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SOURCE Chung-kuo Kung-yeh, New Vol I, No 11, 1950.

SURVEY OF CHINA'S FOOD INDUSTRY, 1950

Comment and Summary: The following report on the food industry of China gives information from an article by Li Chung-ying in the Shanghai monthly magazine Chung-kuo Kung-yeh (Chinese Industry).

The author establishes the annual potential food supply per capita in China as 481 catties of cereals. He indicates that while rice and wheat are regarded as the staple cereals for the majority of Chinese, some 180 million Chinese regard the coarser cereals, such as millet, and tubers as diet staples.

He discusses the development of the wheat, rice, and coarse cereal processing industry in China and its current needs. He advocates the expansion of the edible oil and sugar processing industries, and states that processed eggs constitute a very important export food.

The appendix includes five tables showing data on the principal food crops, potential supplies available, the food industry of China, consumption of China's principal foods, and required food plant establishments.

The report follows:7

Li Chung-ying

A. General Condition of National Food Supply

The people of China consider grain as their staple food and fish, meat, and vegetables as supplementary. Although China's food supply is still far below established nutritional standards, if all the food crops, such as rice, wheat, kaoliang, corn, spiked millet, sweet potatoes, barley, oats, glutinous rice, peas, broad beans, soybeans, peanuts, etc., were properly processed and utilized as food, then the nation's nutritional needs could be met.

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On the basis of the nation's production of essential food crops (see Table 1 in appendix) and from the estimates of the potential yearly average of food per person, the author has calculated the paddy rice in terms of polished rice, the wheat in terms of flour, and the various coarse grains in terms of milled products. When the average distribution to the people is calculated, the potential yearly amount of food averages about 481 catties per person, which corresponds to a daily per capita caloric rate of 2,500 calories. This calculation is reported in Table 2. Actually, a portion of the food supply is lost, some due to improper storage and spoilage, and some because of being used for the manufacture of alcoholic beverages, fodder, and fertilizer. Therefore, the misfortune of a bad harvest frequently creates a regional food shortage; however, this difficulty could be remedied very easily.

China imports some food annually, but the amount is not large. For the past 11 years, the yearly average import of edible rice is calculated at 3,910,000 quintals, wheat at 1,750,000 quintals (equivalent to 1,225,000 quintals of flour), and flour at 1,540,000 quintals. The three items total 6,675,000 quintals, or 13,450,000 market piculs [one market picul equals 110.23 pounds]. Assuming that each person annually consumes 481 catties of food then the imported food is sufficient for an estimated population of 2,700,000 consumers. In relation to China's over 470 million population the amount is very small.

Shanghai is first among the ports of entry for rice, wheat, and flour; Swatow and Tientsin are next. Soybeans, other beans, and miscellaneous coarse cereals of the Northeast are exported annually. If the people of regions that produce rice and wheat were able to consume the coarse cereals, then the import of rice and wheat would not be necessary. It is a common saying in China that southerners eat rice and the northerners eat wheat. Actually, China has an estimated 180 million or more people who consider kaoliang, corn, millet, sweet potatoes, and other miscellaneous foods as essential. Because of our country's vast area, the dissimilarity of the northern and southern climates, the great variety of agricultural products, and, moreover, because communications and transportation are not well developed, the food products of each area have become the principal foods of the people of that area.

Coarse grains constitute a highly important item in the national food crop. These are also important items in a balanced diet. Therefore, in the reconstruction of the food industry, the processing of coarse cereals and the preparation of various food products from them must be emphasized in the future.

B. Present Condition and Future Outlook of Food Industry

Approximately 100,000 workers in over 1,000 factories are engaged in China's food industry. With the exception of the flour mills, and the new, fairly large oil-extracting and sugar-refining plants, the factories generally are small-scale enterprises. New food-processing plants have been established in Shanghai, Hankow, Tientsin, Taiwan, and other places. China's food industry still does not have complete, detailed statistics, therefore the figures shown in appended Table 3 are the result of a preliminary investigation of the condition of the food industry in the large cities of China.

1. Flour Industry

The flour industry is China's second most important light industry topped only by the textile industry. Shanghai is the center of the Chinese flour industry and furnishes more than half of the entire nation's total output. Its daily production capacity is about 100,000 sacks. If the mills along the Shanghai-Nanking line are included, as well as those in Chekiang, Anhwei, and other areas, the daily production capacity is 190,000 sacks. The rest, including Tientsin and Hankow, produce about 20,000 sacks of flour daily; Chungking, Sian, Canton, and others produce from 4,000 to 10,000 sacks daily.

