



1959

The Agricultural Production of China, Japan and Asiatic Russia

James Mudra

Follow this and additional works at: https://scholarlycommons.pacific.edu/uop_etds



Part of the [Chinese Studies Commons](#), and the [Japanese Studies Commons](#)

Recommended Citation

Mudra, James. (1959). *The Agricultural Production of China, Japan and Asiatic Russia*. University of the Pacific, Thesis. https://scholarlycommons.pacific.edu/uop_etds/3966

This Thesis is brought to you for free and open access by the University Libraries at Scholarly Commons. It has been accepted for inclusion in University of the Pacific Theses and Dissertations by an authorized administrator of Scholarly Commons. For more information, please contact [mgibney@pacific.edu](mailto:m gibney@pacific.edu).

THE AGRICULTURAL PRODUCTION OF CHINA,
JAPAN AND ASIATIC RUSSIA
1952-57

THE FACULTY at the AMERICAN ACADEMY
of ASIAN STUDIES
COLLEGE OF THE PACIFIC

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
James Mudra
May 1959

TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM AND AREAS TO BE CONSIDERED	6
The Problem	6
Definitions of Terms Used	6
Evaluation of Production	6
Areas to be Considered	6
Agricultural Production Defined	7
Period Examined	9
Source Data Limited	11
Falsification of Figures	12
II. AGRICULTURAL PRODUCTION IN CHINA	14
Population Density and Water Supply	15
Basic Crops	18
Geographic Survey of China's Agricultural Land	23
III. THE CHINESE FIVE YEAR PLAN	32
Evaluation Periods Examined	32
Pre-Communist - 1937 to 1949	33
Rehabilitation - 1949 to 1952	34
New Peasants of China	36
State Investment Plan - 1953 to 1957	43
Importance of Agricultural Program to China	51
IV. CURRENT AGRICULTURAL PRODUCTION IN JAPAN	54
Japan's Problem Compared to China	55

CHAPTER	PAGE
Basic Crops	63
Japan's Method of Farming	65
Arable Land and Abundance of Labor	66
Mechanization, Fertilizers, Insecticides	72
Rice Import Picture	80
V. AGRICULTURAL PRODUCTION IN ASIATIC RUSSIA	85
Industrial Development	86
Industry Dependent Upon Farmer	87
Maltsev's Experiment With Fallow Land	90
Basic Crops By Political Divisions	94
Mineral Resources of Asiatic Russia	101
Types of Soil in Asiatic Russia	103
VI. CHINESE AGRICULTURAL CLAIMS	106
Pros and Cons	107
Five Limitations	108
Food in Exchange for Machines	112
VII. PROSPECTS AND POSSIBILITIES	113
Japan's Dilemma: Grow or Import Food	114
China: Dense Population; Lacks Food	115
Russia: Davydov's Plan	121
VIII. CONCLUSION	124
BIBLIOGRAPHY	129

LIST OF TABLES

TABLE	PAGE
I. The State Investment Plan, 1953-1957	44
II. Socialization of Trade and Industry, Transport and Agriculture, 1950-1956	46
III. Monthly Mean Air Temperatures, 1886-1940	58
IV. Average Daily Maximum and Minimum Temperatures, 1886-1940	59
V. First and Last Snow and Frost Averages, 1874-1940	60
VI. Average Precipitation, 1876-1940	61
VII. Weight of Dried Crop Harvested Per Plant Area . .	63
VIII. Caloric Content of Certain Crops Per Planted Area	64
IX. Percentage of Farms in Each Class that Uses Engines	70
X. Volume of Production Selected Commodities in Japan	71
XI. Japan: Imports of Wheat by Country of Origin, 1952-1956	78
XII. Japan: Imports of Rice by Country of Origin, 1952-1956	
XIII. Japan: Imports of Barley by Country of Origin, 1952-1956	83
XIV. Japan: Imports of Soybeans by Country of Origin, 1952-1956	83

LIST OF FIGURES

FIGURE	PAGE
1. Density of Farm Population	16
2. A Typical Farmstead of the Better Class Farmer . .	20
3. The Two Main Agricultural Regions of China	24
4. The General Distribution of Acid, Neutral and Alkali Soils in China	25
5. Agricultural Areas of China	29
6. Comparison of Agricultural Production between 1936 and 1956	49
7. Degree of Japan's Dependence on Overseas Markets Represented Graphically, Rice and Wheat	73
8. Degree of Japan's Dependence on Overseas Markets for Barley, Soybeans and Sugar	74
9. Industrialization of Asiatic Russia	88
10. Wheat Acreage	99
11. Oblasts and Krays of Russia	105
12. Proposed Canals	117
13. Davydov's Plan for a Siberian Sea	119
14. Comparative Size of Siberian Sea	120

CHAPTER ONE

I N T R O D U C T I O N

This paper will attempt to evaluate the agricultural production of China, Japan, and Asiatic Russia in the post-World War II period. The appraisal is based on the agricultural productions which are raised mainly for food consumption; however, such industrial crops as cotton, flax, and hemp are considered also. The claims of the Chinese First Five Year Plan, results of the Japanese Land reform, and the land development program in Asiatic Russia are all examined. A comparison is made between the pre-War and post-War periods in an effort to determine the amount of increase in production of agricultural goods, on both a gross product and per capita basis. It concludes with an examination of the self-sufficiency of each country, its need for importing and/or exporting agricultural goods and their implication.

Area Considered

The area that will be considered is primarily the present day boundaries of the countries considered. China includes the area bounded by the Yellow and East China Seas on the East, Indo-China and Burma from China's Southern border, Tibet the Western border, and Kazakh S.S.R., The

Mongolian People's Republic, and the Soviet Far East in the North.

China does not include Tibet,¹ Taiwan, and, of course, not North Korea, or North Vietnam; however, it does include both Sinkiang and Manchuria.

Japan is limited to the four main islands of Kyushu, Shikoku, Honshu, and Hokkaido. It does not include Manchuria, Korea, or Taiwan.

Asiatic Russia is defined as all the Soviet land east of the Ural Mountains and the Caspian Sea. This does not include the Ural Region.² Asiatic Russia also does not include the Mongolian Republic, the Sinkiang Province or Manchuria, but it does include Kazakh Soviet Socialist Republic, Turkmen Soviet Socialist Republic, Uzbek Soviet Socialist Republic, Tadzhik Soviet Socialist Republic, Kirgiz Soviet Socialist Republic, and Tannu Tuva.

Agricultural Products Defined

For the purposes of this paper agricultural products are defined as those crops that are raised by the peasant in an effort to feed and cloth the people of his country. The

¹Although Tibet is under the political control of China today, for the purpose of this paper Tibet is not included.

²This eliminates the Sverdlovsk, Molotov, Chelyabinsk, and the Udmurt and Bashkir Autonomous Soviet Socialist Republics.

primary concern is on foodstuffs--rice, wheat, soy bean, kaoliang, sweet potato, etc. Dairying is mentioned but not considered because it is not carried on to any great extent in Japan and China, and that which is indulged in, in Russia cannot be measured because of lack of statistical information. Lack of information, reliable or otherwise, had also eliminated the consideration of nomad herds and their contribution to the national economy.

The by-products from agriculture have also been eliminated because this study is primarily concerned with the ability of the peasant to raise foodstuffs, to feed the population of his country. Is the nation, or area in the case of Asiatic Russia, capable of caring for its own needs in regard to food consumption? Can the people raise enough food to feed themselves?

Thus, although it is economically important, it is not the immediate concern of this paper to deal with the methods the farmer uses to supplement his income, such as the making of straw mats from the by-product of rice, or the selling of the stalks to the urban people for fuel.

Other by-products of agriculture such as rayon, paper, alcohol, cloth, etc. are classified as industrial commodities. They require the use of machines, skills, and methods that are foreign to the farmer and should be considered in an industrial study, but not in this paper on agricultural production.

Period Examined

The period under consideration is the 1952-1957 period in agriculture; this is the most recent for which statistical information is available. The years immediately following World War II were eliminated because it was felt that there was too much dislocation from the war to give an accurate picture of the present day agricultural capabilities of the areas under consideration. In China, there was still a civil war being waged; in Japan, a large military occupation, with the victor attempting to create a subservient nation.

Since those early pre-War years, conditions have changed. The Chinese Communists are in control of China; they have instituted a land reform and progressed through their first Five Year Plan. In Japan, the victor has changed his attitude toward the conquered; Japan is no longer to be a weak ineffectual nation with limited industrial capacity. She is to be a partner to the West, an industrial power in the Orient and a base for military operations against Communist aggression.

A true assessment could not be made while either of these two nations was going through this period of transition; better to wait until the Communists in China had consolidated their position and gained control of the Chinese Mainland, and the Japanese had readjusted their agricultural position

through land reform. A too early assessment would also mean that the war devastation would be an influencing factor in any agricultural production and would prevent one from obtaining a true picture of the situation.

The 1952-1957 period was chosen for another reason also: this was the first Five Year Plan in China. Communist China had used the first few years as a consolidation readjustment period. In February, 1953 she embarked upon her first Five Year Plan. Agriculture, although it received only a small portion of the budget, 6.2 per cent of the total budget³ was to carry the major burden of financing the industrialization of China. At the same time agriculture was to be collectivized. The 1952-1957 period offers an excellent opportunity to compare the attempts of the Chinese to collectivize, the results of the new land reforms in Japan, and the success of Asiatic Russia in developing her virgin soils.

On the other hand the pre-World War II period, the 1920's and 1930's are not to be considered except in instances of comparison with existing conditions today. The reasons for eliminating this period are: In Russia there was a negligible development occurring at this time, and the statistical information is not available on the little

³2,680 million yuan. Choh Mung Li, Economic Development of Communist China (Berkeley and Los Angeles: University of California Press, 1959), p. 9

production that was achieved. In China there is a difficulty in obtaining a reliable set of figures. There are good sample and regional studies, such as Buck's but these certainly cannot be considered representative of all of China because of the great differences in climate, soil, rainfall, etc. In the case of Japan, her economy was not limited to her present boundaries, but included Manchuria, Taiwan, and Korea and her agricultural planning was set against this background.

Source Data Limited

The task of collecting source data was a difficult one. In the case of Russia, it involved the inability to obtain any constant figures on production in the Asiatic section of Russia. The only source available is the official government source, which was not too consistent.

It was fairly easy to determine what crops were being grown in what oblast or kray, but the quantities were not given. The official sources would, from time to time, indicate an increase of "X" percentage in wheat, flax, or some other crop, but an absolute figure could not be determined. This means that no continuous time series can be created, not even on a percentage basis.

This same fragmentary nature of statistics is carried over into the Chinese area as well. The Chinese will give production figures on some crops in some years, but not in

other years, or for various other crops. This, again, prevents a continuous time series to be created. One inference that can be made from the sporadic nature of the information released is that the Communists actually did not succeed too well, perhaps falling far below their goal, and this is their method of covering.

Another question raised is: once one does have the statistics made available, how accurate and reliable are they? The degree of falsification is impossible to assess falsification on either a deliberate or non-deliberate level.

The non-deliberate falsification can be influenced by the statistics, and the degree of improvement in the methods in taking statistics. Thus, as inconsistencies in the method are eliminated, and the statistics become more accurate and reliable; the validity of a year-to-year comparison is lessened.

The deliberate falsification of statistics is not done to confuse the observer and the student of agriculture; it is caused instead by the pressures of the government. Production levels are set for each farm, and the peasant who does not meet his goal is penalized. To avoid such a penalty, and to be allowed to continue farming his land, the peasant may deliberately claim a higher production figure than he has obtained so that it appears that he is achieving his quota. Thus it is a case of "necessity in order to survive", and

not an attempt to falsify records in order to prove the claims of the government that "agricultural production has increased for the year by so-much per cent and that all norms for the following year have been raised by so-much."

It should be noted that on the primary level the peasant is falsifying his production figures in order to exist. As these figures are passed up, from one administrator to another, they become further and further removed from the actual scene of the "recording" and are handled by men who have less and less intimate knowledge of the actual situation. This means that by the time these figures reach the final computation stage, and are released for publication and consumption, the person (s) who are releasing this information --because of lack of proof to the contrary--actually believe that the figures they are releasing are a true and accurate picture. Thus, although the information has been falsified, it has not been done on the administrative level, and the planners of the economy actually believe that their agrarian plan is increasing each year toward the projected targets.

CHAPTER TWO

AGRICULTURAL PRODUCTION IN CHINA

Beginning with China, we find Chinese agriculture is a picture of contrasts, "one third of China is virtually a desert, and another would be of little agricultural value without the proper management of water".¹ Yet there are several rural areas with very high densities: The delta at Shanghai, the Chengtu Plain and the Canton Delta all have an excess of 2,000 people per square mile, while the Hwang Ho Delta and the Central Yangtze Plain have at least 600 people per square mile.²

The key to China's agricultural situation is in the two statements above. The first, much of China's farmland depends upon the efficient, thoughtful use of water; the other, the high density of population in many areas of farmland. A map of population density of China is almost identical with a map showing agricultural production of China.

This is significant for the agricultural production of China, for if one compares China's total agricultural production, or the per acre yield, the figures are high. In fact she is one of the leading nations in the production of

¹George B. Cressey, Land of 500 Million: A Geography of China (New York: McGraw-Hill Book Company, Inc. 1955) p. 80

²Ibid., p. 15

rice, sweet potatoes, Kaoling, soybeans, millet, barley, peanuts, and tea.³ In wheat production China has had an annual average of about one billion bushels, this ranks her with the United States and the Soviet Union in wheat production.⁴ However, if one were to compare these figures on a man-equivalent-per-farm⁵ (see map p. 16) the figures for China would be low. China has too many farmers per acre engaged in "full-time" farming. The phrase full-time is put in quotes because these people are not actually farming full time. But they do not have any other occupation, and are thus considered full time farmers. The Chinese have not developed the intensity of farming, nor the "feminine farmer" as the Japanese have.⁶

Equally important is water, or the lack of it, is the main factor in Chinese agriculture. In China, water is a variable. Over the centuries man destroyed the natural vegetation in China, and as a result has lowered the moisture storage capacity of the soil. Wells have removed even more, so that the ground water is removed faster than it can

³Ibid., p. 116

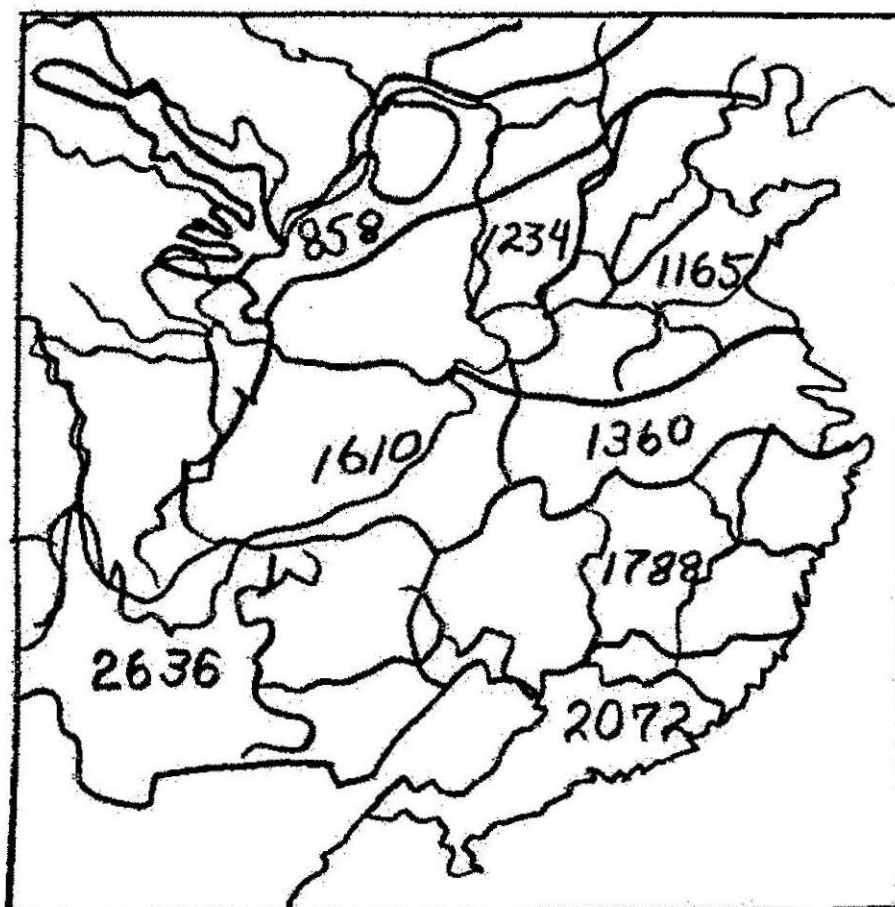
⁴Op. cit.

⁵A unit which represents the work done by the person(s) engaged in farming. It represents the number of people working an acre of farm land.

⁶For an explanation of how the Japanese have solved the part-time farmer problem see below under Japan.

DENSITY OF FARM POPULATION

(NUMBER OF PERSONS PER SQUARE MILE OF CROP AREA)



accumulate.⁷ The wheat areas of Manchuria and the Hwang Ho Basin are generally unirrigated, but elsewhere in China upwards to 90 per cent of the arable land has water added to it, and even in these unirrigated areas the crop yield could be raised considerably if more water were added.

However, on the other hand, an overabundance of water in the form of floods can kill the crops and cause famine. Since before Christ, China has worked at solving the problem of floods. Today they have a network of dikes and canals built to handle the swollen rivers yet China still has floods. This is due to either an excessive run-off, or to the breaking of the dikes. In either case the surrounding countryside is covered with water; the plains are engulfed. After the water subsides a layer of sand and mud covers everything. The peasant who escaped drowning must now rebuild his home and attempt to save his drowned crops. If a harvest is possible, it is a limited one, and famine results. In like manner, the lack of water can also cause famine; drought is more serious than flooding in several respects. When there is a lack of rain, it affects hills as well as plains.⁸

⁷The problem of water is going to become even more grave as China industrializes, for an industrial economy requires much more water, which means within a short time agriculture and industry will be competing for the available water.

⁸Whereas in flood, only the plain crops are ruined; those planted on the higher land can still be harvested.

In the case of flood, if man cannot prevent it, he can at least take measures to control the flooding. As yet, this is not true of drought. Drought, especially long periods of drought, lower the water table and remove any water accumulation that may have developed in the soil.

Now examining the basic crop production of China we find it revolves around grains and vegetables, chiefly rice, wheat, barley, millet, and soybeans. Before the War, manpower and the water problem plagued the farmer and kept him at a subsistence level. Either drought or flood prevented the farmer from accumulating any capital, which hindered him from improving his lot or his method of agriculture. In place of capital the Chinese farmer had manpower; in fact he had an excess of manpower, and this contributed to his plight. The food he grew was for direct human consumption. Land was at a premium and there was little left for the grazing of animals. In fact very little of the grain was spared for feed for animals. This meant that meat: pork, chicken, and beef, were available in very limited quantities.⁹ To supplement the meat diet, the Chinese raised fish. In 1937 China had some 400,000 acres of fish ponds which yielded 380,000 metric tons of fish. Thirteen

⁹The only real grazing land that China possesses is located in the north of Manchuria, where there is a short growing season, or in the West, where there is a lack of water.

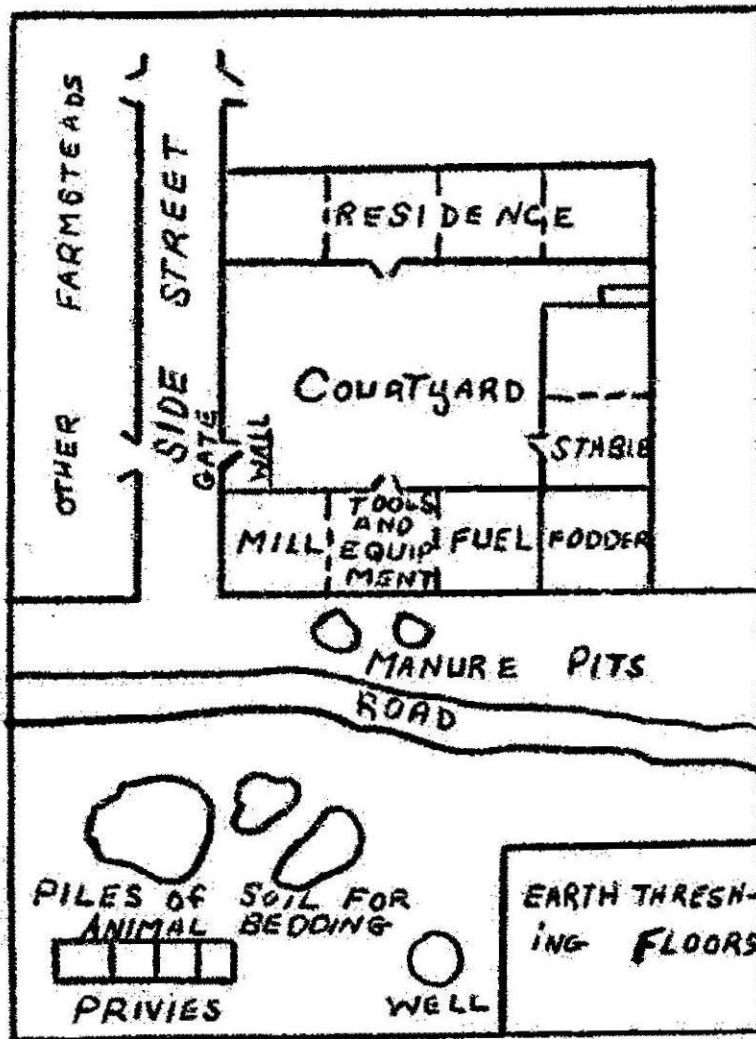
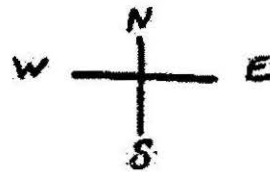
million people were involved in fish-farming, principally in the province of Kwangtung, Chekiang, Kiangsu, Anhwei, Kiangsi, Hunan, and Hupei.¹⁰

In pre-war China the peasant could not feel the impact of science, capital or new methods of farming; his land was over-crowded. There was not enough work to gainfully employ every farmer. He was not able to accumulate a surplus of capital so that he could invest in new, scientifically developed seed, or fertilizer, or machinery. Buck, in his study of farming¹¹ described what happened to the University of Nanking's experiment with farm machinery. Using a threshing machine, it was proven through cost data that the thresher could be used economically. However, the thresher could not be moved from one area to another because of lack of roads. In the one attempt that was made, the road was in such a state of disrepair that the thresher was upset and never did reach the second village.

