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SUPPLY OF AND DEMAND FOR MANCHURIAN FARM PRODUCTS

Postwar figures for production and consumption of agricultural products in the Northeast are too fragmentary to be the basis of any estimates at present [1948]. Although dislocations due to the war must be evaluated, the following data, covering basically the years 1937 - 1943 and complete, with certain exceptions, may be used to make plans for the future.

Consumption of All Farm Products
(In metric tons)

		Supply			Demand		
Period	Year	Production	Imports	Total (A)	Exports (B)	A-B	Index
Free Economy	1934	13,500,388	776,230	14,166,598	3,914,624	10,351,974	100
	1935	15,675,568	724,577	16,400,145	3,742,260	12,657,885	122
	1936	16,550,646	426,278	16,976,924	3,641,339	13,335,565	129
	1937	16,606,311	173,817	16,780,128	4,196,985	12,583,143	122
	1938	19,393,998	388,959	19,782,957	4,356,255	15,426,702	149
	1939	18,143,662	519,808	18,663,470	2,874,100	15,789,370	153
	Avg	16,645,095	499,945	17,145,037	3,787,594	13,357,443	129

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		Supply			Demand		
Period	Year	Production	Imports	Total (A)	Exports (B)	A-B	Index
Controlled Economy	1940	18,726,893	277,948	19,004,841	1,935,473	17,069,368	165
	1941	18,713,885	110,316	18,824,201	1,725,001	17,099,200	165
	1942	17,620,693	103,673	17,724,366	1,805,215	15,919,151	154
	1943	19,418,326	122,526	19,540,852	2,333,489	17,207,363	166
	Avg	18,619,949	153,616	18,773,565	1,949,795	16,823,770	163
	Gen Avg	17,435,036	361,413	17,796,448	3,052,474	14,743,974	142

NOTES:

1. Production figures obtained from Manchukuo data; Jehol and Hsingan not included until 1937.
2. For 1934 - 1938, production figures for vegetable oil materials are not available in detail; consequently, export figures for these years are used for production figures; SMR figures are used for beans and grains.
3. Unit is farming year, October to September.
4. For import figures, flour and rice are calculated in whole grains (flour is considered 75 percent of original; rice, 70 percent).
5. For export figures, perilla oil is reckoned as 36 percent of whole seed; other oils, except bean, 21 percent.
6. Among the oil-producing seeds, only perilla, hemp, castor, and sesamum seeds, and peanuts included.
7. Trade controls were enforced in 1939, so figures for that year are estimates. Under the free economy, recorded consumption averaged 13,400,000 metric tons; under controlled economy, it rose sharply to an average of 16,800,000 metric tons. Estimates of 15 million and 17 million metric tons, respectively, are probably nearer the truth.

Supply and Demand of Grains and Fodder (1934 - 1943)
(In metric tons)

		Supply			Demand		
Period	Year	Production	Imports	Total (A)	Exports (B)	A-B	Index
Free Economy	1934	9,591,785	766,230	10,358,015	436,477	9,921,538	100
	1935	11,516,138	724,577	12,240,715	623,493	11,617,222	117
	1936	12,078,882	426,278	12,505,160	529,308	11,975,852	121
	1937	12,190,714	173,817	12,364,531	816,298	11,548,233	116

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		Supply			Demand		
Period	Year	Production	Imports	Total (A)	Exports (B)	A-B	Index
Free Economy	1938	14,544,005	388,959	14,932,964	817,249	14,061,715	142
	1939	13,983,415	519,808	14,503,223	416,922	14,086,301	142
	Avg	12,317,490	499,945	12,817,435	615,624	12,201,811	126
Controlled Economy	1940	14,917,269	277,948	15,195,217	530,815	14,664,402	148
	1941	15,150,297	110,316	15,260,613	419,750	14,840,863	150
	1942	14,403,679	103,673	14,507,352	470,486	14,036,866	141
	1943	15,969,730	122,526	16,092,256	895,218	15,197,038	153
	Avg	15,110,244	153,616	15,163,860	579,067	14,684,752	146
	Gen Avg	13,434,591	361,413	13,796,004	601,001	13,195,003	133

Until 1937 [sic] imports exceeded exports. Contrary to the general impression, only in that year did Manchuria become a food-surplus area.

The increase of consumption over the periods appears small in comparison with the increase in population. That no great scarcity of food has been felt is due to the greatly increased production of potatoes, e.g., about 2,100,000 metric tons in 1943.

