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ARMY SERVICE FORCES MANUAL **M 370-7**

CIVIL AFFAIRS HANDBOOK

KOREA

SECTION 7: AGRICULTURE

HEADQUARTERS, ARMY SERVICE FORCES 16 OCTOBER 1944

ARMY SERVICE FORCES MANUAL

M 370-7
Civil Affairs

CIVIL AFFAIRS HANDBOOK

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ARMY SERVICE FORCES MANUALS

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This study on Agriculture in Korea was prepared for the

MILITARY GOVERNMENT DIVISION, OFFICE OF THE PROVOST MARSHAL GENERAL

by the

OFFICE OF FOREIGN AGRICULTURAL RELATIONS
UNITED STATES DEPARTMENT OF AGRICULTURE

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INTRODUCTION

Purposes of the Civil Affairs Handbook

The basic purposes of civil affairs officers are (1) to assist the Commanding General by quickly establishing those orderly conditions which will contribute most effectively to the conduct of military operations, (2) to reduce to a minimum the human suffering and the material damage resulting from disorder and (3) to create the conditions which will make it possible for civilian agencies to function effectively.

The preparation of Civil Affairs Handbooks is a part of the effort to carry out these responsibilities as efficiently and humanely as is possible. The Handbooks do not deal with plans or policies (which will depend upon changing and unpredictable developments). It should be clearly understood that they do not imply any given official program of action. They are rather ready reference source books containing the basic factual information needed for planning and policy making.

Korean agriculture is so intimately related to the agricultural programs and the food supply of both Korea and Japan that this handbook on Korean agriculture is necessary for an understanding of Japanese agricultural problems. It should be read in conjunction with Civil Affairs Handbook M 354 - 7 Agriculture in Japan.

CIVIL AFFAIRS HANDBOO
TOPICAL OUTLINE

This study on Agriculture in Korea was prepared for the MILITARY GOVERNMENT DIVISION, OFFICE OF THE PROVOST MARSHAL GENERAL by the OFFICE OF FOREIGN AGRICULTURAL RELATIONS, UNITED STATES DEPARTMENT OF AGRICULTURE.

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Introduction

Korea, for the time being one of Japan's colonial possessions, is preeminently an agricultural country. Whereas in Japan the rural population constitutes 40 percent of the total population, in Korea it accounts for 73 percent of the total of nearly 23 million. Judged by any other standard — whether it be that of provider of the Nation's food, of invested capital, of value of gross or net output, or of value of exports — agriculture is Korea's principal industry.

As in so many agricultural countries, however, the predominance of agriculture in Korea does not go hand in hand with an economically comfortable farm population. The very opposite is true. As a Japanese writer stated, "The suffering of Korean farmers is far greater, and the needs of rural Korea are more serious and urgent than is generally known in Japan proper." 1/ The factors responsible for this state of affairs are implicit in Korea's agricultural economy, described and analyzed in the pages that follow. Topography, climate, increasing pressure of population upon a limited crop acreage, none too fertile soil, and farm techniques not of the highest order — all these have conspired, as it were, to endow Korea with a relatively small area under cultivation, small farm units, concentration on grain production, widespread tenancy, relatively low productivity of the soil, and a very low standard of living.

Another important element that had much to do with shaping Korea's agriculture was the Japanese annexation of the country in 1910. Since then the farm economy of Korea was so directed by Japan as to convert it into a convenient Japanese "bread basket." Japan's aim met with success, and it contributed to some improvement in farm practices and the expansion of output, particularly that of rice.

Evidence exists, however, that Korean farmers did not benefit from Japanese policies. Even the Japanese admit the decline in the fortunes of the mass of Korean farmers. The variety of forms in which it expresses itself is indicated elsewhere in this study, but at least two of its forms are worth emphasizing here.

1/ Uenoda, Setsuo, "Korean Administration Teaches Farm Hands to Help Themselves." The Trans-Pacific, April 26, 1934.

In the first place, Korean food supplies continued to be inadequate in spite of the increase in rice production that resulted from these policies. As production increased, rice exports to Japan also were increased—not because these exports constituted a surplus over and above Korean needs, but because the Koreans felt that they could not financially afford to consume the rice and because they hoped that with the proceeds from these exports they would be able to import larger amounts of cheaper and rougher grains to fill their needs. That even this modest hope proved illusory, however, is attested by the regular annual "spring suffering" when millions of farmers lack even the barest food necessities.

Other evidence of a deterioration in the economic position of the Korean farmers under the Japanese administration rests in the fact that, more and more of these farmers have lost their land, the only form of wealth they possessed. Much of the land had fallen into the hands of the big Korean and Japanese landlords. It was a deliberate policy on the part of Japan to strengthen that group of farmers which had the largest marketable surplus of rice. And in this respect it succeeded only too well. Almost three decades after the annexation of the country, the proportion of tenants to the total number of farmers has increased from one-third to over one-half, while tenants and owner-tenants together account for 80 percent of all the farmers. These figures in themselves are a good index of the impoverishment of Korea's countryside.

It may be concluded, therefore, that the advantages of increased production, sponsored by Japan, have eluded the majority of the farmers, and that their welfare was not within the purview of the Japanese. Their main aim was a plentiful and cheap source of easily accessible food supplies, regardless of the economic effects upon those who made the food available.

PART I. THE LAND AND THE PEOPLE

Physical Factors in Agriculture

Topography

Korea is a peninsula of approximately 85,000 square miles, slightly larger than Kansas, or almost two-thirds the area of Japan proper. The peninsula projects southward from South Manchuria, the longest distance from north to south being 512 miles, and the widest point from east to west is 220 miles. In the north, Korea is separated from Manchuria by the Yalu and Tumen Rivers, while the extreme northeastern corner is bounded by the maritime region of the Soviet Far East. On the east, Korea is washed by the Sea of Japan and in the west by the Yellow Sea. On the south it faces Japan across the Korean Straits, a distance of only 120 miles. The islands of Tsushima form the stepping stones between the two. A 7-1/2 hour ferry service connects the Imperial Japanese Government Railways at Shimonoseki in Japan proper with the main Korean line at Fusan, at the tip of the Korean peninsula.

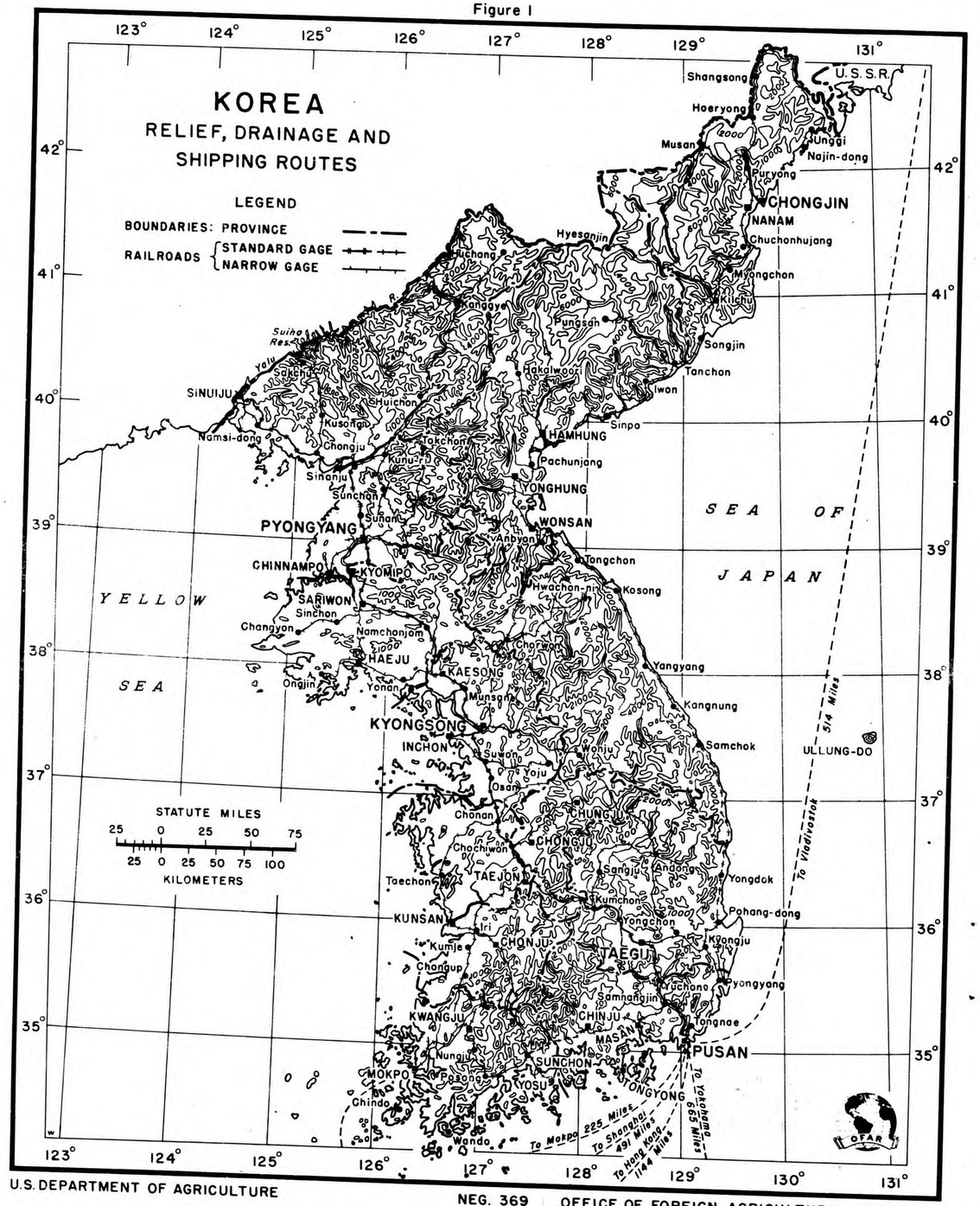
The name of the peninsula, Korea, translated as "High Mountains and Sparkling Streams," epitomizes the land. 1/ In this respect Korea is not unlike Japan, especially from the point of view of land utilization. Three-fourths of Japan is hilly and mountainous and slopes are usually too steep and soils too thin for ordinary cultivation. Somewhat the same may be said of Korea, for the highland character of its land imposes severe limitations on the agricultural economy of the country.

A physiographic diagram of Korea (Fig. 1), shows that the peninsula is dominated by mountains, some of them 6,000 feet high. The long mountain range of Taihaku-san runs along the east coast of Korea with a branch called Syhaku-san running southeastwards over South Korea. The east side of the Taihaku range forms a steep escarpment, leaving only an extremely narrow coastal plain along the Japan Sea. The plains in the north and in the east are too few and too small, and the agricultural opportunities there are meager indeed.

The west side of the range has a gentle slope which merges into fairly extensive plains of Western Korea. All of the important rivers of Korea flow westward, through the plains. These rivers and their tributaries supply water for the irrigation of

1/ Robinson, Arthur H. and McCune, Shannon, "Notes on Physiographic Diagram of Toysen (Korea). The Geographic Review, October 1941, p. 653.

Figure I



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the land, a factor of utmost importance as will be indicated elsewhere. Some of the level land is limited to dry crops, however, since irrigation can be developed upon them only at great expense. But whether irrigated or dry, because of topographic factors Korea's agriculture is concentrated mainly in the west and to some extent in the south. For the same reasons, not more than 11 million acres, or approximately 20 percent of the total estimated land area of Korea is cultivated.

Climate

Despite the fact that Korea is surrounded by the sea on three sides, the climate of the country is continental rather than oceanic. This is especially true of the northern part of the peninsula which is directly exposed to the winter monsoon coming from the interior of Asia. In the south, the sea influence is felt strongest caused by its position between the deep Sea of Japan and the shallow Yellow Sea. This maritime location exercises definite climatic control, although to a much smaller degree than its continental position. Here the winter monsoon arrives after it crosses the comparatively warm water of the Yellow Sea. The air becomes warmed up more or less and absorbs some of the moisture. Thus the winter cold in South Korea is not so rigorous as in North Korea and Manchuria.

Temperature

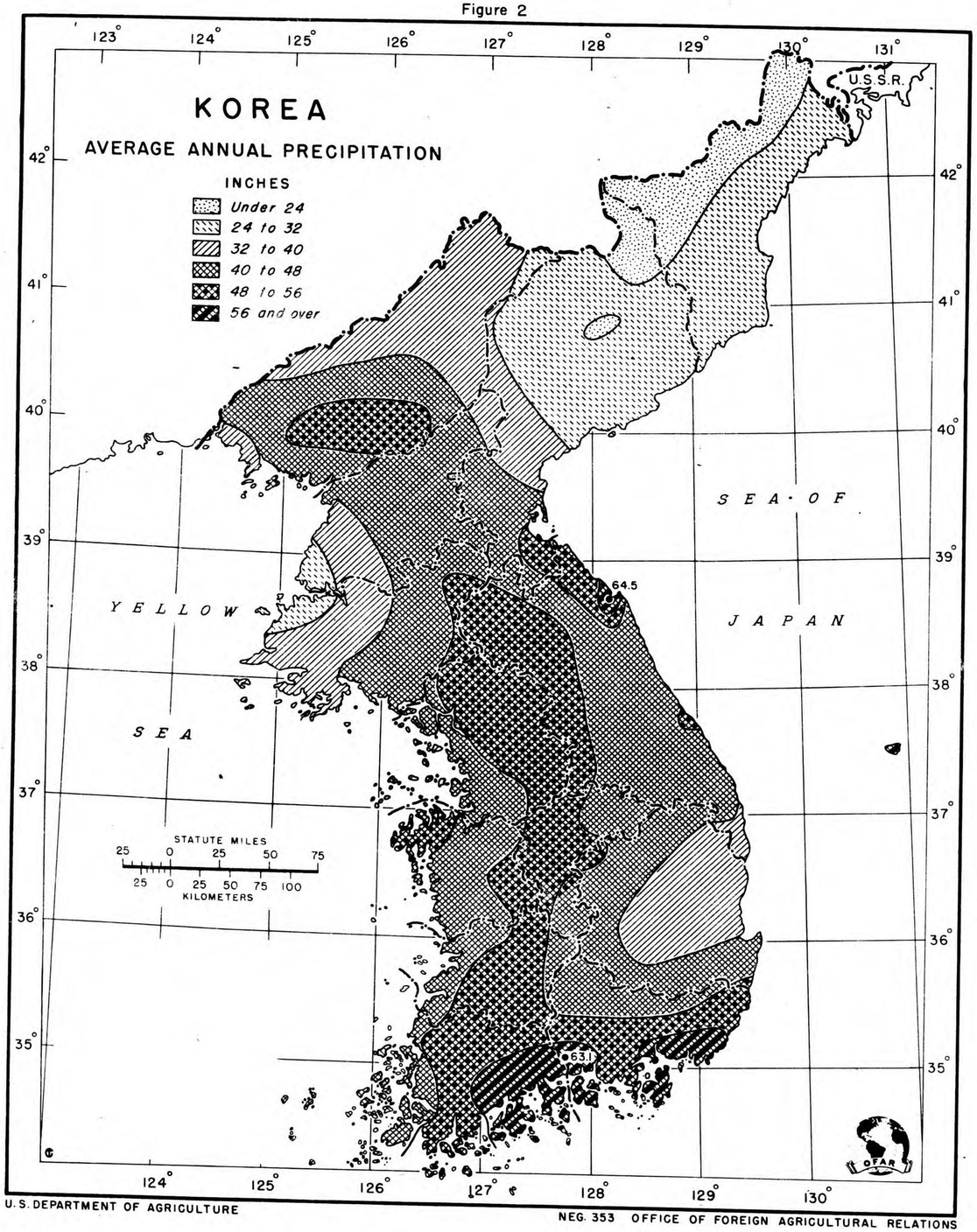
Both north and south the winters are cold and dry, the summers are hot and humid, and the spring and fall are short. The mean January temperature, the coldest month, is below 32°F, while the mean for August, the warmest month, is 71.6°F. Summer temperature does not vary greatly throughout the country, but, as already indicated, the differential between north and south is greatest in the winter. In northern Korea the average annual temperature is 38°F (Tyukotin) as against 58°F in the south (Saisyu or Quelpart Island); the figures for August are 71 and 78, respectively; while those for January are -5°F and 40°F.

Precipitation

Korea has sufficient precipitation for its agriculture. The rainfall is more abundant than in Manchuria but scantier than in Japan proper, and for the most part it ranges from an average of 31 inches in the north to 63 inches in the south. Occasionally droughts or delayed summer rains affect the rice crop adversely, the worse instance of which was the failure of the rice crop of 1939-40. (Fig. 2).

The amount of precipitation in Korea varies greatly because of the mountain ranges and the movement of atmospheric pressure; but in no part of the peninsula is the precipitation less than 19-20 inches. The Tumen River Valley, in the far north east, has the least amount

Figure 2



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of rainfall. On the other hand, the average annual precipitation along the southern coast is about 60 inches. In the western part of Korea, where most of the country's agriculture is concentrated, it averages around 45 inches.

The seasonal distribution of rainfall shows a very marked wet summer and dry winter. The rainy season extends over the three months from June to August, July being the peak month in South Korea and July to August in North Korea. In April, May and September rainfall is also considerable in some years, but it fails in others. The April rain in the west and south are especially important since they help to store up water to irrigate the rice fields, and make these parts of Korea good paddy fields. The dry season continues from October to March or April. According to McCune, "Most of [Korea] has ten times as much rain in the rainiest month of summer as in the driest month of winter. The northern part of the peninsula is especially dry in winter; the proportion goes above 20 to 1 in many places. In the south and along the east coast the contrast is not so marked and is less than 10 to 1 in some localities." 1/

To sum up, the climate of Korea, with its temperatures and precipitation and the seasonal distribution of the latter, is suitable for crop cultivation. With the improvement and growing development of irrigation facilities, precipitation unlike topography has not been a limiting physical factor in the development of Korea's agriculture.

