Total supply	12,024	12,400	12,847	11,846	12,169	12,465
Oil production						
Sunflower	1,816	2,031	1,834	1,852	1,610	1,730
Cottonseed	697	722	637	665	775	725
Soybean	367	221	253	219	221	290
Linseed	23	17	10	10	10	10
Butter	1,500	1,472	1,409	1,350	1,315	1,300
Lard	742	828	852	826	800	800
Tallow/Grease	333	343	345	340	350	350
Fish Oil	76	82	82	82	82	82
Other Oils	62	56	49	44	45	53
Total	5,616	5,772	5,471	5,388	5,208	5,340

Appendix Table 4 (cont'd.)

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82 Estimate
Imports						
Soybean oil	0	107	25	50	200	200
Palm oil	46	48	105	103	120	120
Coconut oil	32	51	48	79	80	100
Sunflower oil	0	0	11	90	125	125
Linseed oil	50	59	67	90	60	70
Butter	62	32	174	249	100	125
Tallow/Grease	76	44	85	100	100	100
Lard	2	2	11	10	10	10
Total	268	343	526	771	795	850
Exports						
Sunflower oil	231	148	113	123	100	100
Total	231	148	113	123	100	100
Total supply	5,653	5,967	5,884	6,036	5,903	6,090
Oilmeal production						
Soybean meal	1,563	999	1,152	984	997	1,300
Cottonseed meal	1,845	1,800	1,865	1,742	2,272	2,140
Sunflowerseed meal	1,942	2,173	1,962	1,967	1,711	1,840
Fish meal	579	495	503	512	515	520
Other meal	126	133	107	115	119	125
Total	6,055	5,600	5,589	5,320	5,614	5,925
Imports						
Soybeen meal	0	0	52	500	1,000	1,500
Cottonseed meal	21	3	4	9	100	100
Peanut meal	0	0	76	52	100	100
Total	21	3	132	561	1,200	1,700
Exports						
Fish meal	19	21	20	18	20	20
Total†	19	21	20	18	20	20
Total supply	6,057	5,582	5,701	5,863	6,794	7,505
Percentage in total supply						
Oilseed	18.3	12.8	7.1	10.5	9.1	8.1
Oil	8.1	8.3	12.8	15.1	15.8	16.9
Meal	15.8	11.5	23.0	21.5	28.3	34.4
Grain	4.7	8.9	6.7	17.3	18.3	21.6

* Includes production from imported seed

Source: Counselor and Attache Reports, Official Statistics, FAS Washington Estimates

As of September, 1981

Foreign Agricultural Service, Oilseeds and Products

Appendix Table 5 China's Soybean and Soybean Oil Production, Trade and Consumption

SOYBEAN

ANALY YEAR	MKT.YR. BEGIN.	HARV. AREA	YIELD	PRODUCTION	BEGIN. STOCKS	MKT.YR. IMPORTS	TOTAL SUPPLY/ DISTRIB	MKT.YR. EXPORTS	CRUSH	FOOD USE	FEED SEED WASTE	TOTAL DOMES. USE	END STOCKS
		000 HA.	KG/HA	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT
CHINA (MAINLAND)			570										
1965	09-1964	8,300	836	6,940	---	---	6,940	577	2,539	3,103	721	6,363	---
1966	09-1965	8,100	844	6,840	---	---	6,840	550	2,510	3,068	712	6,290	---
1967	09-1966	8,000	850	6,800	---	---	6,800	565	2,478	3,029	728	6,235	---
1968	09-1967	8,180	850	6,950	---	---	6,950	571	2,550	3,117	712	6,379	---
1969	09-1968	8,000	810	6,480	---	---	6,480	488	2,376	2,904	712	5,992	---
1970	09-1969	8,309	775	6,203	---	---	6,203	366	2,305	2,817	712	5,834	---
1971	09-1970	8,000	863	6,900	---	---	6,900	460	2,565	3,136	739	6,440	---
1972	09-1971	8,500	952	7,903	---	7	7,902	370	3,025	3,697	810	7,532	---
1973	09-1972	9,100	956	8,700	---	255	8,955	310	3,526	4,309	810	8,645	---
1974	09-1973	9,130	1,099	10,000	---	619	10,619	343	4,273	5,223	783	10,279	---
1975	09-1974	8,800	1,080	9,500	---	36	9,536	330	3,778	4,618	810	7,206	---
1976	09-1975	9,100	1,099	10,007	---	25	10,025	128	4,071	4,975	801	9,847	---
1977	09-1976	6,730	985	6,600	---	253	6,853	125	2,755	3,568	605	6,728	---
1978	09-1977	6,800	1,074	7,300	---	108	7,408	90	3,045	3,721	632	7,398	---
1979	09-1978	7,100	1,070	7,600	---	261	7,961	265	3,150	3,825	641	7,596	---
1980	09-1979	7,230	1,042	7,503	---	810	8,310	190	3,362	4,108	650	8,120	---
1981	09-1980	7,300	1,027	7,500	---	750	8,250	200	3,322	4,060	658	8,050	---

SOYBEAN OIL

ANALYSIS YEAR	MKT.YR. BEGIN.	CRUSH	PRODUCT YIELD	PRODUCTION	BEGIN. STOCKS	MKT. YEAR IMPORTS	TOTAL SUPPLY/ DISTRIB.	MKT. YR. EXPORTS	TOTAL DOMESTIC USE	END STOCKS
		000 MT	%	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT	000 MT
CHINA (MAINLAND)			570							
1965	10-1964	2,539	12.01	305	--	--	305	3	302	--
1966	10-1965	2,510	11.99	301	--	--	301	4	297	--
1967	10-1966	2,478	11.98	297	--	--	297	3	294	--
1968	10-1967	2,550	12.00	306	--	--	306	4	302	--
1969	10-1968	2,376	11.99	285	--	--	285	3	282	--
1970	10-1969	2,305	12.01	277	--	--	277	2	275	--
1971	10-1970	2,565	12.00	308	--	--	308	2	306	--
1972	10-1971	3,025	12.00	363	--	10	373	--	373	--
1973	10-1972	3,526	11.99	423	--	58	481	--	481	--
1974	10-1973	4,273	12.00	513	--	--	513	--	513	--
1975	10-1974	3,778	11.99	453	--	11	464	--	464	--
1976	10-1975	4,071	12.01	489	--	13	502	--	502	--
1977	10-1976	2,755	12.01	331	--	85	416	2	414	--
1978	10-1977	3,045	11.98	365	--	184	549	4	545	--
1979	10-1978	3,130	12.01	376	--	122	498	6	492	--
1980	10-1979	3,362	11.98	403	--	100	503	1	502	--
1981	10-1981	3,322	12.01	399	--	120	519	6	513	--

Source: USDA, Oilseeds and Products, March 1981

Appendix Table 6 China's Production and Trade of Oilseed, Vegetable Oil and Oil Meal

(1,000 tons)

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82 Estimate
Oilseed production						
Sunflower seed	150	200	279	340	800	900
Cottonseed	4,100	4,100	4,334	4,414	5,414	5,800
Soybean	6,664	7,300	7,600	7,460	7,880	7,800
Peanut	1,875	1,950	2,377	2,822	3,600	3,600
Sesame	225	250	322	417	259	425
Rapeseed	1,350	1,175	1,868	2,402	2,384	3,800
Other seed *	400	440	372	454	548	550
Total	14,764	15,415	17,152	18,309	20,885	22,875
Imports						
Soybean	253	188	261	810	500	450
Total	253	188	261	810	500	450
Exports						
Soybean	125	90	265	190	150	250
Peanut	26	30	40	42	150	110
Sesame	1	2	2	17	21	21
Castor bean	1	0	10	18	14	14
Total	153	122	317	267	335	395
Total supply	14,864	15,481	17,096	18,852	21,050	22,930
Vegetable oil production						
Sunflower oil	48	64	90	109	258	290
Cottonseed oil	459	459	485	494	606	648
Soybean oil	331	365	375	401	408	396
Linseed oil	11	11	13	19	22	22
Peanut oil	440	331	380	452	558	552
Rapeseed oil	473	384	588	757	751	1,197
Sesame oil	125	106	121	157	97	160
Palm kernel oil	17	17	18	18	20	21
Castor oil	27	32	35	36	39	40
Tung oil	63	70	74	75	76	76
Total	1,994	1,839	2,179	2,518	2,835	3,402

Appendix Table 6 (cont'd.)

