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WORKING GROUP FOR ASIA AND THE FAR EAST

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PART II

COUNTRY STUDIES

A. CHINA

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CHINA

CHINA

I. IMPACT OF WAR AND EXTENT OF RECOVERY

1. Introduction

The area of China before the war, including Mongolia and the Northeastern Provinces, but excluding Taiwan (Formosa), was about 11,562,000 square kilometres, and the population, 478,000,000 according to rough estimates made by the Ministry of the Interior in 1935.

Without formally declaring war, Japan in 1931, occupied the Northeastern Provinces. These provinces not only were relatively sparsely populated and possessed the largest mineral, forest, and agricultural resources in China, but they also, even before the Japanese occupation, were industrially more developed and with more railways per square mile than the average of the rest of China. The Japanese, during their occupation, accelerated the rate of industrialization to meet the needs of their own programme of economic expansion.

At the same time, China had herself reached a new stage of political and economic stability in 1935-36, and was beginning to launch a large-scale industrialization programme. This meant that she might eventually be too strong to be conquered. So, with the Northeastern Provinces and their resources as a base of operations, Japan, on 7 July 1937, started her all-out drive for the conquest of the Far East.

During the first sixteen months of the war, from July 1937 to the end of October 1938, China lost most of her railway lines and navigable rivers, and practically all of her industrial cities, including Tientsin, Tsingtao, Shanghai, Canton, and Hankow, where her modern industries were concentrated. The richest agricultural regions, producing rice, silk, and tea in the lower Yangtze Valley and those producing wheat and cotton in the North China plateau, were also occupied by the Japanese. The damage and destruction were heaviest during this period, not only because of the battles themselves, but also because of the looting by the Japanese soldiers, the scorched-earth policy, and the floods resulting

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from the breach in the Yellow River dyke.

Hostilities from 1939 to 1942 consisted of seesaw fighting at Changsha and other strategic spots, battles in the mountains, occupation by the Japanese of the coastal cities to strengthen the blockade, guerilla warfare, and continuous air raids. Losses were also heavy during this period, especially around the "Rice Bowl" region in Northern Hunan.

From 1943 to V-J Day, heavy damage was also inflicted by the Allied bombings of the Japanese positions in occupied China. But the most serious losses were sustained at the end of 1944, when the Japanese drove from Hunan through Kwangsi to Kweichow. Many cities were shelled and burnt to the ground, with large military, civilian, and animal casualties. After V-J Day, serious losses were also inflicted during the reoccupation; the civil strife resulted in some destruction of communications and delayed recovery in the North.

Following the war, Mongolia, with an area of 1,621,201 square kilometres, and a population of 2,078,000, became independent. But Taiwan, with an area of 35,760 square kilometres, and a population of 6,248,000, which was ceded to Japan in 1895 after the Sino-Japanese war, was restored to China. The net result was that China's territory was reduced by 14 percent or 1,585,440 square kilometres. The present territory is about 9,977,000 square kilometres.

It is estimated that 9 million persons were killed as a direct result of the war, in addition to those who died from disease, and the countless numbers injured; also because of poverty, malnutrition, and general hardships, many of those who survived were impaired in health and failed to receive adequate education and training. Millions of persons who left their homes during the war are still waiting for means of transport to return to their places of origin.

In housing and clothing, the situation is especially crucial. Residential housing needs are estimated at 40 million rooms. In regard to clothing, with the cotton-producing centres under Japanese occupation

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during the war, cotton production in all China was reduced to one-third of the prewar level after 1938. In fact, even after some recovery in 1946, production reached only 38 percent of the prewar level. Only 2.3 million of the 5.5 million prewar cotton spindles are in workable condition. After a shortage of clothing for 9 long years, there is still little hope of relief in this grave situation.

Even more serious is the food situation. The floods, the loss of draught animals and farm implements, the neglect of irrigation, the shortage of fertilizers - all are responsible for the reduction of crops. As compared with prewar standard of food consumption in China, which was already inadequate, a shortage of over 8 million tons of rice, 0.7 million tons of wheat, 1.7 million tons of meat, 1.0 million tons of fish, and 3.7 billion eggs (7.4 billion in 1945), is estimated for 1946. On the basis of these estimates, UNRRA had estimated in May 1946 that 7 million people were facing death from starvation, and 32 million were living below subsistence level. A later estimate by Dr. T. F. Tsiang, former Director of UNRRA, has put the deaths from starvation in Hunan and Kwangsi Provinces at 20 million.

Industries and mines suffered serious loss, both during the war and during the period of reoccupation. Approximately 90 percent of the productive capacity of the machine and light-metal industries, 70 percent of that of the coal, electric power, and iron and steel industries, and 58 percent of that of the cotton-textile industry were lost to China. At the end of the war, 17 percent of the railways were completely destroyed or dismantled, and 13 percent were partially destroyed. One-half of the locomotives, 40 percent of the passenger cars, and one-third of the freight cars were damaged. Eighty percent of the prewar shipping was lost, and 65 percent of the highways, and 80 percent of the bridges were either partially or completely destroyed. The transport difficulty is the chief bottleneck in the way of general economic recovery.

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Facing the shortage of foodstuffs, clothing and housing, with a disintegrated industry and transport system, China needs large quantities of imports. Unfortunately, her export products are also greatly reduced; the production of silk, tea, tung oil, soya beans, bristles, and other agricultural and animal products, has declined to a small fraction of the prewar level. The remittances from overseas Chinese, which were the most important factor among the invisible items in the balance of payment, have also been adversely affected because of general conditions in the South Pacific countries where most of the Chinese emigrants live and because of exchange controls.

With the aid of UNRRA and individual countries, the transport system, especially water and air transport, is improving; some of the floods are being brought under control, and health is receiving more attention than before. But these improvements mean little when the extent of the devastation is considered.

Also, China was just starting to industrialize before the war, and she is now anxious to make up for the ten-year delay. Much can be done through international co-operation.

/2. Living Conditions

2. Living Conditions of the People and Manpower

Change in Total Manpower

No complete data based on nationwide comprehensive statistics have ever been assembled for birth and death rates. A sample study by Johb Lossing Buck of 38,256 farm families in 101 rural localities of 16 provinces showed that the birth rate per 1,000 population was 38.3, and the death rate 27.1, leaving a natural rate of increase of 11.2.

Direct war casualties have been estimated at 3,211,000 soldiers and 5,610,000 civilians killed. The civilian wounded is put at 3,220,000. In addition, there were millions of deaths from disease and malnutrition, especially from the higher infant mortality rate. The birth rate, too, must have declined because of the separation of families and delayed marriages resulting from military service and the large migration of population. So far, no reliable statistics are available to ascertain the actual change of population during the war period.

Change in Sex Ratio and Age Distribution

Not only did the casualties of the battlefields result in a higher death rate among males than females, but the Japanese tortured and killed more male than female civilians. Based on statistics in 39 hsien, the rate of the male civilian casualties to female was estimated at 3 to 1. As a result, the sex ratio, which was estimated in 1938 to 119.4 males to every 100 females, dropped to 115.6 males to every 100 females, according to estimates made in 1943. Moreover, since children and old people have less resistance to hardships, disease and malnutrition than people of other ages, they must have experienced a higher death rate. Taking the two forces together, while the changed sex ratio resulting from the war reduced the working population more than proportionately to the change in the total population, the changed age distribution may have partially cancelled this effect.

Effect on Health

An important effect of the war on China's population was the decline

/in the quality

in the quality of the population. One of the causes was malnutrition. The Japanese had purchased with valueless paper money large quantities of rice and wheat flour from the occupied areas, to be shipped and stored in Japan, possibly as a precaution in case of blockade. Animals were killed at a rate much faster than they could breed, chiefly for the consumption of the Japanese army. In Hunan and Kwangsi Provinces, where seesaw battles were fought, Japanese policy was to kill the animals deliberately before their retreat. The chief foodstuffs for the common people in the occupied areas, especially in the cities, were reduced to millet, corn, and kaoliang. Indeed, the food supplied for civilians was sometimes even mixed with sand and mud. As the richest agricultural regions were under Japanese occupation, and communications were disrupted by the war, the quality of the food for the people in free China was also inadequate in nutrition, even though considerable success had been achieved by the Chinese government during the war years in increasing production. (An increase of 4,700,000 metric tons of food crops in 1941 was attributed to various measures, the most important being winter-ploughing, which contributed 45.62 percent of the total increase.)

The health of the people degenerated because of malaria, epidemics, and other diseases, general hardships, nerve tension, and the lack of medical care. Many even died from these causes. The better hospitals which were mostly in the occupied areas, were deserted and the equipment removed - including the Peiping Union Medical College, which was one of the finest in all the Far East. Cholera, kala-aza, typhus fever, and plague had been reported in different places in China in 1945-46. In this field of medical service, UNRRA has made a valuable contribution. In addition, the Rockefeller Foundation has expressed its intention of making a grant of US$10 million for the rehabilitation of the Peiping Union Medical College.

/Everywhere

Everywhere in occupied China, the Japanese publicly promoted the use of opium and heroin. They established opium houses and induced the people to go, not infrequently giving them the first few smokes free of charge, and sometimes other advantages, until they became addicts. The effect of heroin was even worse. The intention of the Japanese was twofold: to sell for profit, and to enslave the people. Although the Chinese Government put a strict prohibition on the cultivation of trading in, and smoking of opium immediately after reoccupation, it will still take long and desperate efforts to return the addicts to health.

Effect on Education and Training

Before the war, most of the universities and colleges were in the occupied areas. The Japanese deliberately destroyed them. The best laboratories and libraries were either destroyed or looted and removed, with a total loss to universities and colleges of US$25 - 30 million at the prewar monetary value. The loss to middle schools was estimated at US$50 million, primary schools at 65 million, and other public educational institutions at 34 million. The loss of books in public libraries is estimated at 15 million volumes. The loss of art objects was also great.

In free China, there was an increase of 43 universities, 16 independent colleges, and 15 technical schools, either newly established during the war, or removed from the occupied areas to resume work in the interior. These institutions, however, were very poorly equipped with library and laboratory facilities. On the one hand, the blockade prevented them from obtaining any additional equipment abroad; on the other, the Japanese air raids marked universities and schools among their chief targets. The general academic standard of the students during the eight years of war showed a marked decline as compared with the prewar period, although, as a result of Chinese Government efforts to give subsidies and allowances to the students, the enrolment of the

/college

college students in free China in 1944 reached a number double the enrolment for the whole country in 1936. There were other indirect problems which had harmful effects such as the poor quality and shortage of printing paper in the interior which had a harmful effect on the eyesight both of the students and the general public who read the daily newspapers.

In the occupied areas, the situation was even worse. The number of universities and schools remaining open were reduced to a small fraction of those before the war. The teaching materials were restricted by the Japanese. In addition, because of the interruption of communications and the guerilla warfare, most of the country boys were unable to go to the cities to receive education.

In Taiwan and the Northeastern Provinces, which the Japanese had occupied for a longer time, the Chinese, except in a very few cases, were deprived of their privilege of entering universities, and the standards of the primary and middle schools were kept low. For example, in Taiwan University all students, except a handful of the Chinese in the medical college, were Japanese.