A very serious problem of the pre-war farmer was the utilization of farmland. The farms of the north averaged five acres, those of the south 2.5 acres. This was the size of the actual farm; from this was subtracted the land not

¹⁰Cressey, p. 126

¹¹John Lossing Buck, Chinese Farm Economy (Chicago: University of Chicago Press, 1930) p. 30



A Typical Farmstead of the Better Class Farmer

only devoted to foot paths, but also that area occupied by the home, stables, granaries, privies, manure pits, threshing floor, etc. (see p. 20) This "Unfarmable-farmland" averaged .4 of an acre. To an American this does not seem to be out of line, but when figured on a percentage basis, 16% of the southern farmer's land was devoted to non-productive use.

The non-contiguous plot of land was also a handicap to the farmer. To the old Chinese peasant it had some definite advantages; it assured him of having some good soil, as well as some not so productive soil; in case of flood some of his hill land could still produce a crop even though he did lose the crop in the flood plain area. Basically it gave him a feudalistic type of insurance; by not "putting his eggs all in one basket" he was assured of at least some sort of a harvest each year.¹²

Another factor working against the pre-war peasant of China was the complete utilization of the by-products: straw and stalks were used for fuel, for animal fodder, and for

¹²The disadvantages of this system are obvious. If the farmer were able to consolidate and have all his land connecting, he would eliminate boundaries and be able to gain more crop land. He would also save time traveling from one patch of farm to the next; this would also eliminate the burdensome job of transporting his plow and other tools from plot to plot. Also with connecting plot, the farmer would be better able to control pests disease, as well as be able to fertilize and irrigate more easily.

building materials. None of the residue was allowed to be returned to the soil, (except in the case of night soil). This meant that each successive year the fertility of the soil became less and less. The use of stalks and straw as fuel was so important that after the harvest, fields were raked two and three times over in an attempt to collect every last fiber. This had to supply not only the farm people, but a large section of the city homes as well.¹³

In short, the pre-war peasant was not in too favorable a position: drought and flood threatened him constantly, he was seldom able to accumulate capital to improve his soil, seeds, or crop; his land was losing its fertility with each harvest, and as the population increased yearly, it placed larger and larger demands upon him.

During the 1920's the government felt that the solution to the problem of increased population was to put more land under cultivation. Since the available land was being used, they decided to put some arid land under irrigation: Irrigation was the panacea to their ills. They chose the northeastern corner of the Ordos Desert; invested money and engineering skill. Over a hundred thousand acres were irrigated using the latest methods of canal irrigation. But the soil was too alkaline, and the slope for drainage was too shallow; and, as a result, the water table level was raised and in some places marshy swamps developed. In other

¹³Buck, p. 167

place the capillary action of the water brought additional alkalines to the surface where the water evaporated leaving the ground caked with a hard coat of white salts. The alkalines killed off the crops, and within a few years the entire project was abandoned.¹⁴

Therefore, pre-war China turned to the importing of foodstuffs as the only way to solve her problem of finding enough food to feed all her people. In this period China averaged a yearly import of two million tons of food, half of which was rice and the other half was divided between wheat, flour, and sugar.¹⁵

A GEOGRAPHIC SURVEY OF CHINA'S AGRICULTURAL LAND

At this point it is interesting to note that China can be divided, basically, into two areas:¹⁶ the rice and the wheat areas. The wheat section lies in north China and is determined by its soil; a pedocal, that is, a lime-rich calcium. South China has the leached soil, lime-poor pedifer which is propitious to rice. (see maps, pages 24 and 25) The pH of the South is 6.4 or under, while that of the north is between 7.4 and 8.5.¹⁷

¹⁴Cressey, p. 93 ¹⁵Ibid., p. 101

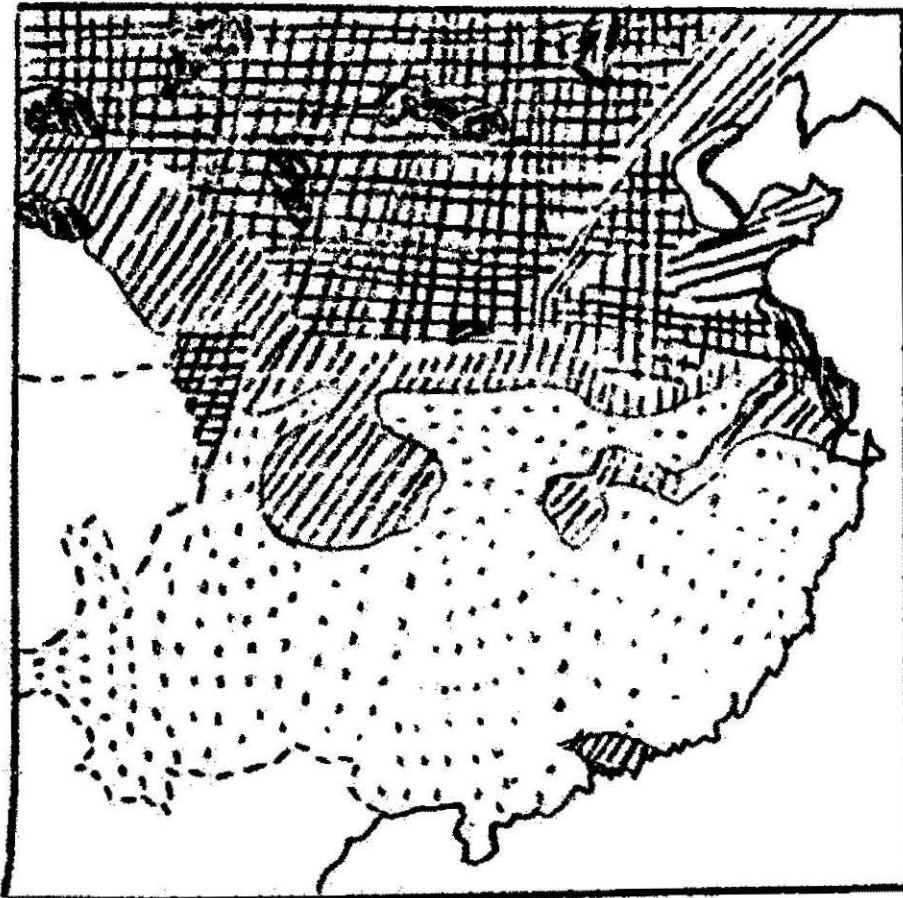
¹⁶See p. 19

¹⁷See p. 20

THE TWO MAIN AGRICULTURAL REGIONS
OF CHINA



THE GENERAL DISTRIBUTION
OF
ACID, NEUTRAL AND ALKALI SOILS IN CHINA



LEGEND

Calcium Soils

Leached Soils

Very alkaline solids,
pH. 8.6 and above



Neutral or slightly acid
Acid soils, pH. 6.4-7.3



Moderately alkaline
soils pH. 7.4-8.5



Acid soils
pH. 4.0-6.4



Within the basic division of north and south, or pedocal and pedifer areas. China can be broken down into smaller basins for a more detailed study of the produce raised. Namely:

Szechwan: Average yearly precipitation 40 inches. Little snow or frost, 11 months growing season.

Summer crop: In the lowlands - rice, in the hills sweet potatoes.

Winter crops: Wheat

Secondary crops: Sugarcane, rapeseed, corn and millet, silk, tea, citrus fruits, and tung oil. Also some tobacco, cotton and opium.

South Yangtze Hills: Average annual precipitation 50 to 70 inches minimum ten months growing season, permits double crop.

Main crop: Rice (this is a rice surplus area)

Secondary crops: Barley, soybeans, sweet potatoes, wheat (winter), rapeseed; plus some buckwheat, cotton, kaoliang, tea, peanuts, sesame, tobacco, peas, and oranges.

Yangtze Plain: Annual rainfall 50 inches

Main Crop: Silk

Secondary crop: Peanuts, sesame, soybeans, cotton, vegetables.

Winter crop: Wheat, barley, rapeseed, broad beans, vegetables.

Southeastern Coast: Annual rainfall 50 to 80 inches.

Main crop: Rice, sweet potatoes, tea

Canton Hinterland: Annual rainfall 50 to 70 inches.

Main crop: Rice (accounts for 90 per cent of the crop area)¹⁸

Secondary crops: Sweet potatoes, sugarcane, barley, corn, silk, tea, cassia, tobacco, ginger, and fruit--oranges, figs, tangerines, litchis, bananas, and pineapples.

Yunnan Highlands: Annual rainfall varies considerably from 30 to 120 inches, depending upon the location, (this is due to the topography.)

Main crops: Rice and opium

Secondary crops: Corn, winter wheat, broad beans, soybeans, barley, tea, tobacco, fruits and nuts--peaches, pears, apricots, persimmons, oranges, lemons, walnuts, and chestnuts.

Loessland of the Hwang Ho Basin: Annual average rainfall 15 inches.

Maincrops: Wheat, miller, kaoliang

Secondary crops: Irish potatoes, cotton, tobacco,

¹⁸This is the only region in China that produces two successive rice crops. Other areas of China have two crops, but the second crop, the winter crop, is usually wheat or barley. There are also some areas in China, especially along the Yangtze, where there are two rice harvests, but this is done by alternating rows, and a second planting a few weeks after the first planting.

opium, and fruit--apricots, peaches, melons.

Yellow Plain: Annual average rainfall 25 inches, but it is very unreliable. In the past it has ranged from over 30 inches in a year, to less than one inch.

Main crops: Wheat, kaoliang, millet, corn soybeans, sweet potatoes, hemp, and cotton, and assorted vegetables. There is a winter crop of wheat and barley.

Shantung Hills: Annual average rainfall is 30 inches.

Main crops: Millet, kaoliang, peanuts, and cotton.

Winter crops: Wheat and barley.

Secondary crops: Silk, sweet potatoes.

Manchurian Plain: Average annual rainfall 15 to 30 inches depending on location, (30 inches in the eastern portion, and decreasing to 15 inches in the western area.)

Main crops: Kaoliang, soybeans, millet, and wheat

Secondary crops: Corn and tobacco.

Frost from October to April, and frozen ground from November to March prevent a second, or winter crop.

Eastern Manchurian Uplands: Average annual rainfall 30 to 40 inches.

Main crops: Kaoliang and soybeans.

Khingan Mountains: Average annual rainfall 10 to 15 inches.

Main crops: Hay and cattle, (very limited agriculture.)

Jehol Mountains: Average annual rainfall 15 to 30

AGRICULTURAL AREAS OF CHINA



inches depending on topography. Agriculture is practically non-existent because of the deforestation that took place during the 1920's. Trees were cut down indiscriminately and within a few years the rains had washed away the thin top soil and the land was abandoned.

Sinkiang: Average annual rainfall is less than 5 inches. Because evaporation exceeds precipitation the only possible method of farming is oasis farming, where the farmer utilizes the underground irrigation canal.¹⁹

Main crops: Wheat, corn, rice, kaoliang, and barley.

Secondary crops: Cotton, grapes, melons, and vegetables.

These are products China does raise, but she still is confronted with the serious problem of over-population and insufficient productivity.²⁰

In the South, China is overcrowded, and it is here that the smallest farms are found. In North China the land is less crowded, but it is also less productive. The density is even less in Manchuria, and it is here that the farmer is able to use machinery and produce a food surplus. With the exception of Hunan, no other area of China is able

¹⁹This system is known as kariz, karez, qanats, saqi, or foggara. Essentially it is a subterranean canal that has been tunnelled into an alluvial fan to tap its water table.

²⁰See map, p. 29

to produce a surplus; the remaining areas produce just enough for self-subsistence, or less. As a result, before World War II, China imported, on the average, two million tons of food a year.²¹

²¹Cressey, p. 101

CHAPTER THREE

THE CHINESE FIVE YEAR PLAN

By the end of 1949 the Communists had gained control of the Chinese mainland. From 1949 to 1952 China went through a period of "rehabilitation". The role of agriculture in this period was "to restore production to the prewar level within three years."¹ From 1937 to 1949 the agricultural production, according to the Chinese Communists, is due to the capitalistic adventure of the Kuomintang and their imperialistic foreign partners. The Communists' evaluation of the 1937 to 1949 period can best be exemplified by:

Record annual cotton production before 1937... was 850,000 tons, but by 1949 it had dropped by almost half to 445,000 tons. The output of silk, tea, tung oil, mulberry, and fruits fell from 50 to 80 per cent. Moreover, all produce deteriorated in quality, and China, although an agricultural country had to import a great deal of grain and cotton.²

The loss in the means of production, especially of livestock and farm implements, was extensive. The country lost 16 per cent of its livestock and in some places where damage was even more serious the decline even reached 40 per cent of the pre-war total. Thirty per cent of the principal farm implements, like plows, and harrows, had been destroyed; the peasants generally kept 30 per cent less manure as fertilizer and used 50 per cent less commercial fertilizer. All these

¹Agriculture in New China, (Peking, China: Foreign Languages Press, 1953), p. 2

²"A Sketch of Chinese Agricultural Geography", People's China, (February 1, 1957), p. 12

factors added up to the decline, year by year, in agricultural production, in crop area, and in crop yield.³

The Chinese Communists were not naive enough to overlook the factors of a war with Japan from 1937 to 1945, and the resulting Civil War from 1945 to 1949. It was obvious that any war fought on China's homeland was bound to decrease her farm production. They viewed the war period as follows:

When the People's Republic of China was established in 1949, its rural economy was found in a state of ruin, and agricultural production had dropped about one quarter as compared with the pre-war level because of destruction caused by the Japanese invaders and Chiang Kai-shek's bandits since the out break of the War of Resistance in 1937. By 1949, the total grain production had dropped to 74.6 per cent of the pre-war level; wheat to 71 per cent, rice to 75 per cent, cotton to 52 per cent, and tobacco to 63 per cent. It should be pointed out that the pre-war level of agricultural production was not high as the reactionary Kuomintang government, representing the interests of the feudal and comprador ruling clique, did nothing to develop agriculture; foodstuffs and cotton were imported.⁴

This was the situation as the Communists analyzed it. In the period of rehabilitation (1949-1952) farm production had to be increased; their solution was "to turn the farmland back to the peasant".

In old China, the poverty and sufferings of the broad peasant masses stemmed from the feudal system and the rule of foreign imperialism. The greater

³Agriculture in New China, p. 5

⁴Ibid., p. 1

part of the land belonged to the landlords. The landlords were extremely cruel in oppressing and exploiting the peasants. Although the peasants toiled and sweated all year around, they went hungry, as the major portion of their income was appropriated by the landlords as rent for the land.⁵

Since the beginning of 1950 the People's Republic has been engaged in "land reforms"; a more even and equitable distribution of the land. The rich peasant who hired laborers was to surrender his excess land⁶ and this land was to be distributed to the poor peasants "no longer have to pay rent to landlords".⁷ Now that the peasants are landowners, the Communists claim that he, the peasant, is a hard diligent worker:

The peasants . . . have become masters of their land, without the need for landlords. In consequence, they work with greater zeal, producing bigger and better crops as time goes on.⁸

The ability to work his own land has produced miracles in the field of agricultural production:

Thanks to the Government's support and the peasants' efforts, the depleted means of production were restored and farming techniques improved.⁹

⁵Ibid., p. 3-4

⁶Excess land being any land that the farmer could not manage by himself; he was allowed to keep all lands that he himself could farm.

⁷Ibid., p. 4 ⁸Ibid., p. 5 ⁹Ibid., p. 2

The 1952 production of grain and chief industrial raw materials surpassed all pre-war levels. With the exception of tea and silk, the production of which has not yet been completely restored because of heavy losses, all the other chief cash crops have surpassed pre-war levels. The following figures will illustrate increases in the production of some of China's agricultural products.

	<u>PRE-WAR</u>	<u>1949</u>	<u>1952</u>
GRAIN	100	74.6	116.9
COTTON	100	52.4	152.3
TOBACCO	100	63.9	253.3

. . . this increase in agricultural production has enabled us to export part of our grain to our neighbors, India and Ceylon, in time of need.¹⁰

Just what evidence is available to back up these Communists' claims? Just how true are their statements? Reliable information is not available on the question of how many farmers were tenants, "land-barons", etc., for the 1949 period. However, Buck¹¹ in his studies revealed that 75 per cent of farmers owned their farm land, and only 17 per cent of all the peasants were full time tenants. Cressey states that:

Prior to the arrival of communism, most farms were owned by those who tilled them. Tenancy has been a serious problem in some areas but not in the country as a whole. It is well to stress this point, for there is widespread misinformation on the subject.¹²

¹⁰Ibid., p. 3

¹¹John Lossing Buck, Land Utilization in China (Nanking: University of Nanking, 1937)

¹²Cressey, p. 108

The University of Nanking, after studying farm problems in China suggested that tenant farming may not be an evil at all:

. . . the food production on tenant farms per farm, per man equivalent and per person on the farm was distinctly greater for tenant farms than for owner farms.

Man-labor and animal-labor efficiency is also greater on tenant than on owner farms, chiefly because of large farms, but partly because the tenant who has less wealth than the owner, works harder than the owner.¹³

Comparative studies of the farm business of tenants and owners show that, as a rule, tenants have larger farms than owners. In China, at least 80 per cent of the farms are too small to be economic units¹⁴

Judging from these conclusions, the tenant farmer is more efficient, and this can be attributed to the fact that he has enough land to utilize effectively. The majority of the farmers, (80 per cent) have a plot so small that they literally do not have enough work to keep them busy producing a crop. Buck also noted this point.¹⁵ In his study of 2866 farms in seventeen localities and seven of China nearly half of all the farmers had some income

¹³Department of Agricultural Economics, Economic Facts, Prepared by the College of Agriculture and Forestry (Chengtú-China: University of Nanking), No. 34 (July 1944), p. 487

¹⁴Ibid., p. 485

¹⁵Buck, Chinese Farm Economy, p. 97

from sources other than the farm. The farm was too small to occupy the farmer's time profitably, constructively.

From the evidence available, it would seem that the majority of the farmers in China owned their own land, but the plot of land was not large enough for them to make a living from it.

Prior to 1950 the Communists had announced that during the period of rehabilitation they would institute land reforms and the poor peasant would receive his share of the land; the rich peasant was to be eliminated. This was the theory: what happened in practice was just the opposite. In Section Two, Article 6 of the Agrarian Reform Law of the People's Republic of China¹⁶ it states that:

Land owned by rich peasants and cultivated by them or by hired labour, and their properties, shall be protected from infringement.

This is because China does not have social insurance for unemployed persons Moreover, much of such land has been bought by the individual's own labour. . . . better protection can then be given to the middle peasants

In short, that is to say, the Communists had attempted two years earlier to confiscate the holdings of the rich peasant but the chaotic conditions arising from greed, waste and destruction hurt the Communist cause (economically) to such a great extent that the whole movement was placed in

¹⁶Adopted by the Central People's Government Council on June 28, 1950.

jeopardy. The Communists had to make a retreat.

This leads to the next question: Is the Communist program aimed at satisfying the needs of the peasant-farmer? China is overwhelmingly peasant; is it the goal of Communism, and its successive five year plans, to create a better world for the peasant? A survey of China's budget allocation for the first five year plan, the quotations of Mao, and of Stalin, can give a good indication of the goals of Chinese Communism.

Mao Tse-tung observed in the late 1940's that there were certain "leftist tendencies" which had to be corrected:

In many places labouring people who did not engage in feudal exploitation or only engaged in slight feudal exploitation were erroneously placed in the landlord or rich-peasant category, thus the area of attack was erroneously expanded, forgetting such an extremely important strategic principle as the fact that it is impossible and necessary for us in work of agrarian reform to unite about 82 per cent of rural households . . . to establish a united front against the feudal system.¹⁷

Mao realized that farm production, if it is to increase and meet the ever expanding population of China, must rely on the rich-peasant farmer who uses the tenant farm, for this is the most effective means of farm production in China at the time. To allow the practice to continue, Mao used the dialectic that it is not the "man" (rich-peasant) we are

¹⁷Mao Tse-Tung and Liu Shao-chi, Significance of Agrarian Reforms in China, (Bombay: People's Publishing House, Ltd., 1950), p. 3

against, it is the system (feudal exploitation); therefore if we can bring an end to the system we will have achieved our objective.

Feudalism is the ally of imperialism and bureaucratic capitalism and the foundation of their rule. Therefore, the new reform of the agrarian system is the main content of China's new democratic revolution. The general line of the agrarian reform is to rely on the poor peasants, unite with the middle peasants, to eliminate systematically and discriminately the feudal system of exploitation, and develop agricultural production.

One of the tasks of the agrarian reform is to satisfy the demands of certain middle peasants. Part of the middle peasants must be permitted to maintain a portion of land more than the average obtained by the poor peasants in general. Our support to the peasants' demands for equal distribution of land is to facilitate the arousing of the broad masses of peasants to speedily eliminate the system of land ownership of the feudal landlord class, and is not at all an advocacy of equalitarianism. Whoever advocates absolute equalitarianism is wrong. . . . This sort of ideology is reactionary, backward, and retrograde in nature¹⁸

In the above quote, Mao admitted that the peasants are not going to be treated equally; the whole idea behind the government's supporting the peasants' demand for redistribution of land is because this demand is at the present useful in helping the Communists gain the objectives are after: the elimination of the people with power, the taking away of their lands. Mao stated that "the target of the agrarian reform is only and must be to end the feudal

¹⁸Ibid., p. 10 [The underlining is mine.]

system of exploitation on the part of the landlord class and the old-type rich peasants¹⁹ The implication here being that rich peasants are acceptable, (as was indicated in the Agrarian Reform Law of 1950) so long as they conformed to the Communist power elite.

What is to happen to the "new peasants of China"? To achieve their ends, the Communists cannot allow the small farmer to remain. The reason for this is obvious; it is the same reason (see above) that the Communists gave for the increase in agricultural production after 1949: "the peasants have become masters of their land . . . they work with greater zeal" The peasant has become a land owner, but more than that, he has now become a capitalist. He is independent. And there is no place for an independent capitalist in the Communist society. For an analysis of the official communist viewpoint see J. Stalin's commentary: Problems of Leninism. In this he expressed the official party line; that which the Communists of China follow:

. . . small peasant economy . . . at the bottom, the same type of economy as capitalist economy, for it rests on the private ownership of the means of production. (thus) . . . by nature the peasantry is non-Socialistic.²⁰

¹⁹Ibid., p. 11

²⁰p. 305

. . . the difference between the peasant and the proletariat is basic . . . it is a contradiction.²¹

Why is this a contradiction? Stalin explains:

. . . because the peasantry is a class whose economy is based on private property and small commodity production. Because as long as it remains a peasantry carrying on small commodity production, (it) will breed capitalists in its ranks, and cannot help by breeding them. Constantly and continuously.²²

To eliminate this the Communists showed where being a land owner was only a step up the progressive ladder to security and life-long happiness.