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82 (forecast)
Imports						
Soybean oil	85	184	122	100	80	100
Palm oil	25	11	51	60	60	80
Coconut oil	13	18	13	30	40	40
Linseed oil	16	28	22	27	35	35
Total	139	241	208	217	215	255
Exports						
Peanut oil	5	7	24	28	30	30
Soybean oil	2	4	6	1	6	6
Rapeseed oil	5	6	11	12	11	11
Castor oil	0	4	6	6	10	10
Tung oil	9	14	19	18	16	16
Total	21	35	66	65	73	73
Total supply	2,112	2,045	2,321	2,670	2,977	3,584
Oil meal production						
Soybean meal	2,372	2,594	2,661	2,846	2,899	2,811
Cottonseed meal	1,335	1,335	1,411	1,437	1,762	1,885
Sunflower seed meal	62	83	116	141	331	373
Peanut meal	361	375	458	543	672	664
Rapeseed meal	729	635	1,009	1,297	1,387	2,223
Sesame meal	88	97	125	162	102	166
Other meal*	222	230	206	238	304	305
Total	5,169	5,349	5,986	6,664	7,457	8,427
Exports						
Soybean meal	10	19	12	15	15	15
Total	10	19	12	15	15	15
Total supply	5,159	5,330	5,974	6,649	7,442	8,412

* Mainly linseed and castor

Source: Counselor and Attache Reports, Official Statistics, FAS Washington Estimates

Appendix Table 7 EC Oilseed: Supply and Use, 1973-1981

(1,000 MT)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
PRODUCTION 1/									
SOYBEANS	0	3	4	2	2	4	4	17	14
COTTONSEED	285	218	257	263	239	310	310	175	194
PEANUTS	2	2	1	2	2	2	2	2	1
SUNFLOWERSEED	83	99	95	147	114	122	120	216	284
RAPESEED	1,083	1,052	1,175	909	986	921	1,173	1,202	2,027
FLAXSEED	35	30	38	67	54	63	48	49	49
TOTAL	1,488	1,406	1,570	1,390	1,397	1,422	1,657	1,661	2,569
EXPORTS									
SOYBEANS	112	16	110	189	120	237	352	322	161
PEANUTS	24	24	17	31	30	39	41	46	54
SUNFLOWERSEED	25	40	10	39	14	16	39	74	132
RAPESEED	348	239	406	243	246	123	209	193	733
FLAXSEED	65	38	43	49	46	53	53	51	46
COPRA	6	0	0	7	2	4	1	2	0
PALM KERNELS	1	5	0	2	0	1	3	3	2
COTTONSEED	0	0	0	0	0	0	0	0	2
TOTAL	581	362	586	560	458	473	698	691	1,130
IMPORTS									
SOYBEANS	7,116	9,118	8,254	9,267	9,198	11,232	12,148	12,217	10,636
COTTONSEED	54	25	26	45	33	4	10	31	27
PEANUTS	767	711	659	806	581	612	576	499	438
SUNFLOWERSEED	197	209	145	258	279	800	1,045	1,432	1,306
RAPESEED	602	397	322	392	584	361	661	1,195	1,000
FLAXSEED	365	201	184	112	216	453	363	304	332
COPRA	515	284	726	839	573	424	233	197	108
PALM KERNELS	233	302	258	313	256	135	138	117	106
TOTAL	9,849	11,247	10,574	12,032	11,720	14,021	15,174	15,992	13,953
CRUSH 2/									
SOYBEANS	6,953	8,924	8,037	8,950	8,907	10,824	11,707	11,521	10,327
COTTONSEED	271	194	226	235	227	229	211	188	199
PEANUTS	485	432	397	456	270	303	234	162	105
SUNFLOWERSEED	236	271	187	340	334	850	1,109	1,509	1,392
RAPESEED	1,276	1,158	1,032	998	1,283	1,093	1,548	1,832	2,255
FLAXSEED	244	126	130	100	174	253	260	245	267
COPRA	534	277	687	869	574	422	234	192	107
PALM KERNELS	212	272	231	269	237	127	117	114	103
TOTAL	10,211	11,654	10,927	12,217	12,006	14,101	15,420	15,763	14,755
ENDING STOCKS 3/									
SOYBEANS	107	121	153	100	90	418	292	421	281
PEANUTS	0	0	0	0	0	4	18	20	15
SUNFLOWERSEED	9	0	29	22	22	44	10	27	32
RAPESEED	30	23	23	28	19	19	31	68	34
COPRA	43	43	74	31	28	12	9	8	5
PALM KERNELS	6	11	4	8	3	2	0	0	0
TOTAL	195	198	283	189	162	499	360	544	367

1/ All Data are shown on an analysis year basis
2/ Crush data represent reported or estimated crush.
3/ Stocks data are not included for many commodities, and in most cases are FAS estimates. Where data are unavailable, changes are included in consumption.

Source: Counselor and Attache Reports,
Official Statistics,
FAS Wawhington Estimates

Appendix Table 8 EC Oils: Supply and Use, 1973-1981

(1,000 MT)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
PRODUCTION 1/									
SOYBEAN OIL	1,229	1,573	1,424	1,599	1,604	1,903	2,078	2,042	1,832
COTTONSEED OIL	35	25	29	31	30	30	27	25	26
PEANUT OIL	157	142	129	147	86	93	70	48	35
SUNFLOWER OIL	92	107	74	135	130	336	428	586	540
RAPESEED OIL	512	457	424	408	522	504	623	743	905
OLIVE OIL	574	738	650	873	527	924	660	680	1,009
COCONUT OIL	323	173	431	546	355	263	146	123	65
PALM K. OIL	98	124	110	128	115	59	56	55	47
FISH OIL	91	123	130	118	114	111	109	156	141
LINSEED OIL	83	43	44	34	60	91	94	88	97
TOTAL	3,194	3,505	3,445	4,019	3,543	4,314	4,291	4,546	4,697
EXPORTS									
SOYBEAN OIL	430	659	680	629	667	842	929	883	850
PEANUT OIL	55	51	72	46	43	42	60	80	66
SUNFLOWER OIL	94	84	61	75	74	156	200	273	292
RAPESEED OIL	234	242	255	235	299	359	349	400	537
OLIVE OIL	41	30	26	45	30	74	73	69	75
COCONUT OIL	155	76	196	266	157	121	74	58	77
PALM K. OIL	39	56	41	47	50	37	43	40	35
PALM OIL	93	85	105	130	122	109	112	128	174
FISH OIL	76	98	95	118	105	96	89	127	116
COTTONSEED OIL	1	2	0	1	1	1	1	3	3
LINSEED OIL	67	55	49	39	65	64	63	67	64
TOTAL	1,285	1,438	1,580	1,631	1,613	1,901	1,995	2,128	2,289
IMPORTS									
SOYBEAN OIL	200	411	360	342	366	438	451	459	466
COTTON OIL	47	53	23	14	21	10	9	10	13
PEANUT OIL	387	303	300	336	338	304	375	423	285
SUNFLOWER OIL	364	340	276	243	252	238	271	241	256
RAPESEED OIL	82	73	73	84	96	93	172	175	229
OLIVE OIL	255	203	130	112	157	101	173	187	138
COCONUT OIL	255	167	250	395	297	360	363	406	505
PALM K. OIL	149	156	156	152	146	162	188	217	198
PALM OIL	718	648	743	796	759	725	780	797	697
FISH OIL	465	415	475	467	464	524	589	597	590
LINSEED OIL	132	93	74	106	120	140	104	104	65
TOTAL	3,054	2,862	2,860	3,047	3,016	3,095	3,475	3,616	3,442
CONSUMPTION 2/									
SOYBEAN OIL	1,012	1,315	1,120	1,300	1,299	1,465	1,520	1,552	1,512
COTTONSEED OIL	81	76	52	44	50	39	35	32	36
PEANUT OIL	489	394	356	438	382	329	372	391	275
SUNFLOWER OIL	362	354	299	303	307	396	499	524	516
RAPESEED OIL	404	278	259	265	318	206	433	459	619
OLIVE OIL	785	853	720	844	716	893	819	840	936
COCONUT OIL	429	262	471	675	493	505	434	466	498
PALM K. OIL	215	226	224	231	212	183	199	227	216
PALM OIL	627	554	621	669	642	618	646	681	528
FISH OIL	496	437	504	459	467	525	635	601	636
LINSEED OIL	148	81	69	101	115	167	133	125	98
TOTAL	5,048	4,830	4,695	5,329	5,001	5,326	5,725	5,898	5,870
ENDING STOCKS 3/									
SOYBEAN OIL	28	38	22	34	38	72	152	218	154
PEANUT OIL	1	1	2	1	0	26	39	39	18
SUNFLOWER OIL	14	23	13	13	14	36	36	66	54
RAPESEED OIL	48	58	41	33	34	66	79	138	116
OLIVE OIL	235	293	327	423	361	419	360	318	454
COCONUT OIL	4	6	20	20	22	19	20	25	20
PALM K. OIL	11	9	10	12	11	12	14	19	13
PALM OIL	11	20	37	34	29	27	49	37	32
FISH OIL	29	32	38	46	52	66	40	65	44
TOTAL	381	480	510	616	561	743	789	925	905

1/ All data are shown on an analysis year basis.