Soils

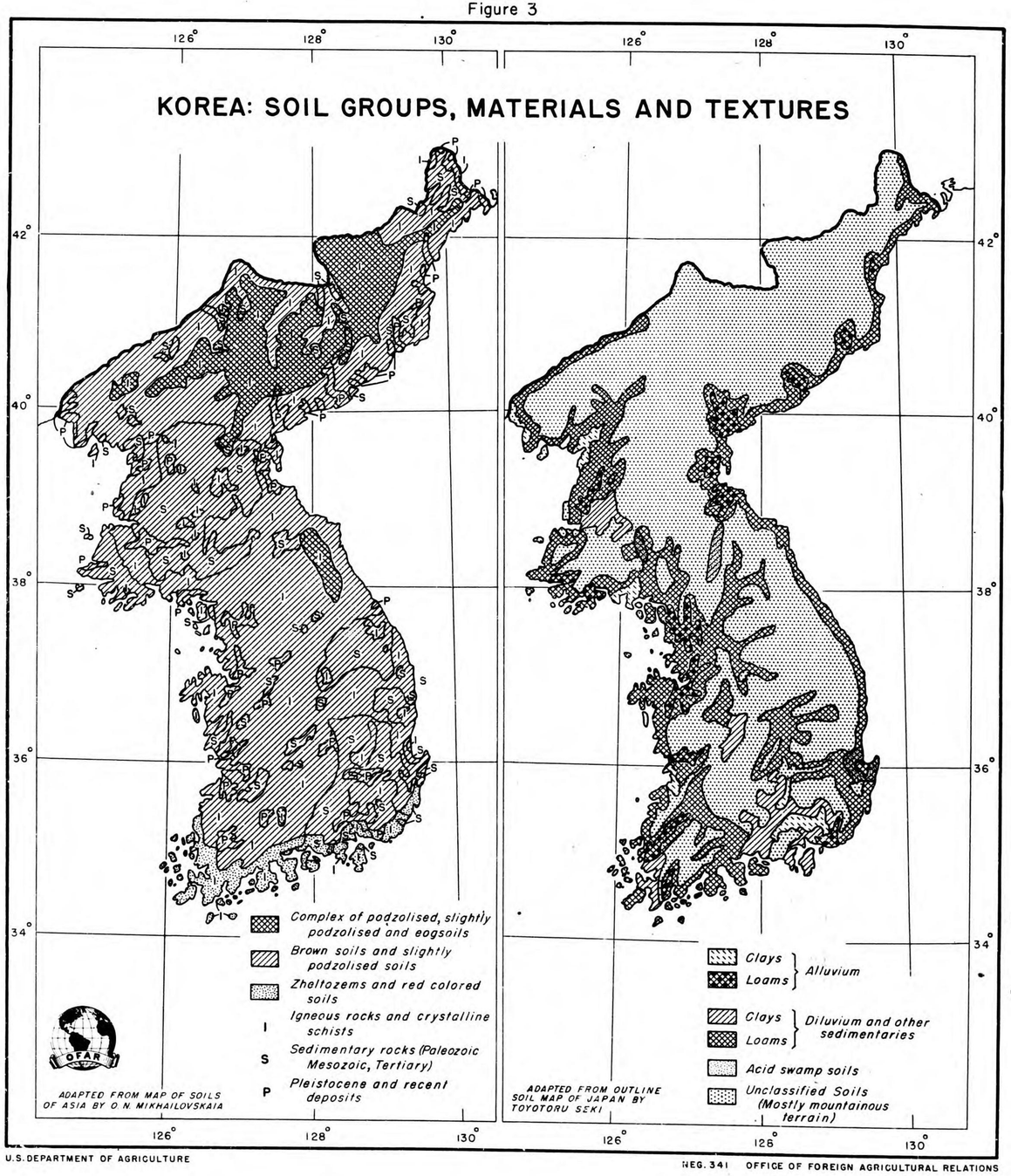
The physical features of Korea, the varied climatic conditions, and the geological formations have fashioned the characteristics and distribution of the Korean soils. Approximately two-thirds of the peninsula is composed of igneous and granitic rocks. The remainder of the country is made up of sedimentary rocks, including deposits of recent origin. The soils are mainly the result of weathering of these basic materials. In some cases, however, particularly in valleys, soils have originated from river or stream deposits; while there are few plains of volcanic origin in the provinces of Kankyo, Kokai and Kogen.

Korean soils may be divided roughly into four groups: Alluvial (clays and loams), diluvium (clays and loams), acid swamp soils, and unclassified soils largely of granite origin that cover the huge mountainous terrain, so characteristic of the country; the cultivation of such soils is limited since to a large extent they constitute the mountainous area. The distribution of the principal groups is shown in Figure 3.

The soils of Korea are characterized by acidity in some areas and alkalinity in others. "Alkalized soils," according to Dr. Nasu,

1/ McCune, Shannon, "Climate of Korea: Climatic Elements" Series B, No. 3, Research Monographs on Korea, April 1, 1941, p. 28.

Figure 3



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"are more extensively distributed in Korea than in Japan proper. The distribution of acid soils is also extensive and their acid character is as strong as in Japan proper." 1/ More than three-fifths of the soils of Keiki and of North and South Keisho province are acid, whereas alkali soils predominate in the provinces of South Heian and South and North Kankyo. 2/

Chemically the soils [of Korea] are short of nitrogen and phosphorus; in this respect they are even more deficient than the Japanese soils. A study of the chemical composition of soils of a number of countries led one student to the conclusion that "Korean soils are poor in chemical composition. There is abundant potassium, but phosphorus and nitrogen are very much lacking, as compared with other countries." 3/ Only the application of nitrogenous and phosphoric fertilizers can improve the fertility of Korean soils which are deficient in the requisite nutrients.

Human Factor in Agriculture - Population

The population of Korea: density

The population of Korea between the early nineteenth and shortly after the turn of this century was declining due to epidemics and famines. An opposite trend set in the twentieth. The population estimated at 13.3 million in 1910, increased to 17.3 in 1920, 20.2 million in 1930 and 24.3 million in 1940.

In consequence of this increase, the average density in the country as a whole was 268 persons per square mile in 1936. 4/ This varies sharply from one part of the country to another, however, ranging from 119 per square mile in the northeast (North Kankyo Province) to 524 in thickly populated Keiki Province. In comparison with Japan, where the density is 488 per square mile, Korea is not too densely populated, although it is much more so than China, Manchuria or India.

A better way of determining the relative density of population is the ratio of population to cultivated land. On this basis, Korea has approximately two inhabitants per cultivated acre. When compared to a number of other countries, 5/ Korea then is among the densely populated ones, even though it is outstripped by Formosa (6.5) and Japan (4.8) This method of gauging population density is not necessarily a valid one, because an acre of cultivated land as a source of income varies greatly from country to country. Much also depends upon the general economy of a given country and the role agriculture plays in it. In a highly industrialized country which exports manufactured products and imports most of its foodstuffs, high density

1/ Nasu, Shiroshi, op. cit., p. 35.
2/ From special report of the Experiment Station at Soowoon (Suigen) on Acid Soils in Korea, given in Lee, Hoon K., op. cit., p. 26.
3/ Ibid, p. 25.
4/ 286 in 1940.
5/ See table 4 of Civil Affairs Handbook on Agriculture in Japan.

of population per cultivated acre is of relatively little importance. Not so with Korea which is predominantly agricultural. The fact is that before the war even Japan with its 2-1/2 times the number of people per cultivated acre, as compared to Korea, enjoyed a far greater measure of economic well being than Korea. This applies not only to Japan as a whole, but to the Japanese farmers as well. despite their low economic status. The causes for this must be sought in the nature of Korea's agricultural economy.

Population by Occupation and Farm Population

The population of Korea is composed of natives, Japanese and a small number of Chinese. Natives accounted in 1938 for 97 percent of the total and the Japanese for 2.8 percent.

The colonial character of Korea becomes evident upon consideration of the occupational distribution of the peninsula's population, as indicated in table 1. Although the Japanese compose 2.8 percent of the total population, they occupy the commanding positions in every walk of life of Korea. The relatively small participation of the natives in occupations other than agricultural does not delineate sufficiently the differences in economic status between Japanese and Koreans. The latter hold the lowest paying offices, and engage in the less important segments of industry and trade, except of course, as wage earners. Even in agriculture the Japanese role is much greater than their numbers indicate.

Table 1. - Population of Korea by occupations, 1938

Occupation	Japanese		Native Koreans		Others		Total	
	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
Agriculture	34	5.4	16,616	75.6	10	20.4	16,660	73.6
Fisheries	10	1.6	324	1.5	-	-	334	1.5
Mining	15	2.4	257	1.2	2	4.1	274	1.2
Industry	105	16.6	586	2.7	7	14.3	698	3.1
Commerce	148	23.3	1,422	6.5	15	30.6	1,585	7.0
Transportation	37	5.8	197	.9	1	2.0	235	1.0
Public service and profession	241	38.0	646	2.9	5	10.2	892	4.0
Others	44	6.9	1,902	8.7	9	18.4	1,955	8.6
Total	634	100.0	21,950	100.0	49	100.0	22,633	100.0

Office of Foreign Agricultural Relations.
Source: The Japan Year Book, 1940-41, p. 861.

As far as the natives are concerned, agriculture is by far the most important occupation. In the 5-year period 1934-38, the farm population constituted 73 percent of the total as against 82 percent in the 1919-23 period. The number of farm households has actually increased from an average of 2,704,000 in 1919-23 to 3,050,000 in 1934-38 (Table 2). This cannot be attributed to the greater attraction held out by agriculture in comparison with other occupations, but to a lack of opportunities in other fields. To be sure, in the past decade or two the industrial development of Korea has proceeded at a rapid pace. In 1938, the value of industrial output represented 54.2 percent 1/ and agriculture 45.8 percent of the total, compared with 22 and 78 percent respectively, in 1919. The increase in industrial output and the expansion of other services have not been large enough, however, to make a perceptible dent in the agricultural character of the country, or to reduce materially the ratio of farm population to the total, or the actual number of farmhouseholds. Korea, with its high proportion (73 percent) of agricultural population, is the most typical rural part of the Japanese empire, when compared with 40 percent in Japan proper, 53 percent in Formosa and 60 percent in Manchuria.

Table 2.- Agricultural families and total number of familes in Korea (Specified years)

Year	Total number of families	Agricultural families	Percentage of total
	Thousands	Thousands	Percent
1919	3,256	2,665	81.8
1920	3,297	2,721	82.5
1921	3,298	2,717	82.4
1922	3,309	2,712	82.0
1923	3,360	2,703	80.4
Average 1919-23	3,304	2,704	81.8
1924	3,404	2,704	79.4
1925	3,433	2,743	79.9
1926	3,610	2,753	76.3
1927	3,618	2,781	76.8
1928	3,627	2,799	77.2
Average 1924-28	3,538	2,756	77.9
1929	3,661	2,815	76.9
1930	3,822	2,870	75.1
1931	3,831	2,882	75.2
1932	3,912	2,931	74.9
1933	3,952	3,010	72.2
Average 1929-33	3,836	2,902	75.6
1934	4,011	3,013	75.1
1935	4,143	3,066	74.0
1936	4,179	3,060	73.2
1937	4,227	3,059	72.4
1938	4,271	3,052	71.4
Average 1934-38	4,167	3,050	73.2

Office of Foreign Agricultural Relations.
Source: Chosen Sotokufu Tokei Nenpo, 1936 and other official sources.

1/ Industry and mining accounted for 42.7% and forestry and fishing (including processing) for 11.5% of the value of the total output.

PART II. SALIENT FEATURES OF KOREAN AGRICULTURE

Distribution of Land for Different Uses

The utilization of land in Korea is classified officially under nineteen heads, such as dry fields, paddy fields, forest sites, miscellaneous land, monastery land, etc. The aim of this minute distribution is mainly fiscal; it provides the basis for taxation rather than for better utilization.

The fact that this detailed enumeration makes no reference to pasture or meadow lands is significant. Nor do the statistical compilation of land utilization shed any light on this question. From Hoon K. Lee's study of land utilization, one gathers that the acreage of such lands is too small to be worth noting. It is quite likely that the acreage under meadows and pastures, if any, is included in the "forest lands" classification. For our purpose, then, all the land may be divided into four categories: forest, waste land, cultivated and all other. In 1938 forest land represented 66.6 percent of the total area, cultivated land 20 percent, waste land 6.8 percent, and all other 6.6 percent 1/ (Figure 4).

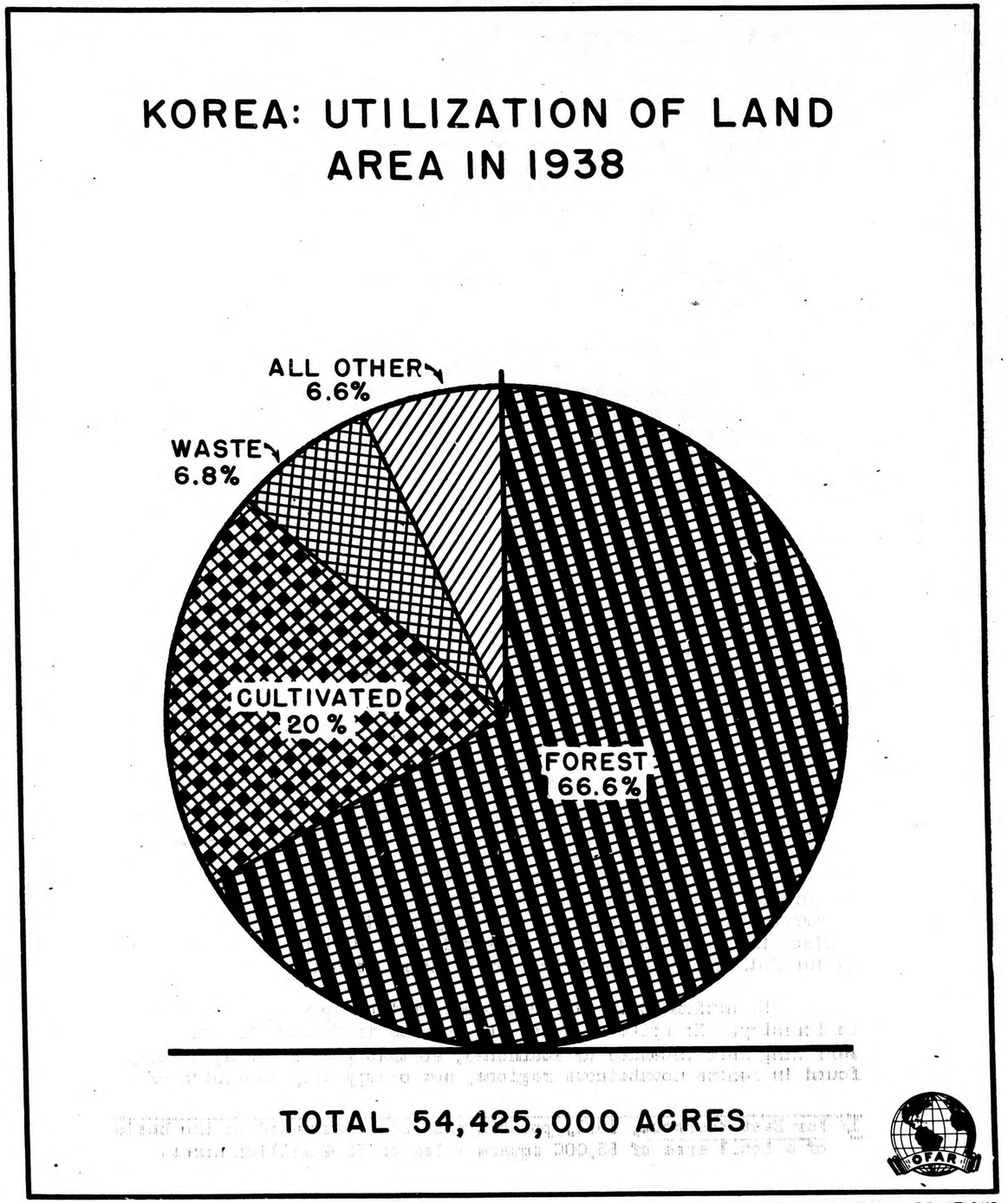
Forest Land

The total forest and waste land in 1938 was estimated at about 40 million acres. In this respect it changed but little from the 39 million acres in 1910 and the nearly 41 million acres in 1930. Much of this huge forest acreage exists in name only, since the term "forest" land is used in a broad sense indeed. A breakdown of the 1910 figures shows that only 32 percent of it consisted of "regular forest"; 42 percent of it was made up of "young trees," and the remainder was deforested. Forest statistics for 1938 show 78 percent of the forested area under trees, and only 14 percent under saplings or young trees. It may be suggested, however, that these figures, especially the first one, do not reflect the real state of the forest lands. Perhaps a better guide is the following statement from an official report:

"No nation in the world prospers without paying due regard to forestry. In spite of this, the forests in Tyosen [Chosen] were long left untended or abandoned, so that good forests, chiefly found in remote mountainous regions, now occupy only one-third of

1/ Far East Yearbook, 1941, pp. 522 and 526. Estimated on the basis of a total area of 85,000 square miles or 54.4 million acres.

Figure 4



the total area of "forest" lands... and the remaining two-thirds is but thinly wooded or entirely denuded." 1/

One of the factors that explains the impoverishment of the forests is the need for fuel and the wanton manner of obtaining it from the forests. The farmers for centuries have been in the habit of cutting down trees indiscriminately without reforestation. The net result is a large denuded forest area, especially in the populated, agricultural regions of the west and south. The best cared for and most important timber stands are located chiefly along the Yalu and Tumen Rivers, and in a few other remote and economically inaccessible mountain regions of the northeast.

Throughout the forest lands there are many varieties of trees in consequence of the difference in climate and soil between the north and south. In the north, spruce, birch, and larch predominate; while in the central and southern parts, red and black pine, oak, alder and bamboo are in greater evidence.

The question of ownership of forest lands is a point worth mentioning. In 1910 over one-half (53 percent) of the forest land was state-owned, the remainder being in private lands. But "after the annexation of Korea by Japan, in 1910, most of the privately owned forest land was taken over by the government as state land, because the owners had failed to register it under the law of 1908. By doing so, the Government acquired more than four-fifths of the entire area under forest." 2/ A provision was added to the effect that "unreserved state forest land might be leased to private persons for the purpose of afforestation and ultimately be transferred to those who were to show success in this work." 3/ Japanese and Koreans took advantage of this provision. At present (1938) the state-owned forests account for only 34 percent of the total.

No information is available on the distribution of private forest land between Japanese and Koreans. There is indirect evidence, however, that the former were particularly successful in obtaining large tracts and the best timber stands. The commercial exploitation of the forests are mainly in the hands of Japanese. In the 1930's the exploitation of forests became an

1/ Annual Report of the Administration of Tyosen, 1937-38, p. 131.
2/ Lee, Hoon K. "Land Utilization and Rural Economy in Korea." Chicago University Press, 1936, p. 183.
3/ Ibid.

important industry, the value of output having increased from 63 million yen in 1930 to 193 million yen in 1939.

According to official testimony, these forest lands are still in a poor state. Numerous measures have been enacted, however, with the view to their better utilization. They relate, amongothers, to model forests, seedling plantations, investigation of forest plants, and, of course, afforestation. It is all part of the work of conservation and scientific exploitation of the forests. Aside from the profits from this industry, the expectation that indirectly agriculture, too, will benefit. Much of the agricultural land of Korea is in the valleys, and by reducing the danger from the floods coming down the deforested mountains and slopes, as well as by the possible conservation of a greater amount of moisture, the physical conditions for raising crops might thereby be improved. Also, the greater availability of firewood, and leaves and grass for fertilizers is of utmost importance to the welfare of the farmers.

Cultivated Land

As is the case in Japan, the fact that 67 percent of Korea is forest land, and mountain forest at that, is perhaps the principal hindrance in expanding the crop acreage. The relief of the peninsula is somewhat lower than that of Japan, and this fact accounts for a higher proportion of cultivated land: 20 percent in Korea as against 16 percent in Japan.

The cultivated land of Korea is found on the southern and western side of Korea, in the valley bottoms where the ground is level. But where the population has increased, high ground of mountain slopes is also tilled. Many of the upper fields are usually situated about 1,000 feet or so above the villages which lie in the valley below. In absolute figures, the total cultivated area of Korea, whether level or elevated, amounted to 10,873,000 acres. If the area under the so-called "fire-fields", estimated at about 400,000 acres, should be added, the total would amount to about 11,273,000 acres. The distribution of the land by provinces shows that Kokai with 12.4 percent of the total cultivated land has by far the largest block. At the opposite scale is the largely mountainous province of North Chusei with 3.5 percent of the land. In general, the acreage distribution by provinces is a clear indication of the amount of level land in a given province.

Great caution must be exercised in dealing with Korean data on cultivated acreage. According to official statistics, the area under crops in 1911 and 1919 was 4,049,000 and 10,736,000 acres, respectively, or a 2.6 times increase. In reality no such increase took place; this was all the result of land survey car-

ried out by the Japanese in 1918. The revelation then was made that only a portion of the land was registered as a means of avoiding the payment of taxes. An estimated 2 percent of the land is not registered to this day.

Table 3 - Cultivated Land and Farm Households by Provinces with Percentage of each Province to total 1936

Province	Acreage cultivated land	Percentage	Farm Households	Percentage
	1,000 acres	Percent	Thousands	Percent
Keiki	961	8.7	245	8.0
North Chusei	389	3.5	145	4.7
South Chusei	611	5.5	221	7.2
North Zenra	594	5.4	239	7.8
South Zenra	1,075	9.7	399	13.0
North Keisho	931	8.4	362	11.8
South Keisho	680	6.1	299	9.8
Kokai	1,370	12.4	245	8.0
South Heian	980	8.9	176	5.8
North Heian	1,013	9.2	213	7.0
Kogen	846	7.6	248	8.1
South Kankyo	1,056	9.6	190	6.2
North Kankyo	551	5.0	79	2.6
Total	11,057	100.0	3,061	100.0

Office of Foreign Agricultural Relations
Source: Chosen Sotokufu Tokei Nenpo, 1936

The data on the cultivated area since 1919 shows little change. There has been a small increase, but as indicated in table 4, it is not large enough to make any great difference. Between the 5-year period 1919-23 and that of 1932-36, the increase amounted to 290,000 acres, or less than 3 percent. A break-down of the total into wet and dry fields shows that the increase occured in the former, while the dry-field acreage has declined somewhat.