But small-scale farming cannot save the peasants from the threat of poverty and bankruptcy. In order to raise the level of agricultural production continuously so that the peasants will forever be freed from this threat, the People's Government has spared no efforts in promoting and leading the movement for mutual aid and co-operation in agricultural production, in accordance with the Common Programme which stipulates in this connection as follows:

The People's Government shall also guide the peasants step by step in the organization of various forms of mutual aid in labour and co-operation in production, according to the voluntary principle and the principle of mutual benefit.²³

The peasant is being urged to consider individualism as only a temporary measure, Why? :

If this peasant economy "(as it stands now)" is

²¹p. 170

²²p. 257-258

²³Agriculture in New China, p. 5

allowed to develop, the result will be that a small number of peasants will become rich peasants, while the majority will again go bankrupt; agricultural production will stagnate, and the masses of peasants will continue to live a poor hard life. Chairman Mao has taught us: For a thousand years the peasant masses have lived in a system of individual economy. Each household constituted a production unit. This scattered individual production has been the economic foundation of feudal rule. It has caused the peasants to suffer constant poverty and hardship. The only way to put an end to such conditions is gradual collectivization.²⁴

These are the reasons given to the peasant; but are they the real reasons? Mao stated in 1948:

. . . all Party comrades must firmly grasp the general lines of the Party, which is the line of the new democratic revolution. The new democratic revolution can be and must be no other, revolution than the revolution of the great masses of the people, led by the proletariat, against imperialism, feudalism, and bureaucratic capitalism. This is today in this revolution no other class and political party can act as leader, but the proletariat and the Chinese Communist Party.²⁵

In this statement Mao speaks of the proletariat, and no other class, as the leaders. What of the peasant? Is not this statement inconsistent with others he has made, such as: "The development of agricultural production is the direct aim of the agrarian reform."²⁶ This is not a

²⁴Ibid., p. 12

²⁵Significance of Agrarian Reforms [Underlining is mine.]

²⁶Ibid., p. 12

contradiction; the agrarian reform is just one part of the over-all picture:

The elimination of the feudal system and the development of agricultural production lay the foundation for the task of developing industrial production and transforming an agricultural country into an industrial country: this is the ultimate goal of the new democratic revolution.²⁷

According to Mao, the main aim of the People's Republic was to build China into a great industrial nation and the fate of the peasant is incidental to the over-all scheme; he is important only because of the fact that he produces the food and some of the raw materials that are to be used by the factory worker.

The State Investment Plan²⁸ for the First Five Year Plan, 1953-1957, shows that 26,400 million of yuan are to be spent on industry; and only 2,680 million yuan are to be spent on agriculture--which includes water conservation and forestry. Thus agriculture, the "foundation stone of the economy" receives only 6.2 per cent of the total budget, while industry receives 61.8 per cent of the total.²⁹ This plan also calls for a net investment of 10,000 million yuan from the farming households; of which 6,800 million yuan

²⁷Ibid., p. 13

²⁸See Table I, p. 44

²⁹Choh-Ming Li, Economic Development of Communist China (Berkeley: University of California Press, 1959) p. 9

TABLE I

THE STATE INVESTMENT PLAN, 1953-1957

<u>Field of Investment</u>	<u>Amount</u>	
	In millions of Yuan	In Per Cent
1. Industry (including mining, electric power)	26,400	61.8
2. Agriculture, water conservation, forestry	2,680	6.2
3. Transportation, communications	7,310	17.1
a. Railways	5,670	13.3
b. Others	1,640	3.8
4. Education, culture, public health	3,070	7.2
5. Municipal utilities	1,600	3.7
6. Trade, banking, commodity reserves.	1,220	2.9
7. Working Capital, extensive repairs, etc.	460	1.1
<hr/>		
TOTAL	42,740	100.0
To be completed within five years	42,740	100.0

is to be fixed capital and 4,000 million yuan is to be working capital.

At its inception, there was no mention in the plan of the collectivization of farms. The farmer was urged to join a primary producers co-operative, (see above) for his own benefit, so that the state could aid him in financing, or in irrigation, use of machines, etc.; but none of them were actually requested to join collectives. This was a direct contradiction to what was happening in fields of trade and industry. On page 43 note that by 1955 most of the wholesale, retail, and industrial sectors were socialized, yet only 14.3 per cent of the farms were in collectives, sovkhosi, or kolkhozi.

Immediately after the fall harvest of 1956, 88 per cent of the farms were collectivized, (See Table II, page 46). They did not go through the transitory stage of first becoming primary producers' co-operatives; these farms proceeded directly to the collective stage:

. . . turned into what Peiping prefers to call the "developed" type of agricultural producers' co-operatives, where land, farm tools, and draft animals are collectively owned, and the members paid according to the number of their workdays with the co-operative. No compensation was made to the previous owner of the land, although for the farm tools and animals an amount to be decided upon by the co-operative might be paid to him in installments within a period of generally not over three years. Each member household was allowed to retain a small lot of land for its own use, the amount not to exceed 5 per cent of the per-capita

Table II

SOCIALIZATION OF TRADE, AND INDUSTRY

TRANSPORT AND AGRICULTURE

1950 - 1956

(In per cent)

<u>ECONOMIC SECTORS</u>	<u>1950</u>	<u>1952</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>
1. Wholesaling volume:					
Share of private sector	76.1	36.3	4.4
2. Retailing volume:					
Share of private sector	83.5	5.78	17.5	3.0	...
3. Gross industrial product:					
a. Share of private factory	48.7	30.7	13.2		10.0
b. Share of individual handicraftsmen	23.0	20.6	16.1	1.3	11.1
4. Water transport (steamship and barges only):					
Share of private sector	...	31.2	1.8		...
5. Motor transport:				5.0	
Share of private sector	...	49.5	18.0		...
6. Agriculture: Percentage of farming households organized in:					
a. Primary producers co-operatives	---	0.1	14.2	8.0	33.3
b. Collectives	---	---	---	88.0	0

land area of the co-operative. With the party workers in charge of the collectives, the state thus gained complete control of the broad agricultural base of the economy.³⁰

The reasons for the strong collective drive in 1956 were two-fold; one, the state needed more complete control over the farm produce, and two; if China was to keep up with the expanding population and her trade commitments, production would have to be increased. What exactly does this mean?

Since 1953 the Communists had been expanding their control over the consumer goods in this instance, grains and edible vegetable oil. This was done under their "planned purchase and planned supply" whereby the state set up quotas in an effort to leave little surplus in the hands of the farmer. In the fall of 1954 cotton was added to this list.

Beginning with the 1953 "plan", the urban areas were put on a food rationing basis and the state opened thousands of government food markets; it was planned that the farmer would sell his quota as well as deliver his "required allotment" of grain. The farmer delivered the required grain, but he found a ready black market for his surplus grain, and by August of 1955 the state was forced to institute a nation-wide, food-rationing system. The next logical step was the collectivization of agriculture which came after

³⁰Ibid., p. 17

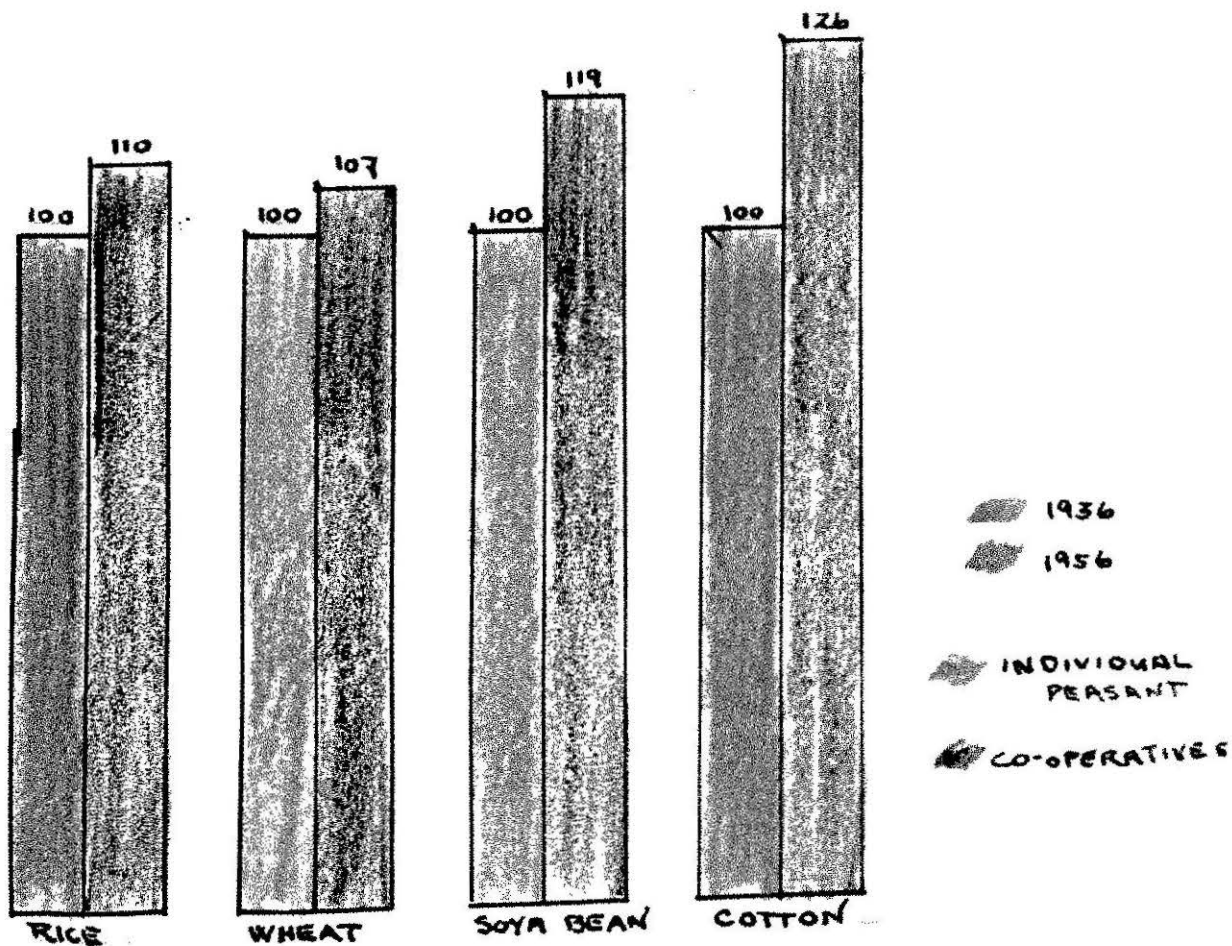
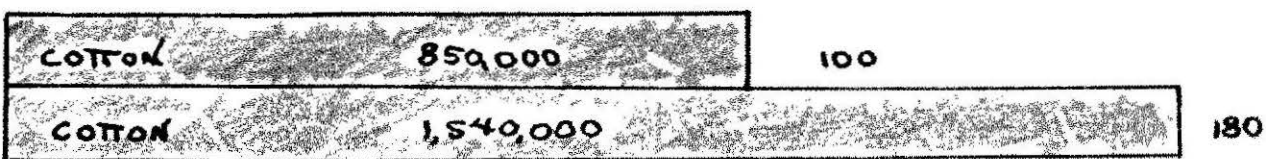
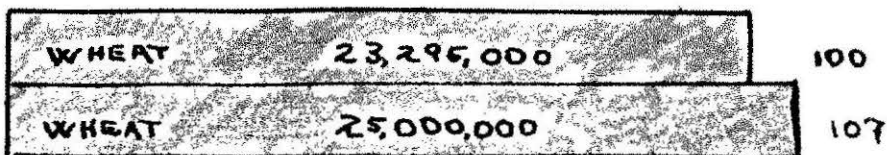
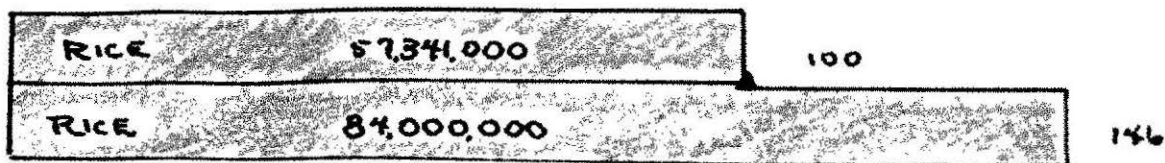
the 1956 harvest.

How successful was this 1956 harvest? The Communists' statistics, although incomplete, indicated great gains; 84 million tons of rice, 25 million tons of wheat and 1.5 million tons of cotton.³¹ These figures compared favorably with the 1936 (the last harvest before the War of Invasion and the Civil War) production figure: (see page 43) the rice harvest showed an increase of 27 million tons over the 1936 rice crop, wheat in 1956 increased by almost 2 million tons, and the 1956 cotton crop nearly doubled its 1936 counterpart. This appeared as though the Communists had made great gains; but in 1936 population was 458 million people, while the 1956 population is estimated at approximately 550 million people.

If these figures are considered on a percentage basis, the gains were significant: population increased 20%, rice 47.3%, wheat only 8.7%, and cotton 81%. Thus rice and cotton increased at a greater percentage than the population, but wheat did not. However, if one figures these production figures on a per capita basis, the 1956 increases do not appear to be as great:

³¹Hua Shu, "Growth of Agricultural Production" People's China, (Vol. 4. February 16, 1957), p. 5

COMPARISON OF AGRICULTURAL PRODUCTION, 1936 and 1956



<u>COMMODITY</u>	<u>1936 PER CAPITA</u>	<u>1956 PER CAPITA</u>	<u>NET GAINS* LOSS-</u>
RICE	.124 of a ton	.152 of a ton	* .028 of a ton
WHEAT	.051 of a ton	.045 of a ton	- .006 of a ton
COTTON	.0018 of a ton	.0028 of a ton	* .0010 of a ton

According to the Communists' own admission the year 1952 was a good year, 1953 was a normal year (but production was up 3.2 per cent over 1952 which was a good year); 1954 was a poor year,³² yet production increased 3.3 per cent. The same was true of the 1955-1957 period. The 1955 harvest was a bumper crop, the 1956 harvest was poor, yet showed an increase of 5 per cent.

Perhaps this increase could be due in part, or in whole, to three factors:

(1) The farm area was going through a period of transition from individual ownership, to co-operative, to collective. This could prove the Communists' contention that the collective farm is a more efficient method of producing crops than the individual holding, or it could mean that as the state gains more and more control over the means of agricultural production the collection of data becomes more and more complete.³³

³²Due to flood, heavy storms and drought in 26 of China's provinces.

³³The method of collecting data before the communists was a sampling of "typical" areas and considering this as representative of the whole. Under the collective system however, each farm unit must report. This leads to a more complete coverage in compiling data.

(2) The 1956 and 1957 figures could be an example of how the use of mechanization (through the development of tractor stations) chemical fertilizers, insecticides, etc., as well as the elimination of "parcels" of land,³⁴ would mean the farmer had more time to spend on cultivating the crop, and the land once used for boundaries between small farms, could now be devoted to cultivation.

(3) The Communists had put more land under the plow,³⁵ and this would allow for a greater annual harvest.

THE IMPORTANCE OF THE AGRICULTURAL PROGRAM TO CHINA

Accordingly, it cannot be unduly emphasized, how important it is to China to have her agricultural program succeed. It is more serious to the Chinese than to any other nation perhaps, because the success of China's industrial revolution is dependent upon it. The Chinese have adopted the method of "paying for industrialization" which the Russians used. In the 1920's the Russian

³⁴Similar to the strip farming in Europe, where the peasant has a section of good land, and a half mile away a section of hill land etc., his land is not contiguous, which means that much time is spent travelling from one area to another.

³⁵People's China for April 1957, claims an increase of 32,940,000 acres of irrigated farmland in China from 1950 through 1956, as well as the opening up of virgin farmlands in such areas as Sinkiang Province by the People's Liberation Army.

Communists organized the peasant to pay for the industrialization of the Soviet Union.

The Communists criticized the "colonial exploitation" that the "capitalists" of the West indulge in; both in small, "backward", underdeveloped areas of the world, as well as the "exploitation" of the worker in the factories at home. However, the Communists' "pay-for-itself--industrialization" program is a colonial exploitation; but instead of the worker, it is the farmer that is exploited. The farm is the source of the raw materials that are to be used in the newly developed industries. These raw materials are obtained at a very "cheap" price because the price of the product is forced down by the state. The farmer is also the market for the industrial goods. In this instance the farmer provides actually "two" markets; one is for consumption goods, the other is for the machines that are manufactured.

Thus the farmer is the real key to the success of the industrialization program. He supplies the raw materials at a very low price, and then provides the market which will buy the manufactured goods at a high price. If the farmers cannot consume the entire production of the manufacturers, the state can always collectivize more of the land, establish more communes, and thus force consumption.

One of the most important areas of the peasants' financing of the industrialization of China is in the area of

overseas payments for machines, equipment and technicians. The Chinese do not have a very extensive industrial complex. The major share of their industry, up until 1950 has been in Manchuria; and most of this was developed by the Japanese during their period of occupation. Thus China is starting from scratch; she cannot meet her own needs; heavy industrial machines, technical assistance, etc. must all come from without. China must import this, and to do so, she needs something to exchange--something to export. Since her only commodities are agricultural products, once again the burden of payment is placed upon the farmer. Not only must he produce enough food to feed himself and his fellow countrymen in the cities, but he must supply the factories with raw materials, as well as grow a surplus of foodstuffs to be used as export items that will pay for the industrial materials that China must import so that she may industrialize.

How important is the agricultural program to China? She cannot industrialize without it; it is the farmer who is going to pay for the industrialization of China. If he fails, the industrialization program fails too: the populace will starve.

CHAPTER FOUR

CURRENT AGRICULTURAL PRODUCTION IN JAPAN

Second in this study, we come to Japan which faces some of the same problems as China. Japan is unable to raise enough food to support her population; for almost thirty years she has had a government controlled economy. For many years the government has supported the agricultural economy; since the turn of the century the government has aided the farmer through the development of better seeds, chemical fertilizers, etc. Half of the agricultural budget was spent on farm subsidies. The Japanese government is in the agricultural field and will not be able to get out even if it wanted to. It is the only organization that has the size to tackle the problems of reclamation, irrigation, drainage, etc. on a scale large enough to attain efficient results. Neither the peasant, nor private corporations have enough capital to do so.

The Aichi Irrigation Public Corporation, the irrigation project at Chiba, the drainage project at Niigata, and the reclamation work in Hachirogata-lake are all examples of government activity in agriculture; all too large for any individual or corporation.

Economically, the agricultural picture is of tremendous importance to the entire Japanese economy. Japan

is similar to China in this respect: the more successful the peasant-farmer is, the larger his annual harvest, the more successful the country's industrial economy can become. Also, both peasants, Chinese as well as Japanese, are faced with the problem of population expansion. Each year an additional twelve million Chinese are added to the total population figure: in Japan it is at least one million. This means that each year the peasant-farmer must not only produce as much food as he did last year, regardless of flood, drought, insects, etc., but he must increase his production if he is to supply people with the same per-capita amount of food as they had last year. This means an increase in the amount of foodstuffs produced every year. The farmer can increase his total production by one of two methods; increasing the size of his farm, or increasing the per acre yield. In both countries the amount of virgin land is limited; the farmer must find the solution--if he is to find it--in an increase in the per acre yield.

The analogy between the peasant-farmer in China and Japan continues into the field of exports. Japan is an industrial nation; but she does not have the raw materials to supply her industrial needs. This means that Japan must import raw materials, process them, ship the finished products to a foreign market, and sell them at competitive prices. An example of this is the cotton textile industry. Japan is

the leading producer (as well as exporter) of cotton textiles; yet Japan does not have any significant domestic production. This means that she must import her entire supply of cotton. The textile industry depends upon this imported cotton to keep its mills running.

Thus, Japanese yen are being spent on importing raw cotton. But if Japan must import food also, Japanese yen are also being spent for foodstuffs. This means that when Japan sells her textiles overseas, if she is to maintain a balanced economy, she must make up the deficit in yen through the sale of the manufactured goods.

If Japan cannot find foreign markets for her finished products she cannot pay for the raw materials imported. This is further complicated by the fact that Japan cannot raise enough food to feed her population: she must import food. Therefore, for Japan to balance her foreign trade--imports vs. exports--she must sell her finished manufactured goods abroad (at a competitive price) at a profit large enough to pay for the imported food that Japan needs to feed her populace. Thus it is to the government's best interest to see to it that the Japanese farmer produces as much of the food as possible, and as efficiently as possible, so that the manufacturer of Japan can be as competitive as possible on the foreign market.

Only a small percentage of the land in Japan can be

classified as arable, but from tables III, IV, V, and VI on pages 58-61, several conclusions can be drawn. The heavy precipitation and the high summer temperatures permit rice cultivation throughout Japan.¹ In the southern area, the temperatures are warm enough in the winter to permit a second, or winter, crop of rice.

Rice is the basic food crop of Japan. Although sweet potatoes can yield three times as many tons per hectare as rice, and the Irish potato four times as many tons per hectare as rice; rice gives three times as many calories per 100 grams as sweet potatoes and over four times as many as Irish potatoes. (see Tables VII and VIII, pages 63-64)

The Japanese farm is organized around the family. This family is the production unit of Japan; it supplies the nation with food, and it also supplies the population increase. Each year some 440,000 young men and women leave the farm to seek a living in the cities. They satisfy expanding industry's need for more workers.

