International Trade in Soybeans and Products- Implications for Alabama

ALABAMA AGRICULTURAL EXPERIMENT STATION
GALE A. BUCHANAN, DIRECTOR
BULLETIN 540

AUBURN UNIVERSITY
AUBURN UNIVERSITY, ALABAMA
NOVEMBER 1982

FOREWORD

This publication on soybeans is the first of a series of publications dealing with the nature of international trade in different agricultural commodities important to Alabama. Future publications in this series are expected to deal with other commodities in as timely an order as possible, considering the nature of trade issues and policies most important at the moment. Soybeans was chosen first because it represented the most important Alabama agricultural commodity affected by international trade.

Work on this publication was conducted under Project Ala.-550 of the Alabama Agricultural Experiment Station entitled "Impact of International Trade on Alabama Agriculture." The objectives of this project are to:

1. Determine the present and potential impact of international agricultural trade, including trade policies and issues, on the Alabama economy in general and on selected agricultural commodities important to Alabama.
2. Assess the current competitive position of the Port of Mobile relative to other ports and its potential position after completion of the Tennessee-Tombigbee waterway with respect to international trade in agricultural products.

Information contained in this publication does not represent completion of an objective of the project. Rather, it represents background information collected as a preliminary to a more in-depth study of one commodity and the Alabama economy. The reason for publishing this preliminary information at this point in the project is so that Alabama farmers, agribusinesses, farm and commodity organizations, extension workers, researchers, and others concerned with international trade can have, in a summarized form, some of the more important background information concerning their particular commodity before it would otherwise be available. While much of the data are from published sources, the layman might have some difficulty assembling these data and processing them in the form presented here. Also, some of the information is from unpublished data from a previous grain marketing project of the Alabama Agricultural Experiment Station and not easily available to the public.

Working with data on international trade is difficult. Not only are there different data bases (USDA, ERS; USDA, FAS; and the UN), but data are constantly being updated. Because of these difficulties, all data pertaining to world production, exports, and imports are

from the USDA, FAS data base of March 1981 and all U.S. export data by countries are from the USDA, ERS data bases, including some from more recent dates. The latter will be from different time periods and will not always agree with the USDA, FAS base; but, relationships intended to be presented should not be affected.

Conversions

1 short ton = 2,000 lb. = .907185 MT
1 metric ton = 2,204.622 lb. = 1.102311 ST
1 acre = .404694 hectares
1 hectare = 2.4710 acres
1 bu. soybeans = 60 lb. = .03 ST = .0272155 MT
1 ST = 33.333 bu. = 2,000 lb.
1 MT = 36.7437 bu. = 2204.622 lb.
1 lb. = .00454 MT

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INTERNATIONAL TRADE IN SOYBEANS AND PRODUCTS

IMPLICATIONS FOR ALABAMA

JAMES L. STALLINGS*

INTRODUCTION

TRADE IN AGRICULTURAL COMMODITIES has been a bright spot in the U.S. merchandise trade account during the past decade. The dollar value of U.S. agricultural exports increased more than five-fold from $7.7 billion in calendar year 1971 to more than $43 billion in 1981 (3).

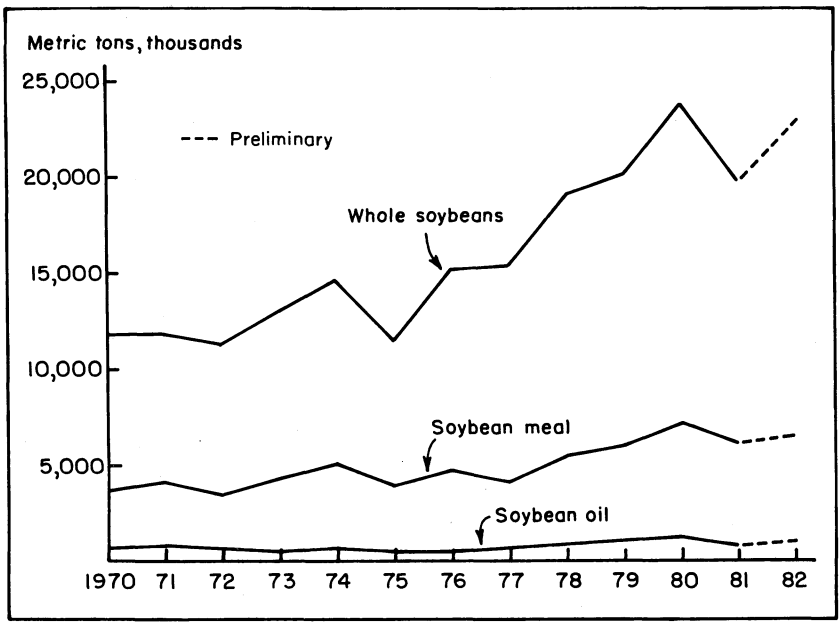

FIG. 1. U.S. export of soybeans and products, 1970-1980.

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U.S. exports of soybeans have been dominant in this overall success story of agricultural exports, averaging 82 percent of the whole beans, 39 percent of the soybean cakes and meals, and 34 percent of the soybean oil exported in the world over the last 5 years (1977-81) *(5)*. This has meant that between 50 and 60 percent of all soybeans produced by U.S. farmers during this period were exported. Or, looking at it another way, more than 1 out of every 2 acres of soybeans harvested in the United States during this period was harvested for export.

Figures 1 and 2 indicate the increasing importance of exports of soybeans and products since 1970. Whole bean exports peaked at 23,818,000 metric tons (875.2 million bushels**) in 1980 and seem

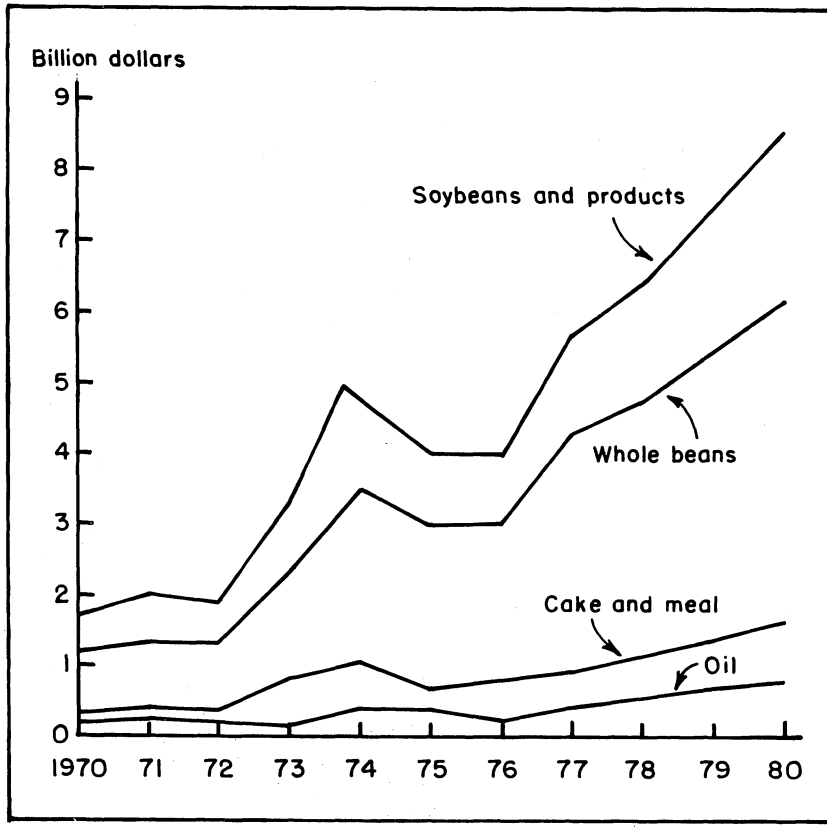

FIG. 2. Value of U.S. exports of soybeans and products, 1970-1980.

**See conversion table following Foreword, page 3. All data from this point will be in metric tons which is the unit of trade for most of the world.

to have stabilized near that level after a drop to 19,712,000 metric tons (724.3 million bushels) in 1981. Preliminary 1982 figures are for an export of 22,861,000 metric tons (840 million bushels). Meal and oil exports have not risen as dramatically as whole bean exports since 1970.

ALABAMA'S EXPORT SHARE

The concept "export share" is used by the USDA to indicate, for individual states, that share of U.S. exports which is proportional to its production of a product. For relatively homogeneous commodities, such as soybeans and other grains and products, it is reasoned that whether or not the grain or product physically comes from a particular state, the economic impact is the same in that, if an equivalent amount of total U.S. exports had not occurred, that state's demand would have been affected by the amount of its export share.