The enrolment of secondary students in 1946 was estimated at 1,160,000 and of primary school students at 25,000,000, as compared with 625,000 and 18,000,000 before the war, showing an increase of 85 percent and 40 percent. But school facilities are far from adequate. For example, in Canton, the 64 municipal primary schools accomodate only 28,600 students, leaving 60,000 without facilities. At least 100 middle schools are needed, but the number just opened is only 54, which can meet no more than half of the current demand. Of the more than 10,000 middle-school graduates who sat for the entrance examinations at Sen Yat-sen University, the University was able to take only 800. More than 4,000 applicants have registered for teaching jobs, but 2,000 are still unemployed. The lack of school facilities in other

/cities

cities show a similar situation. Among the 30,000 middle-school graduates who sat for the joint entrance examinations at Peking, Chinghwa, and Nankai Universities, only 1,000 could be admitted.

The same may be said for the industrial technics. Even before the war, paractically all the modern industries and technicians were in the Japanese-occupied areas, and during the war, because of the difficulties in the way of moving equipment and technicians into free China, the efficiency of what labour force the Chinese had was reduced. On the other hand, in the industries in the occupied areas, Japanese were always assigned to the more important positions, and the training of skilled Chinese labourers was either purposely prevented or neglected.

The impairment of health and the reduction in the quality of education is general in all countries occupied or devastated by war. But the effect is more felt in China because of the longer period of hostility as compared with European countries and the lower standard of living of the people, even before the war.

Migration of Population

The war has caused one of the largest mass movements of the population in history. During the war, tens of millions of the population were displaced; Dr. T. F. Tsiang, Director of CNRRA, reported that 42,000,000 persons moved 100 to 1,000 miles from their normal residence. Many of them migrated to the interior, either by rail, by boat, by animal-drawn carts, or even on foot. Some evacuated their native places before the Japanese occupation; others passed through the Japanese blockade. Among them were thousands of students and skilled labourers who moved into free China.

Reports by CNRRA on displaced persons, excluding those who moved during the war from the formerly occupied areas to free China, are available only for four provinces and two cities.

/Provinces

Provinces	Total Population	Displaced Persons
Hunan	36,469,000	9,000,000
Chekiang	21,762,000	3,255,000
Honan	33,411,000	5,233,000
Shensi	11,601,000	2,885,000
Cities		
Nanking	1,019,000	30,000
Shanghai	3,814,000	380,000
Total of 4 provinces and 2 cities	108,076,000	20,773,000

The emigrants to foreign countries during the war who have returned to China and need rehabilitation add another 800,000 persons to this total.

Besides the general movement of the population to the interior, there were also movements between city and countryside. Before the war, it was estimated that 79 percent of the population lived in rural areas, 11 percent in market towns, and 10 percent in the cities. As the cities were the chief objectives of the Japanese drive and the basis of Chinese defence, while the guerilla warfare was confined to the countryside, people as a rule evacuated the cities during the fighting and then returned to urban centres after the occupation by either side. Since the war, because of the lack of cars and other equipment, only a small percentage of evacuees per month have been able to return on the highways. Most of the refugees have had to depend on the inadequate facilities of the Yangtze River boats.

The movement of the population away from their usual places of occupation created unrest and reduced general production. The evacuation from the farms because of the guerilla warfare and the floods had a particularly unfavourable effect on agricultural production. The rehabilitation of the displaced personsdis, therefore, very important to the general economic rehabilitation.

Cities and Housing

By July 1943, the number of cities where at least one major battle had been fought reached 303, including 108 cities with more than one battle. There were also 64 cities where smaller battles were waged.

/After

After July 1943, to the end of the war in August 1945, there were more serious battles, especially at the end of 1944, in Hunan, Kwangsi and Kweichow provinces, but no figures as to the number of cities affected are available. The number of air raids from 1937 to 1941 was 10,144; for the last four years of war, when Allied bombing was especially serious. No data are available.

Based on incomplete reports from CNRRA, the number of cities damaged, classified according to the extent of total destruction, is as follows:

Number of Cities	Percent of total destruction
161	10 - 20
105	30 - 40
76	50 - 60
54	70 - 80
43	90 - 100
439	

These figures do not include Hopei and Shansi provinces where severe battles were fought. Also, some provinces, such as Chekiang, Fukien, and Kiangsi, failed to report the number of cities with losses less than 50 percent. Finally, the losses in the guerilla area of Shantung province are not included in the above statement.

Just to illustrate the extent of the devastation in the cities, Dr. T. F. Tsiang, Director of CNRRA, after a visit with Mr. Roy Hendrickson Deputy Director of UNRRA, to some of the devastated areas, reported that in Hungyang city, only five houses out of a prewar total of over 50,000 were habitable, and among the rest, only 35 houses were repairable. All the others were in ruins. Similar heavy losses are seen in Lichow, Kweilin, Changsha, and Paoching. According to Dr. Tsiang, Mr. Hendrickson pointed out that none of the European cities had suffered devastation to such an extent. The cost of rehabilitation is prohibitive.

Chinese houses are built with simple materials. The better ones are made with bricks and wood; others with bamboo, sun-dried bricks, or even with mud and straw. Practically all the farm buildings and many of the dwelling houses even in the cities need minor repairs every year.

./It is plain

It is plain that not only the direct effects of the war, but also the lack of attention during the long resistance war of eight years, have resulted in great destruction. More directly, the scorched-earth policy of the Chinese army during the retreat, and the clearing away by the Japanese of any obstructions to the field of vision along the communications lines, as a defence measure against the guerillas, resulted in the leveling of many houses. A large number of the houses destroyed in the air raids in free China were reconstructed as soon as the air-raid season was over. But in the formerly occupied areas, construction work practically ceased during the war.

As a result of these losses, tens of millions became homeless. The needs were estimated by CNRRA at 40,440,000 rooms, the construction of which requires, among other things, 2,561,000,000 cubic feet of timber and 80,881,000 pound of nails. This estimate does not include Shanghai where the destruction was extensive, and the housing problem is still serious.

Seven hundred prefabricated huts were supplied by UNRRA from United States surplus property stores in the South Pacific area, and these are now being used as shelters of all kinds and for godowns. The very small quantity of lumber received from the surplus-property stores was allocated to the Yellow River Project and the Fisheries Programme, and is not available for housing rehabilitation. In fact, the shelter programme originally planned by CNRRA for rehabilitation of the five most devastated provinces Honan, Hupeh, Hunan, Kwangtung, and Kwangsi - has been abandoned because of insufficient funds with which to carry out the work.

Although China has a forest reserve of 300 million acres, most of the timber is located in the northeastern and the western border regions where transportation is difficult. Of the trees planted on the hillsides and along the roads, even those still intact, will not be able to meet the needs of the housing programme. In fact, during the war, many of the trees were either cut down for fuel or cleared by the Japanese to remove

/the hideout

sixth of capacity. Output at this rate represents 2 billion square yards a year, which falls considerably short of China's prewar annual consumption of 4.5 billion square yards. However, even with the reduced capacity of the spindles, the domestic production of cotton can supply only half of the demand of the cotton mills. In other words, the cotton production falls short by half of the spindle capacity, and the spindle capacity by more than half of the prewar annual consumption demand.

Usually the meeting of the demand for clothing may be postponed by wearing out old materials, even though cotton is not so durable as wool. But since the annual cotton production has dropped to a quarter of the prewar figure since 1938, the second year of the war, the people have suffered excessive hardships with worn-out clothing which they have been unable to replace for eight years.

Again, although the shortage of clothing has been universal in China both during and after the war, it was the people in free China who suffered most. The chief cotton-producing provinces in China are Hopei, Chekiang, Shantung, Hupei, Honan, and Shenxi (producing, in 1936, 134,290, 111,500, 81,510, 75,860, 67,870, and 53,380 metric tons respectively). All except the last province mentioned were under Japanese occupation. The price of clothing materials in the interior during the war years rose twice as much as the price of food.

Because of the world-wide shortage of cotton, the clothing materials supplied to China by UNRRA has been exceedingly small in quantity. Up to October 1946, the 10 million yards of cotton textiles and 68,000 tons of raw cotton sent to China met only 0.4 percent of the deficiency in cotton textiles and 10 percent of the deficiency in raw cotton. As a consequence of the general shortage, the average price of clothing material in Shanghai rose 35 percent from July to November 1946, while the price of foodstuffs rose only 22 percent in the same period. It is expected that cotton production will be greatly improved in 1947-48, but there will still be a gap before the domestic production is able to meet the demand.

/The production

The production of silk had been reduced to an even greater extent. However, as silk, since the introduction of cotton into the country, had ceased to be important in the manufacture of clothing in China for domestic consumption, it will be considered later in the sections on agriculture and industry.

3. Food, Agriculture, and Forestry

Although it is estimated that about 307,000,000, or 73 percent of the Chinese population, is dependent on agriculture for its livelihood, the land under cultivation, because of the large mountainous areas, hills, and deserts, represents only 9 percent (164,000,000 out of 1,852,000,000 acres) of the total area of China, excluding the Northeastern Provinces and Taiwan. Accordingly, the average cultivated land per capita amounts to only 0.4 acres, or 1,480 persons per square mile. This density may be compared with 77 in Denmark and 48 in the United States.

The average size of each farm, according to the sample study of John Lossing Buck, was 3.31 acres in 1929-33, representing a decrease of 33 percent since 1870, and too small a size to feed a Chinese family consisting of five or more persons. For comparative purposes, the average size of farms in other countries is given by the same source as follows (for China, the figure represents the crop area):

Japan (1927)	2.67 acres
China (1929-1933)	3.76 "
Netherlands (1930)	14.28 "
Germany (1933)	21.59 "
Denmark (1919)	39.74 "
England and Wales (1924)	63.18 "
United States (1930)	156.85 "

In China, it should be added, 89.6 of the farm land is devoted to crops, and only 1.1 percent to pasture.

The small size of the area under cultivation per capita without benefit of modern agricultural methods has resulted in intensive cultivation depending chiefly on human labour. The labour force is tied to the land in order to stave off starvation. It is believed that by the use of improved seeds, more and better fertilizers, control of insect pests and disease, and by improved irrigation and drainage, the crop yield could be increased, thus freeing part of the farm-labour class for industry, communications, and other occupations.

/Land Devastation

Land Devastation

During the war, a considerable amount of farm land was lost to cultivation. Many of the battles, especially in the guerilla warfare, were fought on farm land and resulted in the destruction of farm houses, implements, and draught animals. In addition, the evacuation of the rural population led to the abandonment of many farms. The neglect of the irrigation systems, loss of fertility, soil erosion, and the growth of weeds have all delayed the return of the affected areas to cultivation.

More serious effects are due to the floods which resulted from the war. The flooded area was estimated at 7.1 million acres along the Yellow River, and 14.6 million acres in other regions, representing 9 percent of the cultivated land of China. A portion of these areas has been reclaimed and returned to cultivation. A large-scale project for returning the Yellow River to its old course, which involves the building of a reinforced earthern wall 100 miles long, 40 feet high, 200 feet wide at its base, and 65 feet wide at its top, has been undertaken by UNRRA-CNRRA, with the help of some 150,000 Chinese workers.

UNRRA-CNRRA also made temporary repairs along the Chien Tang dyke wall, which prevented the water from breaking through on a large scale and inundating several million acres of land. Permanent repairs are now under way. The river dyke above Hankow protecting the Tungting lake area, was not repaired in time for the high water in the spring and summer of 1946. However, temporary and permanent repairs are being planned at the present time.

Loss of Livestock

During the war, draught animals and poultry were deliberately slaughtered or taken away by the enemy. In many of the villages, not a single animal was left. The shortage of crops for feeding purposes also accounts for some of the decrease. At the end of the war, poultry, hogs, and other animals were 40 percent, 30 percent, and 20 percent respectively below the prewar level.