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The wheat used by the new-type flour mills amounts to about 10 percent of the wheat output, but this amount is insufficient to meet the productive capacity of the mills. At the same time, a large amount of wheat is ground in the rural areas by primitive methods, but this type of wheat could not be fully utilized by the modern flour mills. Regarding the import of foreign flour, there is an annual import of more than one million piculs ^[sic] of foreign flour; foreign wheat provides about 20 percent of the raw material required by the flour mills. The existence of this illogical condition actually stems from the following factors:

- a. Internal transportation is limited, and although the quality of local flour and the efficiency of native grinding methods are far from that of machined flour, the cost of local flour is comparatively low. Therefore, the flour mills must be located near the wheat-producing areas to reduce transportation costs.
- b. The quality of nationally produced wheat is not uniform, and the many varieties (entailing separate shipments) increase transportation costs and increase the difficulty of cleaning the wheat before it is milled. In the future, wheat inspection standards must be established.
- c. Milling techniques are backward. China's flour industry has had a 50-year history, but has made very little progress. Immediate measures should be adopted to reduce waste of power and to increase efficiency by providing excellent milling facilities. Also, a specialized research organ for the flour industry must be established.
- d. There is a lack of modern storage granaries and damage to raw material is extremely high. Hereafter it will be necessary to emphasize the problem of food storage and to adopt scientific control methods to reduce waste.

China's flour mills still lack ample facilities for the storage, distribution, and packaging of flour. Shanghai has a distribution granary which holds 20,000 tons; the rest are generally warehouses and ordinary storehouses. The wheat grown in the Yangtze River basin belongs to the soft wheat group, and is rich in starch so it is most suitably used in the manufacture of western type pastries and in sponge cakes. The Northeast is the important spring wheat belt and is the region producing hard wheat. Shantung also produces hard wheat which is rich in gluten and it is most suited for bread. If the two types were milled separately, the flour would be more welcomed by the consumers.

The proportion of the China-grown wheat converted to flour is 72 percent. It is desirable to have flour mills located near the wheat-growing regions. China's wheat-growing provinces: Honan, Shantung, Kiangsu, Hopeh, and Anhwei, should become the center of China's flour industry. The size of new mills should be determined by communications and transportation factors; if transportation is convenient to the markets, then large mills may be established.

Flour milling facilities are to be used mainly for the grinding of standard flour ^[a grade established by the government] and because the food industry must work in conjunction with the production increase movement, the mills must produce standard flour to the fullest capacity in order to improve the people's food supply. For example, each 100 catties of wheat is ground into 81 catties of standard flour; thus 100 catties of wheat yields 10 catties more of standard flour than of ordinary white flour. Calculating the national production of wheat as 400 million piculs, 40 million piculs of grain can be saved by milling only standard flour.

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2. Rice Industry

China's rice-hulling mills, in general, are small-scale enterprises. Shanghai has the most; followed by Taiwan, Hankow, Ch'ang-sha, Heng-yang, Nanch'ang, Chiu-chiang, Nanking, and other places. Shanghai's hulling mills lack husking facilities so paddy rice is converted to unhulled rice in the areas where it is grown, then it is transported to the cities thus saving the cost of shipping chaff. Therefore, the rice-hulling mills in the cities take the unhulled rice and finish it to polished rice.

China's rural areas utilize manpower for threshing, husking, and shelling; although the color of the rice is not pure white, it is comparatively rich in Vitamin B content. Each 100 catties of clean, dry, paddy rice can be husked to 73.5 catties of unhulled rice; each 100 catties of clean, dry unhulled rice can be converted to 90 market catties [one market catty equals 1.1 pounds] of hulled rice. Repeated processing below this standard will bring about a decrease in the edible rice output and in its nutritional value. A modern, new-type rice industry still has not been established in China.

When paddy rice is soaked in water for 8 hours (at 60 degrees Fahrenheit) the soluble vitamins in the rice husks penetrate the kernels. The treatment of this rice under 15 pounds of steam pressure for 15 minutes forces osmosis action of the vitamins. Then the hulled rice is dried and cooled, and what is obtained is edible rice, solid and capable of long, safe storage. The amount of broken rice is reduced during the hulling period and the vitamin content is 200 percent greater than that of ordinary white rice. New-type edible rice mills can accomplish all the operations from paddy rice to the finished product mechanically and automatically.