Quantities consumed locally and marketed were as follows (in metric tons):

	1938	1943
Consumed locally	10,150,000	10,810,000
Marketed	3,910,000	4,300,000
Total	14,060,000	15,110,000

To obtain the nonrural demand, add imports to amount marketed and deduct exports.

Of the total 4,300,000 metric tons marketed in 1943, 800,000 metric tons were for military use. Nonmilitary consumption in Liaoning in 1943 was nearly half of the total for that year for all Manchukuo.

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Demand for Beans in Manchuria (by years)
(In metric tons)

Period	Year	Production	Exports	Demand	Index
Free Economy	1934	3,599,530	1,992,431	1,607,099	100
	1935	3,822,287	1,858,358	1,963,929	122
	1936	4,175,453	1,993,045	2,182,408	136
	1937	4,128,923	2,203,987	1,924,936	119
	1938	4,624,946	2,108,294	2,516,652	157
	1939	3,955,978	1,559,833	2,396,145	149
	Avg	4,051,186	1,952,658	2,098,528	131
Controlled Economy	1940	3,619,425	792,527	2,826,898	176
	1941	3,386,787	660,000	2,726,787	170
	1942	3,026,251	701,554	2,324,697	145
	1943	3,259,068	779,902	2,479,166	154
	Avg	3,322,882	733,495	2,589,387	161
	Gen Avg	3,759,864	1,464,993	2,294,871	143

NOTE: The demand for beans in Manchuria during the free economy period was around 2 million metric tons per annum; under the controlled economy, it jumped to about 2.5 million metric tons as shown in the above table. There was considerable illegal movement during this time, so the figures in the "Demand" column should be revised downward to represent the actual quantities.

It is estimated that the average demand during the controlled economy period, 2,590,000 tons, may be divided as follows (on the basis of a 6-year average):

Retained on farms:	1,340,000
Marketed	1,250,000
Total	2,590,000

Generally speaking, exports under controlled economy were much less than under the free economy.

Most of the 1,590,000 tons of beans marketed in 1943 were taken by the oil mills. Some 100,000 tons went to the military, and a similar amount was consumed as food. Under free economy, over one million metric tons probably went to the oil mills, 50 percent to Dairen, 10 percent to Harbin, and the remainder to smaller places. Of late, Dairen's share in this industry has been diminishing.

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Bean Cakes

Between 1934 and 1939, the average annual production of bean cakes was 900,000 to 1,200,000 metric tons. Most of this was exported; only about 200,000 metric tons were consumed domestically. Under the controlled economy, both military and civilian consumption increased, as shown below.

Consumption of Bean Cakes
(In metric tons)

	1942	1943
Civilian demand	350,000	390,000
Military demand	190,000	200,000
Total	540,000	590,000

Civilian use of bean cakes has increased 100 percent since the free economy for two reasons: (1) fertilizers were required to enrich soils in the southern sections and (2) to meet greatly increased demand for tobacco, hemp, cotton, etc., which need strong fertilizer. Bean cakes were used to supplement a decreasing supply of ammonium sulfate. In 1942 Liaoning used more bean cakes for fertilizer than all other provinces combined.

Bean Oil

Between 1934 and 1939, the average annual production of bean oil was estimated at 100,000-130,000 metric tons, about half of which was exported. Most of the remainder was consumed for food in Manchuria, with a small amount used for industrial purposes.

The amount used for food was in inverse proportion to the consumption of animal fats and other vegetable oils. In theory, the total thus used should increase in proportion to increases in the population, but due to complexity of factors and lack of data, the figures do not fully bear this out.

Taking 3 kilograms as the annual per-capita consumption of all fats and oils, and the population as 35 million in 1934 and 48 million in 1944, and assuming an annual increment of 1.5 million persons, we get the following estimated consumption of edible oils:

	Metric Tons
1935	99,000
1936	103,500
1937	108,000
1938	112,500
1939	117,000
1940	121,500
1941	127,000
1942	131,500
1943	136,000
1944	140,500

Under the free economy, some 40-60 percent of edible oils consumed was bean oil. Under the controlled economy, the individual ration of bean oil was reduced and a large amount diverted to industry, and fishing, as shown by the following figures for bean oil in 1943 (in metric tons):

Supply	
Production	133,500
Carry-over, etc.	9,000
Total	142,500
Demand	
Civilian, including Kwantung	70,500
Industry and fishing	14,000
Military	12,000
Others	5,000
Total	102,500 [sic]
Exports	3,000
Surplus	37,000
	142,500

Consumption of bean oil, for food, industrial, and military uses, shows a considerable increase during the period of controlled economy, as compared with the free economy period. Yet in the controlled economy period the per-capita ration was reduced to 2 kilograms annually, and even less in the more northern areas.