Alabama's export share of whole soybeans, and the equivalent amounts necessary to export meals and oil, are shown in table 1. In the last 5 years, the U.S. and Alabama's share has averaged 55.2 percent (weighted average) of U.S. and Alabama production of whole beans. The value of Alabama's export share has increased to a high of $203.6 million in 1979-80. From another standpoint, it has required the production from as much as 1,190,700 acres of Alabama harvested cropland in 1980-81.

TABLE 1. SOYBEANS AND PRODUCTS: U.S. AND ALABAMA EXPORT SHARES

Years	U.S. bean production[1]	U.S. export shares[2]			Ala. production[1]		Ala. export shares[2]		
		Bu. eq. exp.	Value	Pct. of prod.					
	(000 Bu.)	*(000 Bu.)*	*(000 $)*	*Pct.*	*Acres*	*Bu.*	*Acres*	*Bu.*	*(000 $)*
67/68	976,464	391,629	1,107,225	40.1	484,000	12,826,000	194,084	5,143,226	14,541
68/69	1,106,967	414,650	1,109,164	37.5	550,000	12,100,000	206,250	4,537,500	12,112
69/70	1,133,139	619,599	1,714,396	54.7	630,000	14,175,000	344,610	7,753,725	21,459
70/71	1,127,113	625,541	1,981,914	55.5	600,000	13,800,000	333,000	7,659,000	24,368
71/72	1,176,129	563,146	1,867,248	47.9	655,000	17,030,000	313,745	8,157,370	27,010
72/73	1,270,608	673,790	3,249,956	53.0	800,000	16,000,000	424,000	8,480,000	40,881
73/74	1,547,543	789,565	4,923,632	51.0	970,000	20,370,000	494,700	10,388,700	64,765
74/75	1,216,287	603,493	4,042,828	49.6	920,000	21,160,000	456,320	10,496,360	70,349
75/76	1,548,344	770,498	4,051,939	49.8	1,260,000	30,870,000	627,480	15,373,260	80,771
76/77	1,288,608	747,541	5,637,489	58.0	1,170,000	28,080,000	678,600	16,286,400	122,813
77/78	1,767,267	980,488	6,410,698	55.5	1,500,000	31,500,000	832,500	17,842,500	114,226
78/79	1,868,754	1,019,425	7,514,988	54.6	1,850,000	38,850,000	1,010,100	21,212,100	156,184
79/80	2,267,901	1,206,134	8,587,756	53.2	2,150,000	53,750,000	1,143,800	28,595,000	203,556
80/81	1,792,062	1,016,638	8,041,826	56.7	2,100,000	31,500,000	1,190,700	17,860,500	141,311
81/82[3]	2,030,452	1,141,820	7,766,165	56.2	2,050,000	47,150,000	1,152,100	26,498,300	180,315

[1]Calendar year of first year.
[2]Oct. 1-Sept. 30—allocated as percent exported by U.S.
[3]Forecast.
Sources: USDA ERS, *Foreign Agricultural Trade of the United States,* and Ala. Crop and Lstk. Rept. Serv., *Ala. Agricultural Statistics.*

THE ALABAMA SOYBEAN MARKET
Patterns of Soybean Trade in Alabama

Figure 3 characterizes the nature of the physical flow of trade in soybeans and products as it affects the Alabama economy. This pattern was derived from a survey of grain handling firms in Alabama during 1978 under Southern Regional Research Project 115, "Alternative Structures for Increasing Efficiency in Inter-and Intra-Regional Grain Marketing Systems." While the physical amounts of movement of soybeans and products will have changed somewhat since 1978, the general nature of the physical flows should have remained the same and should provide background for models of the soybean industry for further research.

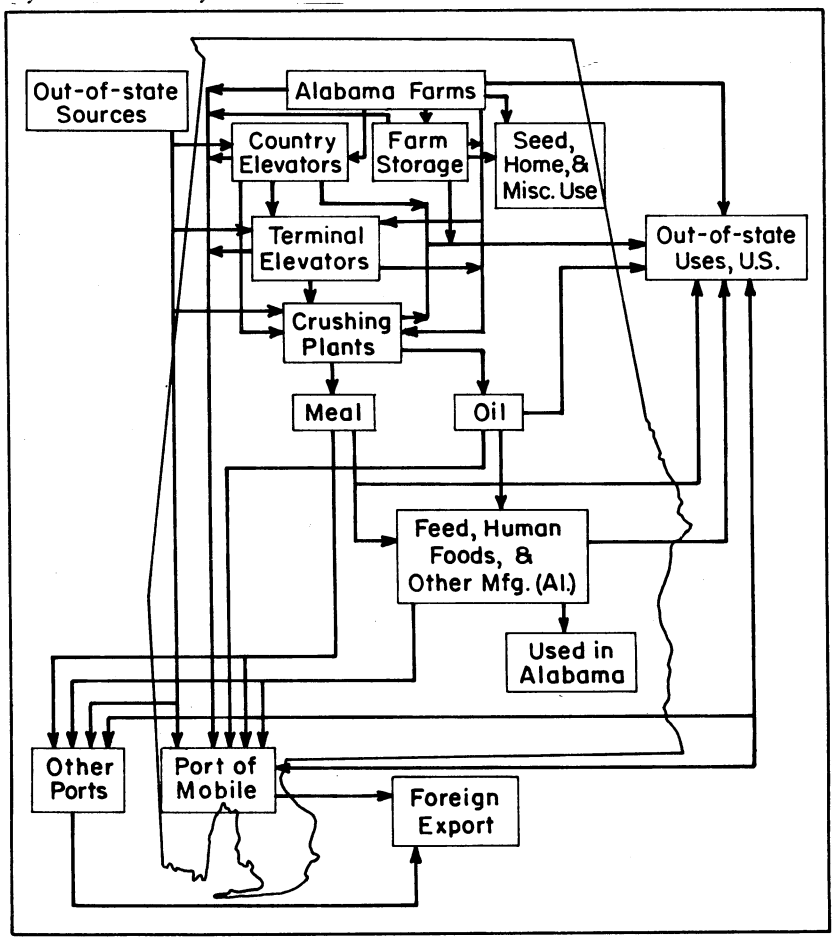

FIG. 3. The Alabama soybean economy—physical movements.

Supply, Demand, and Price Structure

The supply, demand, and price structure existing in the Alabama soybean economy is illustrated in figure 4. While no statistical estimates of the relative effects of the various factors illustrated have been made under the present international trade project at this time, the various factors have been identified and graphed as a model for the design of more specific research.

Note that prices received by Alabama farmers for their soybeans are determined by the demand for the whole soybeans for storage, crushing in Alabama, by out-of-state U.S. firms, and for foreign export. Simultaneously, prices received by Alabama farmers will be determined by the commercial supply of beans available in Alabama. Demand for beans to crush in Alabama, in turn, is determined by forces affecting the meal and oil prices.

Figure 4 illustrates only a few of the possible factors involved in a comprehensive model of the whole demand, supply, and price structure for Alabama soybeans. The reader can visualize, for instance, that each of the elements of demand for the whole beans and for meal and oil would have its own set of factors (not shown here) which would determine that particular demand.

Figure 5 illustrates the demands (D), supplies (S), prices (P), and quantities (Q) for meal, oil, and whole beans using the economists' concepts of demand and supply curves. In the illustration, for instance, the price of soybean meal in the U.S. is determined by the interaction of supply and demand resulting in price (P_m) and quantity (d). The relationship is affected, however, by demands for U.S. except Alabama, Alabama demand, foreign export demand, and supply of meal stocks. Soybean oil supply and demand similarly determine a price of (P_o) for soybean oil with a quantity demanded of (i) for the U.S.

Total demand for whole beans for crushing is, in turn, determined by crushing demands for meal and oil, as well as demands for whole beans for U.S. except Alabama, for Alabama, foreign export demand, and commercial stocks. The various demands for whole beans, along with the supplies, finally determine a price for whole beans of (P_b) with a quantity supplied of (o).

While all these relationships will not be used in all trade analysis, they do provide an overall framework for guiding research into the various issues and policies involved in international trade in soybeans and soybean products. They should provide a framework for further work on the present international trade project in Alabama.