In the future, processing mills which can produce 2 tons of nutritional rice per hour may be established in Ch'ang-sha, Chiu-chiang, Wu-hu, Hankow, Chungking, Shanghai, and other areas to increase year by year the number of installations and to extend them throughout the entire nation.

3. Miscellaneous Food Processing

Miscellaneous foods occupy an important position in the people's food supply. However, China still lacks large-scale miscellaneous food-processing plants. Shanghai has a number of small-scale bean-flour mills, and their products, except the portions used as substitutes for milk and biscuits, and filling for soup dumplings, are supplied to the lumber and plastics industries. Soybean meal added to flour, when the added amount is under 10 percent, can increase the excellence of the flour. During the milling period, soybeans, or bean cakes, are first split and hulled, then the raw bean flavor is removed, and, after drying, the residue is ground. Then it is passed through a No 80 sieve to meet food specifications.

Corn meal is used for pastries or ordinary food; and corn flakes can be used for baby food. In the future soybean flour and other miscellaneous grain processing plants should consider the Northeast as the center for their activity.

4. Oil-Extracting Industry

China's new-type oil-extracting plants established in Dairen, Ying-k'ou, Antung, Harbin, Tsingtao, Chefoo, Tsinan, Ch'ing-hua-chen in Hopeh, Chou-chia-k'ou, and also Shanghai, Wu-hsi, Chen-chiang, Hsi-chou, Hui-an, Fou-yang in Anhwei Province, Swatow in Kwangtung Province, and other places, have an annual output of vegetable oil of over 1,431,336 quintals. The Shanghai oil-extracting plants have bean oil, rape oil, hemp oil, cottonseed oil, and peanut oil as their main products.

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Before the war, products of the Northeast's new oil-extracting plants were mainly exported, but the products of the old-type factories were chiefly for the domestic markets. The Northeast's oil-extracting industry is centered in Dairen in the south and in Harbin in the north. Dairen is also a collection and distribution point for soybeans and coal; Harbin is near regions where raw materials are produced, and which are reasonably priced. Because the oil exported by China in the past was not pure, and because the water content of bean cakes was too high, sales gradually decreased. Prior to 1926, the raw materials required annually by the oil-extracting plants exceeded 1,300,000 shih (one shih equals 109 liquid quarts). Later, this amount gradually diminished and the oil-extracting plants became subsidiaries of large grain warehouses.

The potential vegetable oil output, based on China's oil crops, can be estimated at 31,300,000 quintals, which would be more than 30 times greater than the present output. Shantung, Sungkiang, Szechwan south of the Yangtze, Kirin, Anhwei west of the Yangtze, Kiangsu and other provinces have rich oil crops, and in the future may establish new type oil-extracting plants.

5. Sugar Refining Industry

Taiwan has 42 sugar refineries which have a daily cane-crushing capacity of 65,000 tons and an estimated yearly sugar output of one million tons. The annual output of all of the provinces of mainland China is approximately 300,000 tons. China's annual sugar consumption is about one million tons. During World War II, Taiwan's sugar refineries were bombed. After the victory 36 refineries were repaired and commenced operations. The southern provinces of China have extensive sugar-cane growing areas.

Szechwan's annual sugar output is calculated at about 150,000 tons, Kwangtung's at about 40,000 tons, Kiangsi's at 20,000 tons, and the rest, including Kwangsi and Fukien, collectively produce over 50,000 tons. China's inland areas use local methods of refining sugar -- for coarse sugar a method called t'ang-fang and for white sugar lou-p'eng. The products are not very good. North China and the Yellow River basin are suitable for the growing of sugar beets; Shantung, Shensi, and the Northeast are all productive areas and in the future may establish sugar beet refineries. Harbin, A-ch'eng and Ch'ang-ch'un all have sugar beet refineries and, excepting the Ch'ang-ch'un sugar refinery which was completely destroyed, the remaining plants can be restored for sugar refining. There has been a modern beet sugar mill in Tsinan, Shantung, for many years.

6. Export Food Industry

a. Egg Products

Egg products occupy an important position in China's export trade. China's egg-producing regions are widely distributed: Kiangsu, Chekiang, Anhwei, Kiangsi, Hupeh, Shansi, Honan, Hopeh, Shantung, Szechwan, Sikang, Yunnan, Kweichow, and Kwangsi have abundant production. By means of steamships equipped with refrigeration egg products may be shipped overseas.