The Japanese method of farming depends upon a high degree of personal attention to each individual seedling. The Japanese farm was similar to the Chinese farm before the collectivization of 1956; the farm family consumed most of the production. The number of independent farms is large,

¹Including southern Hokkaido

Table III MONTHLY MEAN AIR TEMPERATURES, 1886-1940

Region Location	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yrly. Aver.	Num. of yr. Obser.
	<u>Centigrade</u>													
1. Kagoshima	6.9	7.4	10.7	15.4	18.9	22.4	26.2	26.8	24.2	19.0	13.7	8.9	16.7	54
2. Fukuoka	4.9	5.1	8.1	13.1	17.2	21.4	25.8	26.4	22.2	16.3	11.5	7.1	14.9	49
3. Kochi	5.3	6.0	9.4	14.2	18.2	21.6	25.3	26.1	23.2	17.8	12.4	7.4	15.6	54
4. Hiroshima	3.9	4.3	7.4	12.8	17.2	21.3	25.6	26.8	22.9	16.8	11.0	6.2	14.7	54
5. Osaka	4.2	4.4	7.5	13.2	17.7	21.9	26.2	27.3	23.4	17.2	11.6	6.7	15.1	54
6. Nagano	-1.8	-1.2	2.6	9.5	14.5	19.1	23.3	24.2	19.8	13.0	6.9	1.2	10.9	51
7. Nagoya	3.0	3.7	6.9	12.9	17.4	21.5	25.7	26.5	22.7	16.4	10.6	5.4	14.4	49
8. Tokyo	3.0	3.8	6.9	12.6	16.7	20.6	24.4	25.7	22.0	16.1	10.7	5.4	14.0	54
9. Niigata	1.4	1.5	4.4	10.2	14.9	19.5	23.9	25.7	21.5	15.4	9.7	4.3	12.7	54
10. Sendai	-1.7	-1.3	2.0	8.9	14.4	19.0	23.1	24.1	19.4	12.5	6.5	1.1	10.7	45
10. Aomori	-2.8	-2.3	0.6	6.9	11.8	16.3	20.8	22.8	18.5	12.0	5.9	0.1	9.2	54
11. Sapporo	-6.3	-5.3	-1.6	5.3	10.5	14.9	19.3	21.0	16.3	9.8	3.2	-3.1	7.0	51

Source: Weather Bureau Records

Table IV AVERAGE DAILY MAXIMUM AND MINIMUM TEMPERATURE
1886 - 1940

Region Location	<u>Centigrade Minimum</u>											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1. Kagoshima	2.4	2.9	5.8	10.6	14.3	18.9	22.8	23.3	20.5	14.6	8.9	4.1
2. Fukuoka	0.9	0.9	3.1	7.4	11.5	17.1	22.2	22.5	18.3	10.9	6.3	2.7
3. Kochi	0.6	1.2	4.5	9.8	13.6	18.0	21.9	22.4	19.5	13.4	7.7	2.6
4. Hiroshima	-0.2	0.0	2.4	7.5	12.0	17.3	22.0	22.8	18.8	11.8	6.1	1.7
5. Osaka	0.3	0.4	2.9	8.3	12.9	17.9	22.7	23.5	19.5	12.7	7.0	2.5
6. Nagano	-6.0	-5.6	-2.2	3.7	8.6	14.1	19.1	19.9	15.7	8.3	2.1	-2.9
7. Nagoya	-1.3	-0.9	1.8	7.5	12.1	17.1	21.8	22.5	18.8	11.8	5.6	0.9
8. Tokyo	-1.4	-0.6	2.3	7.9	12.3	17.0	21.1	22.3	18.8	12.4	6.3	0.8
9. Niigata	-1.3	-1.4	0.9	6.0	10.8	16.8	16.0	20.7	17.9	11.7	6.2	1.3
10. Sendai	-4.5	-3.8	1.2	3.6	8.8	13.8	19.2	20.5	16.0	9.1	3.5	-1.3
10. Aomori	-6.6	-6.4	-3.4	2.1	7.0	12.7	17.6	19.1	14.2	7.3	2.1	-3.2
11. Sapporo	-11.6	-10.9	-6.5	0.1	4.8	10.0	15.0	16.4	11.1	4.0	-1.3	-7.8

Region Location	<u>CENTIGRADE MAXIMUM</u>											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1. Kagoshima	11.9	12.3	15.7	20.3	23.7	26.3	30.3	31.2	28.7	24.1	19.2	14.3
2. Fukuoka	9.2	12.6	13.1	18.5	22.8	26.2	30.2	31.2	27.3	22.3	17.0	11.7
3. Kochi	11.4	11.9	15.1	19.8	23.2	25.8	29.4	30.9	28.2	23.6	18.7	13.8
4. Hiroshima	8.8	9.3	12.7	18.1	22.4	25.7	29.8	31.6	27.8	22.6	16.9	11.5
5. Osaka	8.5	8.9	12.3	18.4	22.7	26.4	30.6	32.2	28.2	22.4	16.7	11.4
6. Nagano	3.0	3.9	8.5	16.5	21.6	25.4	29.2	30.5	25.5	19.0	12.8	6.1
7. Nagoya	8.1	9.1	12.7	18.7	23.1	26.5	30.6	31.7	27.8	22.0	16.5	10.7
8. Tokyo	8.3	8.8	12.0	17.5	21.3	24.6	28.4	29.9	26.0	20.6	15.6	10.9
9. Niigata	4.3	4.7	8.5	14.9	19.5	23.6	27.8	30.0	25.7	19.6	13.6	7.6
10. Sendai	4.0	4.8	8.5	14.1	19.0	21.9	26.2	27.9	24.2	19.2	13.7	7.4
10. Aomori	0.6	1.6	4.7	12.1	17.2	20.8	24.9	27.4	23.6	17.6	10.4	3.4
11. Sapporo	-1.8	-0.7	2.7	10.6	16.3	20.5	24.5	26.2	21.8	15.8	7.9	1.0

Table V FIRST AND LAST SNOW AND FROST, AVERAGES 1876-1940

Region Location	First snow	Last snow	First frost	Last frost	Days between first and last frosts
1. Kagoshima	Jan. 6	Feb. 24	Nov. 24	Mar. 24	120
2. Fukuoka	Dec. 23	Mar. 5	Nov. 10	Apr. 20	161
3. Kochi	Dec. 31	Feb. 27	Nov. 23	Mar. 25	121
4. Hiroshima	Dec. 10	Mar. 17	Nov. 17	Apr. 7	141
5. Osaka	Dec. 23	Mar. 15	Nov. 23	Apr. 9	137
6. Nagano	Nov. 18	Apr. 8	Oct. 22	May 30	220
7. Nagoya	Dec. 15	Mar. 15	Nov. 6	Apr. 14	159
8. Tokyo	Dec. 23	Mar. 21	Nov. 12	Apr. 7	146
9. Niigata	Nov. 27	Apr. 1	Nov. 22	Apr. 8	137
10. Sendai	Nov. 27	Apr. 5	Oct. 29	May 2	185
10. Aomori	Nov. 8	Apr. 12	Oct. 23	May 4	193
11. Sapporo	Oct. 31	Apr. 21	Oct. 4	May 21	229

Table VI AVERAGE PRECIPITATION, 1876-1940

(Millimeters)

Region

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1.	79.2	100.5	154.5	218.5	212.9	387.7	290.0	189.4	218.9	128.9	90.6	82.5	2,153.6
2.	66.5	80.3	105.8	129.9	117.9	204.2	245.6	141.7	190.0	100.0	78.0	78.7	1,574.6
2.	69.4	106.2	179.4	234.1	249.6	365.3	283.7	297.4	336.9	237.0	116.5	71.4	2,455.9
3.	63.9	101.1	181.5	272.3	271.0	330.5	323.8	318.8	398.1	216.6	175.4	78.6	2,671.0
5.	50.0	58.7	90.5	122.7	128.3	194.2	165.0	102.2	170.7	107.9	72.0	61.5	1,324.2
4.	48.9	62.8	105.4	163.0	144.3	241.3	214.4	108.5	184.6	109.6	66.6	53.0	1,503.4
5.	35.3	48.2	76.7	98.3	100.7	160.3	137.7	93.0	150.0	95.6	53.8	38.7	1,088.3
5.	44.6	58.7	95.3	135.3	127.4	188.3	151.7	110.8	76.5	128.7	76.3	48.4	1,338.0
6.	54.8	51.1	55.6	69.8	76.4	108.6	148.3	103.0	130.6	85.5	54.1	55.9	991.0
6.	70.4	74.3	131.9	192.8	192.5	257.7	255.8	185.9	262.2	159.9	98.6	76.7	1,958.1
7.	52.8	68.4	112.4	154.2	151.6	209.0	184.3	166.8	235.4	161.4	87.7	55.7	1,639.7
8.	50.4	73.9	107.9	135.1	149.8	168.9	133.4	152.2	237.8	199.9	96.6	56.6	1,562.5
9.	275.0	187.8	165.8	164.9	133.3	167.2	205.1	157.4	230.4	209.3	270.3	346.1	2,512.6
9.	300.2	203.5	159.1	149.6	129.1	170.1	196.8	139.8	215.3	174.3	224.7	335.7	2,398.8
9.	190.4	127.0	108.8	105.1	89.3	114.4	161.8	119.0	178.1	160.2	194.7	226.5	1,774.9
10.	37.5	46.0	61.4	115.7	96.7	123.0	136.5	127.2	156.2	124.7	65.1	40.2	1,130.2
10.	145.1	109.0	83.2	67.2	72.9	80.0	135.5	118.3	139.3	115.4	142.8	162.0	1,370.5
11.	86.3	68.8	61.5	56.9	61.9	64.8	91.9	108.7	134.4	111.7	107.9	96.7	1,052.5

but production per farm is small. The farms employ all of the members of the family, from the eldest to the youngest. The Japanese however, have been able to utilize outside sources of income somewhat more easily than the Chinese were able to. The adult males of the farm, particularly on the smaller farms, have found work in non-agricultural areas. They commute to a job in a factory or in an office, leaving the burden of the farm labor to the women, children and to the elders. The Japanese have developed Gandhi's home industry one step further; they have what might be termed "village" industries. These are small factories which employ a small number of men. It is in these industries that the male farmers of Japan are finding employment.

The two basic problems of Japanese agriculture are the scarcity of arable land, and an over abundance of labor. This results in a very intensive land utilization. The arable land is used as many times within a growing season as possible. The land is not left to lie fallow, and each crop that is grown is given as much attention as possible. This can best be seen in the method that is used to raise rice.

First, the rice seed is soaked; this is to accelerate germination. The seeds are then sown in a bed that is approximately one-thirteenth the size of the rice field it will actually be raised in. The purpose of the seed bed is to shorten the growing period in the actual rice field.

Table VII

WEIGHT OF DRIED CROP HARVESTED PER PLANT AREA
(sweet potatoes - 100)

CROP	WEIGHT OF DRIED CROP
Sweet potatoes	100
Rice (paddy)	64
Irish potatoes	64
Corn	45
Barley	42
Wheat	36
Bengal grass	34
Soybeans	27
Red beans	24

Source: Nogyo Zenkan, p. 68

Table VIII

CALORIC CONTENT OF CERTAIN CROPS PER PLANTED AREA

CROP	AVERAGE YIELD PER HECTARE (METRIC TONS)	NUMBER OF CALORIES PER 100 GRAMS OF CROP	TOTAL CALORIES PER HECTARE 1931-40 (MILLIONS)
Sweet potatoes	10.45	101	10.6
Rice	2.932	327	9.7
Irish potatoes	12.38	64	7.9
Barley	2.218	261	5.8
Wheat	1.932	294	5.7
Corn	1.447	316	4.6
Soybeans	0.996	409	4.1
Red beans	0.949	314	3.0
Bengal grass	1.166	229	2.7

Source: for second and third columns, Crop Statistics
for Japan,
Report No. 108, 1948, p. 11.

This allows for a double cropping of rice. The farmer is then able to harvest two rice crops instead of one.

Once the seedlings have sprouted, they are transported to the flooded field. Then the rice is weeded. This weeding is done about six times. To get the largest yield possible the field is flooded before the seedlings are planted. The field is kept at a flood level of two inches until the last weeding, (the sixth). The water is then drained off.

To the Japanese, the use of water in agriculture, as exemplified in the paddy field, is of utmost necessity. Many areas have enough water to grow dry crops, but the Japanese, through irrigation use the paddy system. The answer is obvious; upland rice requires no irrigation. Actually only about four to five per cent of the rice area of Japan is upland rice, for it yields about sixty per cent less rice than the irrigated or paddy rice fields.

The sources of water for irrigation according to a government survey made in 1955 reveals that 18 per cent of the water is stored by the farmer during the rainy season to be used later on. This water is stored in ponds. The remaining 82 per cent of the water used is tapped from nature: 73 per cent coming from rivers, and 9 per cent utilizes underground water sources. The latter two are the more desirable in that they do not require the farmer to give up part of his total acreage to water storage. He may use his

entire land for cultivation. The disadvantage of relying on rivers and underground sources is that they may vary from year to year, and in times of severe drought do not supply any water at all.

Tied in with the scarcity of arable land and over abundance of labor are two other problems in post-war Japan: mechanization and fertilizers.

In the case of fertilizers, the farmer is abandoning his concept of organic farming, more by necessity than by choice. In the past fish meal and "night-soil" were used as fertilizer. The organic fertilizers enriched the soil and developed bumper crops. Today, Japan is industrializing more and more, and as her cities grow they include more and more modern, up-to-date plumbing. This means that the farmer can no longer utilize the night soil from the cities. As a result he is being forced to depend more and more upon chemical and inorganic fertilizers, which supplement the plants' diet but do nothing for refurbishing the soil. This could have a serious effect upon future harvests.

The chemical industry has also made a very positive contribution to farm production: in the field of insecticides. Historically the farmer of Japan has waited until after the hottest part of the summer² to plant his rice.

²July and August.

Rice planted before this time meant that the blossoms would be exposed to plant disease and the possibility of the farmer losing his entire crop.³ This worked to the farmer's disadvantage; climate-wise, he could plant earlier but he would run too great a risk of losing his crop to disease, so he withheld from planting early and thereby lost valuable growing time. With the use of insecticides the farmer is able to begin his rice planting much earlier. He can now set his seedlings out in a nursery bed covered with vinyl plastic.⁴ These early seedlings allow the farmer to plant his crop early, use the insecticides, and harvest his crop in August.

This early harvest date allows the farmer to utilize his land for another crop for wheat, barley, or rape seed. This crop is then followed by a root crop such as sweet potatoes, beets or fodder plants. This is allowing the Japanese farmer to switch from the traditional two-crop a year of rice-wheat; to a three crop cycle of rice-wheat-roots. Thus the use of insecticides has produced a revolutionary

³By waiting until mid-summer, the farmer also ran the risk of having his crops destroyed by a typhoon season which begins in September.

⁴By using this "hothouse" method, the farmer is actually able to begin planting his seedlings before the air temperature outside the nursery is warm enough to allow the seedlings to germinate. This gives the farmer an additional jump on the growing season.

change in the farming habits of the farmers. It has changed their crop rotation pattern and given them a third crop. This third crop has been used mostly as a fodder crop. The utilization of this fodder is evident: before World War II Japan averaged approximately 91,700 milch cows with a net milk production of 1.3 million koku.⁵ In 1958 Japan had 600,000 milch cows with a milk production of eight million koku.

In the case of machinery a very interesting situation is developing. Before the war the surplus of agricultural labor created a dearth of workers so that a farmer found it much cheaper to hire men than to try and use machinery. The cheap labor had an advantage over an expensive machine; the farmer could hire the laborer for only that period of time when he was actually needed. The machine, cost more not only in the initial investment, but also in fuel, maintenance, and repair bills.

Since the war, however, the munitions makers have been forced to go into non-military fields. Many have taken up the production of fertilizers and farm machinery. Today there is the possibility that the farmer has a tendency to look upon the farm machine not as an instrument of increasing, or assisting in production, but as a symbol of social status.

⁵Average figures from 1931 to 1936

Due to the smallness of the farms, it appears that to obtain maximum use and efficiency from the machines the farmers will resolve themselves into a co-operative working arrangement.

(see Table IX, page 70)

The increase in machines is significant. In 1939 Japan had in use 211,000 threshing machines, and 133,000 husking machines. In 1957 there were 2,283,000 threshers and 737,000 huskers; this is an increase of 1080% and 550% respectively.

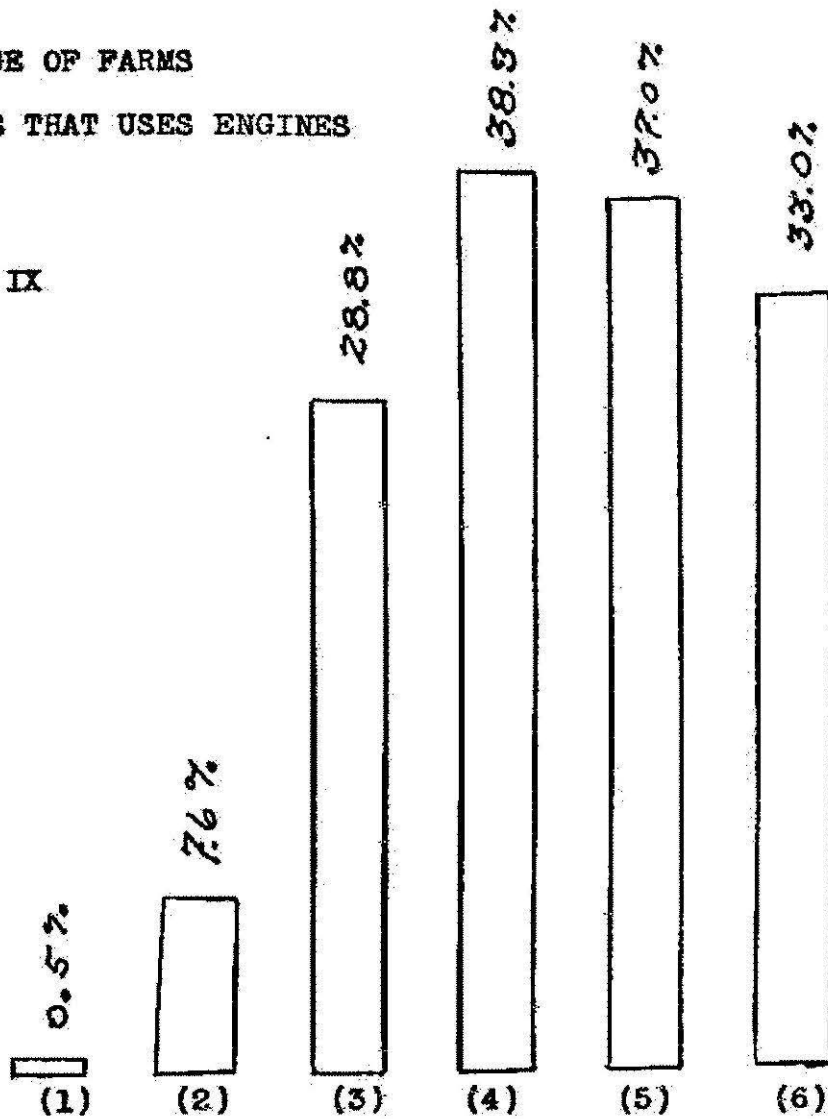
The total sum effect of chemical fertilizers, insecticides, and machinery can be seen in the comparison of the agricultural figures of Japan. The average pre-war figure for rice production was about sixty million koku; in 1952 the harvest was sixty-six million koku, in 1953 it dropped to fifty-four and nine tenths million koku, which is below the pre-war average, and in 1954 it equaled the pre-war average. In 1955 however, rice production rose to a high of eighty-three million koku; this was some twenty-three million above the pre-war average. In 1956 and 1957 the harvests were not as high as in 1955, but they still surpassed the pre-war total by twelve million, and sixteen million koku respectively.⁶

The figures for wheat and barley show even more increase in the 1952-1957 period of production as compared with the

⁶See Table X on page 71.

PERCENTAGE OF FARMS
IN EACH CLASS THAT USES ENGINES

TABLE IX



- (1) Farms under 0.05 CHO
- (2) 0.05 and under 0.5 CHO
- (3) 0.5 and under 1.0 CHO
- (4) 1.0 and under 1.5 CHO
- (5) 1.5 and under 2.0 CHO
- (6) 2.0 CHO and over

Figures for 1955

Table X
 VOLUME OF PRODUCTION OF SELECTED COMMODITIES IN JAPAN

YEAR	RICE	WHEAT & BARLEY
	1,000 Koku	1,000 Koku
1930	66,876	21,629
1935	57,457	25,510
1940	60,874	28,841
1941	55,088	26,148
1942	66,776	25,654
1943	62,887	19,767
1944	58,559	25,284
1945	39,149	18,173
1946	61,386	12,326
1947	58,652	15,705
1948	66,439	24,772
1949	62,553	27,076
1950	64,339	27,470
1951	60,278	30,427
1952	66,152	30,684
1953	54,924	29,157
1954	60,756	34,280
1955	83,565	32,473
1956	72,658	31,216
1957	76,418	27,525

Note: Conversion ratios are:
 1 Koku-5.119 Bushels
 1 Kan-8.267 lbs.-3.75 kgs.

pre-war production. The pre-war average was twenty-five million koku; the 1952 harvest was thirty and seven tenths million koku, for an increase of five million koku over the pre-war harvest; 1953 was twenty-nine million koku, an increase of nine million in 1955, thirty-two million; and in 1957, twenty-seven million which is two million koku over the pre-war average.

As has been stated previously, the Japanese farmer cannot produce enough food to support the Japanese population. This means that Japan just must import food. In the pre-war period Japan imported 8.0 per cent of the rice that was consumed; 24.5 per cent of the soybeans and 87.7 per cent of her sugar consumption.⁷

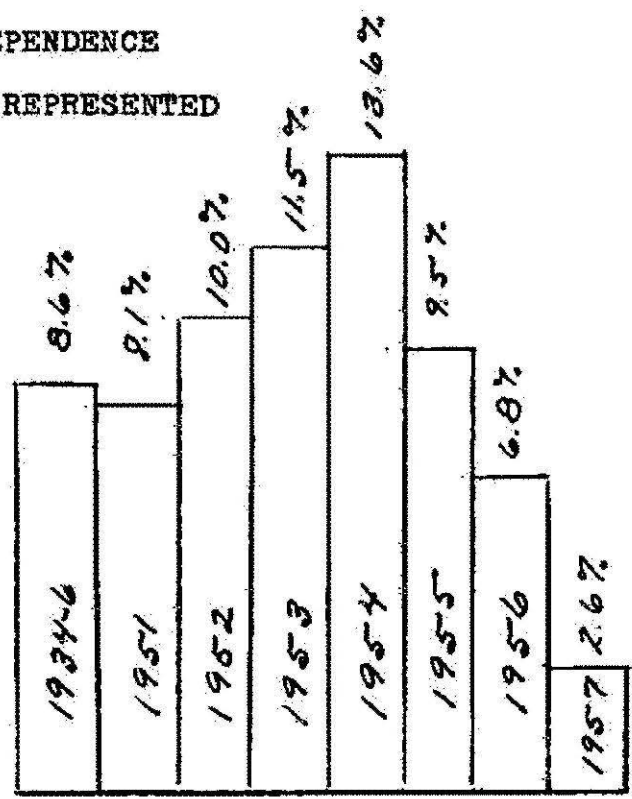
Japan's dependence on overseas supplies has changed during the 1952-1957 period.⁸ In the case of rice, Japan imported 10.0 per cent of her rice needs, this is somewhat higher than the amount (8.6%) that she imported before the war. In 1953, however, the trend reversed itself; Japan required only 9.5 per cent of her entire rice consumption to be supplied by foreign sources--this is still above the pre-war figure of 8.6 per cent. In 1956 the figure fell

⁷Figures are the average for the years 1934-36 taken from the Statistical Survey of Economy of Japan, Ministry of Foreign Affairs, Japan, 1958.