In Japan, there has been practically no expansion of arable land within a similar period but some 4 million acres had been added in the four decades prior to 1920. There is no evidence that Korea was a beneficiary of anything remotely approaching such acreage expansion in the decades immediately preceding 1920. This was not altogether caused by the country's lack of land; inasmuch as Korea is not as mountainous as Japan, possibilities for land reclamation are greater in the former. Estimates of land considered fit for future utilization vary from 2.7 to 3.5 million acres.

Table 4 - Cultivated Area in Korea in Relation to Total Number of Farm Households and Acreage per Household (Specified Years)

Year	Area	Farm families	Area per farm family
	1,000 acres	Thousands	Acres
1919	10,736	2,665	4.0
1920	10,700	2,721	3.9
1921	10,755	2,717	4.0
1922	10,743	2,712	4.0
1923	10,668	2,703	3.9
1924	10,798	2,704	4.0
1925	10,824	2,743	3.9
1926	-	2,753	-
1927	10,915	2,781	3.9
1928	10,921	2,799	3.9
1929	10,918	2,815	3.9
1930	10,945	2,870	3.8
1931	10,918	2,882	3.8
1932	10,930	2,931	3.7
1933	11,001	3,010	3.6
1934	11,041	3,013	3.6
1935	11,028	3,066	3.6
1936	11,057	3,060	3.6
1937	-	3,059	-
1938	11,066	3,052	3.6

Office of Foreign Agricultural Relations
Source: Chosen Sotokufu Tokei Nenpo, 1936 and earlier issues.

Grandiose schemes have been devised by the Administration of Korea for dealing with the reclamation of this land and the improvement of the acreage actually under cultivation. The problem of land amelioration will be discussed in the section on irrigation; as to the plans of expanding the cultivated acreage, the data on the total area of cultivated land reveal no additional acreage. This was anticipated in the following statement: "According to careful observation of physical conditions and other circumstances of the country...we can hardly expect any great increase in the arable land area in the future, as the present area under cultivation has already reached about 20 percent of the total area of the peninsula. The expansion of farm land to the extent of 1,411,000 cho (3,457,000 acres) as estimated by the Government of Korea, will be a matter of considerable difficulty at any rate. 1/ One of the great difficulties was due to Japan's failure to provide the large sums necessary to carry out the project. Furthermore, Japan's real interests centered upon two other

1/ Nasu, S. "Land Utilization in Japan." Tokyo, 1929, p. 224.

problems with which it was directly concerned: (1) higher rice yields from the already existing fields with a view of transforming Korea into a convenient "riee basket" for Japan and (2) the industrialization of Korea. Whatever the advantage these developments might bring to the farmers is purely incidential to the main aims. The welfare of Korean farmers was not the motivating force.

The cultivated land of Korea, like that of Japan, is divided into two main parts: paddy or wet rice fields and dry fields. In addition, and unlike Japan, Korea has a so-called "fire-field" acreage, generally not included in the "total" cultivated area. The acreage under dry-fields is considerably above that of the wet fields (Table 10). In the south wet fields predominate, while in the northern half of the peninsula the proportion of dry to wet fields ranges from roughly three to one to ten to one.

The paddy fields constitute by far the most valuable land, and in this respect Korea is much worse off than Japan, where more than half of the cultivated land is under wet fields. The farmers of Korea are well aware of the respective value of forests, dry and paddy fields. Where possible they convert the first into the second and the latter into rice fields. But as the figures on the changes in total cultivated land, and the two types of land that make up the total indicate, their efforts haven't been crowned with much success.

The "fire-fields" are distinct from the two previously mentioned types of fields. Because of the shortage of arable land, farmers in mountainous regions avail themselves to the opportunity to squat on the forest lands, primarily state-owned. They carry on there what is known as a "shifting" type of land utilization. As the term indicates, a farmer doesn't till the same piece of land every year. He clears a section of forest at certain intervals, burns the stumps, and the ground is laid open for the growing of such crops as millet and potatoes. Under such conditions the land may yield one or two relatively good crops. After that the fertility rapidly diminishes and the farmer shifts to another forest lot, leaving the former to rest and slowly to develop into forest again. This period of resting for several years enables the soil to recover, and the soil then can be brought again to cultivation for one or two more crops.

The "fire-fields" are Korea's "sub-marginal land", covering in 1936 an area of 1,073,000 acres. Judging by the geographic distribution of this land, it is found in the typically mountainous regions of Korea. The two northern provinces of South Kankyo and North Heian account for 56.5 percent of all of this land, and

together with the provinces of South Heian and Kogen the four have within their boundaries 89 percent of all the "fire-fields."

These lands are worked by the poorest farmers. In the words of an official Japanese report, "These poor people are driven by hunger from place to place, making shelter in log cabins and keeping their bodies and souls together by planting grains and vegetables on the hillsides." 1/ The number of these poverty stricken farmers is considerable, amounting to 282,034 families (1936) or to a population of 1,520,368. Of these, 74,727 families are engaged solely in agriculture, and they average 5 acres per household. The average for all "fire-fielders" is less than four acres.

This type of land utilization has nothing to recommend itself for, except the desperate need of the cultivators. It causes forest fires and handicaps afforestation; it burns the cover grasses and bushes on the mountain slopes, thereby resulting in soil erosion, landslides and inundation when the rainy season sets in. The Administration of Korea has vehemently condemned this practice; but having offered nothing better to take its place, the "shifting" system of land cultivation goes on. In fact, more and more hunger-driven farmers turn to it. During the decade 1927-1936 the number of farm families engaged only in working the "fire-fields" increased from 29,000 to 96,000.

Land Tenure

Small Farm Holdings

A total of 11,057,000 acres distributed among 3,060,000 households means an average of 3.6 acres per family. It is fully an acre more than the average for Japan; but in Korean conditions of soil productivity, the system of land tenure, and lack of subsidiary occupations, the average holding is even smaller than that in Japan. The average holding in the latter country has remained unchanged for about two decades. The same does not hold true in Korea. Failure to add any substantial area of new land in the face of a growing population and lack of alternative occupation, has led to a decline of the arable land per farm household (Table 4).

1/ Annual Report on Administration of Tyosen, 1936-37, Keizyo, 1937, p. 115

Table 5 - Cultivated Land per Farm Household by Province in Korea, 1936

Province	Cultivated Acreage	Farm Households	Average cultivated acreage per household
	1,000 acres	Number	Acres
Keiki	961	244,734	3.9
North Chusei	389	145,115	2.7
South Chusei	611	220,708	2.8
North Zenra	594	238,902	2.5
South Zenra	1,075	399,448	2.7
North Keisho	931	361,547	2.6
South Keisho	680	298,614	2.3
Kokai	1,370	244,919	5.6
South Heian	980	176,421	5.6
North Heian	1,013	212,709	4.8
Kogen	846	247,825	3.4
South Kankyo	1,056	189,793	5.6
North Kankyo	551	78,768	7.0
Total	11,057	3,060,000	3.6

Office of Foreign Agricultural Relations
Source: Chosen Sotokufu Tokei Nenpo, 1936

The distribution of the acreage per family by provinces in Korea shows a considerable variation (Table 5). The densely populated western and southern provinces with the best available land have the smallest acreage per family; while in the northern sparsely populated provinces, where the proportion of wet to dry land is very small, the acreage per family (7 acres) is highest.

The theoretical average of 3.6 acres points to the weak base of Korea's farm economy. But in order to appreciate fully its real weakness the fact should be noted that the average holding has little relation to the amount of land actually cultivated and the amount owned by a farmer. .

According to an official report, in 1938, fully 63 percent of all farm households cultivate less than 2.4 acres each; 38 percent of this group cultivated less than 1.2 acres per household. Of the remaining 37 percent, farmers working from 4.9 to 2.4 acres comprised 20 percent, while the remaining 17 percent cultivated from 5 acres and more. Only 457 households cultivated more than 50 acres each, while in 1929 there were in Korea 15 farms with more than 2,500 acres each.

Table 6 - Number of Farm Households in Korea Classified by Area of Cultivated Land, 1938

Amount of cultivated Land per household	Number of Households	Percent of Total Households
Acres	Number	Percent
Less than .74	488,309	17.0
.75 to 1.23	613,379	21.4
1.24 to 2.45	713,699	24.9
2.46 to 4.90	565,118	19.7
4.91 to 7.35	312,787	10.9
7.36 to 12.25	136,108	4.7
12.26 to 24.51	34,000	1.2
24.52 to 49.01	5,341	.2
Over 49.01	457	1/
Total	2,869,198	100.0

Compiled from: Grajdanzev, Andrew J. Memorandum on Korea's Agriculture and Resources. Institute of Pacific Relations, 1942, p. 32. Quoted from Kokusei Gurafu, Feb. 1939, p. 106
1/ Less than 0.1 percent.

As will be shown elsewhere, the amount of land cultivated by the great majority of the farmers is not large enough to provide the farmer with bare necessities. This fact becomes even more apparent upon the examination of the question of landownership in Korea. The amount of land cultivated by a farmer often gives little indication of the amount of land owned by him. This is particularly true of Korea where the divorce of the farmers from landownership is hardly exceeded in any other country.

Recent official statistics of the Government General of Korea, like the data of the Ministry of Agriculture and Forestry in Japan, give no information on landownership. But official data for an earlier period (1928) and unofficial estimates for a more recent year (1938), leave little doubt that landownership in Korea is a privilege enjoyed by a small minority. In 1928 less than 4 percent (3.7) of the farming families owned 54.5 percent of the cultivated land, which included two-thirds of the wet rice-fields. Another 18 percent owned 22.5 percent of the land; in other words, about 22 percent of the farm families owned 77 percent of the land. On the opposite end of the scale are 78 percent of all the farmers owning 23 percent of the land.

A more pessimistic picture is presented in an unofficial estimate for the year 1938. (Table 7) This indicates that nearly 82 percent of the farmers owned not more than 11.4 percent of the land. "This is admittedly an estimate," the author wrote, "which cannot claim great accuracy." 1/ He insists, however, that the errors are on the side of underestimation, since "our table gives a more optimistic picture of the distribution of land ownership in Korea than one can actually observe". 2/ On the whole though, irrespective of whether one accepts the 1928 figures as more nearly representative of the more recent situation, or the 1938 estimate, the validity of the author's conclusion cannot be doubted: "For the majority of Korean farmers property in land is a far-off dream." 3/

Table 7 - Types of landownership in Korea, 1938

Type of Ownership	Number of families	Land owned	Percent of total number	Percent of total acreage
	Number	1,000 acres	Percent	Percent
Landlords	74,000	7,440	2.5	66.1
Owner-farmers	512,000	2,540	17.7	22.5
Tenant-farmers	729,000	1,280	25.2	11.4
Tenant	1,583,000	0	54.6	0
	2,898,000	11,260	100.0	100.0

Grajdanzev, Andrew J. Memorandum on Korea's Agriculture and Resources. Institute of Pacific Relations, 1942, p.31.

Japanese Landownership:

No account of land ownership in Korea is complete unless the role of the Japanese farmers in that country is touched upon. Numerically they constitute a small group: 8,031 families in 1936. Exact data concerning the amount of land they own are not available, however, and the unofficial estimates vary. They all agree, nevertheless, that this small number of Japanese has succeeded in acquiring a considerable acreage.

According to one estimate, at the end of 1930 the Japanese owned approximately 1,500,000 acres, or "about 11 percent of the total taxable land of Korea". 4/ On the other hand, a student of rural Korea, who visited the country in 1926, expressed himself on this subject in the following words:

1/ Grajdanzev, Andrew J. Memorandum on Korea's Agriculture and Resources. Institute of Pacific Relations, 1942, p. 31.
2/ Ibid. 3/ Ibid. 4/ Lee, Hoon K. op. cit. p. 148. This obviously included some forest land.

"Government statistics show less than 6 percent of the agricultural and residential land registered as Japanese in ownership. But this fact needs careful scrutiny. All land belonging to corporations with Korean charter is classed as Korean in ownership, though the ownership of the concern may be Japanese. The holdings of some of these companies are considerable. On the other hand, some of the companies incorporated in Japan proper have Korean stockholders. Again, virtual transfer of ownership of land, title to which is in the name of Koreans, may result through loans made by Japanese institutions or individuals. No data are available on this point. Various careful estimates of fair-minded non-government Japanese and Koreans place the proportion of land owned from 12 to 20 percent. In some countries in the south, Japanese ownership, based on tax records, is said to exceed over half of the land. Thus in one country, Ikson, in South Keisho province, an investigation by a Korean landlord and educator is reported to have shown 32 percent of the assessed property valuation in the hands of 120,000 Koreans and 68 percent in the hands of 8,000 Japanese. Since the great part of all of Japanese-owned land is in the south, it is probably fair to conclude that in this section about one-fourth of the land has passed out of Korean hands." 1/

The above assumes particular significance in the light of the fact that "Southern Korea is mainly a country of paddy fields which bring almost twice the yield of dry fields; that is, the economic importance of the 25 percent of holdings in the south is much higher than that figure would support." 2/

One feature of Japanese landownership in Korea is that the individual holdings of the Japanese are many times larger than those of the Koreans. The average size of such a holding is difficult to ascertain because of lack of official data and the conflicting nature of private estimates. In addition to the Japanese who are engaged in the actual farming of the land, there are, as already mentioned, numerous Japanese and Japanese controlled corporations who own and control large estates worked by tenants. No information covering the 1930's is available, but the one for 1929 is instructive. In that year there were 538 such individuals and entities, which owned 410,000 acres and controlled 66,000 acres, a total of 476,000 acres, or an average of 885 acres per owner. Another measure of the position of the Japanese farmers vis-a-vis that of the Korean may be gleaned from table 8. The average holding of a Japanese member of an irrigation association is 23 acres as against 3 acres on the part of the Korean farmer.

1/ Brunner, Edmund De Schweinitz, Rural Korea, pp. 105-106. In "Missions and Rural Problems", International Missionary Council, London, 1928.
2/ Grajdanzev, Andrew J., op. cit. p. 25.

Table 8 - Landownership in 122 Irrigation Associations, 1930 *

Amount of land owned per person	Japanese		Koreans	
	Number of persons	Area of land	Number of persons	Area of land
Acres	Number	Acres	Number	Acres
Less than 1.2	1,339	818.4	30,833	18,407.7
1.2 to 2.4	792	1,415.0	15,010	27,040.4
2.4 to 24.5	2,237	17,871.2	15,695	87,489.3
24.5 to 122.5	416	21,056.1	849	39,057.6
122.5 to 245.0	69	11,639.0	61	10,427.0
Over 245.0	65	62,527.0	12	11,176.1
Total	4,918	115,326.7	62,460	193,598.1

* The DONG - A ILPO, leading newspaper in Korea, Jan. 1, 1932. Quoted by Hoon K. Lee, op. cit., p. 149.

There have been many cases of replacement of entire Korean village communities by Japanese settlers. An official survey of colonies made up of "free" 1/ or "protected" 1/ Japanese settlers revealed that "many of them replaced Korean villages by driving out Korean peasant farmers. In 1930 there were 61 such colonies where the village is entirely Japanese in the fullest sense." 2/

The Korean farmers have been objecting to the organization of Irrigation Societies sponsored by the Government General of Korea, agencies intended for the improvement of the soil. This attitude stems from a variety of reasons, "but one of the most important factors is that as soon as an Irrigation Association forms in a locality, the petty Korean landowners are not able to hold their land which, on the contrary, falls into the hands of large Japanese landowners and capitalists. This speedy accumulation of land necessarily puts the Korean down into the tenant or landless class." 3/

The net effect of Japanese infiltration on the fortunes of Korean farmers has been largely negative, despite the fact that the latter have benefited by some of the Japanese-sponsered improvements in agricultural techniques. Korea has no free land to spare, if one is to judge by the area of cultivated land in the past two decades. The process of land accumulation in the hands of the Japanese (or Korean landlords) is caused mainly by the dispossessing of native farmers from their land. Data relating to this question are restricted to the 1920's, since none are available for the subsequent years. There is, indirect evidence, however, that the concentration of land in few hands

1/ "Free" settlers are Japanese who farm in Korea on their account; "protected" are those who farm under the auspices of such corporations as the Oriental Development Co., and similar agencies.
2/ Lee, Hoon K., op. cit., p. 288. 3/ Ibid, p. 148.

proceeded unabated in the 1930's as well. The extent and the nature of tenancy in Korea bear witness to that.

Tenancy:

In consequence of the unequal distribution of landownership in Korea, all farmers are divided into the following main groups: owners, who rent most of their land; part owner-farmers, who own the greater part and lease the smaller part of the land they cultivate; part-tenant farmers, who lease the greater part and own the smaller part of the land they cultivate; part-tenant farmers, who lease the greater part and own the smaller part of the land they cultivate; tenants, who rent all the land they cultivate. The percentage distribution of the various categories is indicated in table 9.

Table 9 - Farming Households in Korea according to Status 1/ (Specified years)

Category	1914		1924		1930		1937	
	1000's	Percent	1000's	Percent	1000's	Percent	1000's	Percent
Landlords	47	1.8	102	3.8	104	3.7	-	-
Owner-Farmers	570	22.0	526	19.5	504	17.8	2/543	18.9
Part-Owners (Part-Tenants(	1066	41.1	934	34.5	890	31.4	814	28.4
Full Tenants	911	35.1	1142	42.2	1334	47.1	1511	52.7
Total	2594	100.0	2704	100.0	2832	100.0	2868	100.0

1/ Data for the years 1914, 1924 and 1930 taken from: "Agrarian Problem and Peasant Movement", vol. 4, p. 42. Published by International Agrarian Institute, Moscow, 1937. Data for 1937 taken from: "Farming Households, Holdings, Ownership, and Tenant Status in Chosen," report prepared by A. Alexis Johnson, American Vice-Consul, Keyo (Seoul) Chosen.
2/ Including landlords.

Tenancy in Korea is a centuries-old institution. The new and disturbing element about it is its uninterruped growth during the 1920's and 1930's. This came about chiefly through the loss of ownership in land by the part-owners and part-tenants, and to a smaller extent through some loss of land by the owners. Within the years 1914-1937 the total number of farm households increased 11 percent but that of tenants increased 66 percent, or six times as rapidly. During the same period the proportion of tenants to the total number of farm families increased from 35 to 53 percent. In Japan proper, on the other hand, there has been practically no increase in the "tenant" category, while the proportion of this group to the total number is only half of that in Korea. The inescapable conclusion is that many farmers have already lost their

land and others are in the process of losing it. This development, coupled with the terms under which they rent the land that once belonged to them, has contributed to the pauperization of many farmers.

In 1936 the cultivated area worked by tenants represented 57 percent of the total. When the figure is broken down by wet and dry land, the tenants cultivate 68 percent of the first and 51 percent of the latter. (Table 10) For this reason tenancy is greater in the provinces where the wet lands are concentrated. It is highest in the west and south and lowest in the north. Thus 78 percent of all the arable land of North Zenra is tenanted as against only 24 percent in North Kankyo. 2/

When one considers the great predominance of tenant farming in Korea, the fact becomes obvious that the fortunes of country's agriculture are closely bound up with the economic status of the tenants. An inquiry into the terms upon which they rent and work the landlord's land, therefore, is pertinent.

Tenants pay their rents both in cash and in kind, but 85 to 90 percent of all the tenant households discharge their obligations in the latter manner. Rentals in kind fall into one of the following three types: payments of a certain quantity of produce per unit of land, regardless of the size of the crop; payment on the basis of the crop just harvested, or sample threshing; and payment of one-half of the crops, whatever its size. As to the amount of rent collected, the maximum may reach as high as 80 percent and the minimum no lower than 20 percent of the crop. For the country as a whole, rentals constitute from 50 to 55 percent of the total yield.