Perilla Seeds and Products

Production of perilla seeds declined from 170,000 metric tons in 1935 to 120,000 in 1938. Exports fell from 120,000 metric tons in 1935 to 50,000 in 1937. Deducting exports, some 60,000 metric tons were consumed annually in Manchuria, of which about half was retained locally, and the remainder mostly sold to the oil mills. The principal customer was the Jih-ch'ing Mill in Dairen. Under the controlled economy, exports fell almost to a vanishing point.

In 1943, the domestic demand was about 22,000 metric tons, about half retained on the farm, the other half going to the mills, and a small portion being used to feed army pigeons.

From 1935 to 1938, about 20,000 tons of perilla oil were produced annually, mostly used in the manufacture of paint. Perilla products were formerly an important export, but with lessened supply to the mills, export of perilla oil fell to about 2,000 tons in 1943. In that year, about 3,600 tons were produced; 600 tons were used in industry, 1,000 tons by the army, and the rest went abroad.

Production of perilla mash was about 4,800 metric tons in 1943 of which some 1,500 metric tons went to Japan, and the remainder was used in Manchuria as feed and fertilizer.

Hemp

Under the free economy, hemp seeds were used mostly on the farms for seed and food. But, as the controlled economy forced a decrease in the production of perilla seeds, hemp seeds replaced them as a source of oils. Approximate figures of hemp products bought and sold by the control corporation in 1943 follow (in metric tons):

Hemp seed

Bought by control corporation		55,000
Consumption		
In Manchuria, mills,	19,000	
seed,	2,000	
	21,000	
Export	33,000	
Total	54,000	

Hemp oil and mash

	Oil	Mash	Total
Production	4,400	14,000	18,400
Consumption			
Industry	1,500	--	1,500
Fertilizer	--	6,000	6,000
Others	400	--	400
Military	700	--	700
Total	2,600	6,000	8,600
Exported	1,500	6,000	7,500
Total	4,100	12,000	16,100

Castor Seeds, Peanuts, and Their Derivatives

Under the free economy, castor seeds, peanuts, and their derivatives were mostly marketed, except for small quantities kept for oil and food. Some 5,000 to 10,000 metric tons were used to produce oil, most of which was exported. About 100,000 metric tons of peanuts were shipped abroad during the free economy. Under controls, the export of peanuts was greatly reduced.

Production of castor beans was also reduced, but there was forced cultivation to supply oil for airplanes. Figures for castor bean products handled by the control corporation in 1943 are (in metric tons):

Castor beans bought by control corporation		26,000
Consumption		
Mills		20,000
Seed		3,000
Total		23,000
Export		3,000
Total		26,000

Castor oil consumed	
Industry	130
Medicine	130
Military	7,500
Total	7,780

Supply of and Demand for Sorghum (kaoliang), Millet, and Corn

Sorghum, millet, and corn make up the bulk of the food of the Manchurian people.

Supply of and Demand for Staple Grains in Manchuria
(In metric tons)

			Demand		
Period	Year	Production	Export	Est Consumption	Index
Free Economy	1934	7,291,150	248,416	7,042,734	100
	1935	8,613,888	426,976	8,186,912	116
	1936	9,117,374	354,925	8,762,449	124
	1937	9,241,361	637,534	8,603,827	122
	1938	11,132,131	672,067	10,460,064	149
	1939	10,608,966	300,142	10,308,824	146
	Avg	9,334,145	440,010	8,894,135	126
Controlled Economy	1940	11,609,943	458,000	11,151,943	158
	1941	11,651,574	363,970	11,287,604	160
	1942	11,275,933	470,486	10,805,447	153
	1943	13,184,869	783,896	12,400,973	176
	Avg	11,930,592	519,088	11,411,491	162
	Gen Avg	10,372,718	471,077	9,901,077	141

The entire grain consumption for food and feed has been estimated at 14-15 million metric tons annually. Amounts consumed locally and marketed are shown below (in metric tons):

Year	1938	1943
Consumed locally	8,390,000	8,960,000
Marketed	2,980,000	3,450,000
Total	11,370,000	12,410,000

Rice

Under the free economy, consumption of rice varied with the price, habits, and economic condition of the consumers. After the Japanese occupation of Manchuria in 1931, the influx of rice-eating Koreans and Japanese increased the consumption of and demand for rice.