/Table 2

Table 2

Estimated Livestock in 22 Provinces

Class of Animals	Prewar	(Numbers in 1,000) August 1945	August 1946	Increase from 1945 to 1946	1945 as % of Prewar	1946 as % of Prewar
Horses, Mules, Donkeys, Water Buffaloes	30,896	24,709	26,000	1,300	80	84
Cattle	22,647	18,100	20,000	2,900	80	88
Goats	21,933	17,500	19,000	1,500	80	87
Sheep	20,957	16,800	18,000	1,200	80	86
Hogs	62,639	43,800	50,000	6,200	70	80
Poultry	313,950	188,400	248,000	59,600	60	79

In Taiwan, cattle numbers were 5 percent less in 1946 than in 1939; poultry 25 percent, and pigs, 80 percent.

The effects of the loss of livestock are two-fold. Firstly, the consumption level of meats in prewar China was already very low - 76 calories per day per adult-male, according to Buck - and the loss due to the war will undoubtedly aggravate the problem of malnutrition in China. The total reduction in meat production was estimated at 2.3 million tons in 1945, and 1.7 million tons in 1946. Secondly, in China, buffaloes, cattle, horses, mules, and donkeys are used as work animals on farms. Their loss means a loss of the source of power, as well as fertilizer, which will be reflected in the reduction of productivity. Without restocking in the immediate future, agricultural productivity cannot be quickly restored to its prewar level.

In August 1946, one year after the war, there was a general recovery in all varieties of livestock. However, the totals still fell 12 to 21 percent short of the prewar figures. At last reports, UNRRA was planning to ship to China 1,000 water buffaloes from Siam and 3,500 dairy cattle from the United States and New Zealand.

Loss of Equipment and Shortage of Power and Fertilizer

Although Chinese farmers use very simple agricultural implements, the loss

/of these

of these means from destruction and depreciation, without the opportunity of replacement, was very serious during the long years of war and occupation of wide areas. Among these implements were ploughs and food-processing equipment. After months of careful surveying, blueprinting, and requisitioning, a plan formulated by UNRRA-CNRRA calls for the establishment of one central supply and service workshop in Shanghai, 19 provincial workships, and 3,000 local workships in different parts of China for the manufacture of agricultural implements. The plan in full operation will employ about 5,000 workers and foremen in the provincial machine shops, which, together with 3,000 local blacksmith shops, will be able to process 40,000 tons of steel and 20,000 tons of pig iron per year. Translated into terms of tools and machinery, this means that about 20,000,000 hand tools, 200,000 animal-drawn implements, and 20,000 food-processing machines will be produced annually. In the war-devastated areas, where thousands of square miles of farm lands are idle because of the lack of sufficient tools, the project will make possible the resumption of full-scale cultivation. (In the Yellow River flooded area, the proportion of land untilled, because of the tool shortage, is as high as 80 or 90 percent).

Worthy of note is a small-scale experiment which has been conducted successfully on 1,500 acres of land 32 miles south of Kaifang. This tract was reclaimed after eight years of Yellow River floods by 55 tractors, sent by UNRRA, which were equipped with tilling and sowing implements. With the Yellow River project under way, it is expected that several hundred thousand acres will be under tractor ploughing in 1947. As reported by UNRRA, in the Northeastern provinces, the failure of electric power, with the resulting stoppage of electric pumps, and the decline in the availability of commercial fertilizers, was responsible for the drop in agricultural production. In Taiwan, where commercial fertilizers imported from Japan were widely used before the war, agricultural production has also fallen sharply, The need of fertilizers in Taiwan alone, which is inhabited by only 6 million population,

/is 200,000

is 200,000 tons per annum. Although the rest of China did not use commercial fertilizers extensively, the loss of soil fertility and the loss of farm animals, have greatly increased their need. Unfortunately, ammonium sulphate, which is suited to the soil of China, has been mostly allocated to Europe.

Crop Production

With the widespread devastation of cultivated lands, and the loss of work animals and farm implements, a lower level of crop production was to be expected. Even with the increase of 5 million tons of cereals in the unoccupied area during the war, the total cereal production in 1945 and 1946 still fell below the prewar average.

Table 3

Production of Principal Crops

(In 1,000 Metric Tons)

Crops	Average 1931-35	1945	1946	1946 Compared with 1931-35 Average	Average Annual Imports 1934-35	Total Shortage for Consumption in 1946
Wheat	22,285	18,402	22,110	- .175	548	723
Rice	49,308	42,924	42,209	-7,099	939	8,038
Barley	8,419	6,770	8,267	- 152		
Corn	6,410	5,413	4,965	-1,445		
Millet	6,657	5,659	2,434	-4,223		
Proso-millet	568	482	632	/ 64		
Kaoling	6,788	5,758	2,449	-4,339	—	—
Total Cereal	100,435	85,408	83,066	-17,369	1,582	18,951
Soya Beans	6,043	4,823	2,729	- 4,314		
Broad Beans	3,124	2,510				
Dried Peas	3,440	2,953				
Sweet Potatoes	10,632	14,271	23,319	/12,687		

/The cereal

The cereal production in 1945 was 15 million tons less than the prewar average. In 1946, remarkable recovery was made in wheat production, but millet and kaoliang were greatly reduced, with a net decrease of cereals of 2.3 million tons as compared with 1945. Since China used to import foodstuffs before the war, the reduction in production should be added to the prewar average annual imports. As a result, the total shortage of wheat in 1946 for consumption is 0.7 million tons, and of rice, 8 million tons.

For the Northeastern provinces and Taiwan, the shortage of fertilizers, which were mainly imported from Japan before the war, is the chief reason for the reduction in farm crops. The drought in Taiwan in 1945 also partly accounts for the decline. In Taiwan, the production of rice has been reduced to 50 percent, sugar 10 percent, and tea 3 percent of the average prewar output. The reduction in soya bean production in Manchuria is chiefly due to the loss of export facilities and foreign markets.

Fishing

The Chinese prewar fishing fleet consisted of 101,000 junks and 771 registered trawlers. The yearly catch of salt-water fish was estimated at 1.4 million tons; and that of fresh-water fish at 0.75 to 1.0 million tons. During the war, the Chinese fishing fleet lost 50,000 to 60,000 junks and about 400 trawlers, with the consequent loss of approximately half of the prewar yearly catch.

UNRRA has sent some timber for the construction and repair of fishing boats and has allocated 165 fishing craft which are expected to arrive in the near future.

Deficiency of foodstuffs

The total deficiency of some of the chief foodstuffs in 1945, and a forecast of the deficiency in 1946 are shown in the following table.

/Extent of

Extent of Deficiency of Foodstuffs

	Units	1945 Quantity	%	1946 Quantity	%
Wheat	Million Metric Tons	4.4	19	0.7	3
Rice	" " "	7.3	14	8.0	15
Meat	" " "	2.3	40	1.7	30
Fish	" " "	1.1	50	1.1	50
Eggs	Billions	7.4	40	3.7	20

With the major part of the Chinese population living at a bare subsistence level even before the war, and the quality of the food poor, especially in regard to proteins, minerals and vitamins, the reduction in food production, resulting from the war, has had serious effects on the nutrition of the people. In fact, Colonel R. L. Harrison's Commission, after an extensive field survey in China, reported in May 1946 that "the members of the party unanimously believed that the UNRRA estimate of 7,000,000 facing death by starvation, and 32,000,000 living below subsistence level and attempting to survive by eating roots, barks, seeds, weeds, grass, etc., is, if anything, low."

The food crisis is also accentuated by the destruction of the transport system during the war, which prevents the movement of foods from the surplus areas to the deficit areas. For example, although the overall grain crop is some 18 percent short of prewar consumption, in some areas (Honan, Hupeh, and Hunan), the lowest is about 65 percent of a normal crop. The immediate rehabilitation of the transport systems is a prerequisite to food relief.

Up to October 1946, 145,000 tons of rice, and 75,000 tons of wheat and wheat flour had been shipped to China by UNRRA, meeting 2 percent of the deficit of rice.

Agricultural Products Mainly for Export or Industrial Use

In prewar years, the agricultural products which figured prominently in export and industrial use were tung oil, cotton, silk, tea, and animal

/products, in

products, in addition to soya beans. During the war, as was pointed out above, the production of cotton, soya beans, and the animal products was reduced by land devastation and loss of livestock. In the same period, the production of tung oil, silk, and tea fell sharply as a result of the blockade and communication difficulties. In fact, many of the tung oil, mulberry and tea trees died or were cut down. In 1946, the production of silk was reduced to 11 percent of the prewar level, tea 16 percent, and tung oil and cotton 39 percent. As recovery cannot be expected in the near future, the loss of these products will adversely affect the balance of payments, as well as the supply of clothing materials in the coming years. The decline in production is shown in Table 4.

Table 4

Production of Export Goods, Prewar and 1946

	Prewar Annual Production (tons)	Estimated Level (tons)	1946 as % of prewar production
Tung Oil	136,000	40,000	30
Silk	14,740	1,560	11
Tea	41,000	6,600	16
Cotton	1,025,000	399,800	39

Forestry

The fact that China's important forest reserves are located in the Northeastern provinces, and that the loss of trees else-where had hampered the reconstruction of houses has already been discussed. The Japanese had developed a timber industry both in the Northeastern provinces and Taiwan. The total loss to the forest reserve is unknown.

Agricultural Rehabilitation

UNRRA has appropriated U.S. $80,000,000 for China's agricultural rehabilitation up to March 1947. But the agricultural situation will still

/be far

be far from normal by the end of the UNRRA programme. With the loss of livestock and fishing boats, meat and fish consumption, as well as agricultural production generally, have been reduced. To compensate for the loss of productivity, fertilizer and implements for the irrigation projects are urgently needed.

The import requirements for the complete agricultural recovery of China represent so large a sum that it would be impossible to expect the fulfilment of the programme in a short period. The minimum requirements necessary for a partial relief and rehabilitation programme in the next two years are estimated to cost U. S. $353 million, divided as follows: foodstuffs, $270 million; fertilizers, $24 million; and all other $59 million. The requirements for foodstuffs are estimated only on the basis of 2 million tons of cereals in two years instead of the actual deficiency of 0.7 million tons of wheat, and 8 million tons of rice in 1946.

/4. Mining

4. Mining and Industry

Material Losses

Although China was on the way to industrialization before the war, her modern industries, up to the outbreak of hostilities, were still in their infancy, so that she had to depend on handicrafts and on imports for many products. The most industrially developed areas were the Northeastern provinces, the lower Yangtze Valley, and other coastal cities. Indeed, the Northeastern provinces, with their tremendous mineral, agricultural, and forest resources, and with a comparatively small population relative to land, were even before the Japanese occupation in 1931, more industrially developed and possessed more railways per square mile than other areas in China. Under Japanese occupation, the rate of development was accelerated with the aid of Japanese technicians, Chinese labour and other resources. Outside of the Northeastern provinces, the transport system was so undeveloped that most industrial activities were concentrated in a few cities along the eastern seaboard and along the Yangtze River. Nearly one-half of the plants and one-half of the industrial workers were located in the six principal seaport cities, of which Shanghai, with one-third of the plants, was by far the most important. All these industrialized cities were occupied by the Japanese during the first 15 months of the war, July 1937-October 1938. Only 639 factories and 12,164 skilled workers were successfully moved from the occupied areas to free China during the retreat, a fact which accounts for the difficulty in carrying on the war during the later years.