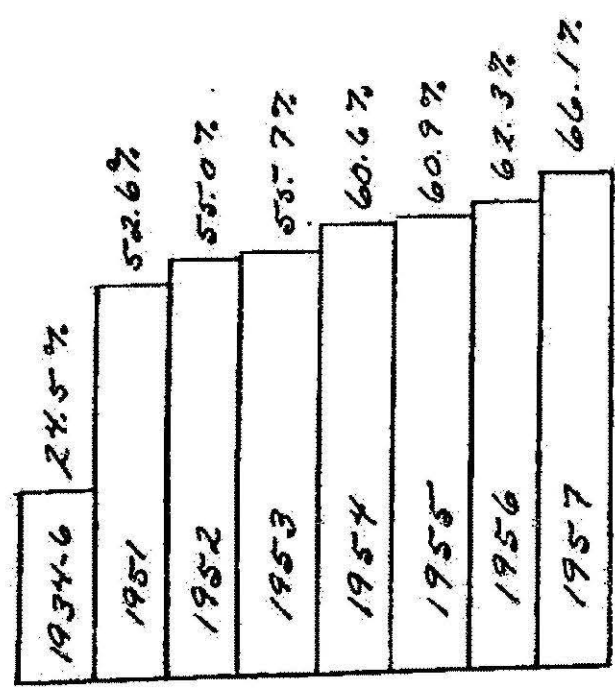
⁸See bar graphs on pages 73-74.

DEGREE OF JAPAN'S DEPENDENCE
ON OVERSEAS MARKETS REPRESENTED
GRAPHICALLY

RICE



WHEAT



BARLEY

1934-6	0.9%
1951	45.9%
1952	43.8%
1953	25.7%
1954	38.0%
1955	33.4%
1956	44.9%
1957	43.0%

SOYABEAN

1934-6	69.8%
1951	39.1%
1952	25.7%
1953	50.2%
1954	57.4%
1955	61.4%
1956	62.8%
1957	63.7%

SUGAR

1934-6	87.7%
1951	83.4%
1952	95.0%
1953	95.3%
1954	95.2%
1955	94.2%
1956	93.6%
1957	91.7%

to 6.8 per cent and in 1957 only 2.6 per cent of Japan's rice consumption was based upon foreign markets.

During this same period, wheat has followed a pattern of steady increase. The pre-war average dependency upon overseas markets was 24.5 per cent. In 1952 it was 52.6 per cent, more than twice the pre-war average; and it has continued to increase. In 1953 it was 55.0 per cent, in 1954, 55.7 per cent; and 1955, 60.0 per cent, in 1956, 60.9 per cent, in 1957, 62.3 per cent, and in 1958, 66.1 per cent of the wheat consumed was supplied by foreign markets.⁹

Barley has followed the pattern of wheat, in that, during the post-war period Japan depended more heavily upon foreign markets than it did in the pre-war period. The

⁹After World War II Japan was not able to obtain enough rice to fulfill the diet requirements of the people, as a result wheat was used as a substitute, and it has remained--to a degree-- as part of the diet. The elder people prefer it in the form of noodles; the younger generation preferring it in the form of bread.

According to Foreign Agriculture Report #104:
Competition in the Japanese Market for Agricultural Products
by Riley H. Kirby, Foreign Agricultural Service, U. S.
Department of Agriculture, November 1957, page 7:

Per capita consumption (of rice) is today less than 80 per cent of the pre-war 300 pounds per year. On the other hand, per capita consumption of wheat is now about 55 pounds per year compared to 21 pounds pre-war, and consumption of barley has increased 30 pounds to more than 40 pounds per person per year.

average for the pre-war period was less than one per cent; actually 0.9 per cent. In 1952 43.8 per cent of Japan's consumption was obtained from overseas markets; in 1953 it fell to 25.7 per cent, which is almost half of the 1952 requirement, but still some twenty-five times more than the pre-war period. By 1957, it had risen to 43.0 per cent, or almost the 1952 level.

On the other hand soybean production is the crop that has had the most fluctuation; its pre-war average was 69 per cent. In 1952, 27.7 per cent of the soybean needs were met by overseas producers. Since that year Japan has depended more and more upon overseas markets until, presently, it has almost reached the pre-war level of dependence.

In 1953 the dependence upon foreign soybean producers was almost double that of 1952; 25.7 for 1952, and 50.2 for 1953. In 1954 it had increased to 57.4, in 1955 to 61.4 per cent; in 1956 increased to 62.8 per cent, and in 1957 it reached the post-war high of 63.7 per cent.

In the field of sugar, Japan has remained the most consistent; she has relied almost exclusively on foreign suppliers; in the pre-war period 87.7 per cent of the sugar needs were supplied by overseas suppliers; in 1952 this dependence had risen to 95.0 per cent and has remained in the 90's throughout the 1952-57 period: 1953-95.3 per cent; 1954-94.2 per cent; 1955-94.2 per cent; 1956-93.6 per cent;

and in 1957-91.7 per cent.

From the above information, it can be seen that Japan does depend rather extensively upon foreign suppliers for her foodstuffs. The assumption should not be made however, that these suppliers are the same countries from year to year, or that the amount supplied by the country remains constant. The table 78 illustrates this point. The grains: rice, wheat, and barley, compose the lion's share of Japan's food imports; the tables are limited to the years 1952 through 1956, the year 1957 being eliminated because the figures were not available.

Table XII, page 78, shows some rather significant developments in regard to rice, Japan's number one cereal. In the pre-war years Japan imported the majority of her rice from Korea and Taiwan. These two countries were her regular suppliers; the post-war, 1952-56 period, reveals a shift in emphasis. In 1952 the countries that supplied Japan with over 100 "units"¹⁰ were the United States (276 units), Thailand (317), Burma (126), and Italy (108). The following year the United States' share had fallen almost 100 points (to 178), Thailand's had risen (to 424), Burma's had also risen (from 126 to 200 for an increase of 74 points) while Italy's had dropped 81 points (to 27 units).

¹⁰A unit being 1,000 metric tons.

TABLE XI

JAPAN: Imports of wheat, by country of origin, 1952-56
in 1,000 Metric tons

YEAR	UNITED STATES	CANADA	ARGENTINA	AUSTRALIA	OTHERS	TOTAL
1952	1,190	443	0	28	1	1,662
1953	928	686	33	40	0	1,687
1954	1,095	808	264	20	0	2,187
1955	1,154	872	79	182	0	2,287
1956	1,080	904	42	251	0	2,277

TABLE XII

JAPAN: Imports of rice, by country of origin, 1952-56
in 1,000 Metric tons

YEAR	UNITED STATES	CHINA	TAIWAN	THAILAND	BURMA
1952	276	0	61	317	126
1953	178	0	54	424	200
1954	346	75	43	380	327
1955	243	133	183	341	236
1956	20	113	89	130	267

	SPAIN	ITALY	EGYPT	OTHERS	WORLD
1952	47	108	0	44	979
1953	38	27	0	158	1,079
1954	49	67	0	145	1,432
1955	29	66	10	5	1,246
1956	57	32	35	17	760

In 1954 the only countries that supplied over 100 units were; the United States-364, for an increase of 168 over 1953, Thailand-380, a loss of 44 over the previous year; and Burma with 327, an increase of 127 over 1953. Another producer entered the market at this time: Communist China. Although she did not supply as much as the three aforementioned nations she did supply 75 units, wherein previous to this time she had not even been a supplier. This fact takes on even more significance in the light of the statements made earlier in this paper about 1954 being a poor harvest year for China.¹¹

In 1955 China's supply almost doubled, reaching a high of 133 units; the United States dropped 103 points to 243, Thailand remained about even 341 and Burma dropped 101 points (down to 236). A new large supplier entered the market in 1955: Taiwan. The four years previous to 1955 Taiwan had supplied Japan with an average of about 55 units per year, and then in 1955 more than tripled her supply to Japan.

In 1956 Japan depended upon only three major suppliers: Communist China (113), Thailand (130), and Burma (267). This was due, primarily to two factors: (1) Japan now only depended upon 2.6 per cent of her total consumption to be supplied by overseas markets,¹² and (2) the trade program

¹¹See above, p. 44 ¹²See above, p. 73

that was being guided by the Japanese Ministry of International Trade and Industry.¹³ The United States share had dropped to 20 points from a high of 346, with Italy supplying 32 units, and Spain--never a large contributor, but always a constant one--added 57 units (her all time high), and Egypt, supplied 35 units.¹⁴

The rice import picture is made complicated by several trade factors. The Japanese people prefer rice that is of the short-grain soft; rather than the long-grain hard varieties, yet the rice Japan buys from Thailand and Burma is of the long-grain variety; and the short-grain rice, which is available in unlimited quantities from the United States (primarily California)¹⁵ neglected. The reasons are based upon Japan's import-export commitments. The rice that is being bought from Thailand and Burma is part of the Japanese Government's overall attempt to expand trade in Southeast Asia. The purchase of Thailand Burmese rice will enable them to purchase Japanese exports.

This same type of thought is behind the large

¹³See below, p. 81

¹⁴Note: Egypt, a large contributor in 1951 with 176 units, did not export any rice to Japan in 1952, 1953, or 1954 and contributed only 10 units in 1955.

¹⁵580,000 metric tons raised in California in 1958.

purchases of Chinese rice.¹⁶ "The Japanese Ministry of International Trade and Industry is urging large imports from China as a means of increasing Japan's fertilizer exports."¹⁷

In the case of the refusal of Californian rice:

. . . it required dollars for import, and continued purchases gave no promise of increased export trade with the United States. . . . The Ministry of International Trade and Industry is urging purchases from other sources where prices are somewhat lower, where dollars are not required, and where prospects are brighter for increasing Japanese exports.¹⁸

The two European suppliers, Spain and Italy were also related to specific programs. "Imports from Spain . . . have been tied in with exports to Spain of iron and steel products, trucks and machinery."¹⁹ Wheat, the second most important grain in Japan's import scheme is supplied by two major suppliers: the United States and Canada. Argentina has been a rather sporadic supplier, ranging from a high of 264 in 1954 to a low of zero in 1952,²⁰ as has Australia,

¹⁶Note: in contrast to the rice being bought in Southeast Asia, the rice that Communist China (as well as Taiwan) is supplying to Japan is the preferred short-grain variety.

¹⁷Kirby, Riley H. p. 12-13

¹⁸Ibid., p. 12

¹⁹Ibid.

²⁰Figures are for 1,000 of metric tons.

with a range from 251 in 1956 to a low of 20 in 1954.

In regard to barley, Japan, as in the case of wheat, is supplied mainly by the United States and Canada. The United States has supplied on the average, 291 "units"²¹ per year, ranging from a low of 205 in 1954 to a high of 399 in 1956. Canada has averaged 281 "units" per year, with a low of 104 in 1955 and a high of 475 in 1952. In barley, as in wheat Australia is making a strong bid for the Japanese market; increasing 231 points from 1952 (70) to 1956 (301). In 1952 Iraq was a contributor with 83 "units" but she fell off to only 3 in 1953 and has not supplied Japan at all since then.

The soybean suppliers for Japan are principally the United States and Canada, with Brazil acting as a minor supplier. The table on page 83 gives the import figures for the 1952-56 period of soybeans. However it does not give any indication of the fact that the soybeans from the United States are not in competition with those from Communist China, or vice-versa. The United States soybean has been developed for a higher oil content. As a result this bean is imported into Japan for the purpose of extracting the oil. The residual is used in the making of shoyu, livestock feed, monosodium glutamate, and glue.

The Chinese bean,²² on the other hand, because it

²¹Ibid.

²²This includes the Brazilian bean also.

TABLE XIII

JAPAN: Imports of barley, by country of origin, 1952-56
in 1,000 Metric tons

YEAR	UNITED STATES	IRAQ	CANADA	AUSTRALIA	OTHERS	TOTAL
1952	314	83	475	70	4	946
1953	211	3	274	211	7	706
1954	205	0	333	217	9	764
1955	326	0	104	146	0	576
1956	399	(1)	221	301	1	922

TABLE XIV

JAPAN: Imports of soybeans, by country of origin, 1952-56
in 1,000 Metric tons

YEAR	UNITED STATES	CHINA	BRAZIL
1952	162	1	2
1953	409	24	14
1954	443	46	18
1955	572	204	31
1956	536	166	12

contains less foreign material than the United States bean, is used principally in the food processing industry, particularly in the making of miso.

This, then, is the current agricultural picture in Japan: a nation with a rapidly expanding population, but very little area available for additional cultivation. Already she depends upon foreign markets for many of her foodstuffs. Only in rice has she been able to reach almost a self-sufficiency level importing only 2.6 per cent of her total needs, and then achieving this only in the last year (1957). And yet this accomplishment is due not so much to the improved methods of agriculture as to the change in the eating habits of the people brought about as a result of unstable conditions after World War II. Japan needs uncrowded virgin farm land, such as that in the Philippines, Thailand, or Asiatic Russia.

CHAPTER FIVE

AGRICULTURAL PRODUCTION IN RUSSIA

Finally it remains for us to examine the agricultural production in Russia. Until 1953, Asiatic Russia's farmland was not considered too strongly in any of the economic planning that was done in the Kremlin. The area had never been able to produce enough foodstuffs to become self-sufficient. Only one-third of the land was considered to be potential farmland. The rest of the area was eliminated, not because of topography as much as the climate and soil condition factors. To the Russians neither topography, climate, or soil conditions are insurmountable barriers.

From the time the Soviet Union came under the control of Khrushchev, one of his prime concerns has been the development of the virgin lands of Siberia. The reasons are obvious. Russia is involved in a life and death power struggle. Through a series of five year and now a more intensive seven year plan, the Soviets are forcing their nation through an intensified industrialization program. Their ultimate goal is to surpass the United States in production. In their present position, they are still not able to compete with the West European alliance of France, West Germany, Italy, and the Low Countries. The earth of

Asiatic Russia contains vast reserves of minerals that a nation needs to become an industrial power; with the resources of Asiatic Russia the Soviet Union is the most self-sufficient nation in the world.

It is the Soviet plan to develop these resources as quickly as possible, for it contains over three-fourths of Russia's coal supply--much of it coming from open pit mines. The same is true of Russia's iron ore: the largest Soviet iron field is in Siberia, and it too can be mined by the open pit process. Most of the Soviet supply of aluminum, copper, zinc, manganese, nickel, and the other industrial minerals are concentrated in the Asiatic section of Russia. Thus to industrialize Russia means the development of Asiatic Russia.

The process has already begun. Two new hydroelectric plants are being built: one on the Yenisei River where it is crossed by the Trans-Siberian Railroad at the town of Krasnoyarsk, and the other on the Angara River at the village of Bratsk. Each of these power stations will have the capacity to produce 3.2 million kilowatts.¹ The next phase of the development plan is to build heavy and light industry: the Soviet Union's aim is diversification. It does not intend to build factories West of the Urals. European Russia is

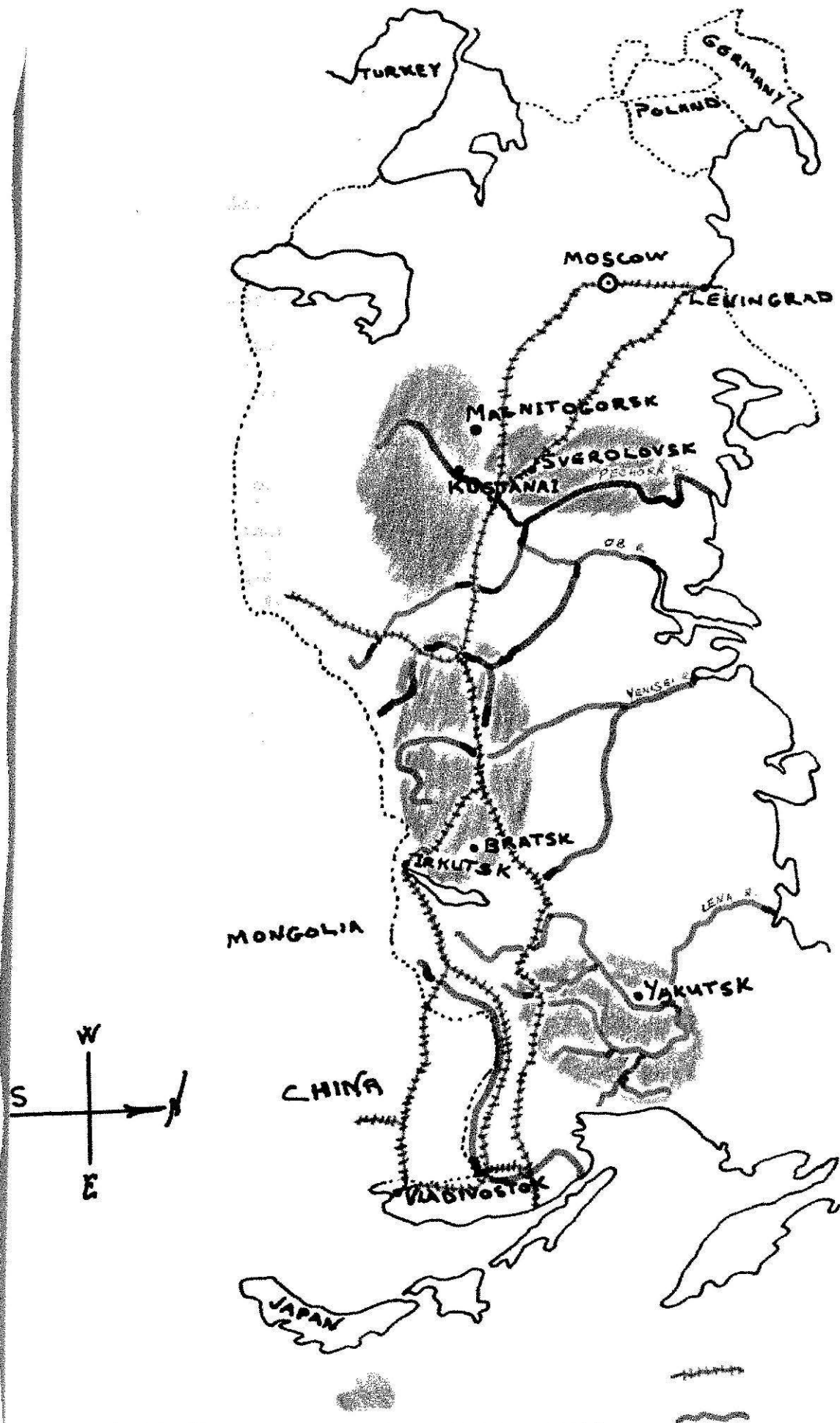
¹For comparison, the largest hydro-electric station in the United States is the Grand Coulee with a capacity of just under 2 million kilowatts.

sufficiently built up. Its present objective is to develop industrial areas next to its sources of supply as outlined on the map on page 88. Distances are too great in Russia. Transporting raw materials thousands of miles to factories in European Russia, processing it into finished goods, and then shipping the goods back another thousand miles to the potential markets is costly and economically unsound. Also, and of primary concern to any over-all Russian picture of strategy, it is militarily unfeasible to locate industries within easy reach of an invader or enemy bomber. It is better to locate in the "hinterland" out of the ready reach of the enemy; the Russians learned this well from the German invasion during World War II.

However this whole industrial development cannot be done without people. And people require food. Khrushchev's solution to this whole situation is developing the virgin soils of Siberia. Can this succeed? The whole concept of developing self-sufficient industrial areas depends upon it.

Another factor for the urgency of developing the farmlands of Asiatic Russia is that the farm production of European Russia had fallen behind. The country's economy was in jeopardy; farm production had to be increased or the whole economy was in danger of collapsing.

The year 1954 was a crucial year. On April 26, 1954 Khrushchev, in his speech at the First Session of the



INDUSTRIALIZATION OF ASIATIC RUSSIA

Supreme Soviet of the U.S.S.R. stated:

Our people have set to work with great energy to carry out the measures for advancing agriculture. The appeal of the Party and the Government to help develop virgin and long-fallow lands has met with wide response. In two months, over half a million Soviet patriots volunteered to help cultivate the new lands

Our socialist industries satisfy adequately agriculture's machine requirements. In a short space of time, 15,000 powerful Diesel tractors and tens of thousands of ploughs, seeders and other farm machines have been dispatched to bring new lands under cultivation. There is every certainty that the development of 13 million hectares of virgin and long-fallow lands will be successfully accomplished in two years.

Grain farming is the corner-stone of all agricultural production. That is why the Party and the Government are taking every measure to increase grain output in order fully to satisfy the growing requirements of the population This task can, and no doubt will, be fulfilled by raising crop yields and bringing virgin and long-fallow lands under cultivation.²

From Khrushchev's speech, it is clear that he feels that the farms of Russia are not producing as high a yield as they should. He states, "Every region . . . must already this year be in a position fully to supply the population with potatoes and other vegetables."³ This is a definite implication that the farms of Russia are not making Russia a self-sufficient nation agriculturally. And who or what

²Khrushchev, Speech at the First Session of the Soviet of the U.S.S.R. (Moscow, Foreign Languages Publishing House, 1954), p. 7-8

³Ibid., p. 9.

is to blame for this? Khrushchev blames it on the directing personnel:

All the opportunities for a powerful advance in agriculture are there; the task is to make the best of them. Attention must be paid above all to reinforcing the collective farms, state farms, and machine and tractor stations with competent managerial personnel and to reinforce the leadership at district levels.⁴

Thus the expanding Soviet economy is not keeping pace with the agricultural sector. By the Soviets' own admission "farm production (in 1954) had fallen behind the country's economy as a whole, and strenuous steps were taken to overcome this lag."⁵

One phase in this program was the development of 70 to 75 million acres of long-fallow land within a two year period in Asiatic Russia. By the end of 1956 the Soviets claimed, not the target 75 million acres under the plow, but a record 87 million,⁶ which was being developed under the directorship of 425 large modern state farms.

Complete production figures for this new land are unavailable, but the Soviets do make some outstanding claims

⁴Ibid., p.8

⁵U.S.S.R. #4, p. 33.

⁶Terenty Semyonovich Maltsev, director of the Lenin Behests Collective Farm and author of New Methods of Soil and Crop Cultivation, claims 43,500,000 acres were turned up for this same period.

for Kazakhstan--one of the areas that played an important role in the development of long-fallow ground.