Supply of and Demand for Rice under Free Economy
(In metric tons)

		Supply		Demand		
Year	Production	Import	Total (A)	Export (B)	A-B	Index
1934	338,551	68,834	407,385	--	407,385	100
1935	453,948	104,257	558,205	--	558,205	137
1936	574,423	145,721	720,144	--	720,144	177
1937	655,762	77,409	733,171	--	733,171	180
1938	723,091	72,204	795,295	--	795,295	195
1939	790,982	105,397	896,379	--	896,379	220
Avg	589,460	95,637	685,097	--	685,097	168

NOTE: Figures are reckoned from Manchukuo data for hulled rice.

Under the free economy, consumption of rice increased annually. With the coming of controls, there was a sudden drop because natives were not permitted to eat rice. Even by the time of restoration of Manchuria to China, consumption had not come back to the quantity under free economy.

Supply and Demand of Rice under Controlled Economy
(In metric tons)

		Supply		Demand		
Year	Production	Import	Total (A)	Export (B)	A-B	Index
1940	685,618	74,298	759,907	--	759,907	100
1941	808,002	9,797	817,799	--	817,799	108
1942	582,146	33,193	615,339	--	615,339	81
1943	692,575	15,553	709,128	--	709,128	93
Avg	692,085	33,458	725,543	--	725,543	95

NOTE: Manchukuo figures. Estimated consumption on farms for 1943, 203,000 metric tons; marketed, 506,000 metric tons

The 1943 marketed amount, 506,000 metric tons, was used as follows:

Civilian	
Food	304,000
Liquor	8,000
Seed	10,000
Others	9,000
Subtotal	331,000
Military	141,000
Carry-over	34,000
Total	506,000

Wheat and Flour

Because of poor climatic conditions and cheapness of imports, Manchukuo was never self-supporting in wheat, as indicated by the following table:

Supply and Demand of Wheat under Free Economy
(In metric tons)

	Supply			Demand		
Year	Production	Import	Total (A)	Export (B)	A-B	Index
1934	638,568	697,396	1,335,964	2,535	1,333,429	100
1935	1,015,464	620,320	1,634,784	29,286	1,606,798	120
1936	953,210	280,557	1,233,767	2,328	1,222,439	91.7
1937	897,367	98,408	993,775	18,371	975,404	73.2
1938	912,554	316,755	1,229,309	--	1,229,309	92.2
1939	945,831	414,411	1,360,242	--	1,360,242	102.0
Avg	993,832	404,308	1,398,140	10,253	1,287,887	99.2

NOTES: 1. Figures from Manchukuo sources. Flour computed as 75 percent of wheat weight and reduced to wheat at this ratio.

2. Of the average domestic consumption under free economy, about 60 percent or over 500,000 metric tons was marketed. It may be estimated that 730,000-850,000 tons of flour were processed or imported per year. This was equivalent to 32,700,000-38,600,000 bags, at 22 kilograms per bag. During the free economy period, the per-capita production of flour was 22 kilograms, or one bag. Taking the average population as 35 million, there is a reasonable correlation between the figures for production and demand as shown above.

With the advent of controlled economy, there was a decline in both production and marketing of wheat as shown below:

Supply and Demand of Wheat during Controlled Economy
(In metric tons)

		Supply		Demand		
Year	Production	Import	Total (A)	Export (B)	A-B	Index
1940	877,865	203,659	1,081,524	--	1,081,524	100
1941	845,273	100,519	945,792	--	945,792	87
1942	693,886	70,480	764,366	--	764,366	71
1943	392,490	105,973	498,463	--	498,463	46
Avg	702,378	120,158	822,536	--	822,536	76

NOTE: Manchukuo sources used.

Of the amount bought by the control corporation, the larger part went to manufacture sauces [sic] and other uses, leaving only about 120,000 metric tons for flour. In 1943, the supply of 180,000 metric tons of flour (100,000 metric tons manufactured, 80,000 imported) was not 24 percent of that under free economy.

Exports of Unprocessed and Processed Products
(In metric tons)

Year	Unprocessed	Mash	Subtotal	Oils	Total
1912	760,000	640,000	1,400,000	40,000	1,440,000
1931	3,760,000	1,900,000	5,660,000	187,000	5,847,000
1943	1,630,000	590,000	2,220,000	7,000	2,227,000

NOTES: 1. Sources are North China and Manchukuo published statistics.