The loss to industries may be attributed to three main causes: the heavy battles before the Chinese retreat, which were mainly fought in the industrial areas, especially Shanghai and Hankow; the Allied bombings; and the reoccupation. In addition, the depletion and obsolescence of equipment, due to lack of maintenance and spare parts, were also responsible for the decrease in productive capacity.

/The loss

The loss in the field of industry was heavy in absolute physical terms. But the effect was even more serious if we consider it in relative terms. Since China was so under-developed what little industry she had represented the initial force vital to her later development. The greatest physical loss was in the machine and light-metal industries, where 90 percent of the productive capacity was affected, and the cost of replacement is estimated at more than half a billion US dollars (original book value). Next came the iron and steel industry, coal mining, and electric power, where 15-30 percent of original capacity was left.

Table 5

Former and Present Capacity of Important Mines and Industries

	Unit	Former Capacity	Present Capacity as % of Former Capacity
Coal	M.T.	55,000,000	30%
Coking coal	M.T.	18,000,000	
Coke	M.T.	9,567,000	
Iron ore	M.T.	10,720,000	23%
Pig iron	M.T.	4,461,000	24%
Steel	M.T.	2,028,000	30%
Finished rolled steel	M.T.	672,000	15%
Machinery and machine tools	US $	109,000,000	10%
Shipbuilding	tons	141,966	
Electric power	Kw.	3,380,000	30%
Petroleum oil:			
Crude	bbls.	590,000	
Synthetic	bbls.	12,310,000	50%
Refining capacity	bbls.	3,200,000	50%
Refined aluminum	M.T.	60,000	10%
Refined magnesium	M.T.	15,000	10%
Refined lead	M.T.	26,000	
Copper ore	M.T.	20,492	
Refined zinc	M.T.	25,600	
Ethyl alcohol	US gal. per day	256,292	
Nitrogen	M.T.	45,500	
Ammonium sulphate	M.T.	888,000	
Cement	M.T.	2,240,000	
Cotton spindles	No.	5,503,000	42%
Wheat flour	M.T.	610,000	
Paper and pulp			70%

/The loss in the key

The loss in the key industries adversely affected recovery in all other fields. For example, the loss of power plants and other mining equipment reduced the production of coal in 1946 (September figure) to not more than 30 percent of the total requirements of the crippled production capacity of other industries. The estimated output in 1947 of four of the bigger coal mines taken over by the Chinese is compared with that in 1942 as follows:

	Production in 1942 (M.T.)	Estimated Production in 1947 (M.T.)
Tushan	6,350,000	1,600,000
Tuhsing	5,370,000	1,150,000
Siam	1,660,000	1,000,000
Peipiao	1,230,000	450,000
	14,610,000	4,200,000

The drop in coal production not only created unemployment among the coal-mine workers, but also reduced the output of electricity in other areas and paralyzed all other industries. The decline of 70 percent in the productive capacity of the electrical power plants had the same effect. Aside from the heavy loss to the machine industries, the workshops, which remained intact in Shanghai, and are now working on the repair of equipment in other industries, also face the added difficulty of obtaining the necessary replacement and spare parts, as well as high labour cost.

The loss in the cotton-textile industry has already been described in the section on clothing above. Only 42 percent of the prewar 5.5 million spindles are in workable condition, and cotton production has dropped 40 percent since before the war. The difficulty lies in both the shortage of equipment and the shortage of material. The present capacity for producing new spindles is 100,000 a year.

One of the consumers' goods industries which was greatly affected by the war is silk. Many of the mulberry trees were cut down, and there is a shortage of silkworm eggs. Although before the war, China exported raw silk, the harvest of cocoons in 1946 was only sufficient to satisfy the

demand of the mechanical silk filatures in Central China for 144 of their 300 working days. Negotiations have been in process to import Japanese cocoons, eggs, and mulberry trees into China, but only a small quantity has been received. It is now reported that the Chinese Silk Company is ready to demand that Japan return the 950,000 metric tons of native cocoons seized by the Japanese during the occupation.

Most of the 5,266 industrial enterprises in Free China, which were either newly established during the war or removed from the occupied areas, and which were in the metallurgical, chemical, and machine-industry category, are small in size. Furthermore, the equipment is poor, the spare parts inadequate, and all the machines have suffered from lack of repair and maintenance. Once the war was over, most of these factories could not face the potential competition of outside products, and by April 1946, 1,110 of them in the former free China areas, employing 167,000 workers, had to close down. Some of these factories may be reopened when the necessary equipment becomes available.

The production of certain export minerals, like tungsten, antimony, and tin, was reduced during the last phase of the war because of transport difficulties, and after the war because of the decline in demand. With mechanization, the cost of production of these mineral products can be reduced and foreign demand stimulated.

The import requirements for the complete restoration of mines and industries, excluding the requirements necessary to meet the specific difficulties mentioned in the last two paragraphs, are shown in Table 6.

/Table 6

Table 6

Import Requirements for Mining and Industrial Recovery

(US $1,000)

Coal mining	50,000
Electric power industry	150,000
Iron and steel industry	360,000
Non-ferrous light metal industry	149,000
Machine industry	390,800
Chemical industry	94,900
Cement industry	26,700
Textile industry	202,900
Food-processing industry	70,400
Other industries	48,800
	$1,543,500

The Retardation in the Rate of Growth of China's Industrialization

China, as we have pointed out above, had just begun to accelerate the pace of her efforts towards industrialization when she was interrupted by the war. With a silver standard before 1935, the year 1931, unlike that in Western countries, was a peak year in business activity in China. Indeed, even in the years 1932 to 1935, in spite of the fact that the general economic momentum declined with the rest of the world, industrialization in China made steady progress. Table 7 shows the increase in the number of factories in different industries, varying from 48 percent to 135 percent, with an average increase of 81 percent, in the five-year period 1931-36. Table 8 gives other data indicating the rate of industrialization.

Table 7

Indices of the Increase in the Number of Factories, 1931-36

Excluding Taiwan and Northeastern Provinces

	All Industries	Textile Industry	Agricultural Processing Industry	Machine Industry	Chemical Industry	Electric Plants Generating Capacity
1931	100.0	100.0	100.0	100.0	100.0	?
1932	103.5	111.3	113.4	116.0	107.4	100.0
1933	121.0	121.7	140.2	102.0	122.8	104.2
1934	135.7	146.5	167.1	119.5	140.3	111.5
1935	155.4	176.1	169.1	144.1	154.4	120.0
1936	180.8	190.2	235.4	197.5	168.5	147.9

Table 8

Indices of China's Industrialization, 1931-36

Excluding Taiwan and Northeastern Provinces

	No. of Factories	Volume of Imported Machines, Tools, Parts and Railway Equipment	No. of Industrial Workers	Gross Production of Modern Manufacturing Industries	Index of Industrialization
1931	100.0	100.0	100.0	100.0	100.0
1932	103.5	72.1	103.4	104.5	95.6
1933	121.0	75.4	115.0	114.0	106.4
1934	135.7	150.0	119.5	122.0	131.8
1935	155.4	178.2	135.6	133.5	150.7
1936	180.8	185.1	143.7	133.5	160.9

Since China depends on importation for most of her industrial equipment, the physical volume of these imports serves as a good indication of the rate of industrialization. The increase was 85 percent in the five-year period of economic depression. The number of industrial workers and the gross products of the modern manufacturing industries also increased 44 percent and 34 percent respectively. The smaller increase in these categories is due to the time lag in the completion of the process and the turning out of the product, especially when the rate of increase is accelerating. An index of industrialization based on a simple arithmetical average of all the above items shows an increase of 61 percent in the period under discussion.

To prove that the increase in the number of factories, workers, importation of machinery, and the gross products of manufacturing industries is not simply a phenomenon of the upswing in a business cycle, we may compare the importation of machinery, the gross physical products of the modern manufacturing industries with the total imports, aggregate national production, and the index numbers of wholesale prices. Table 9 shows that prices fell continuously from 1931 to 1935, dropping 24 percent in four years, indicating a downswing of the business cycle, but the gross products

/of modern

of modern manufacturing industries rose 34 percent, while the total national production rose only 6 percent.

Table 9

Comparison of Volume of Imported Machinery and Gross Production of Modern Manufacturing Industries With Total Value of Imports and Other Items, 1931-36

	Volume of imported machinery	Total volume of imports	Gross production of modern manufacturing industries	Total gross national product	Index of wholesale prices in China
1931	100.0	100.0	100.0	100.0	100.0
1932	72.1	81.6	104.5	105.3	88.7
1933	75.4	76.3	114.0	101.0	81.9
1934	150.0	64.6	122.0	95.9	76.7
1935	178.2	56.9	133.5	105.2	75.8
1936	185.1	66.1	133.5	106.2	85.6

The importation of machinery increased rapidly while the total import declined. Yet, during this period, the rate of growth of industrialization was quite spontaneous without much government encouragement. An extrapolation of the rate of growth to 1946 would bring the index of industrialization to a figure twice as high as 1936.

As a matter of fact, towards the end of 1936, the Chinese Government, having adopted a sound monetary standard, had just launched a new programme of industrialization. Work on numerous highways and several new lines of railways was just starting, and large chemical and iron and steel plants, as well as other factories, were under construction. But for the war, the normal rate of industrialization would have been further accelerated. In fact, it was exactly the fear of China's industrialization that speeded up Japan's aggression in 1937. It is plain that even without physical war losses, the retardation of the rate of industrial progress in China must be considered one of the chief losses attributable to the war.

/Doubtlessly,

Doubtlessly, the retardation of economic growth could be considered as a loss to any country engaged in war. But if the trend of growth resembles, to a certain extent, a logistic curve, the countries which were just starting to industrialize must have been affected most in their rate of progress by the retardation.

5. Transport and Communications

Railways

In China, outside the Northeastern provinces and Taiwan, there were at the end of the war 13,820 kilometres of railways, some of which were constructed during hostilities, either in free China or by the Japanese in the occupied areas. Of this total, 2,399 kilometres, or 17 percent, were completely destroyed or dismantled, 1,871 kilometres partially destroyed, and 9,530 kilometres are still in operation. Even if the stretches still in operation, however, no less than 10 percent of the rails and 25 percent of the sleepers need replacement. To re-establish the main railway lines alone, approximately 3,500 kilometres of rails and accessories, and at least 7 million sleepers, are necessary. As to equipment, according to a survey made in March 1946, 2,612 locomotives, 26,133 freight cars, and 2,709 passenger cars were available - totals not markedly different from the prewar numbers when China had shorter railways. However, of these totals, one-half of the locomotives, 40 percent of the passenger cars, and one-third of the freight cars were reported damaged. A number of railway shops were badly damaged or entirely dismantled.

Table 10

Loss of Railways and Equipment

Excluding the Northeastern Provinces and Taiwan

Railway lines and Rolling Stock	Destroyed	Damaged	In Operation	Total	UNRRA Delivery up to October 1946
Railway Lines (Km)	2,399	1,871	9,550	13,820	
Locomotives	Unknown	1,059	1,103	2,162	32
Passenger Cars	"	1,084	1,625	2,709	
Freight Cars	"	8,101	18,032	26,133	3,465

Because of the shortage of materials, the repairs and the rebuilding of the tracks have been done temporarily with materials of lower grade and salvaged parts. For example, the Canton-Hankow railway of 1,096 kilometres,

/with 416 kilometres

with 416 kilometres completely destroyed, and 455 kilometres partly destroyed to halt the Japanese advance, was rebuilt between January and June 1946 with the manual labour of 50,000 workers. Along this line, there were 110 major bridges, each of them more than 40 metres long, and of these, 102 have had to be completely rebuilt, largely with green wood from nearby forest. Most of the other railway lines were repaired or rebuilt in the same way. They have still to be replaced with standard materials, as soon as the latter are available.