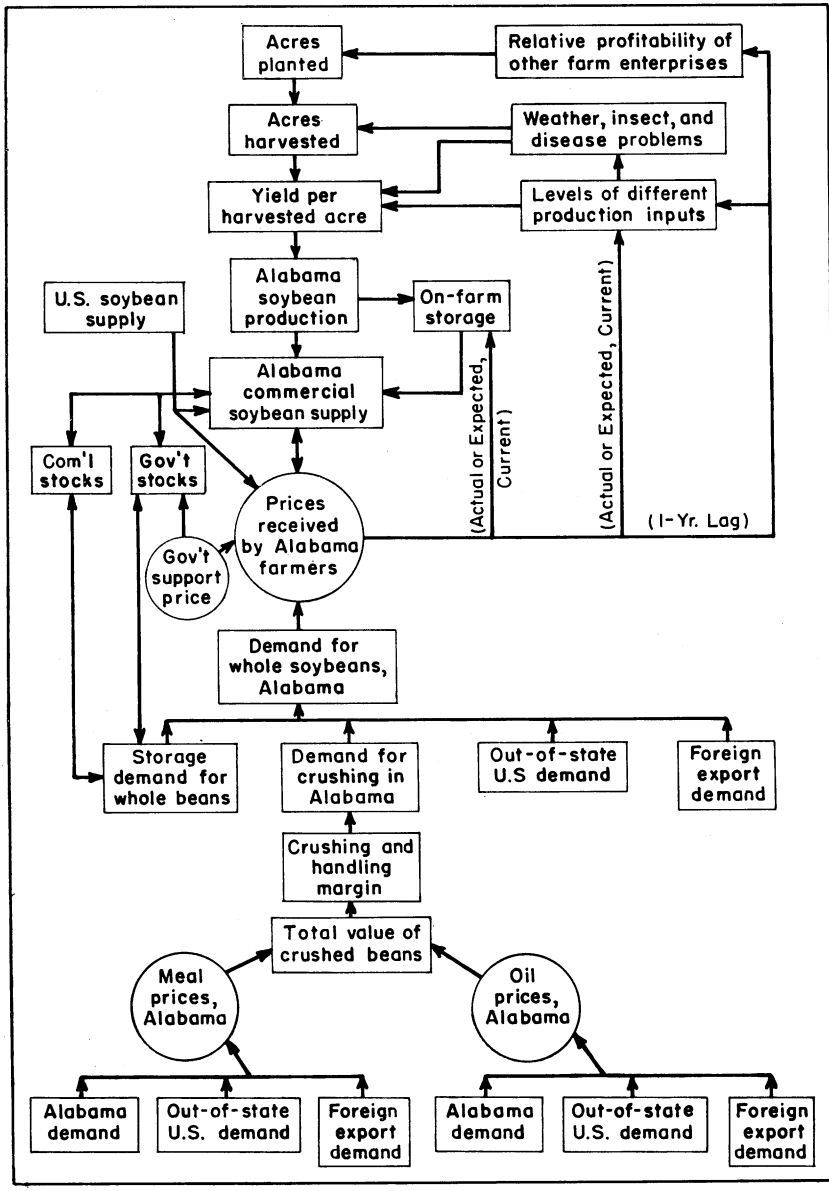

FIG. 4. The demand, supply, and price structure for Alabama soybeans.

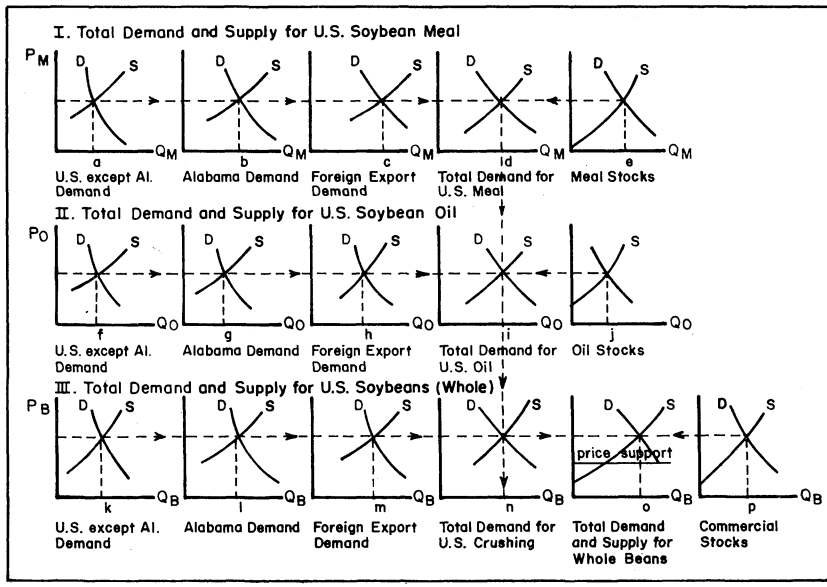

FIG. 5. Graphic illustration of supply and demand components of the U.S. and Alabama soybean markets.

WHOLE SOYBEAN PRODUCTION AND TRADE

World Production

The United States is, by far, the most important producer of soybeans in the world, accounting for an average of 63.88 percent of world production in the 5 years from 1977-1981, table 2. Only three other countries have, individually, averaged more than 1 percent of world production during these years: Brazil, 16.34 percent; the People's Republic of China, 9.51 percent; and, Argentina, 3.96 percent.

World production of soybeans, therefore, is mostly dependent upon the above four countries which have averaged 93.69 percent of world production in the last 5 years. From the standpoint of competition for the world market, therefore, only three countries have the potential for being competitive with the U.S. and Alabama; and, one of these, the People's Republic of China, tends to use all of the soybeans it produces and imports more. Only Brazil and Argentina have shown competitiveness in the world market for whole soybeans, as will be seen in the next section.

TABLE 2. SOYBEANS: WORLD PRODUCTION, BY COUNTRIES, 1977-1981 (000 METRIC TONS)

Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	United States	09-08	35,070	48,097	50,859	61,722	49,453	49,040.2	63.88	63.88
2	Brazil	03-02	12,513	9,534	10,236	15,040	15,400	12,544.6	16.34	80.22
3	China, P.R.	09-08	6,600	7,300	7,600	7,500	7,500	7,300.0	9.51	89.73
4	Argentina	04-03	1,400	2,700	3,700	3,500	3,900	3,040.0	3.96	93.69
5	Indonesia	01-12	523	617	674	650	660	624.8	0.81	94.50
6	Canada	08-07	251	580	516	671	713	546.2	0.71	95.21
7	U.S.S.R.	01-12	480	545	639	467	540	534.2	0.70	95.91
8	Paraguay	04-03	377	333	450	600	700	492.0	0.64	96.55
9	Mexico	09-08	280	470	330	680	280	408.0	0.53	97.08
10	Korea, N.	10-09	300	310	320	330	330	318.0	0.41	97.49
11	Korea, S.	10-09	295	319	293	257	288	290.4	0.38	97.87
12	Romania	09-08	213	191	230	376	330	268.0	0.35	98.22
13	India	10-09	150	180	220	300	450	260.0	0.34	98.56
14	Japan	01-12	111	190	190	192	174	171.4	0.22	98.78
15	Colombia	01-12	103	131	137	146	155	134.4	0.18	98.96
16	Bulgaria	08-07	99	90	120	152	140	120.2	0.16	99.12
17	Iran	08-07	102	86	115	130	115	109.6	0.14	99.26
18	Thailand	04-03	114	96	94	95	100	99.8	0.13	99.39
19	Australia	04-03	55	73	99	89	52	73.6	0.10	99.49
20	Egypt	09-08	11	27	79	106	105	65.6	0.09	99.58
	Totals									
	Top-20		59,047	71,869	76,901	93,003	81,385	76,441.0		
	Others		268	301	324	368	389	330.0		
	All		59,315	72,170	77,225	93,325	81,774	76,771.0		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products*, FOP6-18, March, 1981.

[1]The market year begins in the year before, or Jan. 1, of the year indicated in the northern hemisphere or near the equator, and in the year indicated for the southern hemisphere countries and some near the equator.

World Trade

While the United States accounted for an average of only 63.88 percent of the world production of soybeans during 1977-1981, it accounted for an average of 81.73 percent of all world exports of whole soybeans, table 3. Other countries accounting for more than 1 percent during this time included Argentina, 9.01 percent; Brazil, 5.65 percent; and Paraguay, 1.41 percent. World exports of whole soybeans are, therefore, mostly dependent upon the named four countries which have averaged 97.80 percent of the exports in the period from 1977-1981. Further, research into world competition with the United States for the whole soybean trade can, therefore, practically, be confined to analysis of the three countries, Argentina, Brazil, and Paraguay.

Unlike soybean oil, as will be seen in a later section, the import market for whole soybeans is made up mostly of the more affluent industrialized countries that either have large livestock and poultry industries and want to do their own crushing (the countries of Europe) or have a need for both human and livestock feeds (Japan), table 4. However, unlike world production and world exports, which are dominated by four countries, world imports of whole beans are not dominated by any one country or small group of countries. Japan is the largest single importer of whole soybeans averaging 16.55 percent of world imports from 1977-1981. After Japan, the 10 countries of the European Economic Community (EC-10: West Germany, Netherlands, Italy, U.K., Belgium, Luxemburg, France, Denmark, Greece, and Ireland) accounted for 11,471,800 metric tons or 46.20 percent of all imports during these years. Other individual countries of importance were Spain with 9.63 percent, the U.S.S.R. with 5.32 percent, Taiwan with 3.68 percent, and Mexico with 3.02 percent. The People's Republic of China has been increasing imports in recent years and may be an important market in the future.