In 1956 they claimed that Kazakhstan alone produced 18 million tons of grain. This is a greater yield than all past ten years combined, ten times more than the previous high--1.8 million tons of grain in one year, and twenty times the yearly average. This would mean that within two years, Kazakhstan had become one of Russia's main granaries. Can these figures be reliable?

If it is assumed that the Russians are using conventional methods, it would seem as though these figures were an obvious fabrication; but are they using "ordinary methods"?

The research findings of Terenty Semyonovich Maltsev have been put into practice. Maltsev's experimental farm, the Lenin Behests Collective Farm, is located in the Shadrinsk District of the Kurgan Oblast, which is just north of the Kazakhstan area. Maltsev's main problem was how to thicken the layer of surface soil so that it would remain fertile and productive, and not be blown away by heavy winds, and at the same time maintain moisture.

To begin with, Maltsev abandoned the destruction-restoration-destruction-restoration concept of crop rotation. He did not believe that a soil had to be put into the cycle of annual crops which destroy the soil, and the period of

restoration where the farmer "rests the soil" with perennial grasses. Because of the nature of the soil in this area it was evident that any attempt to open the virgin soil to annual plants would cause the structure of the soil to disintegrate and its fertility to decrease. Within a period of two or three years the whole section could become an enormous dust bowl.

Maltsev proposed the theory that it is the annual plowing with an inversion of the surface soil that reduces the soil's fertility and destroys the structure, and not the annual plants. In fact he asserts that: "given certain conditions, annual plants by their very properties can enrich the soil with organic matter and humus, can build up the structure of the soil and, consequently, increase its effective fertility."⁷ Using this as his basic premise, Maltsev plowed the land to a depth of 40-50 cm. without turning up the soil. This deep ploughing, without inverting the soil, is done once every four or five years; and is combined with only a light surface tillage in the in-between years. The light surface tillage is disc-cultivated in order to easily absorb the rainfall, prevent its evaporation too quickly, and to keep the soil compact so that the roots will under anaerobic

⁷Terenty Semyonovich Maltsev, New Methods of Soil and Crop Cultivation (Moscow: Foreign Languages Publishing House, 1956), p. 13.

conditions.

On the experimental farm, Maltsev was able to obtain from 0.8 to 1.6 tons of wheat per acre in 1950; during the dry years that followed, 10 inches of rainfall or less, 0.7 to 0.8 tons per acre in 1951, in 1952, 0.5 tons, and in 1953 from 0.5 to 0.9 tons of wheat.⁸

To determine the significance of the Soviet claim; if eighteen million tons of wheat were raised in Kazakhstan, and the assumption is made that all the virgin land, eighty-seven million acres were in this area, that would give a net of 0.2 tons of wheat per acre. If we grant Maltsev's figure of 43,500,000 this would net 0.3 tons per acre. If only one fifth of the new virgin and fallow-land was in Kazakhstan, that would net a total of 1.0 ton per acre. All are within the realm of possibility.

The Soviets are planning their agricultural crops to compliment their industrial production; one compliments the other. The vastness of the farms and method of agriculture demand a full utilization of machinery. The farms of Asiatic Russia, to be worked effeciently, demand complete mechanization of farm labor. These machines are produced in the near-by newly located industries.

The farm production is also planned to fit into the

⁸Ibid., p. 30

industrial needs of the area. As an example, using Maltsev's system, the wheat is alternated with annual grasses, which can be used for fodder in the raising of dairy cattle, or with flax which can be used in the textile industry.

There is no doubt that through scientific reasearch and application, the Soviets will be able to put more and more land under the plow. The question is how much of the land of Asiatic Russia can be developed? What are some of the problems that must be overcome? To give a better insight into this, a region by region survey of Asiatic Russia should be made.

<u>POLITICAL DIVISION</u>	<u>MAIN CROPS</u>	<u>SECONDARY CROPS</u>
Kurgan Oblast	grain, mainly wheat, livestock: dairy, meat, sheep	hemp, flax
Tyumen Oblast	wheat, dairy cattle	
Omsk Oblast	dairy cattle, wheat, flax, sheep	rye, oats, sunflower
Novosibirsk Oblast	diary cattle, wheat	
Tomsk Oblast	wheat, oats, barley, flax, dairy cattle	
Altay Kray	wheat sugar beets	flax, dairy cattle
Kemerovo Oblast	truck- produce*	wheat, livestock

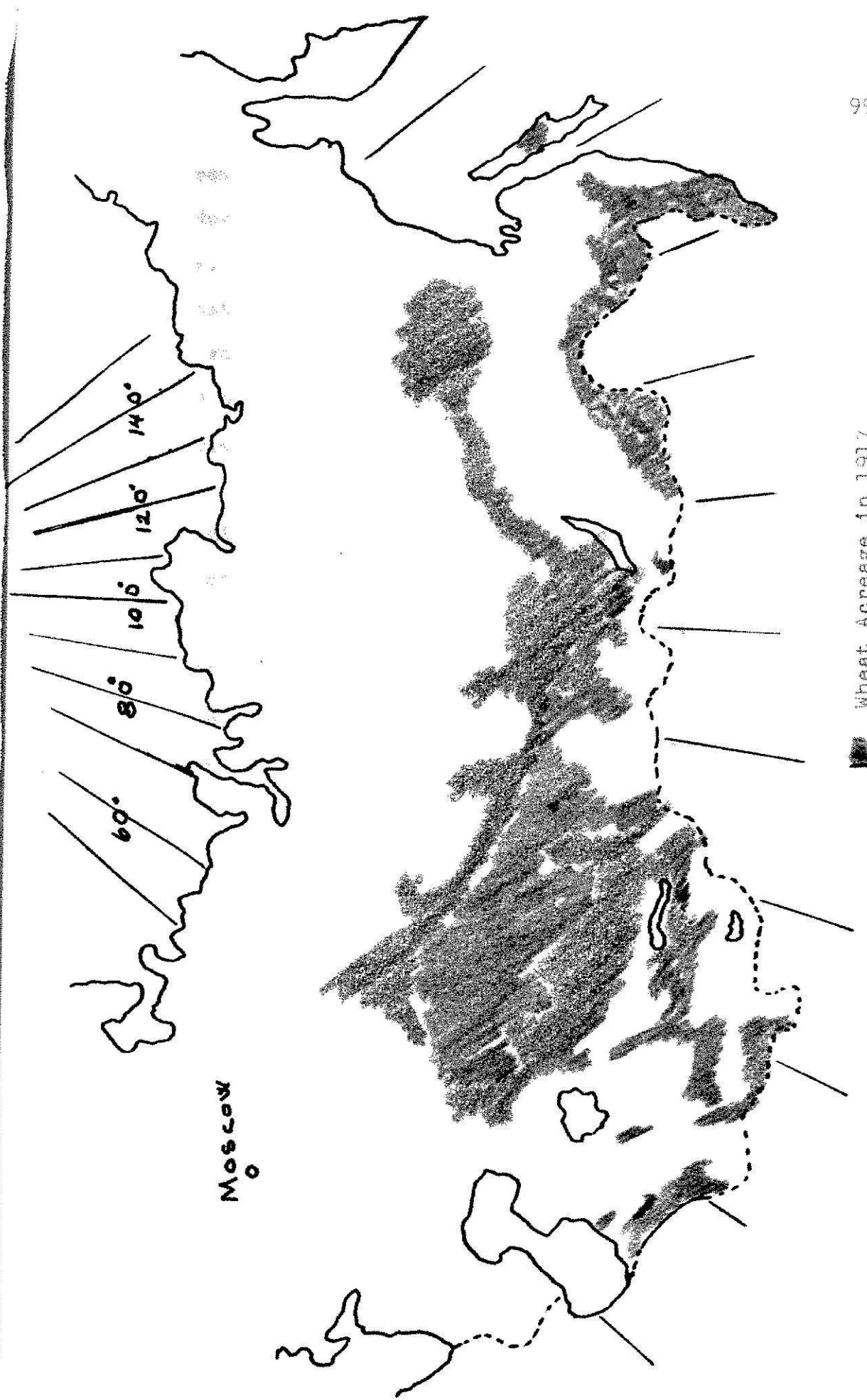
* vegetables, fruits, and fresh milk, to supply the many urban developments in the area.

<u>POLITICAL DIVISION</u>	<u>MAIN CROPS</u>	<u>SECONDARY CROPS</u>
Krasnoyarsk Kray	wheat, potatoes, sugar beets, dairy farming, corn	flax, northern hemp, sunflowers
Tuva Autonomous Oblast	wheat, dairy cattle	
Irkutsk Oblast	wheat, grains, diary cattle	truck produce near the large cities.
Buryat-Mongol Autonomous Soviet Socialist Republic	wheat, livestock	
Chita Oblast	rye, wheat	flax, hay
Yakut Autonomous Soviet Socialist Republic	wheat	
Amur Oblast	wheat, oats, rye	
Khabarovsk Kray	wheat, truck produce rice (in the South)	
Jewish Autonomous Oblast	wheat, rice soybeans	truck produce
Lower Amur Oblast	wheat, vegetables, potatoes	
Maritime Kray	soybeans, millet, perilla, rice	sugar beets, corn, watermelon, squash, garden fruit
Sakhalin Oblast	dairy farming	
West-Kazakhstan Oblast	millet, wheat, mustard seeds, livestock	
Gur'yev Oblast	goats, sheep, camels	
Aktyubinsk Oblast	millet, wheat, mustard seeds, sheep, goats, camels	
Kustanay Oblast	wheat, cattle, sheep	

<u>POLITICAL DIVISION</u>	<u>MAIN CROPS</u>	<u>SECONDARY CROPS</u>
North-Kazakhstan Oblast	wheat, oats, millet, diary products	
Kokchetav Oblast	wheat, millet, oats	dairying
Akmolinsk Oblast	wheat, millet, oats	dairying, sheep
Karaganda Oblast	wheat, dairying	vegetables, sheep, camels, cattle
Pavlodar Oblast	wheat, millet diary cattle	
Semipalatinsk Oblast	wheat, millet sunflowers, cattle, sheep	opium
Yaldy-Kurgan Oblast	rice, wheat, sugar beets, tobacco, cotton	opium cattle, sheep
Alma-Ata Oblast	wheat, sugar beets, apples, grapes	tobacco, opium rubber fiber and medical plants
Dzhambul Oblast	sugar beets, cotton, wheat tice, tobacco	cattle, sheep, horses, camels
South-Kazakhstan Oblast	cotton	fruit
Kzyl-Orda Oblast	rice	
Frunze Oblast	kendyr', Kenaf, southern hemp, (all fibre plants) sugar beets	fruit truck produce
Issyk-Kul' Oblast	wheat, opium	sheep, horses
Tyan'-Shan' Oblast	sheep, horses	wheat
Osh Oblast	cotton, sericulture	wheat, livestock

<u>POLITICAL DIVISION</u>	<u>MAIN CROPS</u>	<u>SECONDARY CROPS</u>
Dzhalal-Abad Oblast	cotton, barley, sericulture, wheat	
Talas Oblast	tobacco, flax, wheat	cattle, sheep
Leninabad Oblast	cotton, vineyards, sericulture, fruits	wheat, sheep goats
Stalinabad Oblast	cotton, wheat, sericulture, pistachio-nut	subtropical fruits, jute, sugar cane, yams, sheep
Kulyab Oblast	cotton, walnuts	wheat, sheep, truck produce, goats, cattle
Gram Oblast	goats, sheep	wheat sericulture
Gorno-Badakhshan Autonomous Oblast	yak, sheep, goats, wheat, barley, rye, fruit beans	vegetables,
Andizhan Oblast	cotton, sericulture	wheat, cattle horses
Fergana Oblast	cotton, sericulture	sheep
Namangan Oblast	cotton, sericulture	wheat, cattle, horses, sheep
Tashkent Oblast	Cotton, fibers, rice, fruit	wheat
Samarkand Oblast	cotton, fruit sericulture	wheat, sheep goats
Surkhan-Darya Oblast	cotton	wheat, sheep goats
Kashka-Darya Oblast	cotton	wheat, sheep, sericulture, fruit

<u>POLITICAL DIVISION</u>	<u>MAIN CROPS</u>	<u>SECONDARY CROPS</u>
Bukhara Oblast	cotton, fruit, sericulture	
Khorezm Oblast	cotton	sericulture, rice, cattle
Kara-Kalpak Autonomous Soviet Socialist Republic	cotton	wheat, rice, alfalfa, camels, sheep
Ashkhabad Oblast	cotton, vineyards, sericulture	fruit, wheat, vegetables, goats, pistachio-nut, sheep
Mary Oblast	cotton, pistachio-nut	wheat, cattle, alfalfa, goats, horses, sheep
Chardzhou Oblast	cotton	wheat sericulture
Tashauz Oblast	cotton	alfalfa, cattle



Wheat Acreage in 1917
Expansion of Wheat Acreage since 1917

From the above breakdown it can be seen that the Asiatic Russian economy is dominated by cotton, wheat, and livestock. However, one should be careful in placing too much emphasis on such a table. Its prime function is to indicate what crops are of prime importance in what areas. It should not be assumed that because a particular product, for example, rice, is the main crop; that the entire area is under rice cultivation. Actually, in some oblasts only 10 per cent of the land is arable; but of that percentage, the main crop is rice.

Also, one should not assume that a crop produced in one oblast is the same as a crop in another area; for example the cotton produced in the Fergana Valley of the Leninabad Oblast, or the cotton of the Kafirnigan and Vakhsh Valleys of the Stalinabad Oblast is the long-staple Egyptian cotton while the cotton grown in the irrigated Kara Kum desert of the Tashauz Oblast is of the American short-staple variety. However, some important clues can be gained from this type of analysis; from a glance at the list of the main crops and the secondary crops it should be noted that in none of the areas can they produce a self-sufficient, balanced diet for their people. Cotton, sericulture, and fibres (kendyr', Kenaf, and southern hemp) are industrial crops. This is also true of much of the livestock, which are grown primarily for their hides, or in the case of sheep, for their wool.

These animals are grown to support an industry; their prime purpose is not for local food consumption.

This would tend to indicate that the basic diet is wheat, meat, and dairy products such as cheese and butter. In some oblasts particularly those in the southwestern section of Asiatic Russia, there is an abundance of fruit and the surplus is canned and traded with other areas for more balanced meals, but for most of the oblasts, it is a case of specializing in a few crops which can be marketed and sold. This means that the farmer is dependent upon other farmers if he is to obtain a variety in his diet. Exceptions to this are in the environs of large manufacturing cities; the immediate surrounding countryside is given over to truck produce, such as the area around Irkutsk and Ulan-Ude. In Western Siberia, in an attempt to solve this problem, vegetables are grown in hothouses located beyond the Arctic Circle.

The Soviets' basic aim in Asiatic Russia is to develop its latent potential: it possesses great amounts of all natural resources except oil. Petroleum is available, but not in the quantities that are needed for a large industrial nation; but this is the only natural resource that is not available in abundance. With the addition of Asiatic Russia to the Soviet Union, the Union of Soviet Socialist Republic becomes the most self-sufficient nation in the world. The Soviet planners are aware of this; it is evidenced in

every new five (or seven) year plan by the allocation of more technicians and money to Asiatic Russia. The Soviets are fortunate that not too many Russians "pioneered" Siberia when Witte sponsored the Trans-Siberian railroad. The Siberian migration has been compared with the great westward migration of our own United States. However, considering the numbers of settlers involved in the settling of Asiatic Russia, it was not the mass movement that the United States had. From 1801 to 1914 approximately 5.7 million Russians migrated from European Russia to Siberia, of which approximately 4.7 million were peasants and almost a million were exiles or prisoners. According to V. V. Oblensky⁹ the largest migration came from 1891 until 1914 when approximately 4 million settlers came to Siberia. This coincided with the building of the Trans-Siberian railroad. The reason: "the Siberian Migration was an agricultural movement."¹⁰ The peasants were trying to escape from the old way of life--from unrecognized serfdom, legal restrictions and economic want. Siberia offered them freedom and a chance for a man to own his own land. Today the land is not divided up into many small farms. The Soviets can move into the virgin land and

⁹Osinsky Mexhdunarodyne i mexhdukontinental' nye migratsii v dovoennoi Rossii SSSR, (Moscow: 1928), p. 84

¹⁰Donald W. Treadgold, The Great Siberian Migration, (Princeton: Princeton University Press, 1957), p. 4.

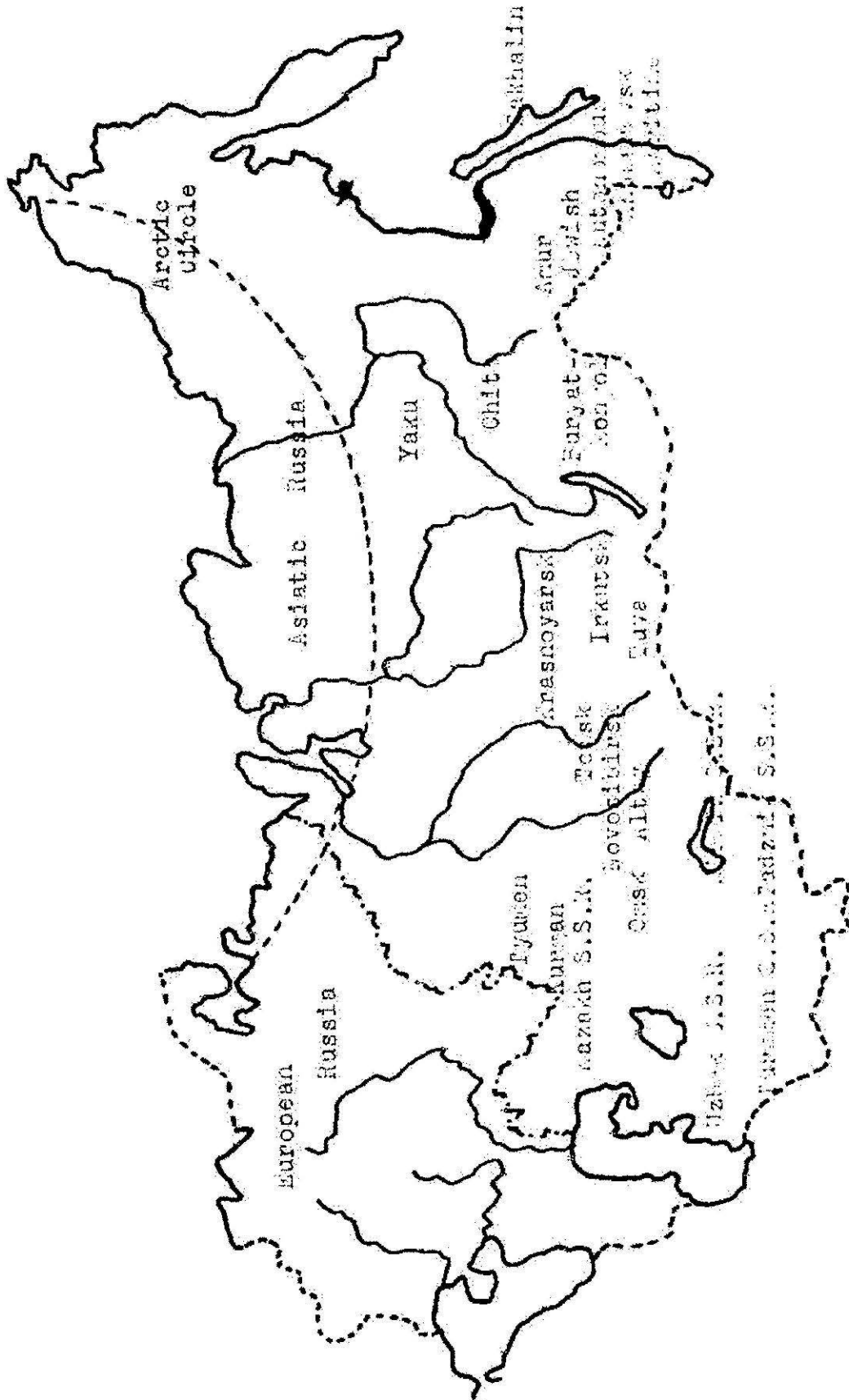
utilize modern mechanized farming methods, which by necessity require large units of farm land if machinery is to be operated at its efficient optimum. It does not have the subsistence-type farm to cope with.

To take advantage of the mineral wealth of Asiatic Russia requires agricultural development as well as industrial development; the workers must eat, and live. At present the industrial development is based primarily upon the first step in the Soviet industrialization plan: local agricultural production. The industrial complex is based upon the farm production of the area. If cotton is the major product, then the industries consist of cotton-ginning and cotton mills, as well as cottonseed-oil presses. Since sericulture and cotton have been introduced together, (the mulberry tree is grown with the cotton) silk-spinning industries are also included.

As shown on the map on page 99, Asiatic Russia is not agriculturally a limitless expanse of rich virgin soil.¹¹ The

¹¹During the 1920's the impression was created (especially by C. G. Fairfax Channing Siberia's Untouched Treasure: Its Future Role in the World. New York G. P. Putman's Sons 1923,) that Siberia was the future granary of the world. "Lake Baikal and the great wheat areas of Siberia are in the latitude of London, Paris, and Seattle. They have the climate and varied soil of our (American) corn and wheat belts." There is absolutely nothing to prevent all classes of investment and labor going into Siberia. They would be right at home and entirely comfortable. It is a practical duplicate of our own United States. p. 317-318
 "Western and Central Siberia is an untouched granary; more potential than both our American corn and wheat belts combined." p. 323

most important group of soils is the chernozem, or fertile black soil, of the steppe and wooded steppe located in southwestern Siberia and northern Kazakhstan. This soil occupies less than 10 per cent of the whole area. North of this fertile bank are the podzolic and marshy soils which occupy about 30 per cent of the total area. South of the black soil belt is the chestnut soil which merges farther south into the desert types of soil; this latter is prevalent throughout Soviet Central Asia. None of these last mentioned soils can compare in fertility with that of the chernozem type soil. It is on the chernozem that the most important wheat crops of Russia are grown. Nevertheless, as it stands now, Asiatic Russia cannot grow enough food to become self-sufficient.



10

Hand-drawn map of Russia

Hand-drawn map of Russia

10

CHAPTER SIX

CHINESE AGRICULTURAL CLAIMS: PROS AND CONS

Varied and conflicting reports have been written about the Chinese Communists' agricultural program. Some people favored the collectivization program:

. . . when our co-op farm totted up accounts it surprised even the most optimistic of us: our income was thirty per cent more than in 1955! Nine out of ten families increased their earnings. No one left the villages.