The tenant's net share is considerably below that of the landlord. All expenses connected with cultivation such as human and animal labor, seed and fertilizers, as well as taxes, are usually supplied by the tenant. There are instances when the landlords pay taxes and carry other charges. The Oriental Development Company, a Japanese large-scale land enterprise and other Japanese landlords follow that practice, but to compensate themselves "they.... impose somewhat heavier rent upon their tenants." 1/ To this must be added occasional gifts to the landlords and extra charges and services, illegal to be sure, shouldered by the tenant in order to maintain the good will of the landlord, or his manager. All these imposts explain why a careful investigation in the early 1920's of tenancy conditions in a village in the south of Korea "showed that the renters' actual net share was seventeen percent, a condition by no means

1/ Kawada, S. "Tenant Systems in Japan and in Korea," Kyoto University, Economic Review, July 1926, p. 70.

2/ See Table 11 and Figure 5.

Figure 5

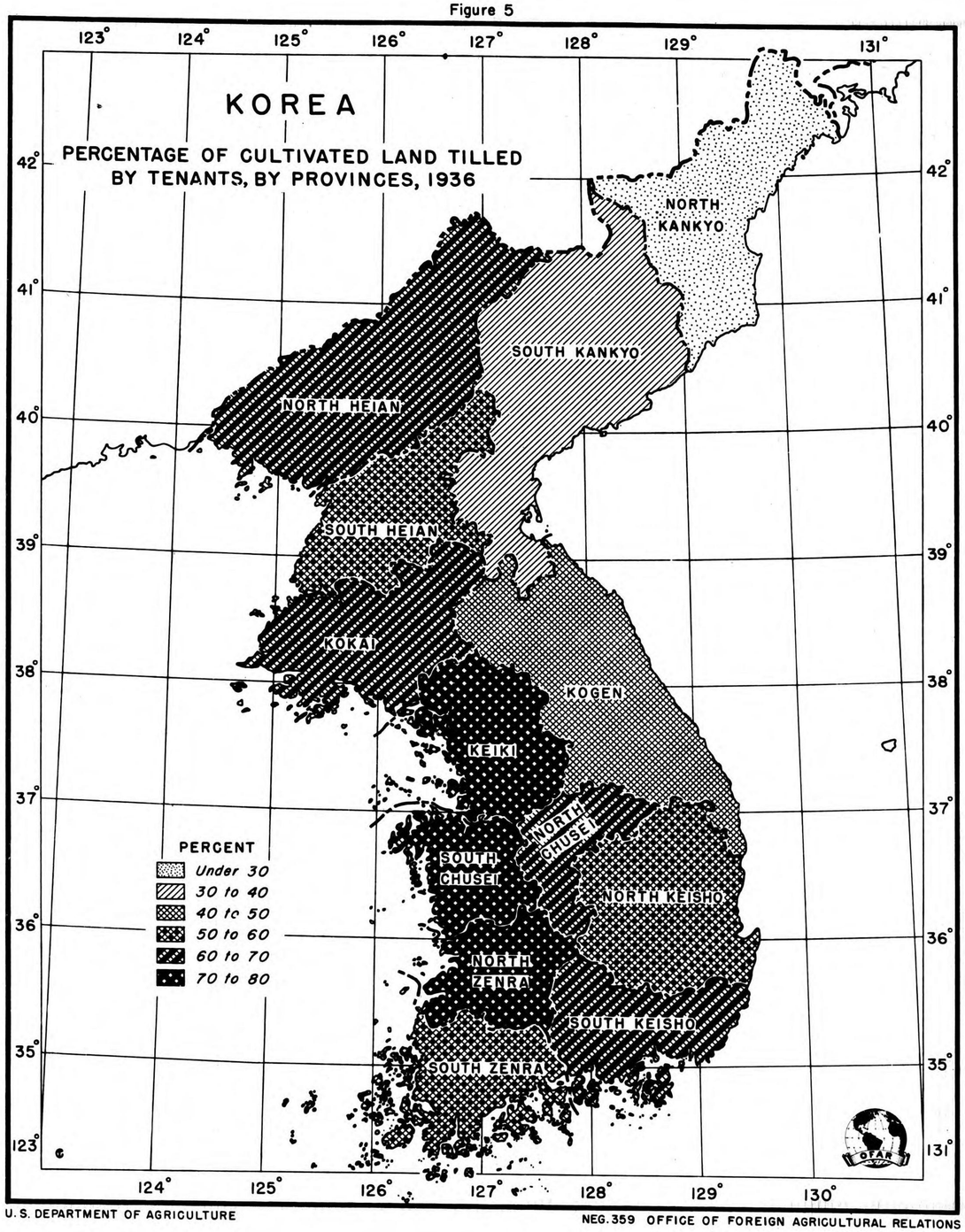


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Table 10 - Distribution of cultivated area between owners and tenants in Korea, 1936

Category of farmer and Category of land	Area	Percent of total
	1,000 acres	Percent
Total cultivated area	11,057	100.0
Tilled by owners	4,722	42.7
Tilled by tenants	6,335	57.3
Irrigated fields	4,211	100.0
Tilled by owners	1,343	31.9
Tilled by tenants	2,868	68.1
Dry fields	6,846	100.0
Tilled by owners	3,379	49.4
Tilled by tenants	3,467	50.6

Office of Foreign Agricultural Relations
Source: Chosen Sotokufu Tokei Nenpo, 1936

Table 11 - Acreage cultivated by tenants as a percentage of total cultivated land by provinces in Korea, 1936

Province	Total cultivated acreage	Acreage cultivated by tenants	Acreage cultivated by tenants as percent of total acreage
	1,000 acres	1,000 acres	Percent
Keiki	961	690	71.7
North Chusei	389	258	66.3
South Chusei	611	444	72.8
North Zenra	594	462	77.8
South Zenra	1,075	567	52.8
North Keisho	931	518	55.6
South Keisho	680	432	63.6
Kokai	1,370	892	65.1
South Heian	980	551	56.2
North Heian	1,013	644	63.6
Kogen	846	403	47.7
South Kankyo	1,056	341	32.3
North Kankyo	551	132	24.0
Total	11,057	6,334	57.3

Office of Foreign Agricultural Relations
Source: Chosen Sotokufu Tokei Nenpo, 1936

exceptional in that part of the country." 1/ Writing in 1940, a Japanese investigator pointed out that tenants in Kogen province are left with only 18 percent of the rice crop and those in Kimpi region with only 25 percent. 2/

Both the tenant and the land he cultivates are at yet another disadvantage. In most cases the agreements between the landlords and tenants are oral and are for 1 year only or they have no fixed term. The result is that the tenant turnover at the end of any year is high. In some provinces, especially in the more fertile southern of southwestern parts, replacements have been estimated at about one-third of the total. Where the tenants remain longer on the land and succeed in raising larger crops, the landlords are more likely than not to raise the rent accordingly. Under the circumstances, the peasants can't be expected to make land improvements even if they had the means of doing so; they are bent on a maximum exploitation of the land in the course of their brief tenure.

Try hard as a tenant may, the surplus of his crop after fixed annual expenses are paid is too small for the maintenance of his family until the next harvest. The lot of the Japanese tenant is bad, but a Japanese authority on the subject wrote that "Korean tenants are poorer than Japanese tenants and their economic condition is much worse than that of tenants in Japan Proper. One is indeed greatly amazed by the law and crude economy of those poor agricultural people in Korea." 3/ Another well-known Japanese agricultural expert wrote that "the small tenants work like servants under landlords and live under feudalistic restraints, a system which almost disappeared in Japan Proper." 4/

Agricultural labor

The stratification of the rural population recognizes yet another group, although a small one, also engaged in agriculture. The reference is to agricultural workers who in 1936 numbered 117,000. The small number of this group emphasizes the fact that in Korea, even more than in Japan, the essential character of the agricultural economy is family farming, its very existence being dependent upon family labor.

1/ Brunner, Edmund de Schweinitz, op. cit., p. 106.
2/ Quoted by Grajdansev, Andrew J. op. cit., p. 34.
3/ Kawada, S. op. cit., p. 58.
4/ Nasu, Shirushi, "Aspects of Japanese Agriculture". Institute of Pacific Relations, 1941, p. 55.

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Office of Foreign Agricultural Relations
Source: Chosen Sotokufu Tokei Nenpo, 1936

Table 11 - Acreage cultivated by tenants as a percentage of total cultivated land by provinces in Korea, 1936

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South Chusei	611	444	72.8
North Zenra	594	462	77.8
South Zenra	1,075	567	52.8
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The stratification of the rural population recognizes yet another group, although a small one, also engaged in agriculture. The reference is to agricultural workers who in 1936 numbered 117,000. The small number of this group emphasizes the fact that in Korea, even more than in Japan, the essential character of the agricultural economy is family farming, its very existence being dependent upon family labor.

1/ Brunner, Edmund de Schweinitz, op. cit., p. 106.
2/ Quoted by Grajdanzev, Andrew J. op. cit., p. 34.
3/ Kawada, S. op. cit., p. 58.
4/ Nasu, Shirushi, "Aspects of Japanese Agriculture". Institute of Pacific Relations, 1941, p. 55.

Not all agricultural workers are engaged in field work; a relatively small number is, the remainder being accounted for as domestics and as workers in a variety of odd jobs directly or indirectly connected with a farm. In view of the abundance of labor in the rural sections of Korea, wages are very low. In 1930 the monthly and daily wages for male workers was 11.72 and .73 yen, respectively; the corresponding figures for women were 5.55 and .42 yen. In both cases they were approximately 50 percent lower than farm labor wages in Japan. The situation may be summed up in these words: "The monthly laborers gets, on an average, nine yen per month, with board and room, whereas the annual farm laborer gets about 60 yen a year, in addition to board, room and clothing." 1/ In the late 1930's wages have risen in the wake of the general inflationary trend prevailing in Japan proper and in its colonies. The extent of the rise is not clear but it is doubtful if the net result, in terms of real wages, provided anything more than a hand-to-mouth existence.

1/ Lee, Hoon K., op. cit., p. 231.

PART III. AGRICULTURAL PRODUCTION

Regional Distribution of Korean Agriculture

In discussing the distribution of the cultivated land of Korea, attention has been called to the western and southern regions as distinguished from the northern. The first two regions contain the lowlands upon which irrigated rice is produced predominately, while in the north the uplands or dry land. This topography and difference in the variety of climatic conditions, already described have been largely responsible for the regional diversity of Korean agriculture.

In treating this subject there is always the danger of oversimplification. No one scheme, such as dividing the country into a number of regions, is necessarily very precise since differences between sections are often only matters of degree, and the drawn line of demarcation is likely as not to omit or include small crop areas prevalent in another region. In the case of Korean rice acreage, for instance, regional characteristics with some few exceptions are not clear-cut. It is an important crop in virtually every province, although the crop is much more important in some than in others. With this limitation in mind, it is perhaps best to discuss the question of regional characteristics of Korean agriculture along two lines: (A) on the basis of rice being the outstanding crop, and (B) on the basis of broadly drawn regional divisions that take into account other crops as well.

Taking (A) as a criterion, Korea may be divided into three parts: rice region, or those provinces where rice fields cover more than 40 percent of the cultivated area; mixed region, those provinces where rice fields occupy from 20 to 40 percent of the total; and dry field region, those provinces where rice fields occupy up to 20 percent of the cultivated land. The regions so marked are indicated in Fig. 7.

The advantage of this scheme is in showing not only the principal rice growing provinces, but also in delineating the importance of the crop. On the other hand, it leaves in the background all other crops which occupy 65 percent of all the cultivated land. A more complete picture of the utilization of cultivated land emerges when the country is divided into the following three sections: (1) Central and Northern Mountain Region; (2) Eastern Rim and (3) Western and Southeastern Region.

The first mentioned is characterized by a single crop system due to severe climatic conditions prevailing there. The principal crops are millet, barley, wheat, oats and potatoes. All the crops are spring sown. This region contains the country's largest millet acreage, just as the south has its largest barley acreage. While

rice is preferred, relatively little of it is produced in the mountain valleys. Only in the southern provinces of this region does rice cultivation show a considerable increase. In general, the region is too mountainous and possesses too little level land to permit any extensive agricultural activity. It is also the center of Korea's most primitive form of land utilization, the "shifting" type.

The Eastern Rim is a very narrow agricultural belt, stretching from north to south along the eastern coast, and is shut off from the west by a mountain barrier. The area of tillable land is small. Rice is the most important crop in the lowlands, with barley, millet, wheat, potatoes and mulberry trees in the uplands. From Kanko northward there is a decrease in the acreage under rice and mulberries, and a corresponding increase in mixed crops.

The third region constitutes the most important agricultural area of Korea, both by virtue of area of cultivated land and climatic conditions conducive to the raising of a great variety of crops. For the greater part it is also the region of double-cropping.

This region, in turn, may be divided into two parts, the smaller and less important part north of Seoul, the capital of Korea, and the larger and very important part south of Seoul. The first is characterized by winter wheat followed in July either by buckwheat, soybeans, adzuki or mung beans as a second crop the same year. The next year, upland rice, millet, corn, kaoliang, cotton or spring barley are sown as spring crops in a single cropping system. South of Seoul the region is characterized by winter barley (wheat occasionally), followed in June by rice in paddy fields. On dry land the winter crop is followed in June by soybeans, adzuki beans, mung beans, buckwheat, kaoliang, millet, sweet potatoes, or upland rice. Cotton is the only single crop that covers a given plot of land in the course of a farm season.

The principal crop of the region is rice, the cultivation of which is particularly well adapted to the lowland areas and flood plains of the rivers. The growing season, too, is favorable, for it lasts 150 days in southern Korea as against 100 days in the north. The rice fields on small alluvial plains or terraced slopes are bordered in many places with soybean plants. This crop is also found in the small valleys of the northwest and the foothill country of the north-central part of the region. In addition to food crops, the southeastern part of the region constitutes the cotton and silk growing centers of Korea.

Farm Practices

Intensive farming

The methods of working the land are quite similar to those

prevailing in Japan. Korean farmers, too, aim to receive a maximum return from a unit of land. In doing this they are not as painstaking as the Japanese, but the difference is one of degree rather than of substance. The fundamental fact is that with little land and many farmers pressing upon it, the farmers have little choice but to cultivate it intensively. In Korea, as in Japan it is expressed in a minimum expenditure of capital in the form of animal power and improved agricultural equipment and in a large application of hand labor, considerable use of fertilizers - although on a much smaller scale than in Japan - and in the practice of double-cropping.

The preparation of the land calls for an immense amount of labor, as seen from the following description:

> "The small paddies are plowed, hoed, or spaded when dry or wet and sometimes in the water. If plowed or hoed when dry the land is harrowed while dry and water is added to the fields and the land is pulverized by hand or by means of wooden harrows drawn by an ox or horse in the water... Those who have no draft animals usually prepare the land entirely by hand. The land is thoroughly prepared and all trash buried with the fertilizers that are applied at this time. The land within the same levees is almost perfectly level. After the soil is thus thoroughly prepared and all growth is destroyed and buried, the fields are ready for transplanting." 1/

The size of the rice crop is much influenced by the preparation and care of the seedbed. This work is all done by hand, and great care is taken to spread the seeds evenly over the surface of the bed. The transplanting of the rice seedlings to the main field is one of the most painstaking jobs; it is done in the busy season of the year, and no time must be wasted if a good crop is to be obtained. Seeding in the dry fields is much simpler: The farmer follows the plow, drops the seed by hand, at the same time trampling them into the soil by foot, or by the use of a rake-like tool called kalki. Weeding, harvesting and threshing - all done by hand - add to the great amount of manual labor that goes into the cultivation of the fields.

Farm equipment

The intensive application of hand labor reflects the simplicity of farm equipment of the Korean farmers. The tools consist of hoes, spades, either solid or forked, small wooden plows and harrows, hand sickle for harvesting and a flail or hetchel and small wooden cylinder with wire teeth for threshing the rice. The equipment is

1/ Jones, Jenkin W. Observations on Methods of Growing Rice in Japan, Korea, China, Java and the Philippine Islands. U.S. Department of Agriculture, 1938, p. 19.

light and easily moved from rice field to rice field, and while often spoken of as being crude, it seems well adapted to the small and scattered fields.

The investment in farm tools and equipment constitutes the smallest portion of the total capital investment of a Korean farmer. An investigation of 1,249 farm households revealed that in 1930 the total value of their farm tools amounted to 14,219,940 yen, or an average value per farm of only 11.4 yen for all classes of farmers. It was established also that in that year 972 households purchased some type of equipment, at an average cost of 4.68 yen per farm. 1/

There are a number of reasons that explain the use of such implements in preference to modern farm equipment. They all stem from some of the principal characteristics of Korean agriculture. The average size of a holding is small, and often is not held in one compact unit but subdivided into a number of scattered plots. A tractor used for the preparation of a rice field could hardly turn around on the ordinary rice field. The dikes and ditches could not stand heavy equipment, and in the tiny fields too much maneuvering of the equipment would damage the crop. Even if the fields were larger, however, irrigation and rainfall keep the ground too soft to permit effective utilization of heavy equipment.

Aside from the mentioned factors, mechanization has been retarded for economic reasons. The cost of modern implements is prohibitive for farmers with such a low economic base. This is quite understandable in the light of the fact that manpower is one of the things farmers have in abundance. This alone would hamper the use of labor-saving devices.

From the point of view of utilization of improved implements Korean agriculture is much more backward than Japanese. No motor driven machines are employed in the latter country in raising crops, but in recent years there has been a sizable increase in power-driven farm machinery for the processing of farm products. Comparable data for Korea are not available; the figures presented below show considerable change in some types of equipment; yet when related to the total number of farm households the opinion expressed by a Japanese, writing in 1940, that "The agricultural implements used by the Koreans are most primitive", 2/ is true indeed. Thus in 1938 only one out of eleven families had an improved plough; one out of 863 had a mechanical pump, and one out of 4,033 families had a gasoline engine.

Double cropping

This practice stands for two harvests from a given unit of land within a single year. It is indicative also of the degree of

1/ Lee, Hoon K., op. cit., p. 210.
2/ Quoted by Grajdanzev, Andrew J. op. cit. 19.

intensity of land utilization. Both paddy and dried fields can be double-cropped, depending, of course, upon climatic conditions. In the case of irrigated rice fields, the summer crop is rice; while the second crop, the winter crop, may be barley, wheat, leguminous green manure crops, and in some cases such vegetables as cabbage, radishes and spinach. On dry fields in the south the first crop is likely to be barley or wheat, followed by sweet potatoes, soybeans, millet or sorghum, and the winter crop may be mostly legumes and vegetables.

Double-cropping is characteristic of densely populated countries of the Far East, where the cultivated area is limited in relation to the population. Korea is no exception in this respect, and many a field, both irrigated and dry, produce two crops a year. The result is that the harvested area is larger than the cultivated. This is especially the case in the milder southern part of the country. In 1938 in South Keish the area of the harvested paddy fields was more than twice the cultivated, and 84 percent greater than the cultivated area of the dry fields. In the north, in the province of South Kankyo, the harvested area of paddy fields was equal to the cultivated, while from 13 percent of the dry fields two crops were harvested. For the country as a whole, the 1938 harvested acreage was 35 percent larger than the cultivated. In other words, 35 percent of the land was double-cropped.

The farmers of Korea benefit from the double-cropping. This practice increases the acreage under cultivation, thereby acting as one of the important factors in increasing the agricultural output of the land. By the same token it provides employment to greater numbers, many of whom have normally no other alternative occupation. Another advantage not to be overlooked is that some of the crop combinations on double-cropped land tend to raise the productivity of the soil.