Hankow and Shanghai both have established large-scale plants for powdered and cold storage eggs. Because the mechanical equipment of powdered-egg factories is not complex, before World War II, Shanghai was the world's egg product manufacturing center. Since then Chinese manufacturing methods have not been improved and the center has shifted to New York. Shanghai has eight cold storage egg plants; the Chinese control one of these and the rest are controlled by foreign interests.

Before the war the export of fresh eggs to Japan was comparatively high; dehydrated eggs and cold storage eggs were shipped to England and the US; salted and preserved eggs were exported to the South Seas, England, the US, and

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other places. In 1947, the export of fresh eggs amounted to 139,867 quintals, cold storage eggs 35,607 quintals, dehydrated eggs 770 quintals, preserved and salted eggs 18,860 quintals. The main export ports were Shanghai and Tientsin. The equipment of the Shanghai powdered egg factories is out-of-date. They must convert to new-type vaporizing and drying equipment in order to raise the quality of their products and to build up the confidence of international markets.

b. Casings

Three kinds of casings -- pig, cattle, sheep -- are produced. Pickling and exporting points for pig casings are concentrated in Shanghai, Hankow, Chungkin, Tientsin, Tsingtao, Chefoo, etc. The total annual export of casings is 10,000 barrels -- Shanghai ships about 4,500 barrels; Hankow and Chungking about 3,500 barrels, Tientsin and Tsingtao about 2,000 barrels. There are two types of pig casings, salted and dried; they are exported in great quantities. Three fourths of the pig intestines obtained by the Shanghai slaughterhouses are used to make casings. Because of the inferior type of salt used, the casings which are produced in the areas along the Shanghai-Nanking railway and the Shanghai-Hangchow line, are black and coarse. After these casings are shipped to Shanghai, they must be further processed before they can be packed for export. Methods of preparing casings are not complex. Fresh intestines are cleaned to remove the fats, three intestines of similar diameter and length tied to make one bunch, and then they are either salted or dried and packed for export. The pig intestines produced by inland China's rural areas are either sold for fertilizer or used for food. If the intestines can be bought for higher prices, and exported in great quantities, not only will foreign exchange increase but the farmers will also have another secondary source of income.

Shanghai has 18 casing plants, each plant having over 20 workers. There are also 41 small operators with three or four workers per enterprise. Facilities are crude and simple; these must be renovated and additional modern equipment installed.

c. Tea

After the success of Indian- and Ceylon-grown tea, Chinese tea exports declined and were finally stabilized at about 400,000 quintals. China produces about 4 million quintals of tea which is 50 percent of the world's total output. Ten percent is exported; the remainder is for domestic consumption. Hunan, Kiangsi, Anhwei, Chekiang, Fukien, Szechwan, Hupeh, and Taiwan are tea-producing areas. After World War II, tea-producing countries like Japan, Indonesia, etc., because of the war's effects, had diminished outputs and the quality of their teas was inferior. If China can improve the quality of her tea for foreign distribution, perhaps Chinese tea can again monopolize international markets.

7. Other Food Industries

Plants for the processing of canned foods, preserved fruits, biscuits, carbonated beverages, spices, etc., are comparatively numerous in Shanghai, but are small. Their output is limited because only the rich can afford their products. The production of fermented foods like soy sauce, wines, vinegar, etc., although unusually wide spread, is, however, still on a handicraft basis and very few plants have installed modern, mechanical equipment.

Foreign-operated food-processing plants in Shanghai are comparatively large. These include: the Shanghai Brewery, the Ewo Jardine Matheson Brewery, Hai-ho Ice Cream Company, the American Ku-li Bottling Works, Cheng-kuang-ho Bottling Works, Ta-hua-li Health Foods Factory, Sullivan's (Sha-li-wen) Bakery and Preserved Fruits Plant, etc. Food processing plants under Chinese control are the Mei-lin Cannery, Kua-sheng-yuan Preserved Fruits and Biscuit Plant and the T'ien-shu Condiments Factory. Their production is still high.

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Comparatively large-scale tobacco factories are located in Shanghai, Hankow, Tientsin, Mukden, Tsingtao, etc. Shantung and Honan grow tobacco, but the quality could be improved.