. . . Chekiang as a whole. . . (made) good the ravages of the typhoon and reap(ed) a grain harvest of 7,500,000 tons, a good 150,000 tons more than the year before and 550,000 tons more than the peak pre-liberation harvest of 1932.¹

Other people opposed the collectivization program:

In the Prosperity and Peace commune, according to Lee Ming-teh, We built dams and highways and irrigation systems. We produced more food than ever before. But we ate less than when we were in the co-operatives, and far less than when we had our own land, given to us by the Communists.

In the commune, an adult got 12 ounces of rice a day, and a child nine ounces. Each adult also got a pound of sweet potatoes a day. Every family was given four ounces of boiled vegetables twice a day.

If you didn't work, you didn't eat. If one member of the family failed to answer roll call, no one in the family could eat that day, even if the others worked. You could report sick, but there were no doctors in the commune, and if the group leader decided you weren't sick, you had to work.

¹People's China, No. VIII (April, 1957), 27

In the Three Joss Sticks connume, the work whistles started sounding at 4:30 a.m. Breakfast was at 5 a.m. Twenty minutes later, men and women marched to the fields. At 11:30 a.m., two sweet potatoes were distributed to each worker. A double-time march to the dining room got the work brigades back just in time for a 6 a.m. meal of rice and vegetables. After that, there was work in the fields under floodlights, or political sessions.²

However quotations of either kind cannot prove the effectiveness of the collective effort, or the degree of success that has been achieved in agricultural production in China. In 1955 the Union Research Institute of Hong Kong did a rather extensive study of the problem in China using sources only from Communist China.

The Institute reached the following conclusions:

Agricultural production in the first two years of the Five Year Plan executed was not satisfactory. On the contrary, due to Communist China's inability to overcome natural calamities and with production enthusiasm dealt a severe blow by the centralized purchase and sale and farm collectivization, production fell off. In 1953 (the first year of the Five Year Plan) food production decreased by some 10,000,000 cattles below 1952, and 1954's production again fell 15,000,000 cattles below 1953. Cotton production in 1954 was 1,000,000 piculs less than in 1952 (Hong Kong Ta Kung Pao, June 20, 1955). Among other produce, toasted tobacco fell off (China's Agriculture, page 19, 8th issue), and production of foodstuffs since 1953 also "made people feel hungrier than previously." (Hsin Hua Yueh Pao, April 1953, article "Production and Consumption of Foodstuffs.") Production of Tea

²U. S. News & World Report, (April 6, 1959), 96

also fell far below the level before the Japanese War, with 1954's production reaching only 54% of the pre-war level; and only by the last period of the second Five Year Plan, namely, the middle of 1962, would production surpass the pre-war level (Jen Min Jih Pao, editorial, March 20, 1955).³

The Union Research Institute attributed the failure of the first three years of the Five Year Plan to these five limitations: (1) Insufficient cultivated land. (2) Poor land and fertilizer. (3) Widespread calamities. (4) Harmful effects of "three fixed" policies and (5) Insufficient animal power. Following are these limitations in more specific detail:

Insufficient cultivated land. Nan Fang Jih Pao in its editorial on November 6, 1955 revealed that existing land on the mainland totalled 1,600,000,000 mou. Distributing this equally among the 600 million population, each person received little more than two mou. The paddyfield areas in the south, with an average yield of 300 cattles of grain per mou (based on the report of Communist China Paddy Production Technique Conference) would give each person around 700 cattles of grain. After removing the bran, this would be about 500 cattles of rice per person, barley sufficient to keep him fed. (Tietsin Ta Kung Pao, October 9, 1955).

³Communist China Problem Research Series (The Union Research Institute of Hong Kong, 1955), p. 116-117.

Poor land and insufficient fertilizer. According to the reports issued by the Work Conference on Soil and Fertilizers, as called for by Communist China's Ministry of Agriculture, these results were decried:

- 1) Fertilizing lagged far behind requirements.
- 2) Especially in the middle reaches of the Yellow River, the erosion was serious.
- 3) On the upper reaches of the river, cultivated land was laid waste.
- 4) In lower reaches, accumulation of silt and floods occurred.
- 5) In some northern areas, farmlands suffered damage by sand storms and soil turned sour.
- 6) Low fertility in the red soil in the south caused a yield of only 300 catties per mou.

Widespread calamities. In 1953 and 1954, natural calamities reduced agricultural production.

In 1955 on the mainland half the acreage of paddy fields was threatened by drought.

Unsteady production volume could not assure crops in some places. (Report at the Technique Conference mentioned above).

More than two million mou of cotton fields were destroyed in the last few years, either due to natural calamities or poor storage of seed.

Losses from insect pests reached 20-30% of the normal production volume. (Jen Min Jih Pao, June 13, 1955).

Harmful effects of "three fixed" policies. In November 1953, the Communists set up a system of centralized purchase and sales. Before the spring planting they carried out the three fixed policy of fixed production, fixed purchases and fixed distribution. Before the planting, the fixed food production volume for each peasant household was determined according to the fertility of the farm and its normal production volume. Then subtracting the agricultural tax and food requirements of the entire household, would leave the fixed surplus food or the "fixed purchase" by the state. In places where there were small peasant households, after paying their agricultural tax, they did not have enough left to feed the family members. Such were called "food short households" to whom were issued food purchase certificates to buy food from government food organs. This was called "fixed distribution."

In fact, "fixed production" was fixed higher than actual production. After payment of the agricultural tax, the major portion of the peasant's crop was bought by the state, leaving insufficient food for the family. By the time planting time arrived, all the food had been consumed, resulting in a serious food crisis in many places on the mainland in March and April 1955. With no food, many farmers

harvested their growing crops. This dealt a severe blow to the Communists' plan to increase food production.

Insufficient animal power. In December 16, 1955 the Tientsin Ta Kung Pao, reported that by 1956 Communists China would still be short 180,000 head of farming oxen. Actually in 1955 the shortage was even greater. For instance, in Hopei Province, human labor was organized to plough the land. In some cases, ten people pulled the plow and eight in others.

But the chief reason for the shortage of animal power was this: With the establishment of agricultural producers' co-operatives, oxen had been given to the co-operatives as the farmer's contribution share, but at such a low price that it almost meant confiscation. Some such co-operatives rented oxen from the peasants also at a low price, causing the peasants to remark, "Previously it was a losing proposition to slaughter oxen but now it is a good business."⁴

It should be remembered that the three years the Institute has examined are 1952, which had a good harvest, 1953 which had an average harvest, and 1954 which was considered a poor year because of drought in some areas and floods in others. Is China actually self-sufficient? Cressey feels that she is:

There is no need for China to import food. . . .

⁴Ibid., p. 119

China is able to produce them (wheat, cotton, tobacco) all in sufficient quantities for her own consumption. . . . In⁵ short, China is capable of feeding herself. . . .

The validity of the arguments used by both sides should be considered in light of the following. China, before the war "imported nearly two million tons of food a year; half of this was rice, the balance was largely wheat, flour, and sugar."⁶ In 1955 China exported 133,000 metric tons of rice to Japan, and in 1956 she exported 113,000 metric tons.⁷ In 1958 China signed a trade deal with Indonesia and promised to deliver to Indonesia 200,000 metric tons of rice. Communist China has made trade agreements with Russia and several other Communist countries of Europe. In each instance China has agreed to trade European machines for Chinese grain. China has honored her trade agreements. Thus it is not a question of can China produce enough grain, but can she increase the production of her farms so that she can raise a surplus so that she can trade more on the international market. If she is to raise her production levels this means an increase in the present system. What forms can this increase take?

⁵George B. Cressey, Land of 500 Million: A Geography of China (New York: McGraw-Hill Book Company, Inc. 1955) p. 119

⁶Ibid., p. 101

⁷See above, pp. 77,79

CHAPTER SEVEN

PROSPECTS AND POSSIBILITIES

China is faced with the task of feeding a population that has an annual increase of twelve million people. Russia is faced with the task of feeding a population that has an annual increase of four to five million. Japan is faced with the task of feeding a population that has an annual increase of at least one million.¹ All three countries have the same agricultural problem: How to raise enough food to supply an expanding population. But it is here that the similarity ends.

Japan. Japan's prospects can be dismissed rather quickly. She is utilizing as much of the farmland as she has available. There is no virgin land that can be claimed and cultivated. Japan has no undeveloped Siberia, Sinkiang, Heilungkiang, or Inner Mongolia, that she can explore or settle more densely. This leaves the Japanese with very few alternatives; the two main ones are: Either grow more food per acre, or import more food.

Japan could increase the yield per acre, the yield per worker acre, the yield per harvest acre and even increase

¹These figures are arrived at on the basis of a net increase of approximately two per cent per year.

the total acreage by various methods of mechanization, using more fertilizers, insecticides, develop more specialized seeds, utilizing farmers' co-operatives, and eliminating the small farms and developing large scale farming. Even under the most favorable conditions, Japan will probably remain a food-importing nation; she will never become a food-exporting one.²

In the case of importing food, Japan has felt it expedient to tie her food importing into her manufactured exporting program. Any nation that shows the ability, or the intent to buy Japan's manufactured goods will, if at all possible, supply Japan's foodstuff requirements at home. The Japanese have several areas of such food-import manufactured export complexes. One of the major ones is the United States; others Japan is trying to develop are Southeast Asia, Thailand and Burma in particular, the Phillipines, and Communist China.

China. In comparing a population density map of Russia and China, one could assume both countries have much vacant space that could be used to absorb the population expansion of these two countries. If it were just a matter of space, this could be the solution; but in the case of China, much of the uninhabited area cannot support agriculture. This

²Never, that is, unless she suffers a tremendous decrease in population, or acquires new territories.

does not mean that it will not become uninhabited. Many areas, for instance, the Shinkiang province where minerals (i.e., iron ore, coal, aluminum, etc.) are being discovered, and where there is an abundant potential for electric power--are being developed by the Communists as industrial centers of modern China. But these cannot be developed as agricultural areas because the soil, climate, and moisture just are not there.

China could increase the density per square mile in some of the farm areas; she would not be able to increase the density figure all over China to as high a man-per-land ratio as is found in south China.³ But she could increase the ratio in Manchuria to one that would be comparable to that which is found south of Manchuria. However, if China would increase the density of the farm population in Manchuria it would mean that the farmer would be relegated to a subsistence type of farming. He could no longer produce a surplus. At the present, Manchuria is the only farm area in China that

³The farmer of the North could never raise enough to support himself if he were required to live on as small a plot as the farmer of the south. The reason the latter can do so is because of the climate; it is much warmer for a longer period of time, thereby allowing him to grow rice (not wheat as in the North) and harvesting at least one other crop.

can produce a yearly surplus of food.⁴ If the rural population density were increased the mechanized efficiency would be lost.

China does have one virgin area which could be developed. It is located on the upper reaches of the Argun and Heilungkiang Rivers. Russia and China have undertaken a joint survey trip to assess the potential locations for power stations. Some thirty different locations were surveyed, and a canal system was proposed.⁵

There are three canals in the proposed system: One connecting the Sungari River with the Liao River, another connecting the Heilungkiang River with the Nun River; and a third connecting the Ussuri River with the Suifen River. The basic purpose behind this canal system is to open new water ways in Manchuria, Mongolia, and Asiatic Russia. It will allow deep draft vessels as far inland as the city of Mohe. It will also "provide water for the arid, salty alkaline land. In the Hulunbuir League (which is under the Argun Banner of Inner Mongolia) two and one half million acres of black earth could be put under the plow."⁶

⁴This statement excludes the rice basin in South China, because the surplus harvest there is not due merely to double cropping, but a triple cropping. It also possesses one of the highest rural population densities found anywhere in China.

⁵See map on p. 117

⁶Cheng Hsiao-feng, "Taming the Black Dragon." People's China, (January, 1957), p.18.

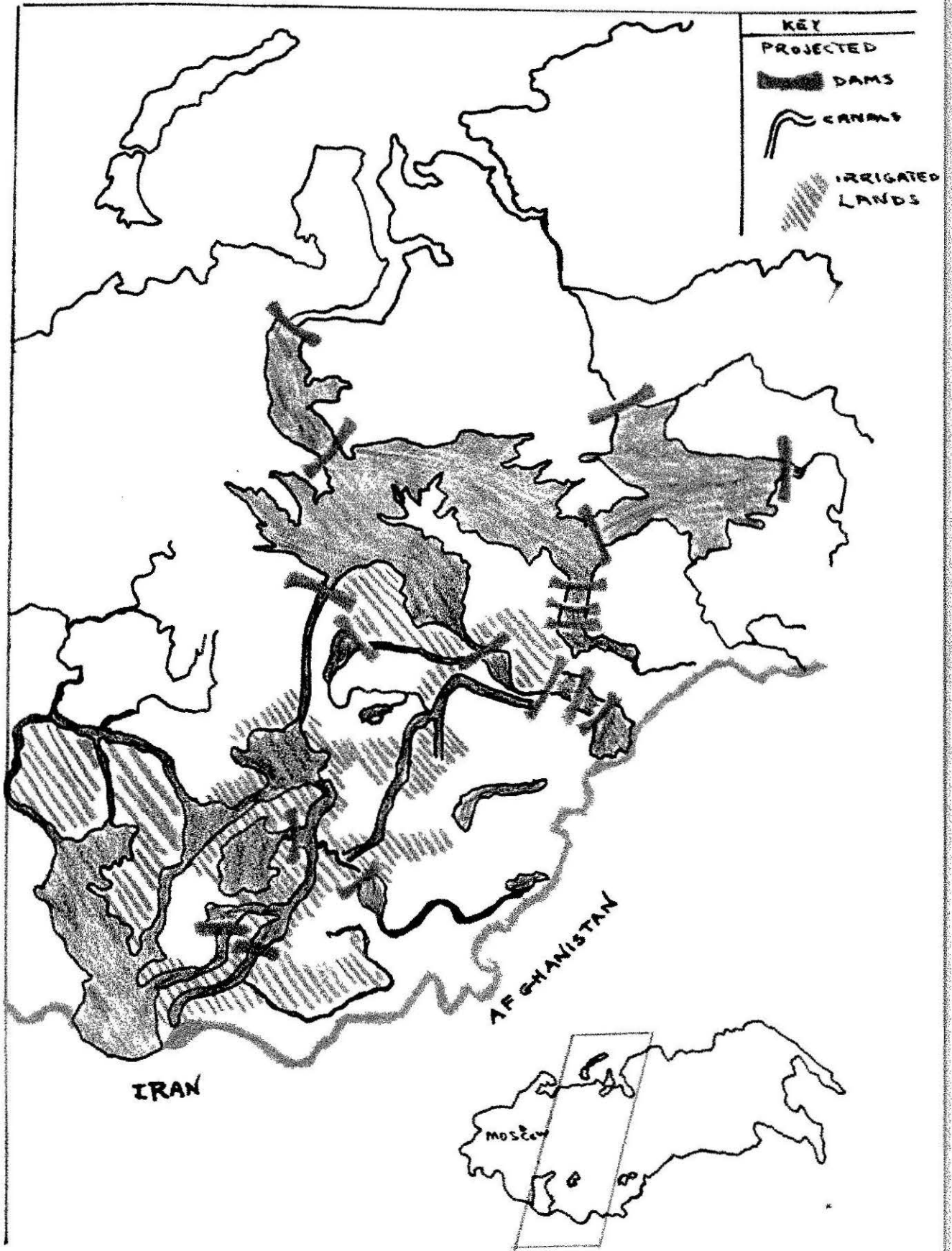


1. Canal to connect the Sungari River with the Liao River
2. Canal to connect the Heilungkiang River with the Nun River
3. Canal to connect the Ussuri River with the Suifen River using Lake Hsingkai

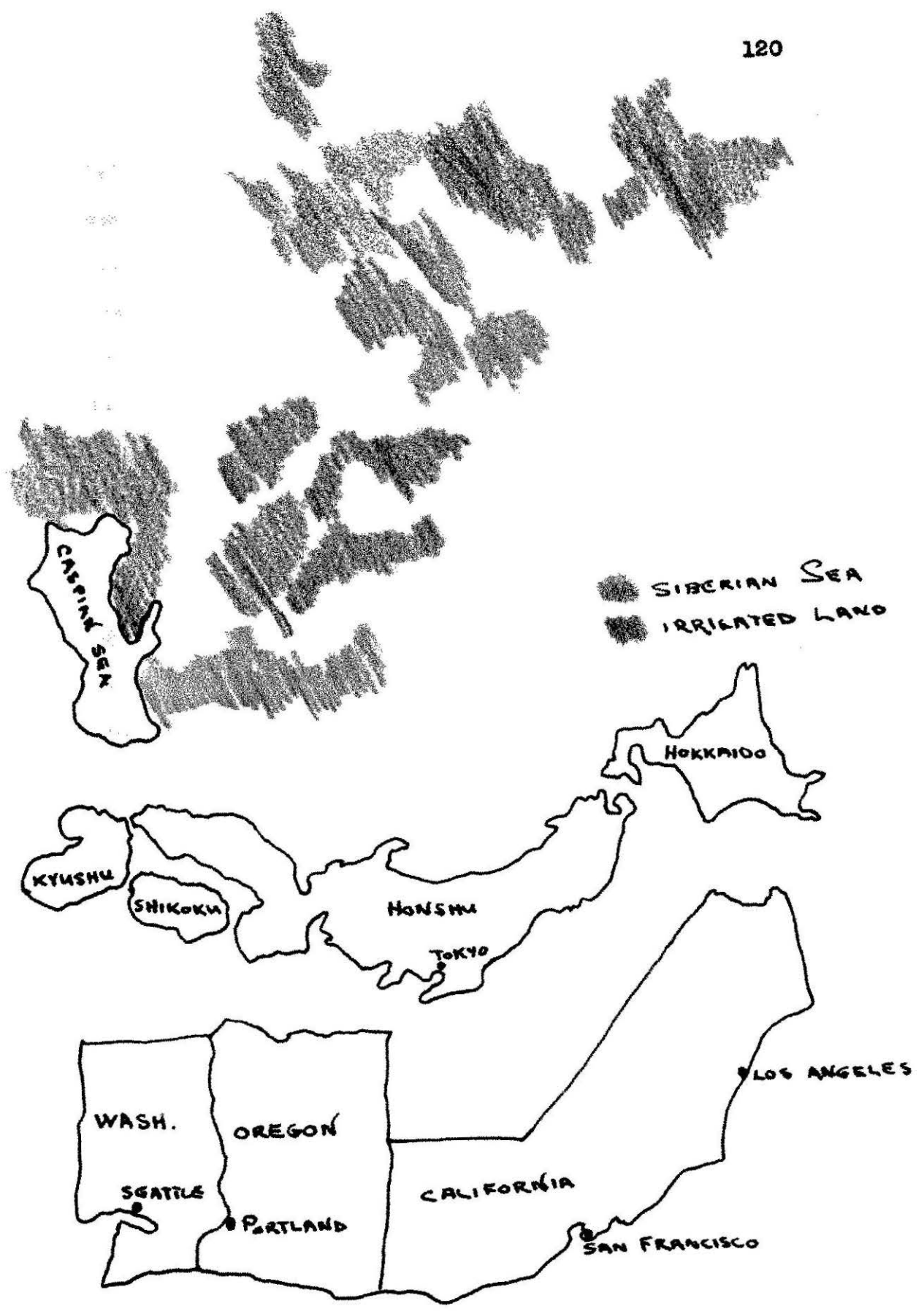
However, the "black Dragon" project is not the principal method for China to increase her agricultural production. China, if she is to increase her agricultural production, is not going to be able to turn to rich expanses of fertile virgin land; she will have to increase the yield-per-acre and the yield-per-worker acre. This can only be done through the efficient use of machines over large scale farms, coupled with prudent application of fertilizers, insecticides, irrigation, and the scientific selection and development of seeds for particular areas. The part-time farm worker must be taken off the farm and fitted into the industrial development program. China must abandon the small farm unit if she is to support her total population and give people a higher standard of living. It could be done.

Russia. The agricultural problem of Russia is different from those of China and Japan. Asiatic Russia has the virgin soils. Her problem is one of population also, but instead of having too many people, she has too few. To develop Asiatic Russia to its fullest potential require a large influx of people. The agricultural lands of Asiatic Russia at the present are almost self-sufficient. Industrially, Asiatic Russia has the mineral wealth to support a manufacturing population.⁷ But if Russia does develop Asiatic Russia

⁷ See map, p. 83



DAVYDOV'S PLAN FOR A SIBERIAN SEA



COMPARATIVE SIZE OF SIBERIAN SEA

industrially, it means that she will also be required to feed these people. This necessitates agricultural development in Asiatic Russia.

Russia intends to solve this problem, in the main, by two methods. The first is to develop more specialized seeds that will fit into the water soil situation of local areas. This will be supplemented, as in the case of China, with machinery, fertilizers, insecticides and local irrigation projects.

The second method is the creation of the Siberian Sea by making the Ob and Yenisei Rivers flow backward. At one time in history, the Ob River flowed in a southerly direction, and watered the land around what is today known as the Turgai district. The course of the Ob River was changed by earthquakes and glaciers. In the last glacial period the glaciers moved north; earthquakes changed the earth's surface and the Turgai, a plateau between Western Siberia and the Aral-Caspian depression, was formed. This plateau checked the flow of the Ob southward. When the river is turned about, it will flow in the same direction as it did thousands of years ago.

Mitrofan Davydov, Russian hydraulic engineer, says:

The flood lands of the rivers Irtysh and Tobol will bring the man-made Siberian Sea right up to the divide between Western Siberia and the Aral-Caspian depression. The plateau can be cut by a big canal.

Powerful pumping stations will send water from the Siberian Sea into the canal. This will make it possible for the Ob to emerge onto the southern slope of the plateau. From that point on, the flow will be natural. In two big branches the river will flow along the beds of dried-up rivers and the new channels onto the waterless plains of Central Asia.

As for the Yenisei, it flows east of the Ob and at 60° north latitude the two rivers approach each other. To create a second Siberian Sea, it will be sufficient to build a dam on the Yenisei at the closest point, below the mouth of the Podkamenaya Tunguska tributary, which feeds into the Yenisei from the east. From here water will flow into the Kas River, a western tributary of the Yenisei, turn its course backward and join up with the first Siberian Sea to flow with the Ob toward the Central Asian deserts and the steppes of Kazakstan.⁸

According to Davydov's plan, Siberian water will irrigate 250 million acres of arid land; far greater than the irrigated land in the United States, Canada, Australia, Japan, Egypt, and Italy combined.

Cotton plantations, vineyards, citrus groves and fields of rice and sugar, will ripen where there was nothing but sand before. This gigantic oasis could support 600 million people.

In the sand wastes of Kara Kum and Kzyl Kum, the daily annual temperature ranges will approximate those of Italy.