TABLE 3. SOYBEANS: WORLD EXPORTS, BY COUNTRIES, 1977-1981 (000 METRIC TONS)

Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	United States	09-08	15,351	19,061	20,115	23,818	21,773	20,023.6	81.73	81.73
2	Argentina	04-03	623	1,983	2,830	2,700	2,900	2,207.2	9.01	90.74
3	Brazil	03-02	2,581	658	638	1,540	1,500	1,383.4	5.65	96.39
4	Paraguay	04-03	241	192	347	450	500	346.0	1.41	97.80
5	Netherlands	01-12	116	218	332	250	250	233.2	0.95	98.75
6	China, P.R.	09-08	125	90	265	190	200	174.0	0.71	99.46
7	Canada	08-07	25	64	91	55	60	59.0	0.24	99.70
8	Singapore	01-12	30	18	17	30	30	25.0	0.10	99.80
9	Germany, W.	01-12	1	18	18	25	25	17.4	0.07	99.87
10	Thailand	04-03	12	8	9	7	10	9.2	0.04	99.91
11	Uruguay	04-03	0	8	2	12	12	6.8	0.03	99.94
12	France	01-12	0	1	1	8	10	4.0	0.02	99.96
13	South Africa	05-04	11	1	1	1	1	3.0	0.01	99.97
14	Hong Kong	01-12	6	2	3	1	0	2.4	0.01	99.98
15	Romania	09-08	9	0	0	0	0	1.8	0.01	99.99
16	Japan	01-12	0	0	0	0	5	1.0	0.00	99.99
17	U.K.	01-12	3	0	0	0	0	0.6	0.00	100.00
18	Denmark	01-12	0	0	0	3	0	0.6	0.00	100.00
19	Nigeria	10-09	2	0	0	0	0	0.4	0.00	100.00
	Totals		19,136	22,322	24,669	29,090	27,276	24,498.6		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products,* FOP6-18, March, 1981.

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Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	Japan	01-12	3,602	4,260	4,132	4,250	4,300	4,108.8	16.55	16.55
2	Germany, W.	01-12	3,372	3,613	3,673	3,950	3,875	3,696.6	14.89	31.44
3	Netherlands	01-12	1,691	2,665	3,288	3,558	3,189	2,878.2	11.59	43.03
4	Spain	09-08	1,835	2,179	2,237	2,900	2,800	2,390.2	9.63	52.66
5	Italy	01-12	1,179	1,279	1,706	1,504	1,525	1,438.6	5.79	58.45
6	U.S.S.R.	01-12	1,364	906	1,765	1,065	1,500	1,320.0	5.32	63.77
7	U.K.	01-12	1,131	1,238	999	1,250	1,150	1,153.6	4.65	68.42
8	Belg.-Lux.	01-12	813	1,061	1,005	1,100	1,100	1,015.8	4.09	72.51
9	Taiwan	01-12	663	959	1,111	930	900	912.6	3.68	76.19
10	France	01-12	549	782	869	868	900	793.6	3.20	79.39
11	Mexico	09-08	550	580	633	783	1,200	749.2	3.02	82.41
12	China, P.R.	09-08	253	188	261	810	750	452.4	1.82	84.23
13	Israel	01-12	407	406	372	328	380	378.6	1.52	85.75
14	Denmark	01-12	401	491	486	300	210	377.6	1.52	87.27
15	Canada	08-07	392	263	350	423	425	370.6	1.49	88.76
16	Korea, S.	10-09	133	239	428	460	500	352.0	1.42	90.18
17	Norway	01-12	228	260	316	325	340	293.8	1.18	91.36
18	Romania	09-08	140	241	260	280	330	250.2	1.01	92.37
19	Brazil	03-02	0	92	253	450	450	249.0	1.00	93.37
20	Portugal	01-12	146	181	229	230	230	203.2	0.82	94.19
	Totals									
	Top-20		18,849	21,883	24,373	25,764	26,054	23,384.6		
	Others		873	1,278	1,504	1,713	1,866	1,446.8		
	All		19,722	23,161	25,877	27,477	27,920	24,831.4		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products,* FOP6-18, March, 1981.

[1]The market year begins in the year before, or Jan. 1, of the year indicated in the northern hemisphere or near the equator and in the year indicated for the southern hemisphere countries and some near the equator.

U.S. Trade

Only the United States has had an absolulte surplus of soybeans over total domestic use in the last 5 years large enough to export consistently large quantities of whole beans, table 5. Consistency is important in world trade; and, while the United States has steadily increased exports of beans from 15,351,000 to 21,773,000 metric tons from 1977-1981, Brazil's exports have been highly inconsistent. Also, Brazil's domestic use of total supply has ranged from 72 to 93 percent while the U.S. domestic use has ranged from 49 to 57 percent.

While the People's Republic of China is an important producer of soybeans, it represents little competition to U.S. trade at the moment as nearly 100 percent of its production is for domestic use. Argentina, on the other hand, while not a large world producer, has been steadily increasing exports and has been exporting a large percent of its production.

As with world imports, no one country dominates U.S. exports, table 6. While the Netherlands accounted for 21.55 percent, Japan is also important with 18.69 percent over the period from 1977-1981. Again, the EC-10 is an important bloc for U.S. exports of soybeans accounting for 45.70 percent. Other important countries, individually, include Spain with 7.83 percent, Taiwan with 4.79 percent, the U.S.S.R. with 3.60 percent, and Mexico with 3.29 percent.

An important question for the United States, and for Alabama, is: "What percent of the world imports of different individual countries is now accounted for by U.S. exports and where does the potential for increased exports exist?" By looking at tables 4 and 6, it can be seen that the U.S. exports 18,305.2 metric tons to its top 20 customers. This is 78.3 percent of the 23,384.6 metric tons imported by the top 20 importing countries from 1977-1981. The potential for increased exports of whole beans, therefore, does not appear to lie so much in getting a bigger share of the existing market as in expanding the total market. This may occur with or without U.S. encouragement as countries become more affluent and develop livestock feeding industries. A larger potential for expansion of the market share may be in exports of soybean meal and soybean oil

where the United States does not now control as large a share, as will be seen later.

There is also the question of whether or not exports of whole beans should be expanded at the expense of exports of meal and oil. Conventional economic theory would hold that the more of the operations in a manufacturing process that can be done on U.S. soil, with U.S. labor, the better. The process of converting beans to meal and oil, presumably, would result in more employment in the United States and the export of a higher value product per unit of weight.

TABLE 5. PRODUCTION-UTILIZATION BALANCE FOR SOYBEANS FOR THE FOUR TOP PRODUCING COUNTRIES, 1977-81

Year	Pro-duction	Begin. stocks	Imports	Total supply	Exports	Total dom. use	End stocks	T. dom. use of T. supply
	000 MT.	*000 MT.*	*000 MT.*	*000 MT.*	*000 MT.*	*000 MT.*	*000 MT.*	*Pct.*
				United States				
1977	35,070	6,666	0	41,736	15,351	23,584	2,801	57
1978	48,097	2,801	0	50,898	19,061	27,451	4,386	54
1979	50,859	4,386	0	55,245	20,115	30,392	4,738	55
1980	61,722	4,738	0	66,460	23,818	32,878	9,764	49
1981	49,453	9,764	0	59,217	21,773	31,457	5,987	53
				Brazil				
1977	12,513	621	0	13,134	2,581	9,463	1,090	72
1978	9,534	1,090	92	10,716	658	9,758	300	91
1979	10,236	300	253	10,789	638	10,030	121	93
1980	15,040	121	450	15,611	1,540	13,900	171	89
1981	15,400	171	450	16,021	1,500	14,330	191	89
				P.R. China				
1977	6,600	0	253	6,853	125	6,728	0	98
1978	7,300	0	188	7,488	90	7,398	0	99
1979	7,600	0	261	7,861	265	7,596	0	97
1980	7,500	0	810	8,310	190	8,120	0	98
1981	7,500	0	750	8,250	200	8,050	0	98
				Argentina				
1977	1,400	114	0	1,514	623	701	190	46
1978	2,700	190	0	2,890	1,983	883	24	31
1979	3,700	24	0	3,724	2,830	851	43	23
1980	3,500	43	0	3,543	2,700	825	18	23
1981	3,900	18	0	3,918	2,900	1,000	18	26

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products,* FOP6-18, March, 1981.