The question, therefore, of extending the double-cropped area is of great importance. In Korea, the problem is partly one of bringing new land into cultivation where the milder climate prevails, and partly one of irrigation. Since the possibilities of adding new land are limited, irrigation is the more promising approach. The more dry land can be turned into irrigated rice fields, the better are the chances of adding to the double-cropped area. The problem is partly an educational one as well, for a view exists that with the introduction of new crops or a better combination of existing crops, more of the land could be subjected to the intensive farm practice of double-cropping.

Fertilizers

The none-too fertile soils of Korea, the small cultivated acreage and the crowded villages, and the compelling need to secure a high yield - all these call for a liberal application of fertilizers.

Table 12 - Consumption of fertilizers in Korea, 1938

Sources	Nitrogen: Amount Consumed	Nitrogen: Percent N. Content	Nitrogen: 1,000 m. tons	Phosphoric Acid: Amount Consumed	Phosphoric Acid: Percent P_2O_5 Content	Phosphoric Acid: 1,000 m. tons	Potash: Amount Consumed	Potash: Percent K_2O Content	Potash: 1,000 m. tons
	1,000 m. tons	Percent		1,000 m. tons	Percent		1,000 m. tons	Percent	
Commercial chemical									
Ammonium sulphate	311	20.5	64						
Superphosphate				59					
Potassium sulphate									
Sodium nitrate	1.7	16	.3						
Calcium cyanamide	135	21	28						
Compound fertilizers	333	6	20	333					
Sub-total	333		112.3						
Pounds per crop acre			17						
	Metric tons	Percent	Metric tons	Metric tons	Percent	Metric tons	Metric tons	Percent	Metric tons
Commercial organic									
Soybean cake	15,500	7.0	1,085	15,500					
Other bean cake	13,500	7.0	945	13,500					
Other plant fertilizers	12,700	7.0	889	12,700					
Fish products	30,000	9.4	2,820	30,000					
Bone meal	900	4.1	37	900					
Sub-total			5,776						
Pounds per crop acre			.9						
	1,000 m. tons	Percent	1,000 m. tons	1,000 m. tons	Percent	1,000 m. tons	1,000 m. tons	Percent	1,000 m. tons
Farm supplied									
Farmyard manure	26,126	0.58	163.1	26,126					
Night soil	6,053	0.57	34.5	6,053					
Night soil ash 1/	846	6.0	50.7	846					
Green manure	1,775	0.56	9.9						
Wild grass	1,609	0.54	8.6	1,609					
Wood ashes				1,505					
Guano	93	13	12.0	93					
Sub-total			278.8						
Pounds per crop acre			41						

Source: Office of Foreign Agricultural Relations. Chosen Nenkan, 1941
1/ Believed to be sewage sludge.

Farmers have long been adept in fertilizing their fields through the use of farmyard manure, night soil, green manure and fuel ashes. With the coming of commercial chemicals and organic fertilizers, they, too, have come into use. More recently commercial chemical fertilizers, especially those with a large nitrogenous content, became so important that according to one source about 50 percent of the farmer's cash expenditures is spent on them. 1/

The 1930's witnessed a large increase in fertilizer application, soybean cake being the exception. The volume of this type of fertilizer declined from 83,000 metric tons in 1926 to 15,000 metric tons in 1938. 2/ On the other hand, within the same period farm self-supplied fertilizers increased from 26 to 40 million tons, while in the utilization of chemical fertilizers the increase was much more pronounced: Ammonium sulphate jumped from 25,000 to 312,000 tons, superphosphate from 8,000 to 59,000 tons, and compound fertilizers from almost zero to 333,000 tons.

Despite this progress, Korea lags behind Japan in the utilization of fertilizers, the exception is in the application of farm-supplied types. In 1938 the Korean farmers applied an estimated total of 112 pounds of farm-supplied fertilizer per crop acre, as against 9 pounds in Japan. These volumes represent the weight of the nitrogen, phosphoric acid and potash content extracted from the gross weight of this type of fertilizer applied on the fields. (Table 12).

An entirely different picture appears upon examination of the data dealing with consumption of commercial fertilizer, both chemical and organic. In the first case in 1938 Korean farmers utilized an estimated 17 pounds of nitrogen content, 4 pounds of phosphoric acid and 2 pounds of potash per crop acre. (Table 12). The respective figures for Japan were estimated at 34, 22 and 10 pounds.

Consumption of commercial organic fertilizers (soybean cake, other bean cakes, fish products, bone meal, etc.) in the two countries reveal a relationship still more favorable to Japan. In 1938, Korean farmers used a total of 73,000 metric tons of such fertilizers, as against an estimated total of 1,377,000 tons in Japan, or 11 pounds of gross weight per crop acre compared with 153 pounds. When these figures are analyzed by their chemical content, commercial organic fertilizers contributed only .9 percent of a pound of nitrogen per crop acre, .3 of a pound of phosphoric acid and .2 of a pound of potash. The respective values for Japan were estimated at 11, 4 and 2 pounds.

Significant as this type of comparison may be, its value can be overestimated. To place fertilizer consumption in Korea and Japan in proper perspective, it is best to make the comparison on the basis of per acre consumption of nitrogen from all sources,

1/ Grajdanzev, Andrew J. op. cit, p. 18, Quoting Shiroshi, Sadanao's Chosen no Nogyo Chidai, Tokyo, 1940, pp. 29-32.
2/ Chosen Nenkan, 1941, pp. 345-346. All data in the section pertaining to Korea taken from the same source.

namely: commercial organic, commercial chemical, and farm-supplied. The same procedure is to be followed in the comparison of the consumption of phosphoric acid and potash. The results are shown in the following table:

Table 13 - Chemical content of all fertilizers per acre, 1/ used in Japan and Korea, 1938

Kind of fertilizer	Japan	Korea	Utilization in Japan as a percent of Korea
Nitrogen	82	59	139
Phosphate	46	30	153
Potash	49	45	104

1/ Made up of commercial chemical, commercial organic and farm supplied.

The consumption of fertilizers in Korea, is clearly smaller than in Japan, yet it is not inconsiderable, particularly in nitrogen-bearingfertilizers. More would have to be consumed, however, in order to raise the productivity of the soil. It is not an easy task. An investigation of 1,212 households carried out in 1930 showed that the average value of fertilizer consumed by a farm amounted to 32 yen. Both volume and value of fertilizer consumption have increased considerably since then, although data on fertilizer consumption in 1938 indicate that much more would have to be consumed in order to raise yields to levels approaching those of Japan. Yet the task of accomplishing it is not an easy one, judging by the following comment on what the cost of fertilizer in 1930 meant to a Korea farmer: 1/

> "This is heavy cost to poor Korean peasants. As a matter of fact, the tenants have very little or no means to buy the needed manures and fertilizers; the customary way of getting these is to ask the landlord to advance the money for buying them. Such loans are paid in the fall, when the harvest is done, but the rate of interest is so high, 40 to 50 percent in most cases, that it is doubtful whether the tenant is better off by using fertilizers or not."

There is no gainsaying the importance of fertilizers in Korean agriculture, yet the mere utilization of fertilizers, even on a large scale, is not by itself a guarantee of high yields. The skill with which they are utilized is of great importance. This in turn calls for great care in all the practices of field preparation and cultivation. Only under such conditions will an increase in utilization of fertilizers result in economic increases in yields.

Livestock

In any appraisal of Korean agricultural production or farm practices, the position of animal husbandry should be mentioned.

1/ Lee, Hoon K., op. cit., pp. 214-215.

To begin with, it is not a thriving industry as the topography of the country might suggest. Animal husbandry as a primary occupation does not exist in Korea, and even as a substantial subsidiary occupation it is known only in some northern sections of the country. In 1938 the value of animal products accounted for 6.5 percent of the total value of the agricultural output.

Cattle represents by far the most important part of the country's livestock; because it is a source of draft power, and, next to human labor, the most important one. In this respect, too, its role while very important, is nevertheless limited as an examination of livestock figures reveal. Over a period of two decades there had been an increase in number of certain types of animals, but not a large one. (Table 14). When the 1919 and 1938 figures are related to the respective numbers of farm households, the number of cattle per household remained practically the same; the number of horses declined, while that of pigs and fowl increased to a small degree.

Table 14- Livestock numbers in Korea (Specified years)

Livestock	1919	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Cattle	1,462	1,586	1,612	1,637	1,664	1,663	1,671	1,679	1,703	1,713	1,717
Horses	1/ 53	56	56	54	54	53	54	53	52	51	49
Pigs	963	1,327	1,387	1,348	913	977	1,584	1,616	1,574	1,625	1,507
Sheep	-	2	2	2	2	3	6	9	12	20	27
Goats	1/ 14	22	14	26	27	29	31	34	40	43	44
Fowl	4,998	6,185	6,146	6,295	6,601	6,808	7,179	7,117	7,118	7,221	7,165

Office of Foreign Agricultural Relations. Chosen Sotokufu Tokei Nempo, 1936, and other official sources

1/ 1915.

What is even more significant is the average number of animals, or more exactly, the "fraction" of animals as it were, per farm. (Table 15). In actual practice this means that large numbers of farmers have no animals. In 1938, only about one out of five or one out of four farms had cattle of working age; only one out of three farmers kept pigs; only 37,000 farmers (out of 3,052,000) had horses, and only 2,959 farms kept sheep.

The reasons underlying this state of affairs are similar to those that explain the limited development of animal husbandry in Japan. First, the lack of good meadow and pasture land; second, in a densely populated country such as Korea and a limited cultivated acreage the food value from an acre under grains or vegetables is much greater than the food value of meat or dairy products that can be obtained by feeding the grain; third, the Koreans have little taste for dairy products and most of the farmers cannot afford to eat meat;

finally, where human labor is as abundant and cheap and poverty as great as it is among the farmers of Korea, the question of animal husbandry as a source of draft power assumes relatively little importance.

Table 15- Number of animals per farm in Korea, 1919 and 1938

Specified Livestock	1919	1938
Cattle	0.54	0.56
Horses	0.19	0.016
Pigs	0.35	0.49
Sheep	-	0.009
Goats	0.005	0.014
Fowl	1.84	2.35

Office of Foreign Agricultural Relations. Compiled from official sources.

The Government General of Korea has made numerous attempts to increase and improve the quality of the country's animal husbandry. One head of cattle per household was the ideal sought. Official measures included the improvement of breeding bulls, pasturage and forage, the prevention of cattle diseases, some advances of funds for the purchase of cattle, cattle shows, popular lectures, etc.

Great efforts were directed particularly towards the increase of sheep numbers, mainly with the view of securing a larger supply of wool for Japan proper. With the development of the textile industry, Japan became one of the leading woolen consumers of the world, requiring some quarter of a billion pounds of raw material for its woolen goods industry. As the main sources of wool were in distant countries beyond Japan's political sphere, the industry depended entirely upon foreign producers. For this reason, self-sufficiency in wool has been a part of Japan's national policy since the first world war. Until 1933, however, efforts to increase the number of sheep in the Japanese Empire were desultory and generally barren of results.

Late in 1933 Japan embarked upon a positive policy for increasing the country's wool supply, the immediate cause being trade difficulties with Australia, from which Japan obtained 80 percent of its wool. A plan was developed for each politically controlled

region. The sheep-raising plan for Korea was set forth in the course of a speech made by the Governor General of Korea in September 1934:

> "In accordance with our policy of self-sufficiency... sheep-raising has been fostered, particularly in the northeastern provinces, since the beginning of this year... The number of sheep will be increased to 100,000 head in 10 years and to 3,000,000 or 4,000,000 in 20 or 30 years. Over 3,000 sheep have been imported from Australia this year, and about the same number will be imported in 1935."

This plan was part of the elaboration of the slogan "Sheep in the North, cotton in the South," enunciated by the Japanese administrators in Korea.

The results in both fields belie the efforts. This is true of many similar plans, except where the Japanese were concerned with the problem of their own food supply. Meanwhile animal husbandry, and especially cattle breeding, so indispensable to the supply of labor and to the general economy of the Korean farm, remains one of the backward segments of Korea's agricultural economy.

Irrigation

Rice is Korea's principal crop, and its cultivation is predicated upon an abundant use of water. Yet the volume of rainfall and its distribution are such that the fortunes of the crops would be uncertain indeed if it depended upon the vagaries of a seasonal rainfall only. Korea stands in greater need of artificial water supply than Japan, for instance, because the former is the drier of the two countries. The Japanese saying, "no famine in dry years" does not apply to Korea, where dry years are always poor years. Under such circumstances, irrigation as a means of insuring a steady rice output is of vital importance for Korean agriculture.

Irrigation has been practical in Korea from time immemorial. There was a time when the country was well irrigated, but by the turn of the century many facilities came into disuse. The reservoirs and barrages in the rivers were neglected so long that many of them had been washed away or become deserted swamps. With the annexation of Korea by the Japanese, and the launching of the "More Rice" program, an improved and expanded irrigation network became the order of the day.

The progress of irrigation since annexation is difficult to assess due to the lack of reliable data covering the earlier period. If it is true that in 1918 Korea had only 800,000 acres under irrigation, then the achievement was great, considering the fact that in 1937 the irrigated area was 2,883,000 acres. A more reliable

guide of the work done in this field is Table 16. It shows that between 1928 and 1937 the area under irrigation in Korea increased approximately 56 percent, while the area of rice fields served by irrigation systems increased from 50 to 72 percent of the total.

Table 16 - Irrigated Area of Korea, 1928 and 1935-1937

Year	Total area of rice fields	Irrigated area	Percentage of rice fields irrigated
	1,000 acres	1,000 acres	Percent
1928	3,719	1,850	50
1935	4,152	2,816	68
1936	3,924	2,846	72
1937	4,017	2,883	72

Foreign Agricultural Relations. Compiled from reports of the Government General of Korea.

The greater part of the irrigated area of Korea is served by small diversion canals and ditches. By far the larger part of the irrigated areas of Korea is served by gravity systems, and as the greater part of the construction and repair work is done by cheap hand labor, there is little use of machines in connection with the construction, operation and repair of irrigation systems in the peninsula. The following table shows the areas served by the various types of installations:

Table 17 - Types of irrigation and area under irrigation in Korea (Specified years)

Year	Diversion canal	Dam	Pump	Other types
	1,000 acres	1,000 acres	1,000 acres	1,000 acres
1935	1,438	555	112	707
1936	1,425	596	129	696
1937	1,470	610	151	653

Foreign Agricultural Relations. Compiled from official sources.

Formerly irrigation works were constructed only by communal associations and by individuals; but since the promulgation of the Korean Irrigation Association Order on July 17, 1917, such work has been carried on also on a large scale and with official backing by formally organized groups. The backing consisted of a subsidy not exceeding 15 percent of the cost of work undertaken by them. Further aid was given to the irrigation associations when a new set of regulations was promulgated in 1920 still in existence. Subsidies granted are limited to 20 percent for improving existing irrigation and drainage systems, 25 percent for construction or irrigation systems to serve dry land being converted into rice fields, 30 percent for

clearing uncultivated land and installing irrigation systems, and 50 percent for reclaiming marsh land and installing irrigation systems.

The irrigation association are under rigorous government supervision; the law governing the associations shows that all actions on their part must be first sanctioned by the Government. Thus the sanction of the Governor-General of Korea must be obtained: 1/

1. When changing associations agreements,
2. When raising loans, or fixing or changing methods to raise such loans or interest thereon or methods to redeem them;
3. When fixing or changing the project of an association.

The sanction of Provincial Governors must be obtained:

1. For matters relating to methods of managing and disposing of unmovable property;
2. For matters relating to methods of creating, managing and disposing of money and articles in reserve,
3. When making contribution of money or granting subsidies,
4. When contracting temporary loans;
5. When taking over new obligations or relinquishing required rights not provided in the budget.

This drastic supervision of associations already organized was often preceded by measures that tended to coerce farmers into organizing associations through the use of police force. Such tactics were successful in organizing a fairly large number of associations. Their number and area served is given in table 18.

From 1932 on the development of the associations has made little progress. The dominant role is played by village associations which served an area of 1,431,000 acres in 1938, followed by individuals who owned various irrigation installations serving 784,000 acres.

An outstanding feature of the irrigation associations is that while the Government-General of Korea literally controls them, it does so at little cost to itself, but at a heavy debt load carried by the members. Table 19 is indicative of this situation. According to another source, 2/ the total cost of irrigation works of 189

1/ Korea and Irrigation. Compiled by the Oriental Development Co., Ltd., Tokyo.
2/ Chosen Nenkan, 1941. Quoted by Grajdanzev, Andrew J. Op. cit. p. 15.

Table 18 - Irrigation Associations in Korea, 1927-1938

Year	Number of associations	Area served
	Number	1,000 acres
1927	88	308
1928	116	362
1929	143	438
1930	149	505
1931	176	529
1932	189	546
1933	192	547
1934	193	496
1935	195	548
1936	190	524
1937	190	530
1938	189	544

Office of Foreign Agricultural Relations. Irrigation Projects. Report prepared by O. Gaylord Marsh, American Consul General. Sept. 26, 1938

Table 19 - Cumulative borrowings, repayments, outstanding debt and Government subsidy to irrigation associations in Korea. (Specified years)

Year	Cumulative borrowings	Cumulative repayments	Outstanding debt	Government subsidies
	1,000 yen	1,000 yen	1,000 yen	1,000 yen
1927	64,255	3,727	60,528	-
1928	74,225	5,133	69,092	2,781
1929	86,811	6,292	80,515	2,909
1930	99,319	7,881	91,438	3,062
1931	110,503	10,453	100,050	3,832
1932	115,482	11,686	103,796	2,113
1933	124,091	15,284	108,807	1,115
1934	126,276	17,979	108,297	1,218
1935	128,569	21,362	107,207	1,454
1936	130,059	24,067	105,992	1,589
1937	-	-	-	1,145

Office of Foreign Agricultural Relations. Irrigation Projects. Report prepared by O. Gaylord Marsh, American Consul General. Sept. 26, 1938.

associations on December 31, 1938, was 112,979,000 yen, and the debt of these associations was 107,679,000 yen. It follows that most of the works were constructed with borrowed capital.

The total estimated expenditures for reclamation land improvement and installation of irrigation systems of the association from 1917 to 1937 were approximately 138,79,000 yen, an average of $73.45 per acre; the cost of maintaining and operating an acre of the irrigation association was $1.49.

Irrigation projects were instrumental in raising the volume of agricultural output, but increased production did not necessarily mean greater prosperity. The numerous complaints by the Korean farmers against the irrigation projects testify to that. The basic problem here is one of the cost of irrigation as against returns derived from that improvement. Irrigation societies receive their income from annual assessments on the irrigated land, as well as from assessments on buildings protected from flood damage by the irrigation and drainage works. The rates depend upon the services received by the members of the association, but the average annual assessments from 1928 to 1937 was 51 yen per cho or $5.85 per acre. But in many cases the increased output achieved at this cost did not compensate for the returns, especially during the years of low rice prices. In order to remedy the situation the following demands are made by those who are concerned with the welfare of the Korean farmers: 1/

(1) The management of the associations should be put in the hands of able members of these associations, and that the Japanese managers who are mostly corrupt, old, inefficient, and retired from the Government services should be discharged; (2) all debts of the associations should be replaced by the Low Rate Interest Funds and the term or repayment extended to fifty years; (3) the Association charges should be reduced to one half the amount of the present rate; (4) state subsidies should be increased.

1/ Lee, Hoon K., op. cit., pp. 130-131.

Area in Various Crops

The farm land of Korea falls into two main groups: rice fields (irrigated land), and upland farms (unirrigated lands) which are devoted to other crops. Many of the cultivated crops in the uplands, as indicated earlier, are also grown on rice fields as winter crops. The total area under all crops in 1936 1/ was 14,872,000 acres, and the distribution of this acreage among various crops is shown in table 20 . In the years following 1936 and in the decade preceding, there has been little change in the acreage under individual crops; the latter remained fairly stable in relation to the total crop area.