Based on the 1947 investigation of the food production of China's major cities, the nationwide monthly output of canned food is 5,345,280 tins, preserved fruits and biscuits 1,075,803 market cattles, soy sauce 18,926 market piculs, carbonated beverages 268,891 dozen bottles, spices 688,500 pounds, wines 53,637 piculs, and tobacco 250,572 cases.

C. Construction of Needed Food-Processing Plants

China's future food-processing plants should be planned in accordance with the conditions of agricultural production and the amounts consumed by the nation's populace. During the initial period of the reconstruction of the food industry, the increase of production and the processing of food should be considered as most important. Only when there is an abundance of food and a sufficiency of fodder, can there be an increase of dairy and meat products. Before the projected increase of food supply becomes effective, the fishing industry must be developed and fish processing plants be established to supplement insufficient meat supplies. Large-scale bean-milk factories should be established to alleviate dairy milk shortages. Cold storage plants, salting plants, and drying plants, should be increased to permit food to withstand long storage without spoilage. During World War II, dried foods were supplied to the navy and air force.

Moreover, there should be an increase in canneries, bread and rice-cake bakeries, etc., permitting all the food to be processed in food plants in great quantities so that housewives may save cooking time and can devote themselves to other productive activities.

China's nationwide consumption of important food products is shown in Table 4.

D. Conclusion

The most important food problem in China at present is to increase food production. The goal is that everyone be "amply nourished." All food industries should exert themselves to conserve raw materials and to reduce waste. For example, if the food industry grinds standard flour and reduces amount of edible rice processed to white rice standards, objective of saving raw material will be achieved.

Because 80 percent of China's people are peasants, more than one half of the agricultural food output is consumed in the rural areas after it is processed by hand methods. But along with the expansion of industrial reconstruction the population of the cities will increase year by year, and to supply inhabitants of cities with a large and suitable amount of food is not easy; hence, there must be the reconstruction and development of a reliable food industry.

[Appended tables follow.]

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Table 1. Principal Food Crops in China, 1937 - 1947 (in 1,000 market piculs)

Name	1937	1938	1939	1940	1941	1942
	15 Provinces	15 Provinces	15 Provinces	15 Provinces	15 Provinces	15 Provinces
Paddy rice	747,055	806,501	809,920	662,210	680,459	662,169
Wheat	131,156	209,911	198,168	201,110	165,120	209,729
Miscellaneous crops (total)	--	--	--	--	--	--
Kaoliang	34,991	93,997	34,299	31,264	29,665	24,044
Corn	67,717	70,371	71,293	67,039	66,533	58,496
Millet	23,812	23,814	23,990	21,171	20,706	14,754
Sweet potatoes	282,250	276,550	248,662	256,404	277,096	242,606
Barley	72,119	90,338	91,534	85,831	73,797	89,963
Oats	2,873	3,118	3,375	3,048	2,877	3,094
Glutenous rice	9,433	9,296	9,645	8,631	10,108	9,589
Peas	27,666	43,694	47,172	43,064	37,543	42,217
Broad beans	33,872	47,644	52,759	47,715	41,906	47,617
Soybeans	38,396	36,470	37,646	38,576	34,714	29,406
Peanuts	21,406	21,901	22,420	22,799	22,848	20,147

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1943 15 Provinces	1944 15 Provinces	1945 15 Provinces	1937 - 1945 Total Output	1937 - 1945 Average Output	1946 22 Provinces Total	1947 35 Provinces Total
462,761	709,018	669,209	6,389,057	709,900	947,482	966,886
199,196	248,264	219,481	1,789,155	198,795	467,762	430,560
--	--	--	--	637,569	1,350,693	1,640,406
28,055	27,467	29,250	332,702	36,967	109,761	203,052
64,899	67,340	72,396	596,084	66,232	154,962	215,474
17,215	17,456	20,868	184,487	20,499	155,922	198,609
290,284	303,431	310,104	2,376,377	264,037	508,176	515,444
81,042	92,387	80,860	776,271	85,141	125,947	126,927
2,916	2,911	2,323	26,538	2,949	13,907	19,061
11,288	96,342	8,310	177,652	19,739	27,379	30,500
37,925	43,675	38,021	360,917	40,102	61,943	65,147
43,877	49,135	39,795	404,320	44,924	57,376	61,867
33,334	32,950	34,048	315,540	35,060	90,692	159,218
21,304	21,777	22,587	197,269	21,919	44,628	45,107