2/ Consumption data represent 'apparent consumption,' and include all disappearance as well as some changes in stocks.

3/ Stocks data are not included for many commodities, and in most cases are FAS estimates. Where stocks data are unavailable, changes are included in consumption.

Source: Counselor and Attache Reports,
Official Statistics,
FAS Washington Estimates

Appendix Table 9 EC Meal: Supply and Use, 1973-1981

(1,000 MT)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
PRODUCTION 1/									
SOYBEAN MEAL	5,538	7,136	6,468	7,172	7,119	8,687	9,366	9,307	8,321
COTTON MEAL	203	145	170	177	171	171	157	147	155
PEANUT MEAL	168	166	146	164	98	109	87	59	41
SUNFLOWER MEAL	140	153	105	194	196	495	654	850	795
RAPESEED MEAL	725	656	584	563	726	624	870	1,051	1,275
COPRA MEAL	196	99	245	311	203	149	81	67	40
PALM K. MEAL	113	145	122	142	122	67	61	61	53
LINSEED MEAL	151	78	80	62	107	157	161	155	169
FISH MEAL	432	483	479	509	489	478	455	501	460
TOTAL	7,666	9,061	8,399	9,294	9,231	10,937	11,892	12,198	11,309
EXPORTS									
SOYBEAN MEAL	2,167	2,265	1,739	1,909	1,963	2,790	3,114	3,575	3,871
COTTON MEAL	53	33	22	40	10	11	58	61	57
PEANUT MEAL	48	40	30	35	29	28	34	31	16
SUNFLOWER MEAL	53	51	17	47	22	130	174	189	197
RAPESEED MEAL	207	264	209	212	212	247	301	289	413
LINSEED MEAL	50	31	34	32	27	49	38	47	54
COPRA MEAL	34	21	34	71	34	39	58	49	34
PALM K. MEAL	44	50	54	60	28	23	15	11	20
FISH MEAL	284	381	362	378	371	351	381	444	403
TOTAL	2,940	3,136	2,501	2,784	2,696	3,668	4,173	4,696	5,065
IMPORTS									
SOYBEAN MEAL	4,425	4,852	4,829	5,649	5,687	7,853	8,445	9,427	10,171
COTTONMEAL	1,069	654	748	678	595	686	846	634	584
PEANUT MEAL	877	505	589	1,044	985	642	926	703	319
SUNFLOWER MEAL	364	328	270	301	375	575	610	689	625
RAPESEED MEAL	346	334	259	321	450	477	520	522	497
LINSEED MEAL	378	341	394	494	362	631	573	652	544
COPRA MEAL	715	559	600	911	730	840	872	891	996
PALM K. MEAL	278	296	333	353	309	336	430	432	402
FISH MEAL	810	772	864	849	755	707	803	760	617
TOTAL	9,262	8,641	8,886	10,600	10,448	12,747	14,025	14,710	14,755
CONSUMPTION 2/									
SOYBEAN MEAL	7,796	9,671	9,587	10,900	10,851	13,473	14,685	15,337	14,584
COTTON MEAL	1,219	766	896	815	756	846	945	720	682
PEANUT MEAL	997	631	705	1,173	1,054	720	972	741	344
SUNFLOWER MEAL	446	427	361	451	551	934	1,090	1,346	1,222
RAPESEED MEAL	861	707	652	662	934	866	1,103	1,269	1,349
LINSEED MEAL	474	364	434	508	596	705	676	725	614
COPRA MEAL	878	636	810	1,150	899	949	895	908	1,005
PALM K. MEAL	347	391	401	435	403	380	476	482	435
FISH MEAL	957	852	1,000	975	866	820	892	819	676
TOTAL	13,975	14,445	14,846	17,069	16,910	19,693	21,734	22,347	20,911
TOTAL SME	13,202	13,842	14,194	16,245	16,087	18,751	20,734	21,244	19,690
ENDING STOCKS 3/									
SOYBEAN MEAL	29	81	52	64	56	333	345	167	204
PEANUT MEAL	0	0	0	0	0	3	10	0	0
SUNFLOWER MEAL	5	8	5	2	0	6	6	10	11
RAPESEED MEAL	5	24	6	16	46	34	20	35	45
COPRA MEAL	2	3	4	5	5	6	6	7	4
FISH MEAL	10	32	13	18	25	39	24	22	20
TOTAL	51	148	80	105	132	421	411	241	284

1/ All data are shown on an analysis year basis.
2/ Consumption data represent 'apparent consumption,' and include all disappearance as well as some changes in stocks.
3/ Stock data are not included for many commodities, and in most cases are FAS estimates. Where stocks data are unavailable, changes are included in consumption.

Source: Counselor and Attache Reports,
Official Statistics,
FAS Washington Estimates

Appendix Table 10 United States Exports: Soybean Oil and Meal 1979-1981

(MT)

Continent and Country of Destination	Soybeans[1]			Soybean oil[2]			Soybean oilseed cake and meal[2]		
	1979	1980	1981[4]	1979	1980	1981[4]	1979	1980	1981[4]
North America:									
Canada	300,737	401,257	282,001	19,845	12,657	5,967	399,467	338,522	338,500
Mexico	407,618	931,249	664,604	729	50,347	2,540	147,435	178,245	117,669
Other	74,135	111,023	129,130	86,268	89,010	91,996	137,369	170,504	205,761
Total	782,490	1,443,529	1,075,735	106,842	152,014	100,493	684,271	687,271	661,930
South America:									
Brazil	65,914	11	77,500	72,124	3,998	0	0	0	0
Colombia	37,644	0	16,062	83,287	79,301	69,305	8,518	0	7,703
Ecuador	0	62	7,635	21,267	37,353	41,622	0	0	0
Peru	22,576	0	6,237	24,527	32,774	54,714	0	33,560	19,182
Venezuela	42,287	65,952	60,245	18,998	19,506	53,572	269,077	339,039	399,150
Other	563	423	226	31,948	6,270	22,941	7,139	3,208	14,926
Total	168,984	66,448	167,906	252,141	179,202	242,154	284,734	375,807	440,962
Europe:									
Belgium & Luxembourg	366,234	593,327	1,041,369	35	3	3	9,007	21,689	34,390
Czechoslovakia	1,524	1,270	0	NA	NA	0	230,828	174,661	20,950
Denmark	335,965	274,392	165,868	3	1	1	55,422	36,443	10
France	699,036	635,564	628,227	3,569	2,940	0	368,915	159,215	27,291
Germany, Fed. Rep. of	1,263,313	1,451,099	2,024,493	53	81	86	570,029	984,312	738,182
Germany, Dem. R.	3,129	1,600	813	NA	NA	0	379,234	360,631	207,506
Ireland	0	0	0	5	0	0	109,141	46,581	2,810
Italy	896,802	837,956	861,009	0	1	11	678,347	825,961	756,005
Netherlands	4,235,496	5,392,262	4,393,546	2	8,471	1,019	825,029	1,669,211	1,853,723
Norway	236,758	269,562	261,016	NA	NA	18	0	168	233
Poland	201,301	241,637	86,851	23,792	11,531	6,997	343,327	311,423	275,406
Portugal	174,051	120,832	298,126	1	0	0	132,679	70,086	225,860
Romania	260,416	247,631	60,503	NA	NA	0	236,108	292,704	318,291
Spain	1,774,110	1,720,315	1,910,235	0	1	2	213,630	2,698	41,437
Switzerland	45,695	4,318	111,366	0	24	350	20,188	31,659	32,942
United Kingdom	525,750	449,281	518,499	10	52	33	65,746	83,417	69,557
Yugoslavia	251,255	181,311	210,017	0	19,999	6,648	81,329	182,050	139,820
Other	130,216	189,737	206,809	216	244	45	194,889	239,966	242,[illegible]
Total	11,391,051	12,612,693	12,877,747	27,586	43,648	15,213	4,513,847	5,492,875	4,997,[illegible]
Soviet Union:	1,816,956	172,942	33,747	24,696	0	0	28,979	0	0
Africa:	45,980	40,504	22,949	58,541	52,844	62,378	8,548	22,622	29,776
Asia:									
China:									
Mainland	412,235	805,688	472,961	58,817	99,657	25,617	0	0	0
Taiwan	1,100,722	935,796	1,062,796	10	27	10	0	10,496	386
India	NA	NA	NA	225,245	366,405	91,708	0	0	0
Indonesia	105,750	202,924	302,597	284	36	48	17,774	18,608	8
Iran	NA	0	0	107,669	0	0	121,353	0	0
Israel	366,018	259,659	300,354	9,794	8,613	5,030	0	0	50
Japan	3,707,192	4,032,866	4,001,330	132	115	19,701	205,056	245,506	82,134
Korea, Rep. of	421,815	564,433	424,581	31	18	97	77,837	0	38,726
Pakistan	0	17	0	163,539	150,221	181,660	0	0	0
Other	83,332	360,823	213,783	64,975	22,583	47,213	142,775	151,930	95,643
Total	6,197,065	6,723,506	6,769,442	630,496	647,675	371,104	564,854	426,533	216,347
Australia & Oceania:	12,658	31,126	21,313	28,942	20,697	26,516	4,481	18,673	7,228
Grand Total	20,890,129	21,778,536	21,830,406	1,129,334	1,096,080	817,857	6,087,713	7,023,787	6,344,614
Value of Exports:									
Total (Mil. $)	5,701	5,880	6,186	789	889	473	1,416	1,664	1,589
Per metric ton	$272.91	$269.98	$283.35	$680.58	$628.50	$579.46	232.67	$235.98	$250.42