2. Before 1939, only beans, bean mash and bean oil are reported; after that date, other products are included.

3. Before 1939, unit is calendar year; thereafter, October 1 to September 30.

It is noteworthy that a peak in the annual figures was reached in 1931. Before that time there was a fairly continuous rise in quantities; after that a decline until 1943, when exports were less than half of those in the peak year.

Exports of Beans and Bean Products
(In metric tons)

Year	Beans	Bean Cakes	Subtotal	Bean Oil	Total
1912	550,000	640,000	1,190,000	40,000	1,230,000
1931	2,840,000	1,900,000	4,740,000	187,000	4,927,000
1943	780,000	580,000	1,360,000	10,000	1,270,000

NOTE: Before 1917, beans other than soy are included.

Destination of Bean Exports
(In thousand metric tons)

	1934	1939	1943
Germany	351	100	--
Britain	253	--	--
France	212	--	--
Holland	6	--	--
Italy	27	--	--
Denmark	None	--	--
Norway	None	--	--
Egypt	340	--	--
USSR	76	--	--
Subtotal	1,265	100	--
East Asia	917	605	780
Total	2,182	705	780

Exports of bean cakes and bean oil to other countries, including the US, show a similar decline in the decade 1934 - 1943. Broadly speaking, of the total imports of beans by European countries, exclusive of the USSR, during 1934 - 1938, about half came from Manchukuo.

Of the beans, 44.4 percent, and of the bean-oil, 26.4 percent, was carried in British ships, 23.5 percent of the beans, and 49 percent of the bean oil, in German bottoms. Next in share of the total business, came Norway followed by Denmark, Greece and Japan.

From 1931 to 1943, US production of soybeans increased very rapidly, from 455,400 tons to 4,975,487 tons. This offered serious competition to Manchuria in world markets. Manchuria must improve and diversify its processing of soybeans if she is to maintain her competitive position.

Other Oil Seeds and Their Products

Statistics as to the exports of other oil seeds and products are very meager. The following 1943 data will give a general idea (in thousand metric tons):

SEEDS

Perilla	Hemp	Peanut	Castor	Sesamum	Cotton	Subtotal
27	33	1	3	Little	None	64

OILS

Perilla	Other	Mash	Total
2	2	10	78

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Exports of the above, as of beans and bean products, increased under free economy, but diminished under controls. These minor oils were much sought after for specific uses. In World War II, perilla and hemp oil were used for paint, and castor oil for airplane lubricants.

Edible Grains

Exports of edible grains are shown below for 3 sample years:

Exports of Edible Grains

Year	Sorghum (kaoliang) Millet, Corn	Other Grains	Wheat	Total
1912	65,000	57,000	83,000	205,000
1931	542,000	148,000	1,000	691,000
1943	780,000 (includes other grains)		None	780,000

In total exports of grains, the peak year was 1926, with a record of 1,705,000 metric tons. It is to be noted that the export of wheat reached its height in 1920 with 875,000 metric tons. After that, the proportion of wheat among exported grains diminished, vanishing altogether in 1939.

In 1943, grain exports went to the following places (in metric tons):

Japan	227,000
Korea	293,000
China	274,000
Total	794,000

Future of Supply and Demand of Manchurian Farm Products

The demand for food and feed in Manchukuo is very hard to calculate. It is estimated that in 1945 consumption of grains and oils in the rural areas would be at least 10 million metric tons, and in urban areas, 4 million metric tons, totaling a minimum of 14 million metric tons for domestic consumption.

In the 5 years, 1940-44, total farm production averaged 18,750,000 tons. Reducing this figure by about 20 percent because of troubled conditions, we get a production figure of 13,100,000 to 15,000,000 tons for 1945.

Taking 15 million as production and 14 million as consumption, we find that in beans and oils, the supply exceeds demand with a surplus for export; but in edible grains, demand exceeds supply, thus requiring imports. If a production figure of 13 million tons is assumed, the deficit will be still larger. Due to the repatriation of Korean and Japanese farmers and the shortage of tools and fertilizers, it will be difficult to augment the rice supply. Therefore, at present there may be some beans for export, but grains will remain insufficient.

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In Manchurian farming, crop rotation is fundamental; otherwise, there is an imbalance between supply and prices, as between grains and beans. Sudden neglect of crop rotation should be avoided in order not to upset the market.

As to increasing output, the most improved methods should be used, and a goal of 17,000,000 tons should be established.

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