TABLE 6. SOYBEANS: U.S. EXPORTS, BY COUNTRIES OF DESTINATION, 1977-1981 (000 METRIC TONS)

Rank 1977-81	Country	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	Netherlands	2,966	4,203	4,137	5,907	4,085	4,259.6	21.55	21.55
2	Japan	3,070	3,798	3,884	3,877	3,849	3,695.6	18.69	40.24
3	Spain	1,030	1,564	1,489	2,158	1,503	1,548.8	7.83	48.07
4	Germany, W.	1,566	1,514	1,479	1,374	1,781	1,542.8	7.80	55.87
5	Taiwan	731	927	1,173	856	1,043	946.0	4.79	60.66
6	Italy	815	882	841	1,016	839	878.6	4.44	65.10
7	U.S.S.R.	825	744	1,178	813	0	712.0	3.60	68.70
8	Mexico	399	580	575	845	855	650.8	3.29	71.99
9	France	460	602	704	740	493	599.8	3.03	75.02
10	Belg.-Lux.	411	500	398	585	712	521.2	2.64	77.66
11	U.K.	390	742	551	520	384	517.4	2.62	80.28
12	Canada	446	281	376	393	291	357.4	1.81	82.09
13	Korea, S.	154	248	439	473	467	356.2	1.80	83.89
14	Israel	392	418	375	249	277	342.2	1.73	85.62
15	Denmark	321	409	341	342	156	313.8	1.59	87.21
16	China, P.R.	0	47	142	810	472	294.2	1.49	88.70
17	Norway	201	249	238	298	261	249.4	1.26	89.96
18	Romania	107	221	200	308	61	179.4	0.91	90.87
19	Yugoslavia	40	180	236	223	205	176.8	0.89	91.76
20	Portugal	80	189	174	138	235	163.2	0.83	92.59
	Totals								
	Top-20	14,404	18,298	18,930	21,925	17,969	18.305.2		
	Others	751	1,388	1,264	1,908	2,003	1,462.8		
	All	15,155	686	20,194	833	972	768.0		

Source: USDA, ERS, *Foreign Agricultural Trade of the United States*, bi-monthly and yearly supplements.

TABLE 7. SOYBEAN MEAL: WORLD PRODUCTION, BY COUNTRIES, 1977-1981 (000 METRIC TONS)

Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	United States	09-08	16,772	20,296	22,094	24,589	23,091	21,368.4	40.65	40.65
2	Brazil	03-02	6,719	6,891	7,039	9,870	10,175	8,138.8	15.48	56.13
3	Germany, W.	01-12	2,748	2,977	2,946	3,100	2,996	2,953.4	5.62	61.75
4	China, P.R.	10-09	2,347	2,594	2,667	2,864	2,830	2,660.4	5.06	66.81
5	Japan	01-12	2,225	2,542	2,645	2,725	2,725	2,572.4	4.89	71.70
6	Netherlands	01-12	1,163	1,862	2,287	2,530	2,205	2,009.4	3.82	75.52
7	Spain	09-08	1,455	1,705	1,788	2,316	2,236	1,900.0	3.61	79.13
8	U.S.S.R.	01-12	5,163	999	1,152	1,318	1,473	1,301.0	2.47	81.60
9	Italy	0.-12	943	1,023	1,208	1,280	1,220	1,134.8	2.16	83.76
10	U.K.	01-12	830	982	748	954	920	886.8	1.69	85.45
11	Mexico	09-08	621	780	767	1,020	1,170	871.6	1.66	87.11
12	Belg.-Lux.	01-12	637	841	824	864	860	805.2	1.53	88.64
13	Canada	08-07	541	567	577	738	765	637.6	1.21	89.85
14	France	01-12	450	598	705	685	727	633.0	1.20	91.05
15	Taiwan	01-12	504	618	680	642	593	607.4	1.16	92.21
16	Argentina	04-03	455	518	499	489	625	517.2	0.98	93.19
17	Romania	09-08	243	328	374	502	497	388.8	0.74	93.93
18	Israel	01-12	311	286	304	293	304	299.6	0.57	94.50
19	Denmark	01-12	307	364	357	235	155	283.6	0.54	95.04
20	Korea, S.	10-09	85.	138	248	354	385	242.0	0.46	95.50
	Totals									
	Top-20		40,919	46,909	49,909	57,368	55,952	50,211.4		
	Others		1,648	2,011	2,420	2,728	2,966	2,354.6		
	All		42,567	48,920	52,329	60,096	58,918	52,566.0		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products,* FOP 6-18, March, 1981.

[1]The market year begins in the year before, or Jan. 1, of the year indicated in the northern hemisphere or near the equator and in the year indicated for the southern hemisphere countries and some near the equator.

SOYBEAN CAKE AND MEAL PRODUCTION AND TRADE

World Production

Soybean meal production does not necessarily take place in the countries where the soybeans are produced. For instance, while the four largest producers of soybeans (United States, Brazil, the People's Republic of China, and Argentina) accounted for an average of 93.69 percent of world soybean production from 1977-1981, they only accounted for 62.17 percent of the meal production, tables 2 and 7. Many important users of soybean meal prefer to import the whole beans and produce their own meal and oil. Some of these countries, in turn, export meal and, especially, oil in competition with the United States. Notable among these are the countries of the EC-10.

While the United States dominated production of soybean meal with an average of 40.65 percent from 1977-1981, table 7, the domination is not nearly as great as with soybean production with 63.88 percent, table 2, and whole soybean exports with 81.73 percent, table 3. Brazil is the only other important producer of soybean meal that is also an important producer of soybeans and is one of the chief competitors with the United States in the export of soybean meal.

World Trade

While the U.S. is the world's largest producer of soybeans and soybean meal, it is not the dominant exporter of meal, table 8. During the period from 1977-1981, Brazil has averaged slightly more meal exports than the United States with 38.82 percent of the world total. One of the reasons for Brazil's leadership in meal exports is that the U.S. used an average of 72.21 percent of its total meal supply domestically for these years (5). Meal exports, therefore, are more of a residual market after domestic needs are taken care of in the U.S. This is true of Alabama as well. With its large poultry industry, Alabama uses much of the soybean meal it can produce within the State. During this same period, however, Brazil used domestically only 25.55 percent of its production of meal, leaving a larger absolute amount for export.

While the EC-10 produces much of the meal it uses from imports of whole beans, it is also the world's principal importer of soybean meal. The countries of the EC-10 accounted for 52.66 percent of all

TABLE 8. SOYBEAN MEAL: WORLD EXPORTS, BY COUNTRIES, 1977-1981 (000 METRIC TONS)

Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	Brazil	03-02	5,329	5,368	5,038	6,900	7,350	5,997.0	38.82	38.82
2	United States	10-09	4,136	5,516	5,996	7,174	6,078	5,780.0	37.41	76.23
3	Netherlands	01-12	593	1,145	1,535	1,700	1,700	1,334.6	8.64	84.87
4	Germany, W.	01-12	715	890	1,010	1,100	1,380	1,019.0	6.60	91.47
5	Belg.-Lux.	01-12	371	516	481	500	500	473.6	3.07	94.54
6	Argentina	04-03	268	269	258	220	325	268.0	1.73	96.27
7	Norway	01-12	89	116	141	175	164	137.0	0.89	97.16
8	Singapore	01-12	106	117	130	135	140	125.6	0.81	97.97
9	Denmark	01-12	63	68	75	28	25	51.8	0.34	98.31
10	India	10-09	0	40	50	60	100	50.0	0.32	98.63
11	Canada	08-07	51	45	41	43	45	45.0	0.29	98.92
12	Paraguay	04-03	17	20	40	36	73	37.2	0.24	99.16
13	U.K.	01-12	47	46	18	10	25	29.2	0.19	99.35
14	Lebanon	01-12	0	0	40	40	55	27.0	0.17	99.52
15	France	01-12	18	10	9	9	20	13.2	0.09	99.61
16	Italy	01-12	9	11	13	15	15	12.6	0.08	99.69
17	Israel	01-12	12	14	12	10	10	11.6	0.08	99.77
18	Bolivia	04-03	0	0	12	25	19	11.2	0.07	99.84
19	Uruguay	04-03	2	10	12	16	13	10.6	0.07	99.91
20	Spain	09-08	0	0	0	10	40	10.0	0.06	99.97
	Totals									
	Top-20		11,826	14,201	14,911	18,206	18,077	15,444.2		
	Others		5	12	3	2	1	4.6		
	All		11,831	14,213	14,914	18,208	18,078	15,448.8		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products,* FOP 6-18, March, 1981.

[1]The market year begins in the year before, or Jan. 1, of the year indicated in the northern hemisphere or near the equator and in the year indicated for the southern hemisphere countries and some near the equator.