Note: Figures computed from unrounded data.
[1]Beginning in 1978, excludes soybeans for planting. [2]Crude and refined oil combined as such. Includes shipments under P.L. 480 as reported by census. Beginning in 1978, excludes partially hydrogenated soybean salad oil. [3]Beginning in 1978, includes soybean flour and meal, non-defatted previously elsewhere classified. [4]Preliminary. [5]Unofficial revisions reported by the Census Bureau. [6]Subject to revision. Source: Foreign Agricultural Service. Compiled form reports of the U.S. Department of Commerce.

Source: ASA, '82 Soybean Bluebook, 1982

Appendix Table 11 Brazil: Export of Soybean Oil and Meal by Country

(1,000 MT)

	1981	1980	1979
Soybeans			
Belgium-Lux..	37.4	18.7	-
France.....	13.4	84.8	56.7
Italy.....	76.4	46.3	41.5
Netherlands..	38.2	373.5	214.4
Germany, FR ...	19.6	50.6	56.2
Norway.....	17.6	8.7	24.9
Portugal.....	30.4	52.2	4.5
Spain.....	481.8	705.6	125.4
Switzerland..	0.5	3.7	0.2
U.S.S.R.....	496.7	118.3	45.3
Mexico.....	217.7	42.0	-
Paraguay.....	3.9	0.3	0.5
Japan.....	5.0	39.6	1.3
West Malaysia	6.5	-	-
Oth.countries	4.7	5.4	67.6
Total.....	1449.7r	1549.9	638.5

	1981	1980	1979
Soybean oil crude			
France.....	-	7.2	-
Netherlands..	52.6	35.1	19.3
West Germany.	0.2	20.9	-
Poland.....	25.1	7.7	-
Yugoslavia...	-	35.2	-
U.S.S.R	71.9	32.0	17.0
Angola.....	0.5r	2.4	-
Egypt.....	2.0r	4.4	-
Mauritius....	4.0	1.1	0.7
Morocco.....	11.2	-	5.7
Nigeria.....	6.0r	-	-
South Africa.	5.5	-	-
Panama.....	7.7	-	-
Chile.....	14.8	10.1	15.6
Colombia.....	36.9r	-	-
Peru.....	19.3	4.0	0.1
Bangladesh...	7.4	11.8	-
China,PR.....	23.9	20.6	45.6
India.....	527.1r	247.8	238.7
Iran.....	208.9r	216.2	67.9
Japan.....	9.7	-	-
Pakistan.....	52.7	60.6	92.8
Singapore....	10.1r	3.8	-
Oth.countries	10.1	10.9	21.1
Total.....	1107.6r	731.9	524.5
refined/oth			
Netherlands..	2.2r	-	-
Poland.....	5.0	-	-
U.S.S.R	2.5r	-	-
Angola.....	32.6	6.4	1.7
Egypt.....	28.1r	-	5.5
Nigeria.....	6.3	-	-
Chile.....	3.3r	0.4	-
Hong Kong....	4.8	-	-
India.....	33.9r	2.5	1.5
Iran.....	18.7r	1.9	
Pakistan.....	0.6r	-	-
Singapore....	21.3r	-	-
Oth.countries	14.5	0.9	0.5
Total.....	173.6r	12.1	9.2

	1981	1980	1979
Soybean meal			
Belgium-Lux..	108.0	134.8	35.6
Denmark.....	48.0	23.5	47.1
France.....	1730.0	1424.4	982.9
Ireland.....	7.4	-	-
Italy.....	447.2	382.3	485.0
Netherlands..	2128.3	1461.7	1305.8
Germany, FR ..	818.5	897.9	548.2
Portugal.....	10.0	108.0	29.0
Spain.....	46.7	30.3	155.3
Sweden.....	10.1	-	0.8
Czechoslovak.	289.4	135.1	60.3
German DR.....	177.0	20.0	-
Hungary.....	352.6r	212.3	131.3
Poland.....	924.6	806.2	604.7
Romania.....	168.3	-	-
Yugoslavia...	71.4	159.2	186.0
U.S.S.R.....	498.4	-	-
Ivory Coast..	3.1	-	-
Morocco.....	4.5	-	-
South Africa.	11.7	-	-
Tunisia.....	105.6	24.8	32.8
Venezuela....	15.2	-	3.5
India.....	9.3	-	13.2
Indonesia....	94.8	57.9	-
Iran.....	175.3	147.0	-
Iraq.....	115.2	30.8	78.0
Japan.....	100.1	88.8	54.4
Jordan.....	15.3	-	5.0
Korea, Rep. of	10.0	12.5	69.1
Philippines..	191.6	221.5	96.0
Singapore....	88.3	127.1	210.8
Syria.....	50.7	10.0	8.0
Thailand.....	58.3	54.4	28.0
Oth.countries	6.3	11.4	[illegible]
Total.....	6891.4r	6581.7	[illegible]

Source: Oil World

Appendix Table 12 Argentina: Exports Soybean Oil and Meal by Country

(1,000 MT)

Soybeans	1981	1980	1979
Italy	195.4	311.6	408.3
Netherlands	337.6	580.7	1248.3
Germany, FR	36.5	182.4	90.8
Spain	111.1	359.0	348.3
USSR	716.5	744.2	-
Mexico	273.6	-	18.1
Brazil	266.1	247.4	52.8
Other countries	270.1	274.6	643.2
Total	2,206.9	2,699.9	2,809.8

Soybean oil	1981	1980	1979
France	-	3.2	-
Germany, FR	2.0	2.5	-
Poland	-	4.3	-
USSR	3.0	7.0	-
Tanzania	-	-	-
Bolivia	10.4	7.9	3.6
Brazil	-	14.4	32.4
Chile	40.9	31.0	7.2
Colombia	4.5	-	-
Peru	0.1	5.3	0.1
Bangladesh	5.0	-	-
China	3.0	-	3.8
Pakistan	-	8.5	11.2
Turkey	-	4.0	-
Other countries	1.0	3.7	22.4
Total	69.9	91.8	80.8

Soybean meal	1981	1980	1979
Belgium-Lux	10.0	-	-
Denmark	116.4	45.1	63.4
France	15.3	14.4	105.3
Italy	10.2	-	5.5
Netherlands	132.7	50.1	60.5
UK	63.0	6.3	-
Germany, FR	10.8	-	7.5
Portugal	11.0	40.9	7.4
Spain	18.0	-	-
Tunisia	-	46.9	18.2
Cuba	86.4	83.8	41.2
Chile	20.2	1.1	-
Peru	9.4	-	-
Uruguay	3.3	1.2	3.0
Singapore	13.9	-	-
Other countries	-	-	34.7
Total	520.5	289.8	346.8

Source: Oil World

Appendix Table 13 Soybean, Soybean Oil and Soybean Meal

(Soybean oil: in cent per pound, Extraction rate: 10.8 pound)

(Soybean meal: in dollar per short ton, Yield rate: 47.5 pound)