⁸Mitrofan Davydov, "The Siberian Rivers Will Flow Backward", U.S.S.R. Illustrated Monthly, XIII (1959), p. 34

Water evaporating in Central Asia will create air currents that will turn north to mitigate the harsh Siberian weather. The artificial seas of Ob and Yenisei may cause the permafrost boundaries in Western and Central Siberia to retreat allowing millions of acres of this barren land to be cultivated.

These rivers will also be used to generate power. This man-made river that is to flow between Siberia and Central Asia will be 35 feet deep. It will connect with the Arctic Ocean, Lake Baikal in Central Siberia, the Baltic Sea to the west, the White Sea to the north, and the Black Sea to the South, handling a large amount of freight along its 5,000 miles of navigable length.

This plan which has been Davydov's dream for 25 years would entail 18 billion cubic feet of earth to be excavated and removed--a hundred times more than in the building of the Panama Canal--and 25 million cubic yards of concrete to be poured.

Is this plan feasible? Kara Kum and Kzyl are lifeless burnt out spaces for most of the year. But during the brief spring rains the desert suddenly blooms. As the rains end, everything withers and dies, only the oases remain green. These, made by tapping underground waters for irrigation, ripen the cotton, dates and olives, and herds fatten on the rich

pastureland. Therefore, Davydov believes his plan will work.

Under Davydov's supervision, a team of experts are drawing up plans for this project. Expeditions already have done the ground explorations in both Siberia and Central Asia, studied the area of future lakes, the disposition of the Ob and the Yenisei and the sites for the future dams. If his plan succeeds, it will solve the problem of feeding the peoples of Asiatic Russia.

C O N C L U S I O N

What are the implications of the aforementioned discussion? In the case of Russia, she is developing her industrial potential. Asiatic Russia has the mineral wealth to make the Soviet Union the most self-sufficient nation in the world. The Soviets realize this, and are developing Asiatic Russia accordingly. To keep pace with the industrial development, Russia has placed great emphasis on the agricultural development of Asiatic Russia. The area can be developed so that agriculturally it will support a large population. Asiatic Russia is, therefore, capable of supporting industrially and agriculturally more people than it now has. At the present, it can be classified as an under-populated area.

In like manner, China is attempting to industrialize. But unlike Russia, she does not have at present, much in the

way of heavy equipment, technicians, or basic industry. As a result China is forced to seek help from foreign countries. The machinery, technical aid, etc., that China receives must be paid for. Since China has little or no manufacturing, she must perforce pay in agricultural goods. This is no means accomplishment. During the pre-war years China imported almost two million tons of good a year, and her population was only 450 million. Since the war her population has increased to approximately 550 million. This has placed a greater demand on her farmers than during the pre-war years. In addition to this increase of population are added the twin industrial burdens: that of raising more crops to pay for the industrial goods which were bought in foreign markets so that China could embark upon an industrialization program, and also the new burden of producing industrial crops, (such as cotton and soybeans) for the newly created industries so that the factories can produce manufactured goods.

China has no alternative. She must increase her agricultural production. Within her own boundaries she does not have significant virgin soil to solve her dilemma. This means that if her present boundaries are to remain, China must increase her annual total production by increasing her yield. If she cannot do this, she will either have to abandon her industrial program, or acquire additional territories; territories which are not crowded. At present China must be

classified as an over-populated area.

In contrast to Russia and China, what is Japan's position? Japan is the only industrial nation in Asia today. Her industrial position however depends upon her agricultural production. She must import and export to exist; her industrial capacity does not rest upon a nation that is wealthy or self-sufficient in minerals and industrial agriculture. Japan must import both in order to produce manufactured goods. In fact, not only must Japan import most of the requirements for her industrial needs, she must also import much of the foodstuffs required to feed her citizens. Thus, although one might say Japan has no right to be an industrial nation, the fact remains that she is one.

Japan is seeking markets for her industrial goods and sources of supply. She is also seeking underdeveloped areas that her industries might be able to develop.

Southeast Asia can offer her all three: Markets for manufactured goods, sources for industrial raw materials and sources for foodstuffs. The United States can offer markets and materials, but Japan must watch her dollar spending; otherwise she could easily run up a dollar deficit which would unbalance her foreign trade.

China, with over 500 million people, could offer Japan almost unlimited markets for her manufactured goods. The prospect of war materials and foodstuffs that China could

offer Japan are not as bright. China already is supplying Japan with rice and soybeans. Japan could absorb more; whether the Chinese could produce more for export to Japan is not known at the present. China does have mineral wealth that Japan could use, but at the present that is undeveloped.

Its location also indicates that transportation would not only be difficult, but its cost might price it out of the competitive market.

Therefore, for the present at least, Japan will continue to look toward Southeast Asia and the United States for sources of supply and for markets. China will not replace either of them in the near future. However, Japan would still like to tap China's untouched consumers' market. If China could divert more of her agricultural production toward Japan, this could become a reality. Regardless of the outcome, Japan will remain as it is today, an over-populated area.

Finally, these are the implications of the above points. Japan is an over-populated area. She cannot produce enough foodstuffs to support her populace either in the present or the future. She will continue to import food. China today is an over-populated area. For the present she might be able to produce enough foodstuffs to support her population, but if the population trend continues increasing as it has in the past, China will soon become a food importing nation. At present Asiatic Russia is, in regard to foodstuffs,

self-sufficient. She is also under-populated. She has the potential to support a large population. To develop her industrial potential Asiatic Russia requires a large population.

Today Japan and China are over-populated. To the south is Southeast Asia with under-populated areas, food surplus areas and sources of raw industrial materials. To the north and west is Asiatic Russia--under-populated with virgin soil and sources of industrial raw materials.

Such is the picture of the agricultural situation today in China, Japan, and Asiatic Russia in the post World War II period. In what direction each country will go remains to be seen.

BIBLIOGRAPHY

A. BOOKS

Agriculture in New China. Peking, China:
Foreign Languages Press, 1953

Buck, John Lossing. Chinese Farm Economy.
Chicago: University of Chicago Press,
1930. 386 pp.

_____, Land Utilization in China, Nanking:
University of Nanking, 1937. 366 pp.

Channing, Fairfax C. G. Siberia's Untouched
Treasure: Its Future Role in the World.
New York: G. P. Putnam's Sons, 1923. 329 pp.

Chen, Han-Seng. Landlord and Peasant in China.
New York: International Publishers, 1936.
140 pp.

A study of the agrarian policy in
Kwantung Province in South China. Discusses
land distribution, tenancy system, taxes,
tolls, trade and credit. A good study but dated.

Chang, Pei-Kang. Agriculture and Industrialization.
Cambridge; Harvard University Press 1949. 260 pp.
An historical and theoretical approach to the
relationship between agriculture and industrialization
and the role of agriculture in the industrialization
process. Since the material was gathered before 1947,
it has little value to the present Chinese situation
but is good for comparison.

Cheng, Tien-Fong. A History of Sino-Russian
Relations. Washington, D. C. Public Affairs
Press, 1957. 389 pp.

Complete and inclusive historical study
Chinese-Russian relationships beginning with the
12th century down to the present day Moscow-Peking
friendship. The major portion of the book deals
with Chinese-Russian relations since the Russian
Revolution.

Cressey, George B. Asia's Lands and Peoples.
New York: McGraw-Hill Book Company, Inc.,
2 nd. ed. 1951

An excellent examination of the physical and social geography of Asia. A lucid explanation well illustrated with maps and figures.

_____, Land of 500 Million, A Geography of China.
New York: McGraw-Hill Book Company, Inc.,
1955. 398 pp.

A geographic presentation of China's economic, social and political position. A definitive study of China's geography including climate and weather, natural resources, natural disasters, agriculture, commerce and industry.

Dallin, David J. Soviet Russia and The Far East.
New Haven: Yale University Press, 1953. 398 pp.

This book is a continuation of the narration the author began in his book The Rise of Russia in Asia. Beginning with the Japanese drive into Manchuria, it traces the power struggle between Japan, Russia and China from 1931-48.

_____, The Rise of Russia in Asia. New Haven:
Yale University Press, 1949. 293 pp.

A dissertation on Russia's expansion into the Far East from the 1840's through the 1920's. Russia's interests are considered against a backdrop of Japanese, Chinese, American, German, British and French interests.

Frey, Hubert. Free China's New Deal.
New York: The Macmillan Company, 1943. 274 pp.

A rather complete study of China in the 1940-41 period. Free China pertains to that area not occupied by the Japanese. The author assesses China's resources, industrial development, communications, standard of living, etc. It fills the gap on China from the pre-war and the post-war periods.

Grajdanzev, Andrew Jonah. Land and Peasant in Japan.
New York: Institute of Pacific Relations, 1952.

An appraisal of the agricultural situation in Japan with an emphasis on the land reform in the post-war period.

Krushchev, Nikita S. Speech at the First Session of the Soviet of the U.S.S.R. Moscow: Foreign Languages Publishing House, 1954.

Lattimore, Owen. Pivot of Asia. Boston: Little, Brown and Company, 1950. 279 pp.
A rather complete appraisal of Sinkiang Province, it not only traces the historical development of the provinces, but gives a complete analysis of the present day situation in terms of nationalities, geography and economic development. It contains a complete evaluation of the agricultural situation in Sinkiang.

_____, The Situation in Asia. Boston: Little, Brown and Company, 1949. 244 pp.
A presentation of American and Russian interests in Asia as compared with those of the Japanese and the Chinese.

Li, Choh-Ming, Economic Development of Communist China. Berkeley and Los Angeles: University of California Press, 1959. 284 pp.
An appraisal of Communist China's First Five Year Plan, 1952-57, drawing extensively from Chinese sources for his information.

Malozemoff, Andrew. Russian Far Eastern Policy 1881-1904. Berkeley and Los Angeles. University of California Press, 1958. 358 pp.
A rather exhaustive study of an historically important period of Russia's expansion into the Far East. An excellent analysis of the causes of the Russo-Japanese War of 1904-5.

Maltsev, Terenty Semyonovich. New Methods of Soil and Crop Cultivation. Moscow: Foreign Languages Publishing House, 1956.

Manchuria: Land of Opportunities. New York: South Manchuria Railway Company, 1924. 93 pp.
Although dated, this book reveals the importance that Japan placed on Manchuria in the Japanese Empire.

Mao, Tse-Tung and Liu Shao-Chi. Significance of Agrarian Reforms in China. Bombay: People's Publishing House, Ltd., 1950. 91 pp.

Michael, F. H. and G. E. Taylor. The Far East in the Modern World. New York: Henry Holt & Company, 1956. 724 pp.

An examination of Russia in Asia, China, Japan, and Southeast Asia from the Philippines to Burma; in regard to Government, religion and social geography.

Rostow, W. W. in collaboration with Richard Hatch. An American Policy in Asia. New York: Published jointly by the Technology and John Wiley & Sons, Inc., 1955.

An analysis of Asia: her aims, goals, desires, and their relationships to the goals of the Communists. This is interpreted through America's interests in Asia and concludes with a concrete foreign policy for America toward the Asian nations.

Shabad, Theodore. Geography of USSR. A Regional Survey. New York: Columbus University Press, 1951. 584 pp.

An examination of Soviet Russia's resources, region by region. It includes the Agricultural, industrial progress of each, as well as the present day administrative-political complex.

Shen, T. H. Agricultural Resources of China. Ithaca, New York: Cornell University Press 1951. 407 pp.

A very complete assessment of the agricultural situation in China, including biological, water, socio-economic, land utilization, and food consumption factors. It covers principally, the years 1937-1948.

Spencer, Joseph E. Asia East by South. New York: John Siley & Sons, Inc., 1954. 453 pp.

Divided into two parts, the first is a systematic presentation of the geography, including geomorphology, climatology as well as the plant cultures and marine life. The second half of the book is devoted to a regional discussion of the growth and development of the various cultures.

Stamp, Dudley L. Asia: A Regional and Economic Geography, London: Methuen & Company Ltd. New York: E. P. Dutton & Company, 1st. ed. 1929, 9th. ed. 1957. 694 pp.

A country to country survey of the agricultural and natural resources of each nation, including climatology. This is one of the few books which includes an analysis of Asiatic Russia as separate from the Soviet Union as a whole.

Stuart, Kirby. (ed.) Contemporary China. Hong Kong: Hong Kong University Press, 1958. 326 pp.

An economic and social studies survey of China; contains an analysis of 'Agricultural production in Mainland China' by Choe Kuo-Chun.

Treadgold, Donald W. The Great Siberian Migration. Princeton, New Jersey: Princeton University Press, 1957. 278 pp.

Government and peasant in resettlement from emancipation to the First World War. It involves also Asiatic Russia, in particular its agriculture and peasantry. The migration was an essential part of Russian agricultural individualism.

Trewartha, Glenn T. Japan: A Physical, Culture, Regional Geography. Madison, Wisconsin: University of Wisconsin Press, 1945.

A detailed description of Japan's geography with a good area by area presentation of Japan's agricultural situation, including both her assets and her problems.

B. PUBLICATIONS OF THE GOVERNMENT, LEARNED SOCIETIES AND OTHER ORGANIZATIONS

Agricultural Trade with Cooperatives of Japan.

Foreign Relations of the United States
PL 65. Washington: Government Printing Office,
May 1958

Japan. A Report on Business and Trade. New York:
The First National City Bank of New York,
September, 1958.

Johnston, B. F. Food and Agriculture in
Japan 1880-1950. Doctor's Thesis
published at Stanford, May, 1953.

Kirby, Riley H. "Competition in the Japanese
Market for Agricultural Production."
Foreign Agriculture Report No. 104 31 pp.
U. S. Department of Agriculture. Washington:
Government Printing Office, November, 1957.

Pike, Clarence E. "How South Asian Countries
Are Boosting Agriculture," Foreign Agriculture
XXI No. 3 (March 1957) 3-5, 22.

Soviet Technical Assistance. Staff Study
No. 7 Washington: Government Printing
Office, July 12, 1956.

Spurlock, Hughes H. "Chinese Agriculture under
Communists." Foreign Agriculture, XXIII
No. 5 p. 9-10 Washington: Government Printing
Office, May 1958.

_____, "Why Communist China Must Expand
Its Agriculture," Foreign Agriculture, XXI,
No. 3 (March 1957), 11-13.
Washington: Government Printing Office.

Statistical Survey of Economy of Japan-1958.
Tokyo: Ministry of Foreign Affairs-Japan. 1958.

"The Japanese Market 1956," pp. 1-16. Pamphlet
compiled and published by J. Walter Thompson
Company, December 1955.

U. S. Department of Agriculture. Rice.
Annual Market Summary, Grain Division
AMS 277. Washington: Government Printing
Office, 1958. 39 pp.

United States Department of Agriculture. Rice.
Production and Marketing in the United States.
Miscellaneous Publication No. 615.
Washington: Government Printing Office
January 1947. 33 pp.

United States Department of Agriculture. The Agricultural Economies of 23 Far Eastern and South Pacific Countries. Foreign Agricultural Service. Washington: Government Printing Office, October, 1956.

C. PERIODICALS

- Aidinov, Georgi. "Virgin Soil", U.S.S.R. Illustrated Monthly, (no. 4), pp. 30-5
Washington, D. C.: Published by the Embassy of Soviet Socialist Republics in the USA.
- Andronov, Iona. "The Soviet Economy Today and Tomorrow," U.S.S.R. Illustrated Monthly, No. 5 (20), pp. 49. Washington, D. C.: Published by the Embassy of the Soviet Socialist Republics in the USA.
- "A Sketch of Chinese Agricultural Geography," People's China, (February 1, 1957) 12-15
- Cheng, Hsiao Feng. "Taming the Black Dragon," People's China, (January, 1957), 18-21
- "China's Back-Yard Steel Boom and the Way It Turned Out," U.S. News & World Report. (January 30, 1959), 68-9.
- Eckstein, Alexander. "Industrializing in a Hurry--Plans and Problems," The New Republic, CXXXVI, No. 19 pp. 26-9
- Guillain, Robert, "Taking Away The 'Good Earth'," The New Republic, CXXXVI, No. 19, (May 13, 1957), pp.30-4
- Hawley, Cameron. "Are We Driving Japan Into Red China's Arms?" Saturday Evening Post, XXIX (August 10, 1957), pp. 18-9, 72-5
- Jesny, Naum. "Soviet Agriculture," "Current History", XXXIV (January, 1958), pp. 21-7

Communist China Problem Research Series.

Hong Kong: The Union Research Institutes,
1955. (Mimeographed.)

Department of Agricultural Economics.

Economic Facts. Prepared by the College of
Agriculture and Forestry, No. 34
Chengtu-China: University of Nanking,
July 1944. 30 pp.

Department of State Publication 6516. Japan
Free World Ally. Far Eastern Series No. 74
Washington: Government Printing Office,
November 1957.

Economic Bulletin For Asia and the Far East.

Prepared by the Research and Statistics
Division Economic Commission of Asia
and the Far East Vol. I, No. 1. Bangkok:
United Nations, May 1953.

Economic Development and Planning in Asia
and the Far East. The Agricultural Sector.
Prepared by the Secretariat of the Economic
Commission for Asia and the Far East.
Vol. VIII, Nov. 3. Bangkok: United Nations
November 1957.

Economic Survey of Japan. Tokyo: Economic
Planning Board Japanese Government, 1956

Harootunian, Dr. H. D. "Japan's Relations with
Red China," Korean Survey, VIII no. 5,
(May, 1959), 3-4-12. Published by The Korean
Research and Information Office, Washington.

Handbook of Statistics of Agriculture,
Forestry, and Fisheries. Tokyo: Statistics
and Survey Division, Ministry of Agriculture
and Forestry, Government of Japan, 1953.

Japan's Agricultural Imports from United
States and from other Countries. Farm
Management PL 68. Foreign Agriculture
Rural Electrification. Washington: Government
Printing Office, September 1957.

Kuo-Chun, Chao. "Agriculture in Communist China," Current History, XXXII (January, 1957), pp. 33-42

_____, "Agricultural Advance in China," Current History, XXXV (December, 1958), pp. 342-7

"Life in a Red Commune--in Refugees' Own Words," U. S. News & World Report (April 6, 1959), p. 96-7

Melby, John F. "The Chinese-Russian Partnership," Current History, XXXIII (December, 1957), pp. 321-6

Morozov, Alexander. "Power and Light--Meditation with a Map," U.S.S.R.. Illustrated Monthly, (No. 4), pp. 26-8 Washington, D. C.: Published by the Embassy of the Soviet Socialist Republics of the USA.

Organski, A. F. K. "The Russian-Chinese Comradeship," Current History, XXXVI (January, 1959), pp. 18-23.

Palmer, Norman. "Foreign Policy of Communist China," Current History, XXXII (January, 1957), pp. 7-12.

Quigley, Harold S. "The Chinese Japanese Courtship," Current History, XXXIII (December, 1957), pp. 353-7.

_____, "Trade with Communist China," Current History, XXXV (December, 1958), pp. 353-7.

Rubinstein, Alvin Z. "Soviet Polity in SouthAsia," Current History, XXXII February, 1957), pp. 97-104

_____, "Soviet Policy in South and Southeast Asia," Current History, XXXVI (January, 1959), pp. 24-30 and 36.

Shu, Hua. "Growth of Agricultural Production," People's China, IV (February 16, 1957), pp. 5-6

- "Siberia's Creeping Orchards," U.S.S.R. Illustrated Monthly, No. 1 (28) p. 52
Washington, D. C.: Published by the
Embassy of Soviet Socialist Republic
in the USA.
- Sukhanov, Mikhail. "The Soviet Farmer
and Machine Power," U.S.S.R. Illustrated
Monthly, (no. 5 (20)), pp 44-47.
Washington, D. C.: Published by the
Embassy of the Soviet Socialist Republic
in the USA.
- Swearingen, Rodger. "A Decade of Soviet
Policy in Asia, 1945-56," Current History,
XXXII (February, 1957), pp. 89-96.
- "The Hundred Million Question." The Economist,
(March 8, 1958), 16-20
- "The Siberian Rivers Will Flow Backward,"
An Interview with Mitrofan Davydov,
Hydrolic, Engineer. U.S.S.R. Illustrated
Monthly, (No. 13), pp. 32-5.
Washington, D. C.: Published by the
Embassy of Soviet Socialist Republics
in the USA.
- "The Year of the Leap" Time, LXXII No. 22,
(December 1, 1958), pp 21-25
- Takehata, Seiichi. "Japan Must Trade to Live,"
The Rotarian, XCIV (January, 1959), pp 23-4.
- Tong, Hollington K. "Why Red China Won't
Break With Russia," The Reader's Digest,
(July, 1957), pp. 97-100.
- Van der Kroef, Justus M. "China in
Southeast Asia," Current History
XXXIII (December, 1957), pp. 345-52.
- Wu, Yuan-Li. "Communist China's Economic
Challenge," Current History, XXXII
(January, 1957), pp. 19-25.
- Zebazny, Pyotr. "Growing Wheat", U.S.S.R. Illustrated
Monthly, (No. 5(20)), pp 48-51. Washington, D. C.
Published by the Embassy of the Soviet Socialist
Republics in the USA.

D. NEWSPAPERS

Chandrasekher, Dr. Sripati. "Life in Red China: A Series: Drive for Progress Moves Entire Nation," Associated Press dispatch, Redwood City (Cal.) Tribune, February 16, 1959, pp. 1,3.

_____, "Entire Nation Working Hard," Associated Press dispatch, Redwood City (Cal.) Tribune, February 17, 1959, p.1.

_____, "Communists End Starvation; Land Problems Still Critical," Associated Press dispatch, Redwood City (Cal.) Tribune, February 18, 1959, p. 8.

_____, "Agricultural Experts Proud of Communes," Associated Press dispatch, Redwood City (Cal.) Tribune, February 19, 1959, p. 14.

_____, "Commune Guarantees Can Be Terrifying," Associated Press dispatch, Redwood City (Cal.) Tribune, February 20, 1959, p. 13.

Frankel, Max. "Inside Siberia--New Soviet World," Copyright New York Times and San Francisco Chronicle, April 30, 1959, p. 1 & 8.

_____, "Noisy Progress as Siberia Builds" Copyright New York Times and San Francisco Chronicle, May 1, 1959, p. 12.

Yutang, Lin. NEA Service, "Formosa Sets Example for Rest of Asia to Follow," Daily Palo Alto Times, February 20, 1959. p. 20

_____, "Communist Infiltration of Japan Openly Defiant," NEA Service. Daily Palo Alto Times, February 21, 1959. p. 10.

_____, "Southeast Asia Ideology War Continues but Freedom May Win Battle of Mind," NEA Service. Daily Palo Alto Times, February 23, 1959, p. 10.