TABLE 9. SOYBEAN MEAL, WORLD IMPORTS, BY COUNTIES, 1977-1981 (000 METRIC TONS)

Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	France	01-12	1,706	2,276	2,558	2,765	2,862	2,433.4	16.02	16.02
2	Germany, W.	01-12	939	1,693	1,812	1,800	1,961	1,641.0	10.80	26.82
3	Italy	01-12	720	1,070	1,226	1,135	1,183	1,066.8	7.02	33.84
4	Germany, E.	01-12	950	900	960	1,000	1,040	970.0	6.39	40.23
5	Netherlands	01-12	841	912	839	970	1,085	929.4	6.12	46.35
6	Poland	01-12	644	730	938	1,100	1,000	882.4	5.81	52.16
7	Denmark	01-12	563	704	715	820	895	739.4	4.87	57.03
8	Hungary	09-08	554	666	622	635	580	611.4	4.03	61.06
9	U.K.	01-12	264	433	555	600	575	485.4	3.20	64.26
10	Belg.-Lux.	01-12	471	532	471	471	462	481.4	3.17	67.43
11	Czechoslovakia	01-12	161	490	500	550	570	454.2	2.99	70.42
12	Canada	08-07	339	376	480	430	381	401.2	2.64	73.06
13	Austria	01-12	244	328	360	375	420	345.4	2.27	75.33
14	Venezuela	01-12	205	240	315	375	425	312.0	2.05	77.38
15	U.S.S.R.	01-12	0	0	52	500	1,000	310.4	2.04	79.42
16	Japan	01-12	314	340	283	250	300	297.4	1.96	81.38
17	Spain	09-08	425	482	380	60	17	272.8	1.80	83.18
18	Sweden	01-12	217	238	250	220	260	237.0	1.56	84.74
19	Romania	09-08	230	129	280	240	220	219.8	1.45	86.19
20	Ireland	01-12	143	213	254	200	225	207.0	1.36	87.55
	Totals									
	Top-20		9,930	12,752	13,850	14,496	15,461	13,297.8		
	Others		1,702	1,666	1,784	2,152	2,152	1,891.2		
	All		11,632	14,418	15,634	16,648	17,613	15,189.0		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products*, FOP 6-18, March, 1981.

[1]The market year begins in the year before, or Jan. 1, of the year indicated in the northern hemisphere or near the equator, and in the year indicated for the southern hemisphere countries and some near the equator.

TABLE 10. SOYBEAN MEAL: U.S. EXPORTS, BY COUNTRIES OF DESTINATION 1977-1981 (000 METRIC TONS)

Rank 1977-81	Country	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	Netherlands	566	655	748	1,490	1,502	992.2	16.16	16.61
2	Germany, W.	953	1,040	718	1,013	710	886.8	14.85	31.46
3	Italy	429	742	691	856	684	680.4	11.39	42.85
4	Poland	257	493	243	400	312	341.0	5.71	48.56
5	Canada	256	339	414	356	331	339.2	5.68	54.24
6	Venezuela	128	114	244	329	374	237.8	3.98	58.22
7	Germany, E.	0	105	469	325	245	228.8	3.83	62.05
8	Japan	217	271	204	210	154	211.4	3.54	65.59
9	Romania	37	32	184	260	431	188.8	3.16	68.75
10	France	131	147	355	270	8	182.2	3.05	71.80
11	Spain	143	237	254	58	22	142.8	2.39	74.19
12	Mexico	190	95	91	148	177	140.2	2.35	76.54
13	Czechoslovakia	100	64	174	214	60	122.4	2.05	78.59
14	Yugoslavia	95	113	58	153	191	122.0	2.04	80.63
15	Portugal	10	82	128	97	244	112.2	1.88	82.51
16	Bulgaria	0	16	116	153	213	99.6	1.67	84.18
17	U.K.	47	112	67	69	57	70.4	1.18	85.36
18	Hungary	38	120	77	95	0	66.0	1.11	86.47
19	Ireland	36	84	118	74	1	62.6	1.05	87.52
20	Iran	32	118	81	40	0	54.2	0.91	88.43
	Totals								
	Top-20	3,665	4,979	5,434	6,610	5,716	5,280.8		
	Others	452	583	562	989	873	691.8		
	All	4,117	5,562	5,996	7,599	6,589	5,972.6		

Source: USDA, ERS, *Foreign Agricultural Trade of the United States*, Bi-monthly and yearly supplements.

world imports of soybean meal from 1977-1981, table 9. (Greece was not in the top 20 and accounted for only .1 percent.) The Communist bloc countries of Europe have also become important importers, as they have increasingly developed more livestock feeding, accounting for 22.71 percent of meal imports from 1977-1981. Putting all countries of Europe together accounts for over three-fourths of the world's meal imports.

U.S. Trade

As with total world imports, the EC-10 and the Communist countries of Europe (including Yugoslavia) take the largest amounts of U.S. exports of soybean meal with 49.68 and 19.66 percent, respectively, table 10. When all of Europe is included, abut three-fourths of U.S. trade in soybean meal is accounted for. Only Canada, Japan, and Mexico are other important customers for U.S. soybean meal.

SOYBEAN OIL PRODUCTION AND TRADE

World Production

As with world meal production, the United States and Brazil dominated world soybean oil production with 41.51 and 16.67 percent, respectively, from 1977-1981, table 11. These are the only two countries which produce enough oil from their own beans to have a significant amount to export. Most of the other important producers of oil produce it from imported beans, except for the People's Republic of China.

World Trade

While relatively few countries of the world export important amounts of soybean oil, table 12, a great many countries of the world import at least some, table 13. Also, while exporters of oil are many of the same countries which export whole beans and meal, the important importers of oil are a different set of customers than those for beans and meal.

Important exporters of oil are the United States, Brazil, and Argentina, as with beans and meal. However, some of the European countries, which import whole beans and do their own crushing for the meal, have a surplus of oil for export. Among these are the Netherlands, Spain, West Germany, France, Belgium, and Luxemburg, table 12.

TABLE 11. SOYBEAN OIL: WORLD PRODUCTION, BY COUNTRIES 1977-81 (000 METRIC TONS)

Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	United States	09-08	3,891	4,666	5,136	5,490	5,266	4,889.8	41.51	41.51
2	Brazil	03-02	1,604	1,645	1,667	2,412	2,487	1,963.0	16.67	58.18
3	Germany, W.	01-12	617	648	649	683	666	652.6	5.54	63.72
4	Japan	01-12	532	598	621	630	630	602.2	5.11	68.83
5	Netherlands	01-12	277	430	530	565	493	459.0	3.90	72.73
6	Spain	09-08	313	374	398	516	502	420.6	3.57	76.30
7	China, P.R.	10-09	331	365	376	403	399	374.8	3.18	79.48
8	U.S.S.R.	01-12	367	221	253	289	323	290.6	2.47	81.95
9	Italy	01-12	200	217	257	272	259	241.0	2.05	84.00
10	Mexico	09-08	143	180	177	235	270	201.0	1.71	85.71
11	U.K.	01-12	188	216	167	212	203	197.2	1.67	87.38
12	Belg.-Lux.	01-12	141	178	179	192	191	176.2	1.50	88.88
13	Taiwan	01-12	116	142	156	148	136	139.6	1.19	90.07
14	Canada	08-07	115	124	129	157	166	138.2	1.17	91.24
15	France	01-12	98	127	156	146	155	136.4	1.16	92.40
16	Argentina	04-03	96	108	106	104	133	109.4	0.93	93.33
17	Romania	09-08	54	73	83	111	110	86.2	0.73	94.06
18	Israel	01-12	75	61	65	62	65	65.6	0.56	94.62
19	Denmark	01-12	74	79	81	51	35	64.0	0.54	95.16
20	Korea, S.	10-09	19	29	52	83	90	54.6	0.46	95.62
	Totals									
	Top-20		9,251	10,481	11,238	12,761	12,579	11,262.0		
	Others		360	444	531	598	650	516.6		
	All		9,611	10,925	11,769	13,359	13,229	11,778.6		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products,* FOP 6-18, March, 1981.

[1]The market year begins in the year before, or Jan. 1, of the year indicated in the northern hemisphere or near the equator, and in the year indicated for the southern hemisphere countries and some near the equator.