Up to October 1946, 32 locomotives, and 3,465 freight cars, 40,000 tons of rails and accessories, and 468,000 ties had been delivered to China by UNRRA. Even after the whole UNRRA programme has been completed, the total deliveries will still fall far short of China's rehabilitation requirements. Table 11 shows the total import requirements for the railways.

/Table 11

Table 11

Two-year Import Requirements for Rail Transport

	Rehabilitation Requirements		UNRRA Supplies (M.T.)	
	Units M.T.	Cost U.S. $1,000	Programmed	Arrived China up to October 1946
Track materials				
Rails and accessories	501,000	34,516	106,000	
Steel sleepers	22,300	1,784	(1,000,000 pcs.)	(468,000 pcs.)
Wooden sleepers	279,940	5,305		
Bridge materials				
Steel	153,062	5,126	43,000	43,000
Construction equipment	56,095	4,964		
Rolling stock				
Locomotives	186,150 (1,760 pcs.)	113,929	(242 pcs.)	(32 pcs.)
Passenger cars	102,000 (2,550 pcs.)	76,500		
Freight cars	351,250 (21,250 pcs.)	63,750	(3,465 pcs.)	(3,465 pcs.)
Shop equipment	74,397	55,209	$4,900,000	$500,000
Repairing and operating equipment	30,333	2,275		
Telecommunication materials	270	135		
Signal and interlocking devices	49,264	24,632		
	1,816,121	408,127		

The most urgent need at the moment is for materials to restore the services of the Chekiang-Kiangsi Railway leading from Hangchow to Chuchow (where it connects with the Canton-Hankow Railway) and the line which runs from Hengyang to Kweilin. These stretches are of paramount importance in the shipment of food supplies from surplus areas to deficiency areas in south and central China. The total distance of the two lines is 1,500 kilometres. The minimum material and equipment requirements for the repair and restoration of 1,000 kilometres are as follows:

/Track Materials

Track Materials	(U.S. $1,000)
Rails and accessories (90% for main line, 75% for sidings) 140,000 tons at $80.00	$11,200
Cross ties (6" x 8" x 8'-0") 1,800,000 pieces at $2.50	4,500
Track tools - 300 tons at $800.00	240
	$15,940
Bridges and Culverts	
Bridge Steel (Fabricated spans and I-Beans, etc.) 15,000 tons at $200.00	$ 3,000
Bridge Timber (deck timber and wooden tresles) 1,000 MBM at $100.00	100
Culverts (steel pipes) 4,000 tons at $200.00	800
Construction Equipment (Cranes, Compressors, Pile drivers, etc.) 300 tons at $1,000.00	300
	$ 4,200
Rolling Stock	
Locomotives (2-8-2 for freight service) 50 units at $100,000.00	$ 5,000
Freight cars (40 ton capacity) 600 units at $4,000.00	2,400
	$ 7,400
Miscellaneous Equipment and Material	
Water supply equipment (pipes, tolks, pumps, etc.) 1,300 tons at $500.00	$ 650
Repair shop equipment 500 tons at $1,000.00	500
Extra spare parts for locomotives and cars 400 tons at $500.00	200
Shop repair materials - 500 tons at $200.00	100
Telephone and telegraph equipment, 1,000 tons at $1,000.00	1,000
	$ 2,450
TOTAL f.o.b. price	$29,990

Water Transport

Before the war, there were over one million tons of shipping, under all flags, engaged in China's trade. Of the Chinese-owned ships totalling 703,420 tons (according to registration in June 1936), 577,213 tons, together with 7,450 junks of unspecified size, were lost (Table 12). In addition, 30,000 fishing boats were lost.

Table 12

Loss of Ocean and Coastwise Shipping

	No. of Ships	Tons	Cost U.S. $
Ships over 100 tons each sunk	111	192,049	$33,409,800
Ships seized by Japanese	16	49,286	9,857,200
Ships chartered to Japanese before the war	6	24,278	4,855,600
Ships under 100 tons each lost during the war	2,316	92,420	9,242,000
Junks over 20 tons each lost during the war	2,655	184,680	10,407,600
Junks (under 20 tons each) and small river craft for passenger and cargo lost	7,450	unknown	5,960,000
	12,599	577,213	$30,735,200

The vessels under operation at the end of the war totalled 41,634 tons, with an additional 70,000 tons awaiting repair. The British and Japanese shipping, which carried an important proportion of Chinese trade (39 percent and 17 percent respectively of the total tonnage entered and cleared in Chinese ports in 1936), was also withdrawn.

About 60,000 tons of shipping were leased from British shipping companies for coastal service, and certain landing crafts were supplied by UNRRA for river transportation. In the case of the latter, although they have been of great help in the short-term rehabilitation, their power is so great that, in inland navigation, only one of the engines can be operated, and even then a junk must be attached to slow down the speed; use of imported petroleum oil is also uneconomical. By the end of July 1946, 205,050 tons of water craft had been procured, chiefly from the United States Navy surplus stocks. In November, 463 vessels, with a gross tonnage of 398,000, were operating in Chinese waters, 60 percent of which were composed of confiscated enemy and puppet vessels and donations from Allied countries. Some of the vessels are over thirty years old, and about one-half of them are less than 200 tons; only 11 are over 5,000 tons. Finally, 64 percent of the vessels are cargo ships, and 19 percent are cargo and passenger ships. The passenger traffic is very small.

/It is expected

It is expected that about 160 American surplus ships, amounting to about 800,000 tons (purchased by the Chinese Government), will arrive soon, and these will be operated by both the State and privately-owned shipping companies. Eventually, when all the existing orders are filled, China's shipping tonnage will be raised to 1,500,000 tons, which will be sufficient, for the time being, to meet the demands of domestic navigation. Chinese shipping companies are also contemplating the resumption of ocean-going service in the near future, beginning with the establishment of a line to the South Seas area.

During the occupation, the Japanese had started the construction of a new port, Taku, off Tientsin. Attempts are now being made to continue the work and complete the port within the next few years. The problem of equipment and materials, however, has yet to be solved.

A similar problem exists in regard to Shanghai. In an attempt to expedite the unloading of heavy cargo directly to flat cars, and thereby relieve port congestion, complete plans were drawn up early in 1946 to rebuild the 2,100 foot pier at Woosung, which had been destroyed, and then partially rebuilt by the Japanese. The large timber necessary, however, has not been available, and until recently only enough timber had been secured to build 300 feet of the pier.

During the war, the dredging of the rivers was badly neglected. The problem is becoming serious, especially in regard to the Whangpoo River (Shanghai), Pearl River (Canton), and the Pi River (Tientsin). Dredgers and dredging equipment are badly needed.

The total requirements for water transport to restore China's trade are shown in Table 13.

/Table 13

Table 13

Two-Year Import Requirements for Water Transport

(Values in U.S. $1,000)

	Total Needs		Procurement to July 1946		Net Import Requirements	
	Gross tons	Value	Gross tons	Value	Gross tons	Value
Coastal vessels	836,000	144,700	177,400	35,480	658,680	$ 109,220
River vessels	286,000	85,800	28,650	8,595	257,350	77,205
Auxiliary vessels		31,565				19,260
Port equipment		5,085				4,640
Port rehabilitation		34,750				16,750
		$301,900	205,050		916,030	$ 227,030

Thanks to UNRRA and the donation of ships by the United States the tonnage available for moving goods inland from Shanghai increased during the period November 1945 to June 1946 from 300 tons to 30,000 tons. The total, however, falls far short of actual needs so that rehabilitation of shipping still remains the first prerequisite for recovery of China's whole economic structure.

Highways

Before the war, the highway was not an important means of transportation in China. During the war, because of the loss of shipping and railway lines, it became the chief means of communication in free China. However, most of the roads built during hostilities, owning to the shortage of materials and labour, were not properly surfaced, and so require constant repairs or even reconstruction.

From a total length of 105,432 kilometres of highways, excluding the Northeastern provinces and Taiwan, 68,000 kilometres were partially or completely destroyed by military action and need repair. Approximately 80 percent of the bridges and a substantial proportion of the roadbed along these routes was destroyed. The loss in motor vehicles reached 50,000 in number. To date, 20,000 trucks have been secured from UNRRA and the United States Government. The two-year requirements for highway transport are shown in Tables 14 and 15.

/Table 14

Table 14

Two-year Import Requirements for Highway Transport

	Pieces	Unit weight tons	Total tonnage	Unit price U.S.$	Total cost U.S. $1,000
Vehicles	46,575		140,868		65,844
Trucks	36,160	3	108,480	1,200/pc	43,392
Busses	9,040	3	27,120	2,000/pc	18,080
Passenger cars	459	1.2	688	1,500/pc	688
Tank cars	458	5	2,290	3,000/pc	1,394
Repair trucks	458	5	2,290	5,000/pc	2,290
Accessories and Equipment			53,169		36,770
Oil reservoir			1,150	200/ton	230
Tires	431,600	0.05	21,580	20/pc	8,632
Accessories			13,939	300/ton	4,180
Repair equipment			13,320	1,400/ton	18,148
Workshop for spare parts			3,180		5,590
Construction materials			222,206		1,016
Communication materials			5,280		1,675
Total			471,523		105,405

Table 15

Two-year Requirements from Domestic Sources for Highways
(Chinese $1,000 at Prewar Value)*

Highway repair (105,432 Km)	81,808
Terminals (224)	13,700
Large stations (235)	7,250
Small stations (491)	3,025
Passenger stations (1,036)	1,267
Shelters (5,271)	1,318
Workshops (28)	62,000
Body fitting of passenger cars	9,073
Body fitting of trucks	14,721
Surface repairs	111
Poles and insulators	4,917
Total	199,192

* Prewar Chinese $1.00 = U.S. $.291/2

/The equipment

The equipment and materials programmed by UNRRA, and th se already supplied to China, are shown in Table 16.

Table 16

Highway Equipment and Materials Programmed by UNRRA

	Programmed by UNRRA		
	U.S. $ 1,000	M.T.	Received in China M.T.
Highway and bridge construction hand tools	525	1,500	500
General construction equipment	6,200	7,750	-
Surplus property general construction equipment	5,500	16,850	12,500
Highway and building construction repair materials	2,400	32,000	21,650
Fuels and lubricants	1,000	3,700	-
Total	15,625	61,810	34,700

UNRRA has also programmed 78 automobile repair shops, of which 35 have arrived in China.

In addition to the shortage of equipment, the rehabilitation of the highways is also handicapped by the shortage of machine operators and maintenance men. Special courses are now in progress for training additional personnel.

Other Communications

The funds UNRRA has allocated for telecommunications in China (U.S. $4.4 million) will only permit the rehabilitation to approximately prewar status of less than one-tenth of the main telegraph and telephone routes and channels in the damaged areas. Because of this, the restoration activities will be confined to an area south of the Yangtze River, and will be limited largely to long-distance circuits. The provincial government iron-wire telephone network, the extent of damage to which has been estimated at 80 percent, and on which efficient regional rehabilitation so much depends, is not included.