Oil / Meal	30	29	28	27	26	25	24	23	22	21	20
180	752.0	741.2	730.4	719.6	708.8	698.5	687.2	676.4	665.6	654.8	644.0
184	761.5	750.7	739.9	729.1	718.3	707.5	696.7	685.9	675.1	664.3	653.5
188	771.0	760.2	749.4	738.6	727.8	717.0	706.2	695.4	684.6	673.8	663.0
192	780.5	769.7	758.9	748.1	737.3	726.5	715.7	704.9	694.1	683.3	672.5
196	790.0	779.2	768.4	757.6	746.8	736.0	725.2	714.4	703.6	692.8	682.0
200	799.5	788.7	777.9	767.1	756.3	745.5	734.7	723.9	713.1	702.3	691.5
204	809.0	798.2	787.4	776.6	765.8	755.0	744.2	733.4	722.6	711.8	701.0
208	818.5	807.7	796.9	786.1	775.3	764.5	753.7	742.9	732.1	721.3	710.5
212	828.0	817.2	806.4	795.6	784.8	774.0	763.2	752.4	741.6	730.8	720.0
216	837.5	826.7	815.9	805.1	794.3	783.5	772.7	761.9	751.1	740.3	729.5
220	847.0	836.2	825.4	814.6	803.8	793.0	782.2	771.4	760.6	749.8	739.0
224	856.5	845.7	834.9	824.1	813.3	802.5	791.7	780.9	770.1	759.3	748.5
228	866.0	855.2	844.4	833.6	822.8	812.0	801.2	790.4	779.6	768.8	758.0
232	875.5	864.7	853.9	843.1	832.3	821.5	810.7	799.9	789.1	778.3	767.5
236	885.0	874.2	863.4	852.6	841.8	831.0	820.2	809.4	798.6	787.8	777.0
240	894.5	883.7	872.9	862.1	851.3	840.5	829.7	818.9	808.1	797.3	786.5
244	904.0	893.2	882.4	871.6	860.8	850.0	839.2	828.4	817.6	806.8	796.0
248	913.5	902.7	891.9	881.1	870.3	859.5	848.7	837.9	827.1	816.3	805.5
252	923.0	912.2	901.4	890.6	879.8	869.0	858.2	847.4	836.6	825.8	815.0
256	932.5	921.7	910.9	900.1	889.3	878.5	867.7	856.9	846.1	835.3	824.5
260	942.0	931.2	920.4	909.6	898.8	888.0	877.2	866.4	855.6	844.8	834.0
264	951.5	940.7	929.9	919.1	908.3	897.5	886.7	875.9	865.1	854.3	843.5
268	961.0	950.2	939.4	928.6	917.8	907.0	896.2	885.4	874.6	863.8	853.0
272	970.5	959.7	948.9	938.1	927.3	916.5	905.7	894.9	884.1	873.3	862.5
276	980.0	969.2	958.4	947.6	936.8	926.0	915.2	904.4	893.6	882.8	872.0
280	989.5	978.7	967.9	957.1	946.3	935.5	924.7	913.9	903.1	892.3	881.5

Soybeans: in cent per bushel

Source: Tozo Tsuchiya, Analyzing Method of Chicago Soybean Market, 1981

[1-2-4] OTHER OILSEED CROPS

Of the vegetable oils studied, peanut, sunflower, cottonseed, corn and castor oils are described generally here. These oilseed crops are all annual. Their oils, except for castor bean oil, are used mostly as edible oils and are known in general as premium oils because their prices are higher than those of soybean oil and rapeseed oil.

Cottonseed, a byproduct of cotton, is unique in that its production trends parallel that of cotton. The production of corn oil, a byproduct of cornstarch, is dependent on the production of cornstarch. Castor oil, used for industry, has a supply and demand pattern different from all other edible oilseed crops. Production of each of these oilseed crops is concentrated in a few countries, but is relatively dispersed in comparison with that of soybeans in the United States or palm oil in Malaysia.

Except for castor oil, a large proportion of the production of each of these oils is consumed in the producing countries. Consequently, the ratio of exports to production is low. The production of corn oil is concentrated in the United States and the export ratio is higher.

[1-2-4-1] PEANUT

A. PRODUCTION AND EXPORT

I. Production

Peanut is cultivated widely in the tropical and temperate zones, and is a crop that grows relatively well in high temperatures with good resistance to dry conditions. It is botanically classified into a few subspecies and many varieties, and is also classified by seed size for practical purposes, into large seeds and small seeds. The former are used mainly as food, while the latter are mainly used as a material for oil extraction and for peanut butter, because of their high oil content.

Peanut production in the world and in each country is shown in Appendix Table 1 (FAO, Production Yearbook) and Appendix Table 2 (Oil World statistics). The figures in Appendix Table 1 show the production of peanuts in shell, and those in Appendix Table 2 show that of shelled peanuts.[1)]

Using data from Appendix Table 1, the area under cultivation, the yield and the average production for the past three years in the major producing countries are tabulated in Table A-1 below. A comparison with the output of ten years ago is also shown.

As seen in Table A-1, India, China and the United States are the major producing countries. The yield is highest (about 2.5 tons/ha) in the United States, lowest (about 0.77 tons/ha) in India, and in the middle range in China, Indonesia and Brazil.

In the last decade, peanut production increased slightly in the world and in the major producing countries, but decreased almost by half in Brazil. The area under cultivation has shown little change in

1) The proportion of peanut in shell to shelled peanut (conversion rate), which varies by country, is usually between 67 and 75% (see Appendix Table 2). Shelled peanut volume is usually used in import-export statistics and as the volume of peanut used for oil extraction.

Table A-1 Area under Cultivation, Yield and Production of Peanut in the World and in Main Producing Countries (1979 - 1981 Average)

[area: 1,000 ha; yield: kg/ha; production (nuts in shell): 1,000 tons]

	Area under cultivation	Yield	Production	1979-81 average
India	7,214	775	5,595	5,807
China	2,345	1,433	3,368	2,134
USA	594	2,583	1,546	1,289
Sudan	963	861	830	370
Indonesia	500	1,567	786	462
Brazil	281	1,539	433	876
Argentina	291	1,318	401	280
World total	18,932	965	18,277	17,850

Source: Excerpted from FAO statistics shown in Appendix Table 1

the past decade, and the increase in production is a result of the increase in crop yield (Brazil's decrease in production resulted from a decrease in area under cultivation).

II. Exports

Peanut is exported either in the form of nuts or as processed goods (oil and meal). Export in the form of nuts is shown by country for the last five years in Appendix Table 3; the average export of nuts from each of the main exporting countries in the last three years is shown along with production in Table A-2.[1)]

As shown in this Table, the total world production of peanut [2)] is 11.64 million tons, while exports are 776,000 tons, or only 6.7% of production. This means that almost all peanut produced is used for crushing or is eaten in producing countries.

1) There is a time lag between production and export, but it may be negligible because the figures in this Table represent an average over a three-year period.
2) Though total world exports may be over-calculated because transit exports from Singapore are included, there is probably not a very large error.

Table A-2 Peanut Exports from Main Exporting Countries (1979 ~ 1981 Average)

(Quantity of shelled nuts: 1,000 tons)

	USA	China	Argentina	Sudan	India	South Africa	Brazil	Others	World total
Export	263	103	68	64	36	34	29	276	776
Production	1,159	2,315	188	598	4,037	211	282	2,860	11,647

Source: Oil World

Looking at this information by country, it can been seen that in India, which is the greatest producer of peanut, almost all of the production is consumed within the country and that the main exporting countries are the United States, China, Argentina and Sudan. China and the United States are major producing countries, after India, and are also major exporting countries. The ratio of exports to production is 5.4% in China, and a high 21% in the United States. The country with the highest export ratio is Argentina, which exports 36% of its output. Peanut is an important export crop for Argentina because it exports a large amount of oil and meal as well.

III. Situation in Major Producing Countries

1. India

India is a major producer of peanut, accounting for one third of world peanut production. Moreover, this country, where various oilseed crops besides peanut are cultivated, holds a substantial position in world oilseed crop cultivation.

Peanut was introduced into India in the sixteenth century, but it was not until the twentieth century that it became an economically important crop. This is demonstrated by the fact that the area under cultivation in India rose from about 160,000 ha at the beginning of this century to 3 million ha in the 1930s, and has now exceeded 7 million ha.

The cultivation of peanut is concentrated in the five states (Gujarat, Andhra Pradesh, Tamil Nadu, Maharashtra and Madhya Pradesh)

account for 90% of the total domestic production. This area is semiarid. Gujarat, which ranks first in production, has an annual rainfall of from 600 to 800 mm, and peanut is cultivated in areas with rainfall of 350 mm or less. Since the cultivation of peanut requires a rainfall of 650 mm or more, peanut cultivation in India is carried out on marginal land. This seems to be a major reason why the peanut yield in India is markedly lower than that of other major producers (China, the United States and Brazil). Peanut cultivation in India is mostly dependent on rainfall, but irrigation is carried out in Punjab State. This state ranks ninth in peanut production states of India but has a yield at least double that of other states.