Food Crops

Rice

An outstanding feature of Korea's agricultural economy is its one-sidedness, i.e. its concentration upon raising foodstuffs made up of cereals, legumes and vegetables. In 1936 these foodstuffs accounted for 93 percent of the total crop area, whereas in Japan the respective figure amounted to about 80 percent. Chief among the food crops is rice. Its relative importance to Korea is as great as the Japanese rice crop is to Japan. In 1936 out of 11,057,000 acres of cultivated land, 3,924,000 acres or 35 percent consisted of "paddy" or irrigated rice lands. In relation to the crop area the rice acreage made up 26 percent of the total. In terms of value, the rice output overshadows all other crops put together. In 1938 rice alone was responsible for 59 percent (63 percent in Japan) of the total value of agricultural output. On the whole, rice is the mainstay of Korea's agricultural economy from the standpoint of acreage, value of production, the place in total export trade, and, of course, as the country's principal food item.

General consideration of rice culture.

In Korea, as in other oriental countries, two principal types of rice may be distinguished, common and glutinous. The first comprises varieties whose kernels are normally quite hard, and when properly cooked retain their identity. The kernels of glutinous rice when cooked, lose their identity and become a sticky mass. Glutinous rice is used largely for pastries and confections. In view of the limited utilization of this type of rice, only about two percent of the total rice acreage is devoted to it.

For a more complete understanding of rice culture in Korea, mention should be made of native and Japanese, or improved,

1/ In some cases the discussion of individual crops is based on data as recent as 1941 and 1942 but because of the absence of official data covering all crops beyond 1936, that year was chosen as indicative of the general character of distribution of the crop area.

Table 20- Acreage under specified crops in Korea, 1936

Specified crop	1936	
	Acreage	Percentage of total
	1,000 acres	Percent
Irrigated rice	1/ 3,924	26.4
Cereals (dry crops)		
Wheat	817	5.5
Common barley	2,111	14.2
Naked barley	504	3.4
Millets (foxtail, proso, and barnyard)	2,135	14.4
Oats	260	1.7
Buckwheat	298	2.0
Corn	509	3.4
Total	6,634	44.6
Leguminous crops		
Soybeans	1,930	13.0
Beans	564	3.8
Other legumes	139	.9
Total	2,633	17.7
Potatoes		
Irish	288	1.9
Sweet	65	.4
Total	353	2.3
Vegetables	429	2.9
Industrial crops		
Cotton	561	3.8
Mulberry	131	.9
Tobacco	43	.3
Other technical crops	164	1.1
Total	899	6.1
Grand total	14,872	100.0

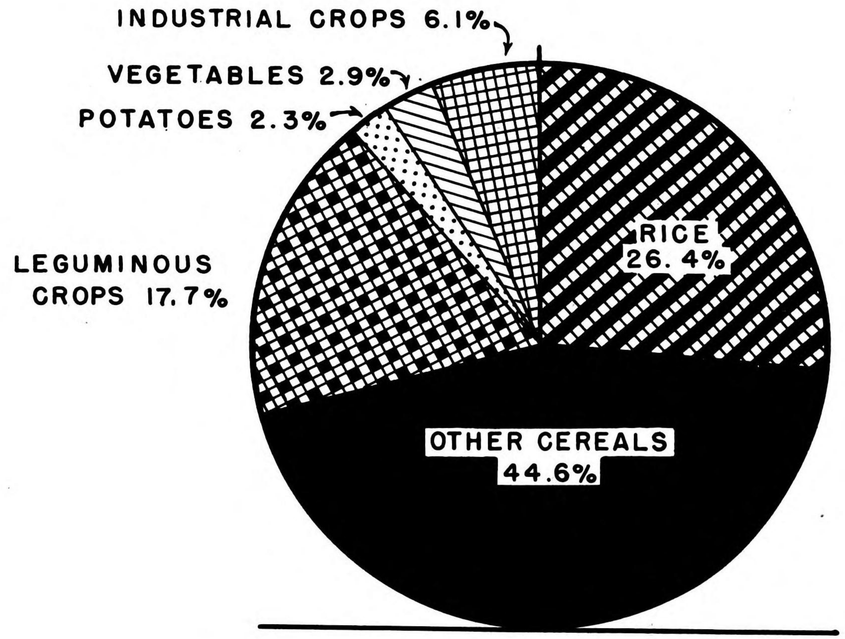
Office of Foreign Agricultural Relations.
Chosen Sotokufu Tokei Nenpo, 1936.

1/ Including about 2 percent of upland rice.

Figure 6

KOREA

ACREAGE OF HARVESTED CROPS AS A PERCENTAGE OF THE TOTAL HARVESTED CROP ACREAGE, 1936



TOTAL 14,872,000 ACRES HARVESTED

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varieties. Native varieities are characterized by low yields and poor resistance to unfavorable weather conditions. In the drive for a larger output the Japanese spared no efforts in replacing native varieties with their own high-yielding ones, and their efforts have been successful. Native varieties remained only, and on a reduced scale, in the northern provinces. The ratio of improved to native in recent years is not available, but in 1934 82 percent of the rice acreage was estimated to be under improved varieties. 1/

In order to meet the problem of rice growing created by diverse climatic conditions, the Korean farmers have developed mid-season, late maturing and early maturing varieties. The first is grown principally in the central provinces; the second in the southern provinces; and the third type, which occupies little acreage and is lowest in yield is found in the north and in the northeast. In this part of the country the month of May, when the rice is growing in the seedbeds, is comparatively cool. Still more serious is the cool weather in October. For this reason rice varieties that ripen by the middle or end of September are of prime importance. Generally speaking, rice in Korea is sown in seed beds about May 1, transplanted from June 10 to June 15, and harvested from about September 15 to October 30th, or even later.

Practically all the rice acreage is irrigated, i.e., it is grown under artificial irrigation or natural swamps where there is standing water at appropriate time. Only about two percent of the acreage is under upland rice, also known as "hill" or "mountain" rice, which is grown without the benefit of irrigation or natural surface water. "Commonly, the varieties grown as upland rice are not the same as those grown as lowland [irrigated] rice, for some varieties do relatively well in drier environment, others relatively well in moister environment." 2/ The yields of upland rice are much lower than those of irrigated, and its cultivation is resorted to either in the absence of lowlands or where land may be abundant; but agriculture is still in a primitive stage of development.

The irrigated fields are found chiefly in areas with slight natural gradients that can easily be converted to a level surface, but many fields are located also on steep slopes. Areas closest to large rivers unless protected by dams, are often avoided because of the danger of flooding and silting. The most favorable location of rice fields is on the western side of Korea, in basins of various sizes, strung along the lower courses of rivers. The preference for such locations is due to two factors: the best alluvial bottom lands are found there, and irrigation of the fields offers the least technical difficulties.

1/ Nasu, Shiroshi, op. cit., p. 123.
2/ Wickizer, V.D. and Bennett, M.K. The Rice Economy of Monsoon Asia. Food Research Institute, Stanford University, California, 1941, p. 11.

Aside from topographical considerations, climate is the other important factor that determines the extent of rice cultivation. As already indicated, Korea has a dry, cold winter and a warm, wet summer. In lowlands the summer offers fairly suitable conditions for the cultivation of rice almost throughout the country, with the exception of northeast. The entire west coast, even as far as the mouth of the Yalu river, yields good crops when provided with good irrigation. Outside of North Korea, the average summer precipitation in most regions is over 28 inches, a volume of rainfall sufficient for rice growing. If the yields in the principal rice areas of Korea still fluctuate and the crops occasionally fail, they are caused not only by lack of precipitation but also by the inadequate methods of irrigation, or lack of proper irrigation facilities.

Acreage

Official statistics show that, barring exceptional crop failures such as took place in 1939, Korea has about four million acres under rice. In view of the importance attached to the crop by Korea and Japan, strong efforts have been made to expand the acreage. They have met only with limited success, however, judging by the acreage-trend during a 25-year period. (Table 21). The causes underlying this small increase have been touched upon in the general discussion of Korea's cultivated acreage and the possibilities of its expansion; what remains to be noted here is that even the largest rice acreage on record (1931-1935) was only eight percent above the smallest (1916-1920).

Topographic and climatic conditions referred to above are responsible for the uneven distribution of the rice acreage by provinces (Fig. 7). The area varies from a maximum of 496,000 acres to a low of 44,000 acres. Although in no province is the percentage of rice area to the total cultivated area as high as that in some of the Japanese prefectures, it is quite large as indicated in Table 22 and Fig. 8. The rice acreage of five of the provinces constitutes 56 percent of the total rice acreage of Korea.

Yield and Production

An examination of Japanese agricultural policies in Korea shows that, in the main, they aimed to increase the rice output. The question is whether they have succeeded, and if so, to what extent. The available information is such, particularly as it relates to the second half of the 1930's, that only a cautious answer can be given.

Prior to 1936 yields rose although very slowly. Average yields for the 5-year period 1931-35 show a 10 percent increase

Table 21 - Acreage, yield and production of brown rice in Korea, 1916-1920 to 1944.

Period	Acreage		Yield		Production	
	1,000 acres	Percent of 1916-20	Pounds per acre	Percent of 1916-20	Million pounds	Percent of 1916-20
Average 1916-1920 1/	3,768.0	100.0	1,206.0	100.0	4,546.0	100.0
1921	3,753.4		1,230.5		4,618.5	
1922	3,818.1		1,267.9		4,840.9	
1923	3,799.6		1,287.7		4,892.6	
1924	3,861.6		1,103.7		4,262.2	
1925	3,884.9		1,226.1		4,763.2	
Average 1921-1925	3,823.5	101.5	1,222.8	101.4	4,675.5	102.8
1926	3,891.7		1,267.6		4,933.3	
1927	3,926.8		1,420.4		5,577.6	
1928	3,719.6		1,171.2		4,356.5	
1929	3,999.7		1,104.5		4,417.8	
1930	4,073.1		1,518.5		6,185.1	
Average 1926-1930	3,922.2	104.1	1,298.8	107.7	5,094.0	112.0
1931	4,104.0		1,247.0		5,117.8	
1932	4,027.6		1,308.5		5,270.3	
1933	4,160.0		1,410.0		5,865.7	
1934	4,195.5		1,284.7		5,390.0	
1935	4,152.8		1,388.6		5,766.5	
Average 1931-1935	4,128.0	109.6	1,328.0	110.1	5,482.1	120.6
1936	3,924.4		1,595.0		6,259	
1937	4,017.0		1,701.6		2/6,835.3	
1938	4,066.2		1,522.6		2/6,191.0	
1939	3,025.3		1,215.1		2/3,676.0	
1940	4,023.0		1,369.4		2/5,509.0	
Average 1936-1940	3,811.2	101.1	1,494.0	123.8	5,694.0	123.3
1941	4,036.2		1,578.0		2/6,368.0	
1942					2/4,046.0	
1943	3,676.0		1,313.0		2/ 4,828.0	
1944						

Office of Foreign Agricultural Relations.
Compiled from official sources.
1/ Lee, Hoon K. op. cit., p. 56.
2/ Estimated by reducing official figures 20 percent. See text pp.

Table 22.- Total cultivated acreage and acreage in rice by provinces in Korea, 1936

Prefecture	Cultivated Acreage	Rice Acreage	Percent rice acreage is of cultivated acreage	Percent acreage in each prefecture is of total rice acreage
	1,000 acres	1,000 acres	Percent	Percent
Keiki	961.0	455.6	47.4	11.6
North Chusei	388.9	167.2	43.0	4.3
South "	610.6	392.1	64.2	10.0
North Zenra	594.2	416.7	70.1	10.6
South "	1,074.7	495.6	46.1	12.6
North Keisho	930.9	458.0	49.2	11.7
South "	680.3	422.5	62.1	10.8
Kokai	1,370.1	302.1	22.0	7.7
South Heian	979.9	192.1	19.6	4.9
North "	1,013.5	230.2	22.7	5.9
Kogen	845.6	202.4	23.9	5.1
South Kankyo	1,056.3	146.3	13.8	3.7
North "	550.6	43.5	7.9	1.1
TOTAL	11,056.6	3,924.3	35.5	100.0

Office of Foreign Agricultural Relations, Chosen Sotokufu Tokei Nenpo, 1936.

Figure 7

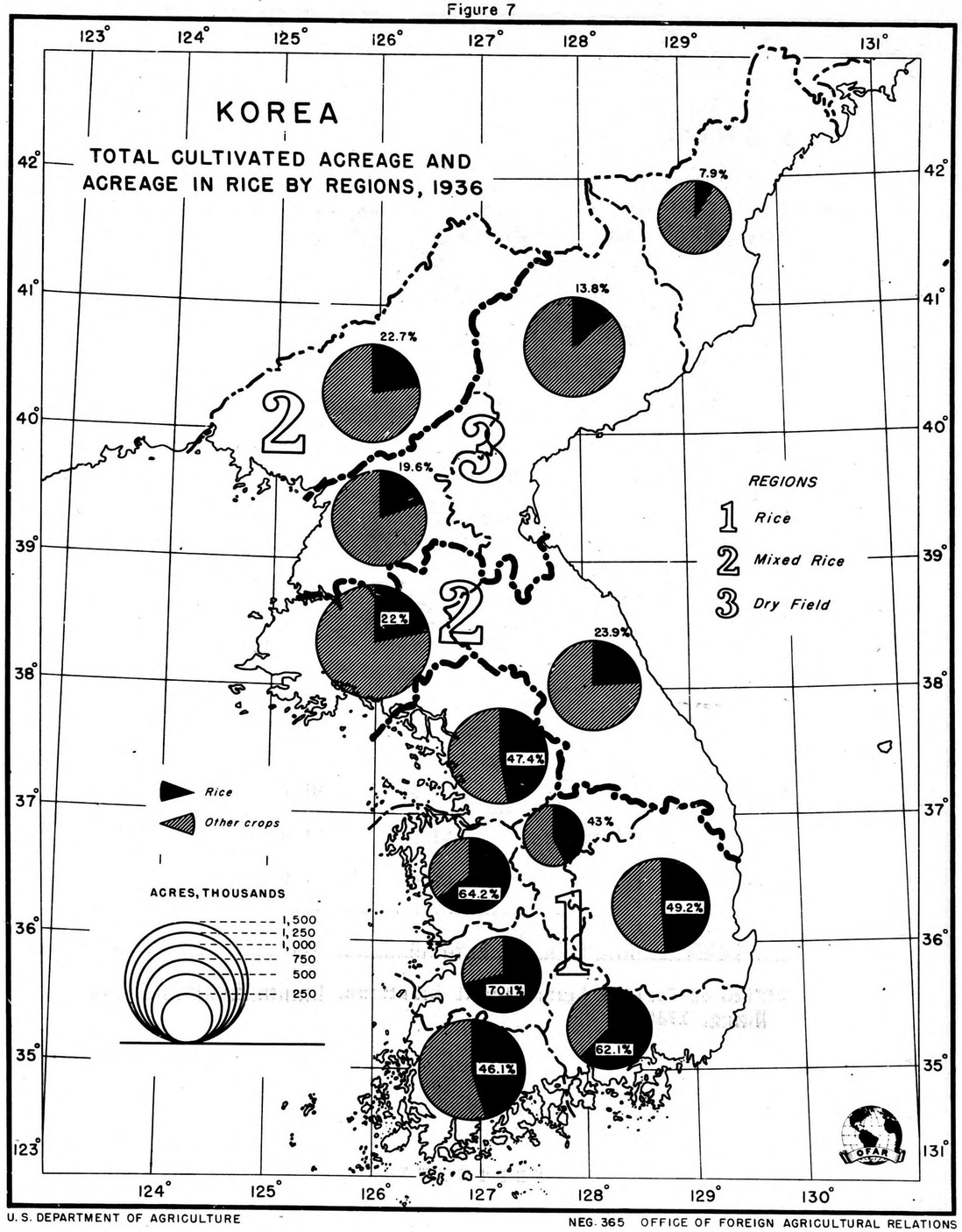

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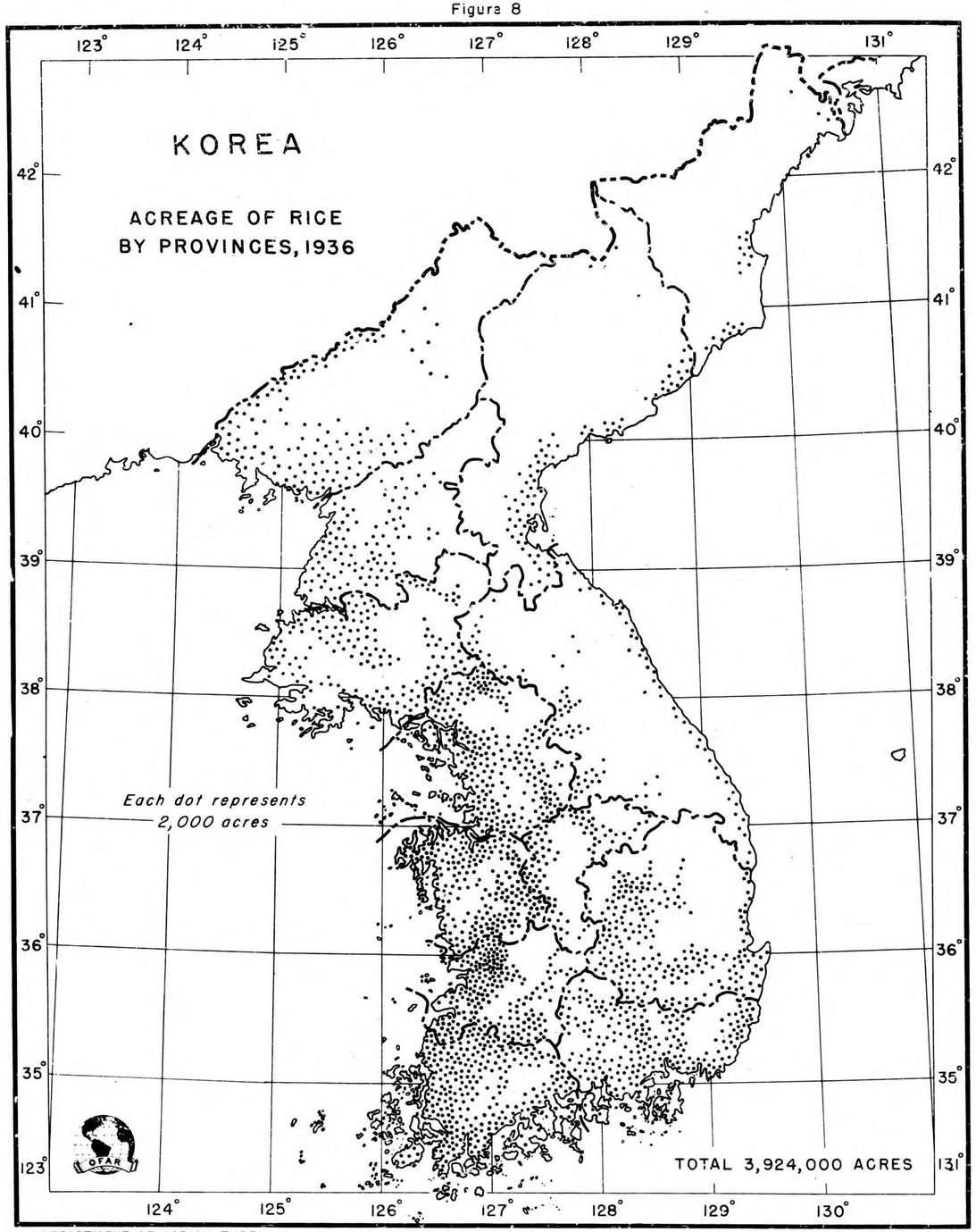
Figure 8



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over those for the period 1916-1920. The output increased by 20.6 percent during the same years. The expanded production was the result of higher yields and somewhat augmented acreage. If the official figures of the five-year period following 1936-1940 are taken at their face value, then average yields were 49 and production 51 percent larger than in 1916-1920. This unprecedented and sudden jump in output is the more surprising considering that (1) the acreage was actually lower than in the preceding five-year period, that (2) in 1939 Korea suffered one of its worst crop failures, and that (3) no revolutionary changes in the methods of cultivation that finally resulted in high yields beginning with the year 1936, can be detected.