/Table 17

Table 17

Two-year Import Requirements for Telecommunication Equipment

	Metric tons	U.S. $1,000
Telephone and telegraph line materials	3,570	2,467
Long-distance telephone equipment	2,190	2,200
Telegraph equipment	1,700	1,500
Local telephone lines and equipment	9,954	11,730
Radio communications equipment		2,400
Repair shop equipment and materials	1,417	1,133
	18,831	21,430

/Table 18

Table 18

Two-year Requirements of Domestic Supplies for Wired Telecommunications

(Chinese $1,000 at prewar value)*

	Domestic Materials	Transportation Cost	Engineering Cost	Salaries & Wages	TOTAL
	First year 1946-47				
Long-distance telephone lines	2,804	2,003	1,302	260	6,370
Telegraph lines	171	440	220	64	894
Long-distance telephones and parts	423	187	278	10	898
Telephone apparatus and parts	620	65	490	17	1,192
City telephones	420	330	390	36	1,176
Total	4,438	3,025	2,680	386	10,529
	Second year 1947-48				
Long-distance telephone lines	2,038	1,585	951	201	4,774
Telegraph lines	742	1,908	954	276	3,880
Long-distance telephone and parts	185	120	177	4	486
Telegraph apparatus and parts	251	23	176	7	456
City telephones	420	330	390	36	1,176
Total	3,636	3,966	2,648	523	10,772

For the restoration of the Postal service, China needs CR$23,160,000 (at the prewar value of the Chinese dollar) from domestic sources and US$4,872,150 for foreign sources. Requirements for air transport are shown in Table 19.

* Prewar Chinese $1.00 = U.S. $.29 1/2

/Table 19

Table 19

Two-year Requirements for Air Transport

	Domestic supplies (in Chinese prewar $)*	Import requirements (in U.S.$)
Repair of airfields (28)	9,380,000	1,400,000
Repair shops (11)	726,000	330,000
Purchase of planes - 80 DC-3		10,400,000
Accessories 30 percent		3,120,000
Purchase of 20 DC-4		7,000,000
Accessories 30 percent		2,100,000
Training of pilots, 100 persons	3,300,000	
Training of radio operators 100 persons	1,650,000	
Training of technicians, 600 persons	5,940,000	
Total	20,996,000	24,350,000

* Prewar Chinese $1.00 = U.S. $.29 1/2

7. Foreign Trade and Balance of Payments

Disruption of Normal Trade Channels

Tables 20 and 21 show China's average annual imports and exports by chief categories in the years 1935-37. In the total import trade 43% represented consumers goods, 36% raw materials and 21% capital goods. Of the imports of capital goods, 21% came from Germany, 19% each from Great Britain and Japan and 18% from the United States. Of the total exports, 35% were plant and animal products, 35% industrial raw materials and only 10% manufactured goods. The largest buyer of Chinese exports was the United States, followed by Japan, Great Britain and Germany. Thus the defeat of Germany and Japan has cut off sources accounting for 40% of China's import of capital goods and outlets for 20% of her exports before the war. With the world shortage of productive equipment, the establishment of a capital goods industries in China is essential for her own reconstruction needs.

TABLE 20

SUMMARY OF CHINA'S IMPORT TRADE, EXCLUDING THE NORTHEASTERN PROVINCES AND TAIWAN, AVERAGES FOR 1935 - 37.
(Values in US$1,000)

	Total Value	G. Britain Value	%	U.S.A. Value	%	Germany Value	%	Japan Value	%
1.Capital goods	62,179	11,848	19.1	11,255	18.1	13,185	21.2	11,693	18.8
2.Raw Materials	108,312	10,438	9.6	27,329	25.2	14,925	13.8	11,033	10.2
3.Consumer goods	128,972	8,403	6.5	15,498	12.0	7,696	6.0	24,155	18.7
Total	299,463	30,689	10.2	54,082	18.1	35,806	11.4	46,871	15.6

/TABLE 21

TABLE 21

SUMMARY OF CHINA'S EXPORT TRADE, EXCLUDING THE NORTHEASTERN PROVINCES AND TAIWAN, AVERAGES FOR 1935-37
(Values in US$1,000)

	Total Value	G. Britain Value	%	U.S.A. Value	%	Germany Value	%	Japan Value	%
Plant and animal products	121,611	13,071	10.2	37,263	30.6	9,923	8.2	13,030	10.7
Industrial raw materials	77,057	5,107	6.6	18,265	23.7	5,181	6.7	13,705	17.8
Manufactured goods	22,889	2,057	9.0	2,013	8.8	350	0.2	1,552	6.7
	221,607	20,235	9.6	57,541	25.9	15,454	7.0	26,267	12.7

Loss of Exportable Commodities

The chief items in China's prewar export trade consisted of plant and animal products and industrial raw materials. The production of most of these goods declined sharply during the war. Table 22 shows some of the principal commodities affected.

TABLE 22

CHINESE EXPORTS AFFECTED BY THE WAR AS PERCENT OF TOTAL TRADE
(Excluding the Northeastern Provinces and Taiwan)

	% of total value of trade
Tung oil	10.4
Cotton piece goods, yarns, threads, etc.	8.0
Silk	7.9
Eggs and egg products	5.9
Silk, hides and leather	5.7
Seeds, seed cakes and related products	4.8
Tea	4.3
Raw cotton	4.0
Hair, feathers and wool	4.0
Bristles	3.6
Groundnuts and products	3.2
Other textiles	1.6
Coal	1.6
Beans and bean products	1.4
Tobacco	1.4
Fruits	1.4
Herbs, medicines and spices	1.4
Cereals	1.4
Vegetables	1.3
Animals, live	1.1
	74.6

/As has been

As has been seen in an earlier section, the production of most of the agricultural commodities for export has been greatly curtailed; for example, soya bean dropped by 20 percent, silk by 89 percent, tung oil by 70 percent and tea by 84 percent. Similarly, the heavy loss of livestock has certainly affected China's export capacity in respect to hides, skins and other animal products. And as to cotton, faced with a serious shortage of clothing at home, China will require large imports of cotton goods for home consumption, to say nothing of her inability to export these goods in the near future as she did in prewar years.

Present Situation of Imports and Exports

These heavy losses in commodities for export and the urgent need of imports are reflected in recent trade figures. The value of exports during the first nine months of 1946 was only 23 percent of the imports of the same period, as can be seen in Table 23.

TABLE 23

FOREIGN TRADE OF CHINA JANUARY-SEPTEMBER 1946
(in million Chinese Dollars)

	Imports	Exports	Excess of Imports over Exports	Exports as % of Imports
1946				
January	10,914	6,337	4,577	58
February	16,601	4,544	12,057	28
March	49,435	9,260	40,175	19
April	128,534	7,460	121,043	6
May	158,436	19,873	138,562	12
June	138,846	18,265	120,581	13
July	111,562	30,513	81,049	27
August	137,458	63,073	74,385	46
September	245,801	67,357	178,444	28
Total Jan-Sept.	997,587	226,713	770,874	23
1936 Jan-Sept.	685	508	117	71

/Ninety percent

Ninety percent of the imports and eighty percent of the exports in September 1946 passed through Shanghai. The Shanghai trade may be separated into commercial imports and UNRRA supplies as in Table 24. The exports from Shanghai is 23 percent of the commercial imports and 19 percent of total import into Shanghai.

TABLE 24

FOREIGN TRADE OF SHANGHAI - JANUARY-SEPTEMBER 1946
(In million Chinese Dollars)

	IMPORTS			Exports	Exports as % of	
	Commercial Imports	UNRRA Supplies	TOTAL		Commercial Imports	TOTAL Imports
January	9,383	598	9,981	5,641	60	57
February	17,173	2,858	20,031	3,309	19	17
March	40,577	21,071	61,647	3,937	10	6
April	81,510	15,863	97,373	4,048	5	4
May	77,997	34,618	112,615	11,105	14	10
June	122,619	31,678	154,297	6,717	5	4
July	94,034	25,079	119,113	23,740	25	20
August	117,955	34,271	152,226	49,709	42	33
September	222,606	66,260	288,866	53,520	24	19
Total				161,726	23	19

The main categories of imports for the first eight months of 1943 were:

	In Million Ch.$	%
Raw materials	528,534	70
Daily necessities	180,854	24
Machinery and equipment	40,232	5.3
Coal, fuel, pitch and tar, etc.	2,167	0.7
		100.0

Raw cotton represented 46 percent of the raw materials group, amounting to Ch.$ 243 millions, or 2,279,085 quintals. Petroleum and related products

/came next

came next with Ch.$ 121 millions (183,691,000 liters). In the machinery and equipment group, weaving and textile machinery and chemical apparatus were first.

The high cost of the export products as a result of the inflation continues to act as a deterrent to exports. In many cases, such as raw silk, the present stocks are hardly sufficient to satisfy home consumption.

Loss of Overseas Financial Resources

China since 1877 has always had an unfavourable balance of commodity trade, with a total excess of imports in sixty years of about Ch.$ 10 billion, or US$ 3 billion at the exchange rate of 1936. One of the largest offsetting items has been the remittances of the overseas Chinese. As a result of the devastation in the areas where a large share of these remittances originated (Southeast Asia and the Philippines) and of exchange restrictions, this source of receipts has suffered a serious blow. The remittances from January to November 1946 totalled only US$ 65 million or 60 percent of the average prewar figure. The extent of Chinese investments in Southeast Asia before the war is shown in Table 25.

TABLE 25

CHINESE POPULATION AND INVESTMENTS IN SOUTHEAST ASIA

	Chinese Populations (rough estimates)	Estimated Chinese Investments US$.
Philippine Islands	110,000 (1931)	100,000,000
Netherlands Indies	1,345,000 (1937)	150,000,000
French Indo-China	427,000 (1940)	80,000,000
British Malaya	2,300,000 (1940)	200,000,000
Burma	194,000 (1937)	12,000,000
Thailand	2,500,000 (?)	100,000,000
	6,876,000	642,000,000

Foreign Loans, UNRRA Supplies and U.S. Surplus Materials

Since the end of the war, foreign exchange in the form of foreign loans has been made available to China as follows:

/(a) Loans

(a)	Loans from Canadian Government for the purchase of ships and other rehabilitation supplies from Canada	...	$ 60,000,000
(b)	From U.S. Export-Import Bank		
i.	For cotton	$33,000,000	
ii.	For railway materials	16,650,000	
iii.	For power plants	8,800,000	
iv.	For mining equipment	1,450,000	
v.	For ships	6,844,000	
			$ 66,744,000
			$126,744,000

The items in the UNRRA programme for China total US$ 535 million in value. In addition to these sources China acquired a quantity of U.S. surplus war materials and equipment in the Pacific, costing originally US$ 800 million, together with a credit of $30 million to facilitate their reconditioning and use. The present real value of the equipment is unknown, although the account was fixed at US$ 170 million.

Recent Chinese Trade Regulations

With the large excess of imports over exports and the consequent drain on its foreign exchange resources, the Chinese Government, as a protective measure, announced new regulations affecting foreign trade in November 1946. A quota was set on the importation of each commodity, except in the case of productive machinery and equipment, and the importation of luxuries was temporarily prohibited. As a result, there are indications that the excess of imports in December 1946 was considerably lower than in previous months.

Balance of Payments

The balance of payments in 1947 will depend very much on the extent of rehabilitation to be undertaken, and the external financial resources which can be made available. Assuming no additional external financial receipts and the reduction of relief and rehabilitation needs to an absolute minimum, the Chinese Government has estimated its 1947 balance of payments as shown in Table 26. It should be noticed that imports for "rehabilitation" are estimated at only US$ 100 million, and that no allowance is estimated for "reconstruction."