Rotation and intercropping are generally done with various kinds of crops, e.g., wheat, ragi (Eleucine coracana), sorghum, gram, castor or cotton. Since peanut plants are low in height and since some species are spreading varieties, they are intercropped with taller crops.

Peanut is produced in the greatest volume among all the oilseed crops of India, and peanut oil is the most popular edible oil.

It is estimated that of total peanut production, 10% is used for seed and 10% for eating. Oil is extracted from the remaining 80%.

In the oil extraction industry, many ultra-small-scale mills are used which crush peanuts by means of rotary mills using cattle power (called bull ghani), in addition to modern mills with expeller systems. Since the extraction by these crushing systems leaves 8 to 10% of the oil behind in the meal, there are also mills for solvent extraction. The meal left after solvent extraction is defatted cake containing from 1 to 2% oil and 25% protein.

Peanut oil is widely used as an edible oil, especially in India where it is the most important oil as a material for vanaspati, indispensable to the people's eating habits.[1] In order to prevent the price of vanaspati from rising, palm oil has been recently imported as a material, and consequently, peanut oil and palm oil are in competition as materials for vanaspati. The Indian Government controls the imports of palm oil and promotes the production of peanut especially in the State of Gujarat in consideration of the balance of interests between peanut farmers and domestic oil extraction companies on one hand and vanaspati consumers on the other.

The meal, a byproduct of the extraction of oil, is mostly consumed as feed within the country, and some is exported. India also makes efforts to use the meal as protein food which is refined and processed in both the public and private sectors. Various kinds of

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1) See the preceeding chapter on palm oil with regard to vanaspati.

foodstuffs have been developed, for example, baby foods called Bal Amul and Bal Ahar, a flour mixture used as a material for chappati, and peanut yogurt. There is, however, a problem with aflatoxin in using peanut oil meal directly for food, especially for baby food.

2. China

The history of peanuts in China can be traced back to times before the birth of Christ, and some Chinese scholars say that peanuts originated in China. Commercial peanut cultivation, however, has a short history, beginning when an American missionary brought Virginia-type large peanut varieties to China in the second half of the nineteenth century. Since then, peanut cultivation spread from Shantung Province.

In recent years, China, with an area under cultivation of about 2.5 million ha and production of about 2.3 million tons of shelled peanuts, ranks second in the world, following India (see Table A-1 above and Appendix Table 1).

The main peanut-producing areas are the districts on the Bo Hai Coast of the Shantung Peninsula in North China, accounting for about 40% of the national production, but production is dispersed throughout the country. The main oilseed crops in China are soybean, peanut, sesame seed and rapeseed, of which peanut is the second most important. Peanut production has steadily increased in the last three decades. In addition to domestic consumption, some of China's peanut is exported. China ranks second in peanut exports, following the United States.

Varieties of peanut cultivated in China fall into peculiar categories when named in Chinese, but from the point of view of physical characteristics, they seem to be four types: Virginia, Spanish, Valencia and Peruvian. Thus it seems that the ordinary types of peanut are cultivated in China.

Judging by Chinese eating habits, a considerable portion of peanuts are used for eating. Peanuts are eaten directly, boiled or parched, and also in the form of processed foods such as Chinese peanut butter, biscuits, rice cakes and soy sauce. The oil is consumed as a high-quality edible oil and the meal is used not only as a feed but also as a material for brewing soy. The production of peanut has been about 2.3 million tons in recent years (on average over the 1979-1982 period), and about 1 million tons are used for crushing.

Since the remainder is used for eating and sowing, it follows that peanuts are used for eating and for crushing in equal amounts.

The proportion of peanuts for eating in China is high compared with the figure calculated in the same way for India (73% for crushing).

3. The United States

The United States ranks third in the world in production of peanut, but first in peanut exports. Main producing areas are the southern plains, the southeast areas and two central Atlantic states, North Carolina and Virginia. Seven states account for 98% of the national production. The State of Georgia in particular produces a large amount of peanut, accounting for one third or more of the national production.

As for varieties cultivated, Runner type is most common, and the Virginia and Spanish types are cultivated as well. The large Virginia peanuts are used exclusively for eating.

Peanut production in the United States is controlled by the Government's production control policy concerning the area under cultivation and production. Price support is provided within a poundage quota under the Agriculture and Food Act. The quota was reduced from 1.44 million tons in 1981 to 1.2 million tons in 1982 (short tons), and the support price was raised from US$455 to US$550 per ton in the same period.

About 22% of the peanut produced is exported and the remainder is used for food and extraction within the country. The proportion of peanuts used for eating is much more than that used for crushing. The distribution of domestic consumption will be referred to in the section on consumption.

4. Sudan

Sudan has the largest area of any country in Africa, but a large part of the country consists of deserts, waterlogged areas and other types of land which are not suitable for agriculture. Cultivable areas occupy only one third of the country, and no more than 9% of that has been cultivated. Sudan has, however, an extremely large potential for agricultural development, since the Nile River runs through the country.

In Sudan, peanut is an important cash and export crop. Sudan ranks fourth in world production, with about 1 million ha under cultivation and 600,000 tons of production. This means that the cultivation of peanut occupies one seventh of the cultivated area (about 7 million ha) in the country.

The cultivation of peanuts depends chiefly on rainfall, and irrigated cultivation accounts for about one fourth of all cultivation. Rainfed cultivation is done either by the primitive slash-and-burn-method (shifting cultivation) or by crop rotation. The former method does not use fertilizers in general, and instead of rotation, combined cultivation with sesame, roselle (Hibiscus sabdariffa) and millet is carried out.

The peanut produced is exported in the form of nuts or as oil and meal after crushing. The domestic consumption is small. Thus Sudan is one of the most important countries in the world export of peanut, peanut oil and meal.

5. Brazil

Brazil ranks eighth in the world in the production of peanut but first in the export of peanut oil (on the average over the 1979-1981 period, see Table A-2 above).

As shown in the following chart, the largest proportion of the peanuts produced is crushed, and almost all of the oil and meal produced is exported from Brazil. In the export of meal, Brazil equals Argentina, following Sudan and Senegal.

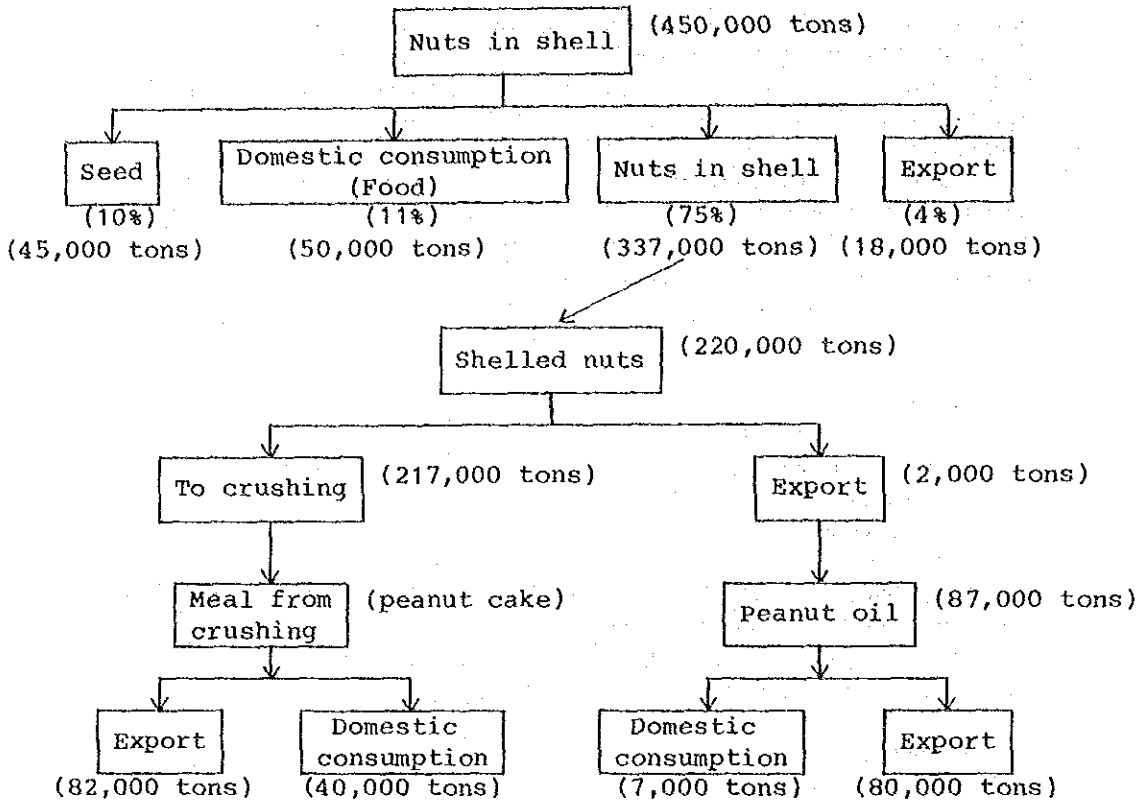
Another point which should be noted with regard to peanut production in Brazil is that Brazil alone has reduced production, in contrast to the increase in the past decade in almost all of the other producing countries of the world. Brazil reduced peanut output from 600,000 tons in the beginning of the 1970s to 250,000 tons in 1981/1982 (330,000 tons on the average in the past decade).