TABLE 12. SOYBEAN OIL: WORLD EXPORTS, BY COUNTRIES, 1977-81 (000 METRIC TONS)

Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	United States	10-09	702	933	1,059	1,220	907	964.2	33.66	33.66
2	Brazil	03-02	557	542	469	800	870	647.6	22.61	56.27
3	Netherlands	01-12	199	291	396	400	333	323.8	11.30	67.57
4	Spain	09-08	134	272	311	360	380	291.4	10.17	77.74
5	Germany, W.	01-12	234	216	212	248	226	227.2	7.93	85.67
6	France	01-12	83	127	148	132	130	124.0	4.33	90.00
7	Belg.-Lux.	01-12	85	131	118	125	121	116.0	4.05	94.05
8	Argentina	04-03	64	59	78	70	95	73.2	2.56	96.61
9	Denmark	01-12	23	30	21	14	10	19.6	0.68	97.29
10	Greece	01-12	5	15	14	20	22	15.2	0.53	97.82
11	Norway	01-12	5	7	13	14	17	11.2	0.39	98.21
12	Portugal	01-12	0	3	14	14	12	8.6	0.30	98.51
13	Italy	01-12	6	7	8	10	10	8.2	0.29	98.80
14	U.K.	01-12	13	4	5	5	5	6.4	0.22	99.02
15	Malaysia	01-12	0	0	0	9	13	4.4	0.15	99.17
16	Canada	08-07	0	1	2	9	10	4.4	0.15	99.32
17	Japan	01-12	1	1	3	6	10	4.2	0.15	99.47
18	China, P.R.	10-09	2	4	6	1	6	3.8	0.13	99.60
19	Singapore	01-12	3	2	2	2	2	2.2	0.08	99.68
20	Paraguay	04-03	0	0	0	5	5	2.0	0.07	99.75
	Totals									
	Top-20		2,116	2,645	2,879	3,464	3,184	2,857.6		
	Others		10	6	13	3	3	7.0		
	All		2,126	2,651	2,892	3,467	3,187	2,864.6		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products,* FOP 6-18

[1]The market year begins in the year before, or Jan. 1, of the year indicated in the northern hemisphere or near the equator, and in the year indicated for the southern hemisphere countries and some near the equator.

TABLE 13. SOYBEAN OIL: WORLD IMPORTS, BY COUNTRIES, 1977-81 (000 METRIC TONS)

Rank 1977-81	Country	Mkt. yr.[1]	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	India	10-09	440	510	555	690	600	559.0	20.58	20.58
2	Iran	08-07	158	288	200	250	270	233.2	8.59	29.17
3	Pakistan	01-12	97	181	260	250	260	209.6	7.72	36.89
4	Morocco	01-12	131	126	149	145	149	140.0	5.16	42.05
5	China, P.R.	10-09	85	184	122	100	120	122.2	4.50	46.55
6	U.S.S.R.	01-12	0	107	144	50	200	100.2	3.69	50.24
7	France	01-12	91	110	109	94	87	98.2	3.62	53.86
8	Germany, W.	01-12	52	96	96	100	100	88.8	3.27	57.13
9	Italy	01-12	100	82	79	68	86	83.0	3.06	60.19
10	Columbia	01-12	52	53	87	70	91	70.6	2.60	62.79
11	Nigeria	01-12	60	80	46	53	75	62.8	2.31	65.10
12	Yugoslavia	09-08	22	50	0	88	110	54.0	1.99	67.09
13	Turkey	09-08	11	29	81	95	50	53.2	1.96	69.05
14	Sweden	01-12	55	57	25	62	64	52.6	1.94	70.99
15	U.K.	01-12	20	52	74	70	32	49.6	1.83	72.82
16	Netherlands	01-12	77	73	42	32	20	48.8	1.80	74.62
17	Peru	01-12	60	83	20	36	40	47.8	1.76	76.38
18	Chile	01-12	38	49	53	45	50	47.0	1.73	78.11
19	Austria	01-12	39	41	45	45	50	44.0	1.62	79.73
20	Bangladesh	07-06	35	19	52	51	55	42.4	1.56	81.29
	Totals									
	Top-20		1,623	2,270	2,239	2,394	2,509	2,207.0		
	Others		335	417	605	517	669	508.6		
	All		1,958	2,687	2,844	2,911	3,178	2,715.6		

Source: USDA, FAS, *Foreign Agriculture Circular, Oilseeds and Products,* FOP 6-18, March, 1981.

[1]The market year begins in the year before, or Jan. 1, of the year indicated in the northern hemisphere or near the equator, and in the year indicated for the southern hemisphere countries and some near the equator.

TABLE 14. SOYBEAN OIL, U.S. EXPORTS, BY COUNTRIES OF DESTINATION, 1977-1981 (000 METRIC TONS)

Rank 1977-81	Country	1977	1978	1979	1980	1981	1977-81 Av.	1977-81 Pct.	Cum. Pct.
1	India	252	248	181	428	62	234.2	25.16	25.16
2	Pakistan	119	96	163	147	126	130.2	13.99	39.15
3	Iran	72	54	181	*	0	61.4	6.60	45.75
4	Columbia	27	44	84	83	60	59.6	6.40	52.15
5	China P.R.	0	106	59	100	26	58.2	6.25	58.40
6	Peru	57	69	29	36	41	46.4	4.98	63.38
7	Ecuador	16	26	22	35	39	27.6	2.97	66.35
8	Bangladesh	4	40	46	21	25	27.2	2.92	69.27
9	Dominican R.	5	18	33	23	25	20.8	2.23	71.50
10	Mexico	15	30	5	31	22	20.6	2.21	74.71
11	Canada	26	28	21	15	8	19.6	2.11	75.82
12	Haiti	17	14	17	23	22	18.6	2.00	77.82
13	Chile	12	22	23	13	23	18.6	2.00	79.82
14	Australia	20	21	16	16	16	17.8	1.91	81.73
15	Venezuela	0	*	13	10	53	15.2	1.63	83.36
16	Brazil	0	0	0	76	0	15.2	1.63	84.99
17	Panama	13	8	19	18	15	14.6	1.57	86.56
18	Poland	0	2	24	4	15	9.0	0.97	87.53
19	Somalia	*	5	5	14	15	7.8	0.84	88.37
20	Israel	3	6	10	10	5	6.8	0.73	89.10
	Totals								
	Top-20	658	837	951	1,103	598	829.4		
	Others	45	96	108	117	141	101.4		
	All	703	933	1,059	1,220	739	930.8		

Source: USDA, ERS, *Foreign Agricultural Trade of the United States*, Bi-monthly and yearly supplements.

* 500 metric tons or less.

India has consistently accounted for a large percentage of the world's imports of soybean oil to meet the needs of its large population, table 13. Unlike the People's Republic of China, which produces most of what it uses, India consistently does not produce enough edible oils for its domestic needs and should be a good customer for edible oils for some time to come. Over the past 5 years, the United States has contributed an average of 41.90 percent of India's imports of soybean oil, tables 13 and 14.

After India, however, a large number of countries import important amounts of soybean oil, but not one stands out in the top 20 as does India, table 13. Also note that nearly 20 percent of the soybean oil imported is accounted for by countries other than the top 20. Much of this is to Third World countries, especially in Africa, which is exported under the PL 480 (Food for Peace) program as a form of foreign aid. While not one of these countries beyond the top 20 is a significant importer individually, together they make up a substantial market for sales of soybean oil and may become important purchasers for hard currency outside the foreign aid channel in the future.

U.S. Trade

U.S. exports of soybean oil have generally followed the same pattern as the important importers of the world with a few exceptions, table 14. India was the most important customer of the United States for soybean oil from 1977-1981, averaging 25.16 percent of U.S. exports. However, Pakistan is the second most important U.S. customer with 13.99 percent exports. The United States supplied over 62 percent of Pakistan's total imports over the last 5 years.

After India and Pakistan, a large number of countries take an important share of U.S. exports of oil, but no other country dominates. There is also an important amount of exports beyond the top 20 accounting for over 10 percent of U.S. exports.

ISSUES AND POLICIES

This section presents only brief statements of selected issues and policies affecting international trade in soybeans which may affect the economies of the United States and Alabama. Each of these could rate a separate study, and detailed analysis of the impact of each is not possible in this publication. Most of the following statements have been excerpted from the references cited at the end of this publication, especially Jabara (1) and the USDA, ESS (3).

They should be useful for farmers, agribusinesses, farm and commodity organizations, extension workers, researchers, and others concerned with international trade in soybeans and products in their planning for production and for political action.

U.S. Grain Embargoes to the U.S.S.R. and Poland

Embargoes have been discussed during the recent "Poland Crisis" by the present U.S. Administration and an embargo was actually carried out against the U.S.S.R. in recent years. This includes soybeans. The Alabama Soybean Association passed a resolution at its annual meeting in January, 1982, stating its opposition to any sort of grain embargo.

Members of the Alabama Soybean Association, as well as the American Soybean Association and others, allege that embargoes hurt soybean producers by damaging the United States' reputation as a reliable supplier. This, in turn, encourages other countries to look for other sources of supply in competition with U.S. and Alabama producers. Over time, the United States would tend to become the "supplier-of-last-resort" (countries would only buy from the United States after they have exhausted other sources).

The policy of using soybeans and other farm products as instruments of our foreign policy (to punish countries with an embargo when we don't agree with something they do) may also result in the establishment of areas of production which did not exist before in competition with U.S. and Alabama producers. It may take the form, for instance, of actually buying or leasing lands in other countries to grow soybeans and other farm commodities. Japan is already doing this in some cases.