/TABLE 26

TABLE 26

ESTIMATED BALANCE OF PAYMENTS FOR 1947

(US$ millions)

		July-Dec. 1946	1947
	(A) Foreign Currency Receipts		
1.	UNRRA appropriation (contra of Item 9 below)	184	268
2.	Exports	87	260
3.	Unrecorded exports	9	25
4.	Inward remittances	50	100
5.	Foreign investment in China	0	0
6.	Foreign expenditures in China	30	40
7.	Repatriation of capital by sale of unblocked funds, etc.	15	20
8.	Payments to China under credits and purchase agreements existing as of 30 November 1946 (contra of Item 10 for government imports under credits in (B) below)	93	154
	TOTAL	418	857
	(B) Payments in Foreign Currency		
9.	UNRRA imports	134	268
10.	Government imports under credits and purchase agreements existing as of 30 November 1946 (comprising surplus property, Export-Import Bank credits, Canadian credit)	93	164
11.	Rehabilitation, chiefly of railways and waterways	50	100
12.	Essential economic reconstruction (foreign exchange reserve position necessitates omission of any provision for this item and a reduction to 100 for preceding item in 1947)	0	0
13.	Government imports paid for in cash, including liquid fuel, banknotes, etc.	50	100

/Table 26 (continued)

TABLE 26 (continued)

ESTIMATED BALANCE OF PAYMENTS FOR 1947

(US$ millions)

	July-Dec. 1946	1947
14. Ordinary imports (1946 figures are actual; 1947 estimated, i.e. cotton 175; food 80; petroleum products 50; all others 155)	300	460
15. Unrecorded imports	30	46
16. Foreign debt service, not including prewar debt in arrears	68	60
17. Miscellaneous	25	50
TOTAL	750	1238
(C) Estimated Deficit	332	381

Prospective improvement in 1947 deficit is due to adoption of import control on 17 November 1946 and to deferred UNRRA arrivals plus United States surplus property, which makes it possible the further reduction of imports. The estimate has made minimum allowance for its 1947 food and textile needs in above tabulation. Even allowing for UNRRA imports, it will still be necessary to import US$ 175 millions of cotton, and US$ 80 millions of food. These two items, it is apparent, constitute a major portion of the 1947 deficit. With respect to general imports, through her import controls, China is now in a position to enforce her schedule, which is based on bare essentials.

7. Finance

Before 1934, China was on the silver standard. The price level and foreign trade were geared to variations in the gold-silver price ratio in the silver-producing countries. In 1934, the Chinese Government imposed a duty on silver export, varying the rate according to the changes in the gold-silver price ratio. In November 1935, the monetary standard was changed to gold, and the exchange rate with sterling stabilized. In the meantime, the accounting currency of taels, which had special use in foreign trade practice, was abolished. Local paper notes were restricted, and, with the exception of small localities, the currency of the whole country was unified. In the immediate prewar year, 1936, the balance of payments was favourable. Foreign exchange holdings, which were increasing, were large, and were equal to 50 percent of all notes outstanding and demand liabilities of the Central Bank. The principal external bonds were selling above par. The tax system, which was being restored, was improving, and the Government's revenue was increasing. On the eve of the war, the country's financial situation was sound.

During the war, the loss of all coastal cities, where industry and trade in China was concentrated, took from the Central Government its major sources of revenue, including the customs revenue, salt tax, and excise tax on factory products. These three were the source of more than 80 percent of the Central Government's prewar revenue. Since the richest areas were occupied by the Japanese, returns from income tax and bonds were insignificant, and with heavy military expenses, the deficit was mounting. It was only after 1941 when the Central Government took over the land tax from the local governments and collected grain instead of money that the government was saved from bankruptcy. The real income of government employees had shrunk to a small fraction of the prewar level, which accounted for the decrease in government efficiency.

/The scarcity

The scarcity of commodities in free China, the blockade, and the loss of the major sources of revenue, resulted in an increased note issue, and a substantial wartime price increase, averaging from 150 percent to 200 percent per annum. On V-J Day, prices in Chungking were 2,500 times as high as those in 1937.

Prices in the Japanese-occupied areas rose even higher. In 1944-45, the Japanese, realizing their eventual defeat, boosted the note issue in order to seize commodities. Prices in Shanghai rose 14 times from 1943 to 1944, and another 34 times from 1944 to 1945. On V-J Day, prices in Shanghai were 86,400 times as high as those in 1937. Even after V-J Day, the Japanese continued to issue paper money in large quantities before the reoccupation by the Chinese. The same policy was adopted by the Japanese in North China. After the reoccupation, the Chinese found a much larger quantity of enemy and puppet-government notes than the total quantity of the legal tender notes:

Note Issues of the Puppet Governments	("Chinese Dollars")
Central China	$4,930,256,598,800
North China	300,000,000,000
Northeastern Provinces	12,000,000,000
Inner Mongolia	3,500,000,000

After the conversion of the puppet notes, except those circulated in the Northeast provinces, the total currency in circulation at the end of October 1946 was estimated at Ch.$2,153 billion. The prices in Shanghai according to the index numbers of the Central Bank of China, were 5,317 times those of 1937. Total deposits in all banks in September 1946 was estimated at Ch.$390 billion.

The Central Government budget for 1947, including subsidies to local governments is Ch.$9,220 billion, of which about Ch.$1,000 billion is earmarked for the improvement of transport and communications, and Ch.$500 billion for other reconstruction work. However, since industries and trade have not fully recovered, the total revenue will be only Ch.$7,000 billion, including Ch.$3,600 billion from the sale of confiscated Japanese goods and part of the United States surplus properties. The deficit is estimated at Ch.$2,220 billion.

II. PRESENT DIFFICULTIES AND PLANS FOR THE FUTURE

1. Immediate Needs

The total import requirements for China's relief and rehabilitation programme were originally estimated in 1944 at U.S. $2,529,677,000, and the amount requested from UNRRA was U.S. $945,046,000. UNRRA appropriations, however, totalled only U.S. $535,000,000, one-fifth of the original estimated import requirements.

Table 27

Total Requirements of China's Relief and Rehabilitation Programme, Excluding Northeastern Provinces and Taiwan, and UNRRA Programme in China

	Total Requirements			
	Chinese Expenditures Ch.$1,000	Import Supplies U.S.$1,000	Request from UNRRA U.S.$1,000	UNRRA Programme in China* U.S.$1,000
Food	100,000	316,840	153,881	131,500
Clothing	150,000	979,309	154,919	95,900
Health	246,515	66,004	66,004	41,250
Agriculture	206,700	86,350	77,476	80,000
Industries	1,153,500	348,500	115,000	186,320
Transportation	430,964	663,014	330,102	
Shelter	100,000	25,000	5,000	
Flooded areas	139,570	6,500	4,500	
Welfare service	160,817	32,531	32,531	
Displaced persons	39,098	5,633	5,633	
	2,727,164	2,529,677	945,046	535,000

* The categories in the UNRRA programme are different from those in other classifications

Although the UNRRA allocations for China represented the largest expenditure programme for any single country, the total figure of U.S. $535,000,000 amounted to only U.S.$2.01 per capita of the population of occupied China.

To begin to restore the original productive capacity of the country, China's total import requirements for the next two years are estimated at U.S.$3,824 million. From this sum may be deducted the UNRRA allocations,

/the United

the United States war-surplus materials, and other loans - leaving a net requirement of U.S.$2,953 million (or around U.S.$7.00 per capita), as shown in Table 28.

Table 28

Urgent Import Requirements Next Two Years

(U.S.$1,000)

Transport and Communications		787,984
Rail transport	408,123	
Water transport	227,030	
Highway transport	105,405	
Air transportation	24,350	
Telecommunication	18,200	
Postal service	4,872	
Machinery		1,543,500
Basic materials		167,300
Iron and steel other than those included in above items	67,500	
Timber	21,100	
Non-ferrous metals, cements, and miscellaneous	6,700	
Petroleum products	72,000	
Agricultural rehabilitation		83,000
Fertilizers	24,000	
All others	59,000	
Food, textiles, etc.		613,800
Foodstuffs	270,000	
Cotton textiles	25,000	
Raw cotton	162,200	
Others	156,600	
Shipping and insurance, 20%		678,277
Total c.i.f.		3,773,861
Technical service		50,000
Total goods and services		3,823,861
Deduct:		
UNRRA programme excluding medical supplies*	493,740	
U.S. surplus, (rough estimate)	250,000**	
Loans	126,744	
Total	870,484	
Net Total Requirements	2,953,377	

* Medical supply is excluded because that item has been omitted in the present estimate of the import requirements

**Estimated economic value of war surplus for industrial uses

2. Reconstruction Plans

The Need for Industrialization

The per capita national income of China is one of the lowest in the world. Even after adjustments for differences in prices, marketing structure, and family services, the average gross per capita income in 1931-36, according to T.C. Liu, was only U.S.$40.70, or 7.5 percent of that of the United States - or, if not adjusted, U.S.$20.50, or 3.8 percent of that of the United States.

Further examination of the composition of the national income reveals that 60-65 percent of the income in China for 1936, excluding the Northeastern provinces, was from agriculture, and 9-11 percent from manufacturing, including modern factories, handicrafts, and household industries. If we take the year 1931, the gross income from agriculture was even higher, 77.8 percent, and from manufacturing, 7.7 percent.

Table 29

National Income of China, 1936*
Excluding the Northeastern Provinces
and Taiwan

	"Gross national product" estimated by T.C. Liu		"National income" estimated by Academia Sinica	
	Value	Percent	Value	Percent
Agriculture	15.63	60.4	16.93	65.0
Mining and metallurgical	0.57	2.2	0.29	1.1
Manufacturing	2.94	11.4	2.41	9.3
Construction	-	-	0.20	0.8
Transport and communications	0.27**	1.1**	1.05	4.0
Commerce	1.99	7.6	2.57	9.9
Financial transactions	0.10***	0.4***	0.29	1.1
Residential houses	-	-	0.92	3.5
Professional	2.44	9.1	0.30	1.2
Domestic services	0.02	3.5	-	-
Government	1.03****	3.9****	1.00	3.8
	25.89	100.0	29.95*****	100.0

* Value not adjusted for national differences in prices, marketing, structures, etc.

** Modern transport and communications only.

*** Modern financial institutions only.

**** Including educational institutions.

***** This item is covered by other items to the extent of Ch.$ 023 billion

It was estimated some years ago, that the amounts of machinery per head, taking the industrial countries in Northwestern Europe as 100, which made the United States 405, was only between 0 and 1 in China; one-fourth of the world's population is therefore practically working with their bare hands. Recent studies have shown that the industrialization of the under-developed areas will not only raise the standards of living of the people involved, but will also encourage the trade of, and bring prosperity to, all the industrialized countries. The benefit to be derived by all from the industrialization of China, which embraces so much of the world's population, is thus obvious.

The Potentialities of Industrialization

The undeveloped material resources.

Though relatively small as compared with the leading industrial countries, especially in respect to petroleum, water power, iron and copper, China's potential resources, are sufficient for at least a moderate programme of industrialization. Failure to exploit them not only keeps her own standard of living even lower than necessary, but also serves as a drain on the resources of the highly industrialized countries.

Table 30

Estimated Natural Resources of China*

Water-power resources (excluding Sinkiang and Tibet)		64,694,000 kw.
Coal deposits:		240,847,000,000 M.T.
Anthracite	46,089,000,000 M.T.	
Bituminous	183,566,000,000 M.T.	
Lignite	4,692,000,000 M.T.	
Oil Deposits:		521,000,000 M.T.
Petroleum oil	206,000,000 M.T.	
Shale oil	315,000,000 M.T.	
Iron deposits		1,503,000,000 M.T.**
Copper deposits		2,000,000 M.T.
Lead deposits		2,695,000 M.T.
Zinc deposits		155,000 M.T.
Aluminum deposits		Fairly abundant.