The sharp line of demarcation between average yields during the 1916-1936 period and production after 1936 is explained by a new method of calculating the rice crop introduced by the Japanese in 1936. 1/ Judging by recalculated output figures from 1928 on, this method consists in raising them by 26 percent. "This new method," the author remarked, "may be good or bad - without knowledge of the reasons why it was adopted we cannot say which is the better method. But every statistician is under an obligation to use the figures calculated by the same method, and not jump from one set to another and then to project non-existing trends." 2/ Using the old method, the comparable figures in table 21 show an increase in yield and production of about 23 percent.

A comparison of Korean yields with those of Japan points to a fundamental factor in the low status of the country's agricultural economy, and, by the same token, to the poverty of its farmers. Korean rice yields are only slightly more than half of those of Japan. (Table 23). Approximately the same is true of other grain crops. One of the explanations of the low productivity of Korean soil is the smaller utilization of fertilizers; less advantageous rainfall distribution in Korea, imperfect irrigation facilities and generally somewhat less efficient working of the soil as compared with Japanese methods, are the other elements that make for low yields in Korea.

1/ Grajdanzev, Andrew J., op. cit. p. 4. The author of this study is of the opinion that the change in the method of estimating the crop was first applied in 1937. The sharp increase in the official figures of production took place in that year, when the rice crop was estimated at 26.8 million koku (8.6 billion pounds of brown rice) as aginst 19.4 million koku (6.3 billion pounds) in 1936.
2/ Ibid, p. 5.

Table 23- Comparison of rice yields in Korea and Japan (Specified years)

Period	Korea	Japan	Korea as a percent of Japan
	Pounds per acre	Pounds per acre	Percent
1921-25	1,223	2,412	51
1926-30	1,299	2,508	52
1931	1,247	2,236	56
1932	1,308	2,439	54
1933	1,410	2,936	48
1934	1,285	2,150	60
1935	1,389	2,359	59
1936	1,595	2,762	58
1937	1,702	2,715	63
1938	1,523	2,691	56
1939	1,215	2,555	48

Office of Foreign Agricultural Relations. Compiled from official sources.

Distribution of output by groups

The question to consider now is how the rice output is distributed among the various farm groups, such as landlords, independent farmers, owner-tenants and tenants. To ascertain this is important because of the bearing it has upon the economic welfare of the socially stratified village, and because of the light it throws upon the source of the rice surplus which is exported to Japan. Information on this point is available for 1932, as a result of an investigation sponsored by the Japanese to determine Korea's marketable surplus of rice.

The results presented in table 24 1/ are revealing. The average rice holdings of 6.1 koku per farm family has no bearing upon the actual distribution of the output. The landlords who in that year accounted for only 3.6 percent of all the farm families possessed 37 percent of the rice output (including the rent in kind collected from the tenants). Even on the basis of a per capita rice disappearance of 200 pounds a year, 2/ the total disappearnce caused by this group could not have exceeded 420,000 koku (135 million pounds),

1/ It contains only the output column of the original table quoted by Grajdanzev from Chosen Beikoku Keizairon. The second column of this table, on rice available per member of the family, is somewhat out of line with the data on the various farm groups. This is especially true of the average volume of rice available per member of all farm households.

2/ See Table 27 for per capita disappearance.

leaving a marketable surplus of about 6 million koku (1.9 billion pounds). This is approximately three-fourths of Korea's total rice exports. The independent farmers and farmer-tenants who in 1932 represented 42 percent of all the households, had 43 percent of the rice output; while the tenants, who alone accounted for 54 percent of all the households, possessed only 20 percent of the rice output.

Table 24- Quantity of rice controlled by farmers under each type of land tenure, 1932

Type of farmers	Quantity of rice controlled 1/	Number of farm families 2/	Quantity available per family
	1,000 koku		Koku
Landlords	6,486	104,823	62.0
Independent farmers	2,578	476,351	5.4
Owner-tenants	4,892	742,961	6.6
Tenants	3,440	1,546,456	2.2
Total	17,396	2,870,591	6.1

Office of Foreign Agricultural Relations.

1/ Quantities available to farmers after the payment of rent. The landlords share includes rice obtained from tenants as rent. Grajdanzev, Andrew J. op. cit. 30. Quoted from Chosen Beikoku Keizairon.

2/ Chosen Sotokufu Tokei Nempo., 1936.

The average of 2.2 koku of rice per household means a per capita quantity among tenants of 129 pounds. In reality the actual quantity of rice left at their disposal for food purposes is much smaller than the given figure, because they must sell part of the rice to make payments for fertilizers, pay taxes, interest, if not principal, on indebtedness, etc. The result is that tenants have much less rice than the country's average per capita disappearance of about 134 pounds (average 1936-40).

Surplus and deficit provinces

Korea, as shown in the preceding pages, is a surplus rice producer. But not all of the provinces fall in that category, and the size of the surplus varies from province to province. For the purpose of this study it is important to indicate the surplus rice producing provinces, and the respective volume of the surpluses. It will be possible then to point out the principal rice exporting provinces.

Table 25.- Estimates of surplus rice producing and deficit rice consuming areas in Korea, based upon per capita production in each province and average per capita disappearance in 1936

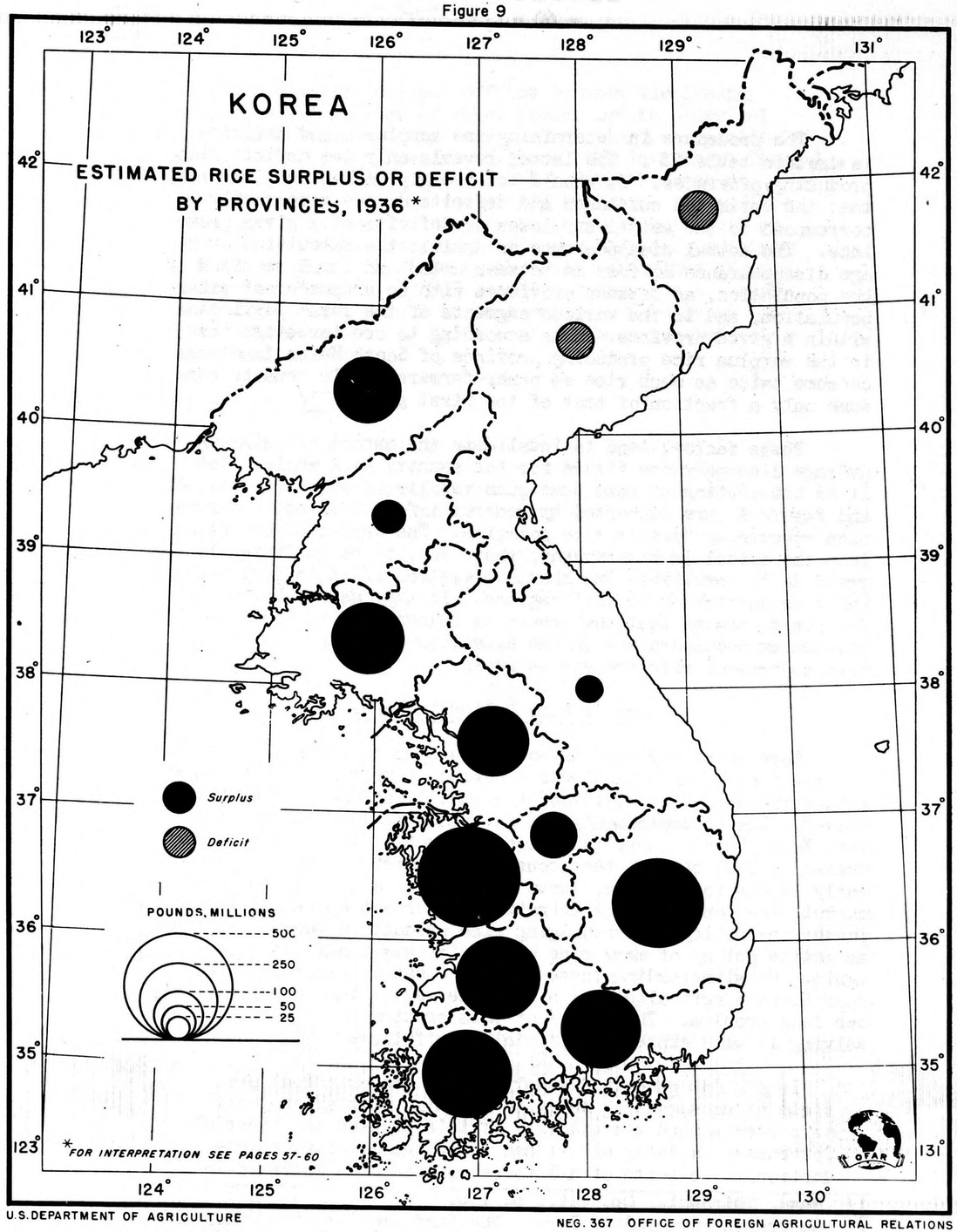
Province	Population 1/	Rice Production 1/	Production per person 2/	(-) Deficit or (+) Surplus per person	Total (-) deficit or (+) surplus
	1,000	Million pounds	Pounds	Pounds	Million pounds
Keiki	2,392	646	270	+ 93	+ 222
North Chusei	907	252	278	+ 101	+ 92
South "	1,483	709	478	+ 301	+ 446
North Zenra	1,541	560	363	+ 186	+ 287
South "	2,416	758	314	+ 137	+ 331
North Keisho	2,454	778	317	+ 140	+ 344
South "	2,214	651	294	+ 119	+ 259
Kokai	1,639	508	310	+ 133	+ 218
South Heian	1,435	302	210	+ 33	+ 47
North "	1,621	492	304	+ 127	+ 206
Kogen	1,529	301	197	+ 20	+ 31
South Kankyo	1,602	228	142	- 35	- 56
North "	814	72	88	- 89	- 72
TOTAL	22,047	6,258	284	+ 107	+ 2,355

Office of Foreign Agricultural Relations.

1/ Chosen Sotokufu Tokei Nenpo, 1936.

2/ Theoretical deficits or surpluses calculated on the basis of average per capita disappearance for country as a whole estimated at 177 pounds of brown rice. The high disappearance figure (compared with the average of 134 pounds in 1936-40 and 126 in 1931-35) was the result of the high 1936 output, the highest on record prior to 1937, and of relatively low 1937 exports when compared with the three preceding years.

Figure 9



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The procedure in determining the surpluses and deficits is shown in table 25. The latter reveals only two deficit rice producing provinces. It should be strongly emphasized, however, that the estimated surpluses and deficits do not necessarily correspond to the actual surpluses or deficits of a given province. The actual disappearance as against the calculated average disappearance differs as between urban and rural sections of the population, as between provinces with no preponderant urban population, and in the various segments of the rural population within a given province. Thus according to one investigation in the surplus rice producing province of South Heian landlords consume twice as much rice as owner-farmers, while tenants consume only a fraction of that of the first group. 1/

These factors tend to invalidate the method of using an average disappearance figure for the country as a whole. Yet it is interesting to note that such results as shown in table 25 and figure 9 are supported by general information and observation concerning Korea's rice position. The degree of deviation from the actual is not thought, therefore, to be sufficiently great as to invalidate the characterization of individual provinces as surplus or deficit regions. In the case of Korea, it is fair to assume that the provinces beginning with Kokai and proceeding southward - with the exception of Kogen - are the main sources of rice exports to Japan.

Japan's Rice Policy in Korea

Korea's rice yields do not measure up to those of Japan, but the fact remains that over a period of years they have shown a fair increase. In addition, the quality of Korean rice has improved. These developments can be traced to Japan's aim to convert Korea into a convenient "bread-basket." This policy inaugurated in 1920 has not been consistent, however. When in the early 1930's, for example, Japan experienced a glut in the rice market, the Japanese Administration of Korea temporarily suspended the policy of encouraging rice production there. In 1938 an active policy of more rice production was inaugurated once again. Notwithstanding these shifts, Japan in general looked upon Korea's agriculture as a possible key to the solution of its own food problem. The nature of this problem and the methods of solving it were expressed officially as follows: 2/

> In our Japanese food supply, rice, the principal article of consumption, tends to be short year after year. As a step toward the solution of this problem the Imperial Government is doing all it can to increase the rice production... In spite of all these efforts, the increase in

1/ Nasu, Shiroshi. Op. cit., p. 150.
2/ Government General of Korea, The Land Amelioration Undertaking in Korea, November 1928, p. 4. Quoted by Hoon K. Lee, op. ti., p. 123.

> rice production clearly does not suffice to meet the demand in the near future. In view of these facts, and in order not only to help in solving the Empire's food problem but specifically also to develop the economy of Korea, the Government General of Chosen planned in 1919 to have almost 1,960,000 acres of paddy field reclaimed and improved within 30 years. As a first installment, the Government is trying to complete such work on almost a million acres in 15 years. In this way, and counting also on an increase of the yield by improved techniques of production, approximately 45,630,000 bushels of rice are to be added to the total annual output in that period. This is the so-called "More Rice" project in Korea that has been underway since 1920.

Korean rice exports to Japan

The expanded program policy called for a 70 percent increase in output; but as noted already, the increase never amounted in practice to more than about 23 percent. From the point of view of Japan's food requirements, however, the efforts were not in vain. Japan succeeded in getting from Korea practically all of the latter's rice exports. Ever since Japan's occupation of Korea, rice exports from Korea have been mounting as indicated in table 26. These exports in recent years constituted nearly one-half of the output (40 percent during the period 1931-39), a factor that explains the declining consumption in Korea. On the Japanese side, Korean exports supplied the former with approximately 11 percent of its total rice disappearance, or 62 percent of its imports (1932-37).

Table 26 - Korean rice exports to Japan
(Specified years)

Period	Exports (brown rice)	Percent of 1911-15 average
	Million pounds	
Average		
1911-15 1/	276	100
1916-20 1/	561	203
1921-25 1/	1,132	410
1926-30 1/	1,846	669
1931-35 2/	2,723	986
1936-39 2/	2,570	931

Foreign Agricultural Relations.
1/ Wickizer, V.D. and Bennett, M.K. The Rice Economy of Monsoon Asia. Stanford Univeristy, 1941, p. 324. Figures given in terms of cleaned rice adjusted to brown rice, the former having been raised by 6 percent.
2/ The Far East Year Book, 1941.

Effect on Japanese farmers

This stream of exports has affected adversely the Japanese farmers, and especially those of Korea. Japanese rice is produced at a high cost and sold at a high price, but the Japanese consumer finds foreign rice so unpalatable that normally the high price of the home-grown variety can hardly be reduced by imports. Rice produced in Korea (as well as in Formosa) is not classed as foreign rice, one of the reasons being that in taste it approaches that produced in Japan proper. Furthermore, Korean rice is produced at lower cost than Japanese. The characteristics of Korean rice have succeeded in undermining the monopolistic position of Japanese rice. "Korean rice growers," an official report stated, "are still obliged to sell their produce during harvest time on account of poverty and lack of warehouses. Large quantities of Korean rice are exported to Japan Proper in a rush for the short period of four or five months after harvest." 1/ The ever-increasing volume of Korean rice reaching the Japanese market right after the harvest has had a depressing effect upon its prices. In years of good crops the imported Korean rice has forced the price down to a level well below that of the cost of production in Japan, thereby adding to the economic distress of Japanese producers.

On Korean farmers

Of much greater importance is the effect upon the Korean farmers themselves of the Japanese policy of expanding Korea rice production and rice exports into Japan. It may be recalled in this connection that Japan aimed not only to solve its own food problem, but also to meet the growing demand for food in Korea, and to improve the economic position of the Korean farmer and thus further the economic development of Korea as a whole. 2/ The first objective has been attained; have the other two as well?

A more complete answer to the questions, particularly the last one, will be found on pages 90 - 97. At this juncture it may be stated that Japan was instrumental in depleting Korea's rice supply, and in thus lowering the standard of living of the Koreans.

For a Korean farmer, as for a Japanese farmer, rice is not only a basic food staple, but an index of the standard of living. The more rice he consumes the higher his standard of living, and vice versa. Since the annexation of Korea by Japan, however, Koreans have been eating less and less rice (Table 27). The average yearly per capita domestic consumption in the 5-year

1/ Annual Report of the Administration of Toysen, 1937-38. Keizyo, 1938, p. 123.
2/ Nasu, S., Land Utilization in Japan, Tokyo, 1929, p. 230.

Table 27 - Production, foreign trade and domestic disappearance of brown rice in Korea (Specified years)

Period	Production	Net exports	Available supplies	Population	Per capita disappearance
	Million pounds	Million pounds	Million pounds	Million	Pounds
1916-20	4,546	1/ 626	3,920	17.1	229
1921-25	4,675	1/ 1,138	3,537	18.6	190
1926-30	5,094	1/ 1,614	3,480	20.4	170
1931-35	5,482	2/ 2,698	2,784	22.1	126
1936-40	5,694	2/ 2,494	3,200	23.8	134

Office of Foreign Agricultural Relations.
1/ Wickizer, V.D., and Bennett, M.K. The Rice Economy of Monsoon Asia. Stanford University, 1941, p. 324. Figures given in terms of cleaned rice adjusted to brown rice, the former having been raised by 6 percent.
2/ Four-year average. The Far East Year Book, 1941

period 1931-35 was 45 percent lower than that in the 1916-20 period. Consumption showed a slight rise in the years 1936-40, but even then it was 41 percent below the 1916-20 average. In Japan, on the other hand, consumption is more than double that of Korea, and it remained practically stable in the course of a similar period, characterized by a rapid increase in population. 1/

The reduced rice disappearance was caused by a decline in the available supplies on the one hand, and the rise in population on the other. The reason underlying the decline in supplies is that the Koreans cannot afford to eat the rice they produce; they had to export rice and with the proceeds purchase and eat the cheaper and less palatable grains instead. 2/ During the period 1926-1940 net rice exports amounted to 42 percent of the crop. If the Korean farmers were economically able to consume all the rice they formerly consumed on or immediately after Japan's occupation of Korea, most of the output would be required to satisfy domestic needs. The declining consumption of rice on the part of the Korean people largely insured Japan proper with an ample rice supply.

Wheat

Wheat in Korea is not as important as either barley or millet. It competes with barley as a second crop on rice fields, but not successfully when the changes in acreage of the two crops over a period of years are noted. The disadvantage and position of wheat is explained by the following circumstances. 3/

> The larger growing period of wheat may bring its harvesting into the rainy season in early summer and injure the quality of the crop. Moreover, the longer growing period, as compared with barley, shortens the interval between the rice harvest in the fall and the sowing of winter grain, and also the interval between the grain harvest in the spring and the rice transplanted in early summer. Even as small a difference as a week or ten days in the growing periods of wheat and barley may give barley a distinct advantage when the summers are rather short for the maturing of rice.

1/ See column on per capita disappearance in Table 31 of Civil Affairs Handbook on Agriculture in Japan.
2/ This development might have had a positive aspect if the volume of imported substitute grains with their greater nutritive values were sufficiently large to compensate for the exported rice.
3/ Alsberg, Carl L. Japanese Self-sufficiency in Wheat. Food Research Institute, Stanford University, California, November 1935, pp. 66-67.

The correctness of this statement applies not only to wheat growing in Japan, but to Korea as well. 1/ There is this difference to be considered, however: special and successful measures have been introduced in Japan to overcome some of the factors that normally limit wheat cultivation, and to expand the acreage. No such action took place in Korea, the result being that the wheat acreage there has tended to decline (Table 28).

Acreage, yield, production and disappearance

Korea's wheat acreage represents from 7 to 8 percent of the total cultivated area, and is unevenly distributed. It is in the northern part of the country with its continental climate that the greater acreage of wheat is grown. The province of Kokai, which is to the north of the line that roughly divides the country between north and south, has 44 percent of the peninsula's wheat acreage; the second largest with 14 percent is north of Kokai. In all other provinces the acreage ranges from less than one to eleven percent of the total (Table 29 and Fig. 10).