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- Notes:
- (1) 15 Provinces include: Chekiang, Kiangsi, Hupeh, Hunan, Szechwan, Honan, Shensi, Kansu, Tsinghai, Fukien, Kwangtung, Kwangsi, Yunnan, Kweichow, and Ninghsia.
 - (2) 22 Provinces include: Above 15 plus Kiangsu, Anhwei, Hopeh, Shantung, Shansi, Chahar, and Suiyuan.
 - (3) 35 Provinces include: Above 22 plus Jehol, Liaoning, Liaopei, Antung, Kirin, Sungkiang, Nunkiang, Hokiang, Heilungkiang, Hsingan, Sinkiang, Sikang, Taiwan.
 - (4) This table is based on materials compiled by Central Agricultural Statistical Bureau.

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Table 2. Yearly Potential Food Supply Per Person

	Total Pop- ulation of Given Provinces	Amount of Basic Grains (in 1,000 market piculs)			Potential Processed Cereals (in 1,000 market piculs)			Total Amount of Processed Cereals (in market piculs)	Annual Aver- age of Poten- tial Food Per Person (in market piculs)
		Paddy Rice	Wheat	Misc Grains	White Rice	White Flour	Mixed Misc Flour*		
1937-1945 Output (15 Provinces)	250,732,857	709,900	198,795	637,569	472,000	139,100	510,000	1,121,100,000	4.48
1946 Output (22 Provinces)	404,692,683	947,482	467,762	1,350,693	630,000	327,000	1,080,000	2,037,000,000	5.04
1947 Output (35 Provinces)	406,007,285	966,886	430,560	1,640,406	643,000	301,000	1,311,000	2,258,000,000	4.91
Average	--	--	--	--	--	--	--	--	4.81

Notes: (1) Population figures were obtained from the Census Bureau's compiled statistic of December 1936.

(2) 100 catties of paddy rice are processed to 66.5 catties of white rice; 100 catties of wheat are ground to 80 catties of white flour; 100 catties of miscellaneous grains are ground to 80 catties of flour. Because the water content of sweet potatoes is very high, in this group there is an average decrease of 20%.

*The moisture deduction does not appear to have been taken into account in calculations in this column.

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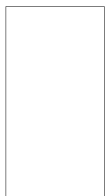
Table 3. Results of a Preliminary Investigation of the Food Industry of China's Major Cities

		<u>Shanghai</u>	<u>Nanking</u>	<u>Peiping</u>	<u>Tientsin</u>	<u>Tsingtao</u>	<u>Chungking</u>	<u>Mukden</u>	<u>Sian</u>
Flour Industry	Flour Milling Machines	459	30	50	118	28	27	--	61
	Monthly Output Flour (sacks)	1,034,800	130,000	18,380	207,830	15,790	110,000	--	227,889
Rice Hulling Industry	Husking Machines	7,380	127	5	4	--	--	Kaoling Machines 174 Kaoling (edible grain) 18,840 Quintals	15
	Hulling Machines	2	19	3	--	--	--		1
	Monthly Edible Rice Output (shih)	1,803,400	206,796	1,026	1,923	--	--		6,340
Oil Extracting Industry	Oil-Extracting Machines	159	9	25	--	115	--	264	--
	Vegetable Oil Per Month (quintals)	61,394	1,164	795	13,180	11,700	--	22,600	--
Sugar Refining Industry	Sugar Refining Machines								
	Monthly Output Cane Sugar (ton)								
Tobacco Industry	Slicing Machines	424	--	7	26	25	10	25	7
	Cigarette Machines	608	--	6	50	25	26	30	7
	Monthly Tobacco Output (boxes)	203,163	--	235	2,173	2,150	2,338	1,000	205
Other Food Industries	Soy Sauce (piculs)	910	15,616					1,800	
	Spices (pounds)	688,500							
	Preserved Fruits, Biscuits (market cattles)	360,000						210,000	
	Canned Foods (tins)	4,522,000							
	Fruit Juices (bottles)	492,008							
	Sines (market piculs)		41,850	1,000		5,700		5,017	
	Carbonated Beverages (dozens of bottles)		17,501					37,500	
	Ice (tons)								