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* Most of the figures are based on rough estimates subject to revision as more detailed surveys are made.

** 873 billion tons, or 58 percent are in Lianning province, Manchuria

/Tungsten ore deposits

Table 30 (continued)

Tungsten ore deposits	5,000,000 M.T.
Antimony deposits	*
Tin deposits	600,000 M.T.
Mercury deposits	20,000,000 M.T.
Forest land	200,000,000 acres

In evaluating China's resources, certain qualifications must be made. The excessive seasonal changes in the water levels of most of the rivers, the remoteness of most of the water-power resources and the petroleum-oil deposits from the present industrial centres, the wide distance of the coking coal resources from the iron resources, the inferiority of most of the iron ores, deposited thinly in scattered areas - all these factors limit efficient and economic exploitation. But many of these problems may be gradually solved as communications are improved and cost of transportation lowered, or when new industrial centres near the source of resources are developed.

As to agricultural raw materials, China produces fairly large quantities of raw cotton and flax, which may be further increased by agricultural improvements. She also normally exports soya beans, tung oil, bristles, tea and silk, but the production of wool is very small.

The Domestic Market

China has an estimated 478 million population whose standard of living is waiting to be raised. The increased production resulting from industrialization, if well planned, would be practically all absorbed by the increased income of the people themselves.

Labour Force

The presence of a large labour force in China with an exceedingly low standard of living is generally regarded as a factor hindering industrialization. This is the case so far as the cheap domestic labour competes with the expensive imported machines. But once the technics have been acquired and the machines are made by the people themselves,

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* Total deposits have not been estimated, but there was surplus production for export before the war.

/these machines

these machines made with cheap labour can be used as a substitute for domestic labour just as economically as expensive machinery in the United States is used as a substitute for expensive labour. An excellent illustration of this is Japan whose labour cost, much lower than in the Western industrialized countries, has helped instead of hindered her industrialization. The bottlenecks which the country striving towards industrialization must pass through are the economic utilization of the first set of imported machines and the building up of a body of technicians.

The Five-year Plan

In 1945 the central Planning Board of the Chinese Government, in co-operation with different ministries of the Executive Yuan, drafted a moderate five-year reconstruction plan (The plan is slightly more ambitious than the prewar plans in order partly to offset the delay of ten years). The programme puts special emphasis on transport the cost of which constitutes nearly 40 percent of the total programme. This item includes 14,331 km. of railways, 62,300 km. of highways and 1,667,000 tons of water crafts. Next in order come manufacturing, mining and metallurgy, power, water-works, and agriculture. Since farm machinery and fertilizers for the improvement of agriculture are included in the category of manufacturing, and irrigation is included in the group designated as water-works, the relative stress on agriculture may be partly obscured. In manufacturing, nearly half of the expense is devoted to the textile industry, followed by the chemical industry which includes the manufacture of fertilizers.

In consumption foods, besides the increase of 5 million tons of wheat and 2 million tons of beans, the plan pays special attention to animal protein food and cotton textiles, both especially short in China. The average annual per capita consumption of animal proteins before the war was 70 calories. The five-year plan would increase the production of milk by 90 percent, fish 87 percent, meat 30 percent and eggs 25 percent. The prewar annual per capita consumption of cotton

textiles was 8.8 metres; the five-year plan would increase this figure to 16 metres;

About one-half of the expenditures on the programme is to be spent for domestic materials and labour, and the balance for imported materials and equipment and services of foreign exports. The direct personnel requirements of the plan are estimated at 5 million men.

Unfortunately since the revised five-year plan is a secret document and has not yet been released, it is not available for reproduction here. However Mr. Alex Taub, who spent two years with the assistance of many technical experts, in drawing up the Guide to the Industrialization of China while he was the Chief Engineer for the Foreign Economic Administration of the United States Government, has made an independent estimate of China's absorptive capacity for five years. The result corresponds very closely to the Chinese five-year plan. A summary of Mr. Taub's estimates is reproduced in Table 31.

Table 31

CHINA'S ABSORPTIVE CAPACITY FOR FIVE-YEARS,
ESTIMATED BY ALEX TAUB

(US$ 1,000,000)

		Import Requirements.
1. Equipment:		
Transport		1.647
Railways	509	
Highways	342	
Water transport	673	
Air transport	50	
Postal service	5	
Telecommunication	68	
Power		312
Mining and Metallurgical		533
Manufacturing		722
Mechanical	121	
Electrical equipment	50	
Chemical industry	313	
Textile	238	
Agriculture		125
Irrigation		31
Total equipments		3,370

/2. Basic materials

Table 31 (continued)

			Import Requirements.
	Brought forward		3,370
2.	Basic materials and supplies		497
	Total equipment and materials		3,867
3.	Technical Service		100
	Foreign Experts	65	
	Training in foreign countries	36	
	GRAND TOTAL		3,967

Need for International Co-operation

Capital

With her exceedingly low per capita income, annual savings from income in China before the war were negligible. After eight years of a destructive war, the national income has been still further lowered, in many localities below the subsistence level. Moreover, even after rehabilitation, the annual savings will be insignificant. It is for this reason that foreign capital in the form of either loans or direct investment is necessary to speed up the industrialization process to enable reconstruction and development activities to take place without further lowering the standard of living.

As to the repayments on the foreign loans and direct investments, China will depend to a large extent on the exportation of certain mineral products needed by other countries, such as tungsten, antimony, tin, or even coal, and agricultural products, such as soya beans, tung oil, bristles, nuts, silk, or tea. Some handicraft and art objects like fine porcelains, embroideries, carvings, etc., will also be developed for export to repay the loans. Finally, the tourist trade may be developed into a large-scale source of revenue once communications are improved.

Technics and Management

Industrial technics and managerial experience are required for industrialization. Mention has been made of the destruction of the

/technical

technical colleges and industrial centres during the war, where technicians and managerial staffs might have been trained. A more comprehensive well-planned training programme must now be inaugerated to meet the technical personnel requirements. Here international co-operation is urgently needed.

Equipment

Since China's under-developed metallurgical and machine-tool industries have suffered heavily from hostilities, reducing their original capacity by 10 to 30 percent the country has to depend on the importation of practically all kinds of machinery, especially in the initial stage.

3. Proposals for Meeting China's Rehabilitation and Reconstruction Requirements.

Japanese Reparation

After eight years of general warfare, fourteen years of the enemy's usurpation of power in the Northeastern provinces, and fifty years of occupation in Taiwan, China has suffered such tremendous losses that there is no parallel to be found in other countries attacked by Japan. The loss of human life, the famine, starvation, and the lack of shelter and clothing, the degeneration of health, education, and training, the physical losses to agriculture, transport, mining and industry, and the retardation of the rate of growth of the general economy, may be ascribed to Japanese aggression. In fact, even the political chaos, which had retarded so much the economic growth during the 25 years of the Chinese Republic before the war was aggravated by the Japanese separation policy.

The Chinese feel that the Japanese should compensate them for their losses. There is in any case an urgent need for the reconstruction of China, not only to compensate her for losses sustained and to raise the standards of living of a large part of the world's population, but also to fill the vacuum left by the measures taken to restrict Japanese industrial activities and thus prevent the latter from reviving in such a way as to be able to wage more wars.

As far as it has been possible to determine China's attitude towards the reparations question, the following appear to be the main principles:

(1) Those industrial and utility plants in China which have been damaged or dismantled, as a direct or indirect result of the war, should be replaced and expanded with similar equipment to be taken from Japan.

(2) Title to those industrial plants in Japan, used exclusively for the processing of Chinese raw materials and production of commodities mainly exported to China, should be transferred to the Chinese and the

/plants

plants moved to the mainland to utilize local materials and thus secure better economy in production.

(3) From the equipment to be removed from Japanese plants having direct bearing on war activities, those items most urgently needed for completing China's economic reconstruction should be alloted to China with due consideration, of course, for the just claims of other devastated areas.

(4) The major portion of the superfluous Japanese industrial equipment, such as iron and steel mills, steam electric power plants, shipyards, machine tools, etc., should be diverted to China to establish a balanced development of the Far Eastern economy.

(5) A number of recurring goods should be supplied from Japan outright, or annually for a maximum period of five years, in order to furnish China her most urgently needed commodities during the first few postwar years. These commodities should include copper, sulphur, steel, glass, rayon, pulp, timber, mulberry tree seedlings, silkworms eggs, phenol, etc.

It is further proposed by Chinese planners that a number of limited companies for making productive use of the industrial equipment obtained from Japan should be organized, with shares for most of these new companies open for public subscription. Efficient management would be insured by acquiring technical and managerial assistance from the leading concerns of the highly industrialized countries. New equipment and tools not available in Japan should be brought from other countries. Executives, engineers, and foremen should be properly selected and trained. In the initial period, in some of these new plants, a small number of Japanese technicians might be employed to help in the installation and starting of operations, under the supervision of Chinese executives.

The eight-year war between China and Japan has been over for one and a half years. Because of the widespread devastation and the extensive

/needs for

needs for rehabilitation and reconstruction which cannot be secured from other sources, the Chinese people continue to suffer, and may still continue to do so for a considerable length of time. Since Japan is responsible for the disasters, the Chinese feel it is imperative to settle the reparation claims against Japan, and transfer the properties to China as well as the other claiments at the earliest possible moment.

Education and Training

In view of the heavy losses sustained by educational institutions, and the inadequate education and training during the war periods, international co-operation in this field would be exceedingly valuable in the rehabilitation and reconstruction of China. Outstanding professors in technical fields and laboratory equipment should be sent to China to help establish training programmes; Chinese graduates should be sent abroad for further studies and experience in schools and factories of the highly industrialized countries; and engineers and technical experts from other countries should be sent to China to help plan and establish the more important industries.

Many other steps to assist education could be taken. For example, technical and college textbooks published in the United States and European countries are too expensive for Chinese students. It would greatly assist Chinese education (and probably education in other Far Eastern countries with similar low standards of living), if cheap editions of technical and college textbocks could be published for exclusive use of specified Far Eastern countries. One of the book companies did this before the war. It has been estimated that to send the printed sheets to be bound in China would reduce the cost of the books by one-third and that to send the plates to print the books on cheaper paper in China would result in savings of two-thirds to four-fifths of the total cost.

/Food, Clothing

Food, Clothing and Housing

Famine is still stalking many parts of China, and tens of millions are facing starvation, or living considerably below the subsistance level. Clothing and housing are also vitally needed. UNRRA supplies, the shipment of which have been substantially increased recently, will be of great assistance in 1947. However, the need is so great that similar aid will have to continue after the termination of UNRRA.

Mining, Industry, Transport and Communication

If the Japanese reparations materials requested by the Chinese government could be transferred in the near future, and the proposed measures for international co-operation in technical training be speedily adopted, further present requirements in the rehabilitation and reconstruction of mining, industry, transport and communication would be limited to relatively smaller quantities of auxiliary equipment, lesser technical assistance, and smaller sums of money would be needed for financing the various projects. One of the alternatives, if the reparations and the transfer of property should for any reason be delayed, would be to so arrange the financing of the rehabilitation and reconstruction of mining, industry, transport and communications from other international sources that the loans would be repaid by the Japanese reparations when the latter is settled. This procedure would avoid undue delay in the economic recovery and would save much unnecessary prolonged suffering in China.