Reference to the production situation in Brazil is not necessary for the purposes of this chapter, but it may be considered that the reduction mentioned above is the result of competition with soybean, which expanded greatly in production in the 1970s. It is also conceivable that the problem of aflatoxin contamination of Brazilian peanuts is related to the reduction of output.

6. Argentina

Argentina ranks seventh in world peanut production (see Table A-1 above), but third in peanut exports (see Table A-2 above), and third in oil and meal exports, following Sudan and Senegal, and thus Argentina should be considered as an exporting country. Argentina is one of the important exporting countries not only of peanut but also of sunflower and soybean.

Fig. A-1 Distribution Chart of Peanut in Brazil



Source: Pompeu, 1980; CACEX, 1980

One of the original homes of peanut, as is Brazil, Argentina has a long history of peanut cultivation, but it is only since the nineteenth century that peanut became an important crop from an economic point of view.

Main producing areas at the end of the nineteenth century were the states of Santa Fe, Entre Rios and Corrientes, but these states began to turn to sunflower and cotton cultivation in the 1930s. On the other hand, Cordoba State has increased peanut production and recently accounts for 90% of national production.

Cordoba, which belongs to the area called "pampa arida" in Spanish, has the characteristics of a semiarid area. 600 to 800 mm of rainfalls annually between October and March. It is assumed that this state became a major producer of peanuts because wheat and maize, which had been main crops in this area, often suffered from

drought and yielded poor crops, while peanut is drought-resistant and its crop is stable.

The area under cultivation of peanut on an ordinary farm in this state is about 100 to 150 ha. Cultivated varieties are mainly the Valencia and Spanish types (small size for crushing) and the varieties which were developed in Manfredi State Agricultural Station are pervasive. Of these, about 20% are Colorado Irradio INTA, a mutated variety obtained by X-ray radiation on Colorado Manfredi, which is a variety developed at the Station.

Varieties of the Virginia type (large size) peanut are not produced extensively since their growing period is long and the market for peanut for eating has not yet been established in this country; i.e., there are disadvantages in terms of both production and demand.

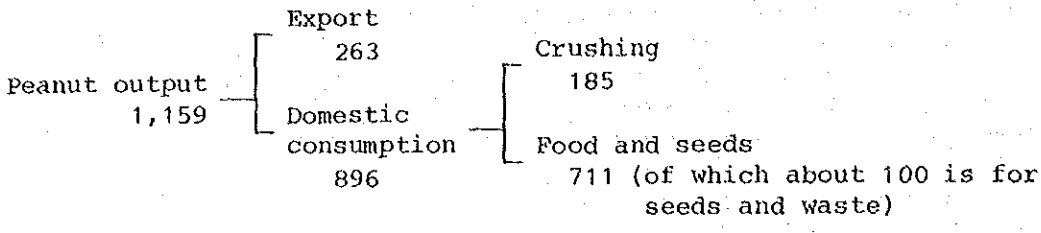
B. CONSUMPTION AND IMPORT

The consumption of peanut is classified by use into two categories: consumption as nuts or as processed goods (e.g., peanut butter and confectionery), and consumption as edible oil after crushing. The average production of peanut in the last three years was 11.612 million tons (shelled), of which the amount crushed for oil was 6.367 million tons, accounted for about 55% of production. Thus it is estimated that the remainder, or 45%, was for food, seeds and waste.

As stated in the previous section, a large quantity of peanuts are consumed in producing countries. The export of nuts accounts for no more than 6.7% of the total production; the majority is eaten or crushed in the producing countries. Oil extracted in producing countries is consumed mainly within those countries, and the export of oil accounts for 17% of the total oil produced. The reason for such consumption in producing countries is that India and China, which account for the majority of the total world production, have a large population (the total population of the two countries is 37% of the world population).

The United States, which is the third-largest producing country in

the world, exports a small part of its production and consumes most of it within the country. The domestic consumption goes more for eating than crushing. This is illustrated as follows: (1979-1981 average; 1,000 tons)



Source: Derived from Oil World statistics

As shown above, the amount consumed as a food is more than that used for crushing in the United States. According to other data (Statistical Reporting Service, USDA), the quantity of nuts used for peanut processed foods in the United States in 1980/81 was 488,000 tons, which was distributed as follows:

Candy	22.1%
Salted nuts	19.1%
Peanut butter	54.7%
Butter sandwich	2.2%
Other processed goods	1.9%
Total	488,000 tons

In the United States, more than 60% of the peanut oil produced is consumed for cooking and as salad oil, and the remainder is consumed as a material for shortening, margarine and other uses.

The imports of peanut by country are shown in Appendix Table 6. The imports by main importing countries are shown as averages over the last three years below:

Table B-1 Peanut Imports by Main Importing Countries (1979 - 1981 Average)

(Quantity of shelled nuts: 1,000 tons)

France	UK	Nether-lands	Canada	Japan	Germany, FR	Italy	Others	World total
110	78	70	61	62	54	44	300	780

Source: Oil World

The imports of peanut shown in this Table show that high-income industrialized countries, i.e., the EC countries, Canada and Japan, are the main importing countries. The EC countries are also main importing countries of peanut oil (the imports of oil by Canada and Japan are small).

Imports to these countries are for the most part used as food, except in France.

In France a considerable portion of the nut imported is crushed, but France is also the largest importer of peanut oil. This means that the consumption of peanut oil in this country is considerably more than in other countries. Though the consumption of vegetable oil in France is not necessarily more than in other developed countries, the consumption of peanut oil is much greater. This is probably because French people have a strong preference for the flavor of peanut oil.

C. PEANUT OIL DEMAND AND SUPPLY, AND PRICE

As previously stated, peanut demand is divided into the demand for peanut as a food and the demand for peanut as an oil. The latter is of considerable importance in international demand and supply (exports and imports). The export and import of nuts are largely in the form of a food (crushing is done mainly in producing countries), and is a very small portion of the output. Since this section will discuss peanut as an oilseed, peanut oil demand and price are described here.

I. Peanut Oil Production and Consumption

The production of peanut oil by country is shown in Appendix Table 4, and the average output in each of the major countries in the latest three-year period is shown in Table C-1. A large proportion of peanut oil is produced in peanut producing countries, but European countries, especially the EC countries, import and crush peanuts.

In the producing countries, except for India, which consumes all of its production within the country, the oil produced is in part absorbed by domestic consumption and the remainder is exported. Peanut oil export statistics are shown in Appendix Table 5, and the exports from the major exporting countries, which are listed with their production levels in Table C-1 below, show that the ratio of exports to production is high in Brazil and Argentina. Exports from the EC countries are mainly to other EC countries and other European countries.

Table C-1 Peanut Oil Production and Exports

(1,000 tons, %)

	Production		Exports	
India	1,179	45.8	4	0.9
China	420	16.3	34	7.6
Sudan	166	6.4	31	6.9
Senegal	133	5.2	76	16.9
Brazil	96	3.7	83	18.4
Argentina	85	3.3	81	18.0
USA	71	2.8	14	3.1
EC	59	2.2	58	12.8
S. Africa	39	1.5	24	5.3
Others	328	15.0	45	22.9
World	2,576	100.0	450	100.0

Source: Oil World

On the other hand, the importing countries are concentrated in Europe, especially the EC countries, and France imports a tremendous amount of peanut oil, accounting for 46.7% of world imports on the average in the past three years. France is followed by Italy, Belgium and the Federal Republic of Germany, each of which account for about 8% of the total. Imports by country are shown in Appendix Table 6.

The disappearance of peanut oil by country, which is calculated by adding the initial inventory to production and imports and subtracting the final inventory, is shown in Table C-2.