The Effect of Exchange Rates

Recently the U.S. dollar has been increasing in value relative to most of the currencies of countries who buy U.S. soybeans and soybean products. To the extent that this would make U.S. products relatively more expensive than before in terms of foreign currency, it should have a negative effect on demand for U.S. soybeans and product.

Protectionism Versus Free Trade

Most economic theory would hold that trade throughout the world should maximize global welfare and promote price stability to

a greater extent than when various protectionist policies and bilateral trade agreements are followed. Since the end of World War II, the goal of U.S. trade policy has been to achieve freer trade. U.S. and Alabama soybean producers have also endorsed this policy through various resolutions. This is especially appropriate for soybean producers as 50-60 percent of U.S. soybeans, including the equivalent in products, have been exported in recent years, and any increase in protectionist policies would have the effect of reducing exports and consequently prices and incomes of U.S. and Alabama farmers.

While world trade in grains is heavily influenced by protectionist policies, world trade in soybeans has, so far, remained relatively unhindered. Japan, the second most important single customer for U.S. soybeans in the last 5 years, is not likely to impose trade restrictions, and has agreed to bind the import duty on soybeans at zero at the most recent round of Multilateral Trade Negotiations (Toyko Round, 1979). In the EC-10, however, sentiment is growing to increase tariffs or quotas on soybeans and soybean meal to reduce chronic dairy product surpluses, curtail the displacement of domestically produced grains in feed rations, and reduce the EC-10's high degree of dependence on imported protein feeds. Also, with the recent admittance of Greece and the future admittance of Spain and Portugal, all surplus olive oil producers, there is increasing pressure to levy a beans tax on all imported edible vegetable oils (including soybean oil), with the tax on olive oil rebated to member countries. Policies of some important customers and competitors of the United States are briefly summarized in the following sections.

EC-10 Present Policies

An ad valorem duty of between 4 and 8 percent is levied on U.S. soybean oil for industrial use, and oil for edible use is subject to a 10 to 15-percent ad valorem duty. At the same time, vegetable oils from Lome Convention countries are admitted duty free. Although few of these countries export soybean oil, many export oils competitive with U.S. soybean oil, such as palm oil and coconut oil.

The EC-10 has also protected its soybean producers (although few) by establishing "guide prices" since 1974. These are support prices above world market prices. Also, soybean processors receive a subsidy payment equal to the difference between the guide prices and the world price for the purchase of domestic soybeans. These

policies encourage domestic production in competition with the United States and encourage purchase of local beans when available.

Japan's Present Policies

Tariff levels on imports of soybeans and meals are bound at zero by GATT. Soybean oil imports, however, are levied at specific tariffs of 17 to 23 yen per kilogram ($U.S. 0.08-0.11). Soybean producers in Japan benefit from guaranteed support prices that are higher than equivalent world market prices. However, Japanese production is largely food-quality beans whereas U.S. imports are crushed for oil and meal. Japanese farmers who cultivate soybeans on rice paddy fields also receive a "diversion payment" in addition to the guaranteed price for the soybeans. The difference between the producer price and the standard market price paid by consumers is subsidized by the government. Japan often makes use of bilateral trade agreements to guarantee supplies. Japan signed a trade agreement in 1975 with the United States which guaranteed Japan 3 million tons of soybeans over a period of 3 years *(1)*.

Brazil's Present Policies

The Brazilian government provides credit for soybean growers at interest rates well below the level of inflation on production loans based on historical yield averages. Farmers can borrow up to 100 percent of the estimated cost of production.

Export of soybeans and derivative products have been under the control of the Bank of Brazil's foreign trade office since 1958. Since that date the office has used a variety of export quota and licensing schemes to control exports. Currently, soybean meal and oil are exported under a global export quota system. The system is designed to ensure that sufficient oil and meal are available to keep domestic prices at or below domestic price ceilings. Exports licenses are required for some exports.

The Brazilian government favors exports of soybean oil and meal rather than whole beans through special financing arrangements and income tax deductions. Processors receive subsidized credit at an annual interest rate of 8 percent to finance production of soybean oil and soybean meal destined for export. In addition, earnings from soybean oil exports are not subject to income taxes. In contrast, corporate income is taxed at 30 percent.

Argentina's Present Policies

The government influences exports of oilseeds and derivative products by requiring exporters to register with the National Grain Board, which restricts export registrations if domestic needs appear to be in jeopardy.

Export taxes promote the export of processed soybean products over whole soybeans. Rebates may be applied to encourage a product, such as a 10 percent rebate, for export of soybean oil since 1980.

Tennessee-Tombigbee Waterway and Port of Mobile Expansion

The Alabama Soybean Association passed a resolution at its annual meeting in January, 1982, urging completion of the Tennessee-Tombigbee Waterway and expansion of the port facilities at Mobile.

These developments would not only aid Alabama farmers by providing a stronger alternate market to the domestic market, but could save money for corn belt and other up-river producers by providing a closer alternative port for export. For example, the distance from Mt. Vernon, Indiana, to Mobile, Alabama, when the Tennessee-Tombigbee waterway is completed, will be approximately 842 miles compared with 1,124 miles to New Orleans, a saving of 282 miles *(1)*. For another example, soybean oil or meal could be shipped from the crushing plant at Decatur, Alabama, to Mobile, Alabama, with a savings of 732 miles (543 miles compared with 1,275 miles to New Orleans).

Soil Mining Aspects of Soybean Production

It is alleged that increased exports of soybeans in the United States in recent years and possible increases in the future may "mine" U.S. soil and result in declining yields over time as more soybeans are produced than necessary for domestic needs. This issue was discussed at the annual meeting of the Alabama Soybean Association and it was agreed that more needs to be known about this allegation. At present, the USDA, SCS is working on a linear programming model of crop production in Alabama in which soil erosion from different crops is estimated.

Requirements for Shipping in U.S. Vessels

Certain percentages of U.S. grain exports by law must be shipped overseas in U.S. vessels. To the extent that the U.S. vessel rates are higher than foreign rates, this represents a tax on U.S. exporters of soybeans. This issue was discussed at the Alabama Soybean Association meeting in January, 1982, and some participants felt this policy was costing U.S. and Alabama soybean producers several cents a bushel in profit from exporting. This is a topic which could be studied further and documented. However, political considerations have appeared to be more important than cost of shipping considerations in the past, and it would be difficult to repeal this requirement.

SUMMARY AND CONCLUSIONS

International trade in soybeans is extremely important to Alabama agriculture in that more than 1 out of every 2 acres of harvested cropland constitutes Alabama's export share of U.S. exports. The value of Alabama's export share was $203.6 million in 1980.

The United States is the world's most important soybean producer with nearly two-thirds of world production. Only Brazil, the People's Republic of China, and Argentina are other significant producers and competitors with the U.S. and Alabama. The U.S. and these three countries accounted for 93.69 percent of the world's soybean production in 1977-1981.

The U.S. accounted for 81.73 percent of the whole soybeans, 38.82 percent of the soybean meal, and 33.66 percent of the soybean oil exported in the world in 1977-1981. Competitors with the United States for the whole soybean trade were Argentina and Brazil with 9.01 and 5.65 percent of the world exports, respectively. Competitors in the world soybean meal trade were Brazil, Netherlands, West Germany, Belgium-Luxembourg, and Argentina with 38.82, 8.64, 6.60, 3.01, and 1.73 percent of exports, respectively. Competitors in the world soybean oil trade were Brazil, Netherlands, Spain, West Germany, France, Belgium-Luxembourg, and Argentina with 22.61, 11.30, 10.17, 7.93, 4.33, 4.05, and 2.56 percent of exports, respectively.

Importers of whole soybeans and meal are mostly the industrialized countries of Europe and Japan while importers of oil involve a large number of countries of the world with India the most important importer of soybean oil.

The most important customers for U.S. and Alabama soybeans and soybean products include Netherlands and Japan for whole beans with 21.55 and 18.69 percent of U.S. exports, respectively; Netherlands, West Germany, and Italy for meal with 16.61, 14.85, and 11.39 percent, respectively; and India and Pakistan for oil with 25.16 and 13.99 percent, respectively.

Policies most affecting U.S. trade in soybeans include the various policies of the EC-10, Japan, Brazil, and Argentina, which either result in restraint of trade or a subsidy to their own producers and processors.

While the most important customers for U.S. soybeans and products, the EC-10 and Japan, do not have extremely harmful policies restricting import of U.S. soybean at this time, any more policies in this direction would have a serious impact on the U.S. soybean export market. This is more likely to happen in the EC-10 with the addition of southern European countries which produce surplus olive oil in competition with U.S. soybean oil.

Requirements for shipping in U.S. vessels, grain embargoes, the Tennessee-Tombigbee waterway, the Port of Mobile expansion, and soil mining are other issues of concern to U.S. and Alabama soybean producers.

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