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<u>Hankow</u>	<u>Canton</u>	<u>Taiwan</u>	<u>Lan-chou</u>	<u>Swatow</u>	<u>Foochow</u>	<u>K'un-ming</u>	<u>Kuei-yang</u>	<u>Ch'ang-sha Heng-yang</u>	<u>Han-ch'ang Chin-chiang</u>
--	--	--	16	--	52	16	2	18	8
353,672	--	--	153,265	--	6,230	11,450	1,200	39,321	9,004
23 17	--	291 231	--	--	59 23	--	--	78 41	98 132
24,255	--	258,700	--	--	59,190	--	--	104,045	172,718
344	--	69	--	30	3	--	--	--	6
5,692	--	1,854	--	354	--	--	--	--	545
6	10	49	--	--	--	--	--	--	--
--	30 35	45 40	--	--	--	34	40 57	20 9	--
7,600	8,390	1,167	--	--	--	2,185	5,666	14,300	--
22,603	483,200	--	--	--	--	--	--	--	--
--	432,480	--	--	--	--	--	--	--	--
28,800	154,450	--	--	500	--	--	--	--	--
1,032	305	--	--	--	--	--	--	240	--

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- Notes: (1) This table was compiled from the April 1948 publication, "The Preliminary Report on the Investigation of the Industries of China's Major Cities" by the National Economic Investigating Committee, Bureau of Economics.
- (2) Blank spaces in the table mean that the product is not normally processed in the area.
- (3) Two dashes indicate no complete figures available.

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Table 4. Consumption of China's Principal Foods

	<u>Edible Rice</u>	<u>Flour (wheat)</u>	<u>Misc Grain Flour</u>	<u>Meat, Fish, Egg Products</u>	<u>Beans (bean milk, etc.)</u>	<u>Milk</u>	<u>Fresh Vegetables and Fresh Fruits</u>	<u>Oils, Fats</u>	<u>Cane Sugar</u>	<u>Salt</u>
Daily requirement per person	0.5 kg	0.5 kg	0.5 kg	0.061 kg (about 2 shih-liang)*	0.12 kg (about 4 shih-liang)	0.12 kg	0.25 kg (about 1/2 shih-chin)**	0.03 kg (about one shih-liang)	0.015 kg (about 1/2 shih-liang)	0.009 kg
Estimated number of persons supplied	150 million	140 million	130 million	470 million	470 million	470 million	470 million	470 million	470 million	470 million
Yearly national consumption (in 1,000 quintals except where indicated)	270,000 (or 530 million shih-tan)	252,000	324,000	102,000	212,000	212,000	417,700	51,000	25,300	14,000,000 piculs***

* One shih-liang equals 31.25 grams

** One shih-chin equals 1.1 pounds

*** One picul equals 133.5 pounds

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Table 5. China's Required Food Plant Establishments

<u>Industry</u>	<u>Plants</u>	<u>Daily Production Capacity</u>	<u>Yearly Production Capacity on Basis of 300 Work-days (in 1,000 quintals except where noted)</u>	<u>Total Requirement of Processed Foods (in 1,000 quintals)</u>	<u>Factories Required</u>	<u>Notes</u>
Grain	Rice hulling	1,000 quintals	300	270,000	900	
	Nutritional processing	200 quintals	60	27,000	450	10% edible rice used for nutritional rice processing
	Flour mills	1,250 quintals (5,000 sacks)	375	252,000	726	
	Miscellaneous grain processing	1,250 quintals (6,000 sacks)	375	324,000	607	
Meat	Slaughterhouses	50 quintals	15	103,400	6,893	Fresh meats furnish one half of total consumption; cold storage, canned, pickled and dried furnish one eighth of total consumption
	Cold storage	1,000 quintals	300	12,925	421	
	Canneries	50,000 tins	150 (15 million one-kg tins)	12,925	86	
	Salt preserving plants	40 quintals	12	12,925	1,077	
	Drying plants (raw material)	50 quintals	15	12,925	860	

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Vegetable and fruit processing	Cold storage plants	1,000 quintals	300	26,731	89	Fresh vegetables provide three-fourths, processed one-sixth total consumption
	Canneries	50,000 tins	150 (15 million one-kg tins)	26,731	165	
	Preserving plants	40 quintals	12	26,731	2,230	
	Drying plants	50 quintals (raw material)	15	26,731	1,650	
Sugar Refining	Refineries	100 quintals	30	25,000	833	
Oil Extracting	Oil extracting	300 quintals	90	51,000	566	
Salt	Salt works	100 quintals	30	14,100	470	

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