As shown in the table, the disappearance in India and China, which are two major producing countries, increases or decreases in proportion to changes in the output in either country, whereas

Table C-2 Peanut Oil Disappearance

(Initial inventory + Output + Imports - Exports - final inventory)

	Oct Sept 81/82F	Oct Sept 80/81	Oct Sept 79/80	Oct Sept 78/79	Oct Sept 77/78	Oct Sept 76/77
France.....	237*	211	272	257	249*	273*
U.K.....	13*	14*	16*	14*	15*	16*
Germany, FR .	30*	30	33	32	34	35
Oth. EEC	59*	50*	77*	81*	72*	75*
Oth.W.Europe..	42*	33*	48*	61*	58*	89*
West Europe...	381	338	445	425	428	488
Senegal.....	57*	56*	63*	59*	41*	72*
South Africa..	24*	13*	18*	15*	16*	30*
Sudan.....	140*	115*	144*	136*	93*	117*
U.S.A.....	50*	33r	87	51	82	121
Brazil.....	18*	18*	9*	14*	11*	17*
Venezuela.....	6*	3*	12*	44*	58*	100*
China,PR.....	399*	420*	403*	306*	257*	292*
India.....	1160*	1064*	1228*	1307*	1203*	1131*
Oth.countries.	334*	329*	332*	326*	329*	388*
Total.....	2569	2379	2741	2682	2547	2756
Ending stocks.	326	284	339	390	338	385

* Estimated on the basis of the official (but obviously incomplete) figure.

Source: Oil World

disappearance in West European countries, which are main consuming countries, follows fluctuations in production in the main exporting countries.

The disappearance in West European countries during the period shown in the above Table tended to decrease; the fall in the 1980-1981 period was especially large (a 25% decrease from the previous year). During this period, the production in major exporting countries such as the United States, Brazil, Argentina and Senegal dropped substantially, and total world exports decreased by 23% from the previous year. During the same period, the international market price of peanut oil rose rapidly from $784 (per ton; CIF Rotterdam crude oil) at the end of the previous year (September 1980) to a peak of $1,185 in May, 1981.

Thus the structure of international peanut oil demand follows a fundamental pattern in that India and China, which account for the majority of world production, are self-sufficient, and the demand from importing/consuming countries changes with fluctuations in the price

due to crop fluctuations in the producing/exporting countries. As stated in the preceding part (General Description), however, despite this pattern, peanut oil demand is dependent not only on the supply and price of peanut oil itself but also on the supply and prices of other competitive/substitute oils.

II. Peanut Oil Price

Peanut oil is the most expensive oil; it is the so-called premium oil among the many edible vegetable oils because of its good flavor.

As mentioned in the first part of this chapter (General Description on Oilseeds and Oils) the prices of vegetable oils are influenced by the supply and demand for each oil and the supply and demand of oils on the whole, and are largely controlled by the price of soybean oil in particular.

As for the price correlation coefficient as quoted in the first part of this chapter, the coefficients of peanut oil to soybean oil, sunflower oil and cottonseed oil are 0.97, 0.96 and 0.95 respectively.

From the point of view of use, peanut oil as a material for shortening and margarine is easily replaced by sunflower and cottonseed oils.

The price of peanut oil (the annual average) over the past decade is shown in Fig. C-1 below, and the prices of peanut oil and soybean oil are shown for comparison in Fig. C-2.

Fig. C-1 Changes in Peanut Oil Price (the annual average price)

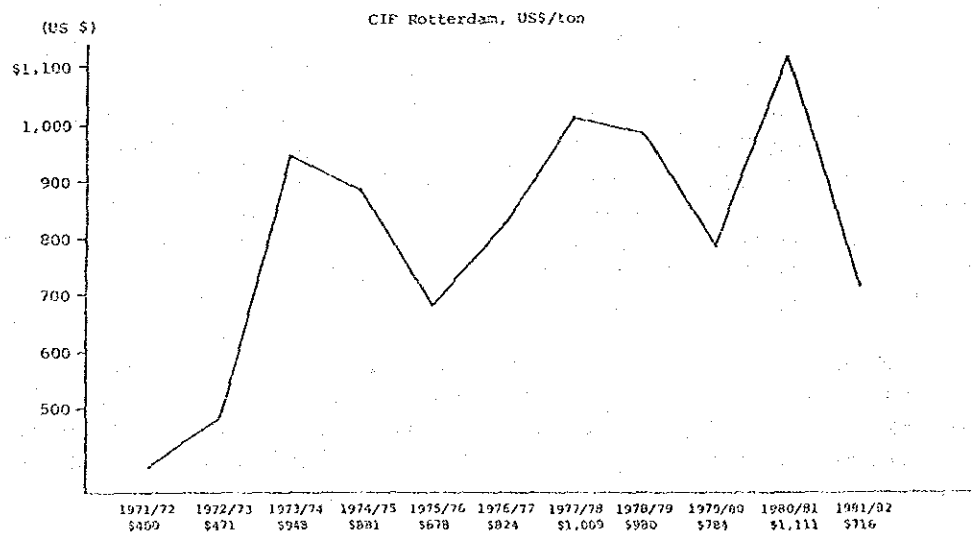
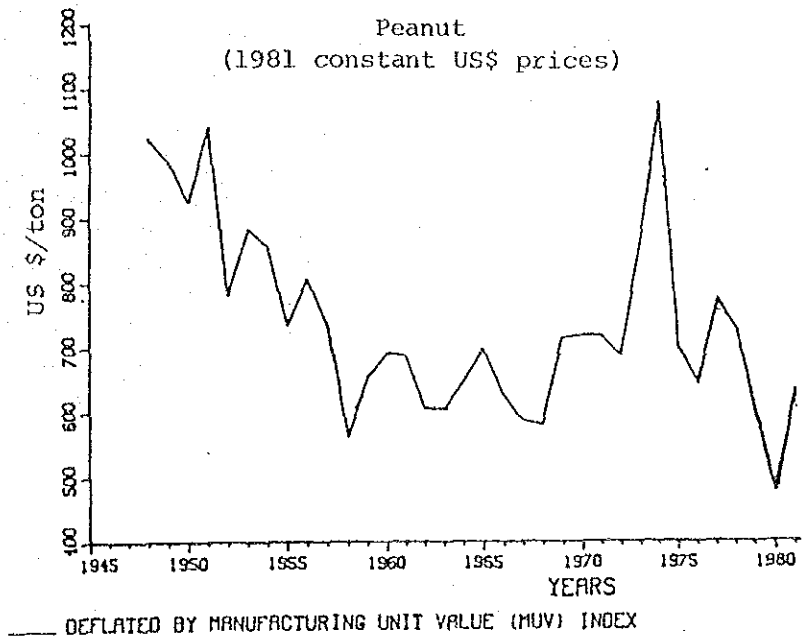
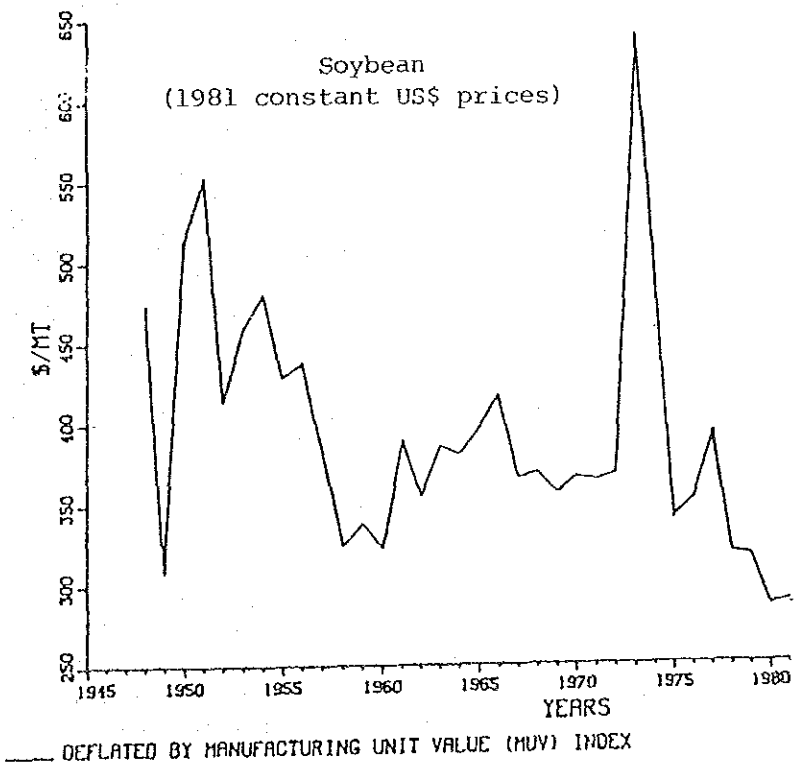


Fig. C-2 Changes in the Actual Prices of Peanut and Soybean Oils





Source: World Bank, Price Prospects for Major Primary Commodities, July 1982