Yields have risen to an average of 12.8 bushels (1937-41) from 10.5 bushels (1925-29), or 22 percent, (Table 28) but in the case of all other grain crops it is much below the Japanese levels. Korean wheat yields are approximately 40 percent of those of Japan. The output of about 9 to 10 million bushels does not suffice to take care of domestic requirements. The volume of imports, available supplies and per capita disappearance are given in table 30 .

Table 28 - Acreage, yield, and production of wheat in Korea (Specified years)

Period	Acreage 1/	Yield	Production
	1,000 acres	Bushels	1,000 bushels
Average			
1925-29	890	10.5	9,342
1930-34	809	11.2	9,048
1935	800	12.2	9,747
1936	817	9.9	8,095
1937	839	12.2	10,242
1938	846	12.3	10,401
1939	859	14.6	12,566
1940	859	11.9	10,222
1941	773	13.3	10,265

Office of Foreign Agricultural Relations. Compiled from official sources.
1/ Figures refer to harvested areas.

1/ Lee, Hoon K., op. cit., p. 59.

Figure 10

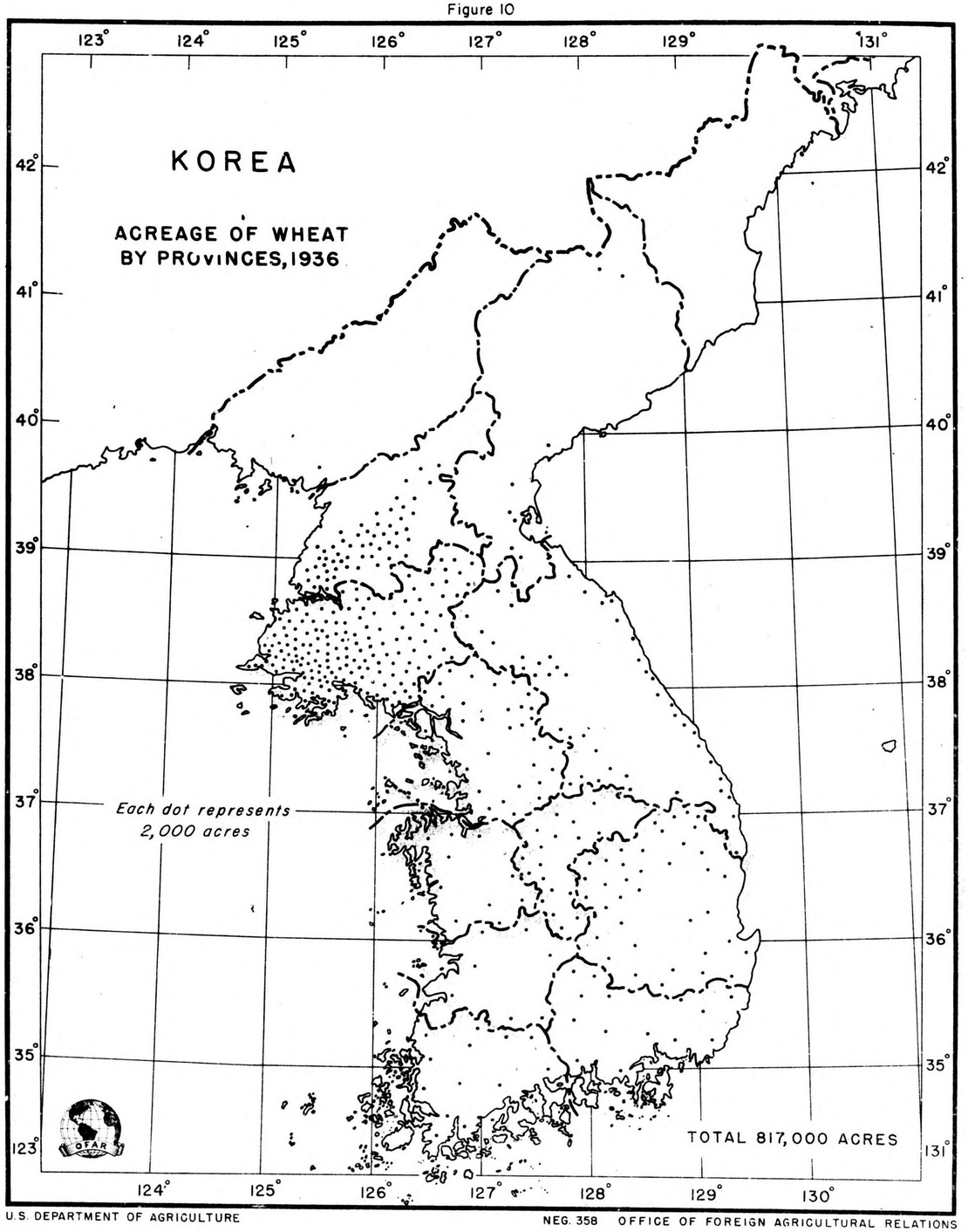

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Table 29.- Wheat and barley: Acreage by provinces in Korea, 1936

Prefecture	Wheat: Acreage	Wheat: Percent acreage in each prefecture is of total wheat acreage	Barley: Acreage	Barley: Percent acreage in each prefecture is of total barley acreage
	Acres	Percent	Acres	Percent
Keiki	64,137	7.9	230,435	8.8
North Chusei	36,323	4.5	173,252	6.6
South "	22,950	2.8	187,277	7.2
North Zenra	13,120	1.6	207,353	7.9
South "	25,163	3.1	429,879	16.4
North Keisho	76,613	9.4	533,184	20.4
South "	27,841	3.4	417,327	16.0
Kokai	329,738	40.3	33,010	1.3
South Heian	113,889	13.9	56,984	2.2
North "	1,037	.1	13,248	.5
Kogen	89,839	11.0	105,412	4.0
South Kankyo	16,627	2.0	109,253	4.2
North "	83	1/	118,153	4.5
TOTAL	817,360	100.0	2,614,767	100.0

Office of Foreign Agricultural Relations. Chosen Sotokufu Tokei Nenpo, 1936

1/ Less than 0.1 percent.

Table 30.- Per capita disappearance of wheat in Korea (Specified years)

Period	Production	Net 1/ Imports	Available Supplies	Population	Per capita Disappearance
	1,000 bushels	1,000 bushels	1,000 bushels	Thousands	Pounds
Average					
1925-29	9,342	1,714	11,056	19,151	35
1930-34	9,048	1,422	10,472	20,007	31
1935	9,747	3,876	13,623	21,891	37
1936	8,095	2,586	10,681	22,048	29
1937	10,242	926	11,168	22,355	30
1938	10,401	588	10,989	22,634	29
1939	12,566	1,977	14,543	22,801	38

Office of Foreign Agricultural Relations.

1/ 1925 to 1933 from Foreign Trade of Japan, a statistical survey by Oriental Economist (monthly). 1935 to 1939 from Bureau of Foreign and Domestic Commerce, United States Department of Commerce.

Barley

After rice, barley is the most important crop in Korea by virtue of acreage and as a staple food of the country, particularly of the poorer groups, which abound. There are two principal varieties: common and "naked," or hulless. The grain of the latter, carries no hull and in threshing the kernels separate out like the kernels of wheat. It is of higher food value than common barley, 1/ but in Korea only 20 percent of the barley acreage is under the naked variety. Barley is favored by the farmers in the south for double cropping, or as a second crop in the rice field, before the rice is planted.

Acreage, yield, production and disappearance.

The barley acreage of Korea is unevenly distributed throughout the country. It is largest in the south, where it can be cultivated as a second crop, smaller in the central part, and smallest in the north. The 1936 barley acreage accounted for almost 24 percent of the total cultivated area. The distribution of the acreage by provinces shows that three provinces that occupy the extreme southern and southeastern parts of Korea contain 53 percent of the total barley acreage; while six provinces, beginning with Kokai and northward, account for only 17 percent of the acreage. Production and distribution follow closely that of the acreage.

Barley acreage has shown a steady upward trend (Table 31).

Table 31- Acreage, yield and production of barley in Korea, Average 1925-29 and 1930-34, annual 1935-41

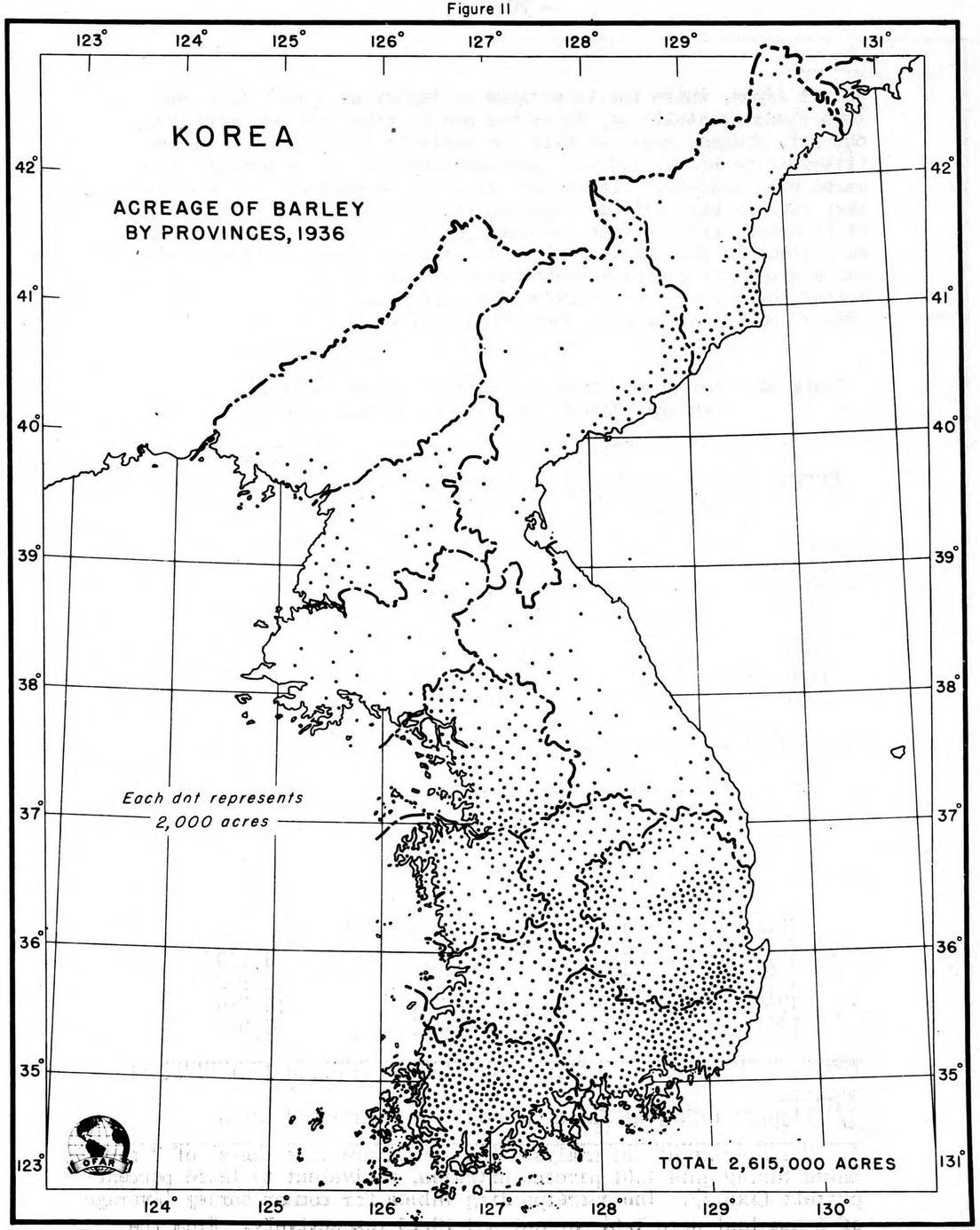
Period	Acreage 1/	Yield	Production
	1,000 acres	Bushels	1,000 bushels
Average			
1925-29	2,209	17.1	37,751
1930-34	2,423	18.3	44,432
1935	2,548	20.9	53,138
1936	2,615	17.8	46,541
1937	2,687	25.0	67,119
1938	2,737	18.7	51,100
1939	2,762	20.6	56,902
1940	2,913	20.2	58,785
1941	2,576	22.9	59,080

Office of Foreign Agricultural Relations. Compiled from official sources.

1/ Figures refer, as far as possible, to harvested areas.

1/ The average of the analyses (on a moisture-free basis) of 7 samples naked barley gave 2.01 percent nitrogen, equivalent to 12.56 percent protein (Nx6.5). The corresponding values for common barley (Average of 6 samples) were 1.64 percent and 10.25 respectively. From the Chemical Analysis of Food in Japan, by T. Saiki, et al. Tokyo, 1934, p. 224. Quoted by Carl L. Alsberg in Japanese Self-Sufficiency in Wheat, Food Research Institute, Nov. 1935, p. 75.

Figure 11



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Unlike Japan, where the importance of barley as a food crop has been steadily declining, Korea has had to rely more and more upon cheaper, rougher grain to fill the nation's food larder. In the five-year period of 1937-41, acreage increased by 24 percent compared with 1925-29. Yields have risen by 26 percent, but even so they were barely half the Japanese yields. Within the same period of time the barley output increased by 55 percent. Korea is self-sufficient in this grain; and in consequence of the augmented output average per capita disappearance has increased from 95 pounds during the 5-year period 1925-29 to 118 pounds during the comparable 1935-39 period or by 24 percent (Table 32).

Table 32 - Per capita disappearance of barley in Korea, Average 1925-29 and 1930-34, annual 1935-39

Period	1/ Production	Population	Per capita Disappearance
	1,000 bushels	Thousands	Pounds
Average			
1925-29	37,751	19,151	95
1930-34	44,432	20,607	104
1935	53,138	21,891	117
1936	46,541	22,048	101
1937	67,119	22,355	144
1938	51,100	22,634	108
1939	56,902	22,801	120

Office of Foreign Agricultural Relations. Compiled from official sources.
1/ Production figures only are used to determine per capita disappearance since exports and imports practically cancel each other.

Millet

Millet is perhaps even a more important food grain, although the acreage under this grain is smaller than that under barley. Because many Korean farmers cannot afford to eat the rice they produce, millet is to them what rice is to the Japanese. Nearly a fifth (19 percent) of the total cultivated area (1936) was under millet (Table 33). Its habitat, unlike that of barley, is largely in the northern part of the country, where it occupies from 26 to 35 percent of the cultivated land. Approximately two-thirds of all the acreage and production is found in five northern and northeastern provinces. (Fig. 12).

Figure 12

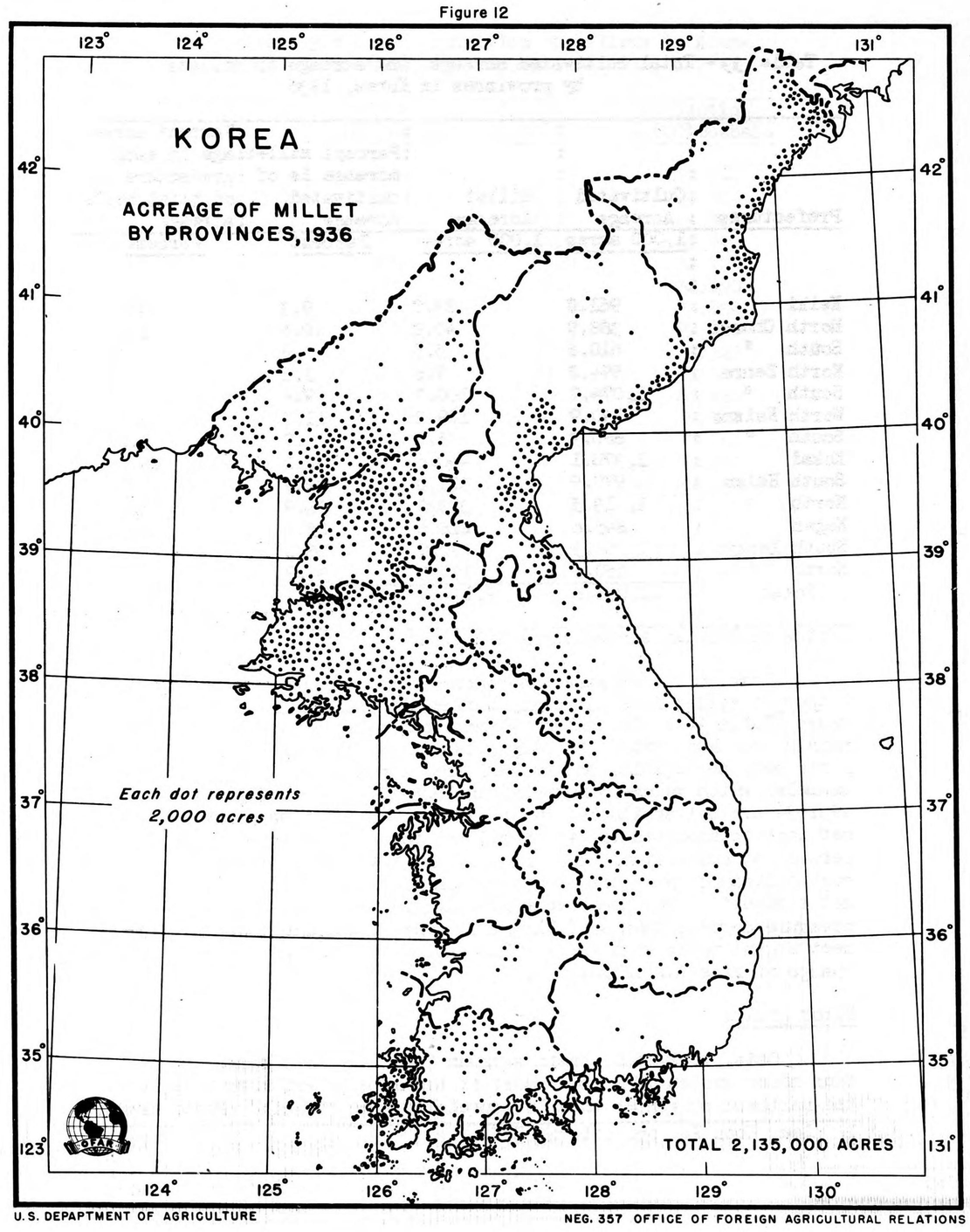

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Table 33 - Total cultivated acreage and acreage in millets by provinces in Korea, 1936

Prefectures	Cultivated Acreage	Millet Acreage	Percent millet acreage is of cultivated acreage	Percent acreage in each prefecture is of total millet acreage
	1,000 acres	1,000 acres	Percent	Percent
Keiki	961.0	89.7	9.3	4.2
North Chusei	388.9	40.8	10.5	1.9
South "	610.6	5.5	.9	.3
North Zenra	594.2	9.6	1.6	.5
South "	1,074.7	100.7	9.4	4.7
North Keisho	930.9	109.2	11.7	5.1
South "	680.3	5.0	.7	.2
Kokai	1,370.1	440.6	32.2	20.6
South Heian	979.9	321.0	32.8	15.0
North "	1,013.5	323.0	31.9	15.1
Kogen	845.6	216.6	25.6	10.2
South Kankyo	1,056.3	280.9	26.6	13.2
North "	550.6	192.3	34.9	9.0
Total	11,056.6	2,134.9	19.3	100.0

Office of Foreign Agricultural Relations.

Despite its growing importance as a food, neither acreage nor output of millet have shown any noticeable increase in the past 20 years (Table 34). The chief reliance has been upon imported millet, mainly from Manchuria. Shortly after the annexation of Korea imports were negligible, but by 1920 they amounted to 2.5 million bushels, which volume quadrupled in 1926-30. Import figures for 1931-34 are not available, but in the subsequent five years average net imports amounted to over 6 million bushels, or approximately 20 percent of production. Barring the last five years, the average per capita disappearance has increased considerably (Table 35). This is not a result of any preference for the grain - "But the economic pressure compels them to follow this course, because they have to meet urgent needs with the surplus cash which they get from the exchange of rice for millet." 1/

Minor grains

Oats, buckwheat, grain sorghum (kaoliang) and corn, are the four minor grains of Korea. Most of the acreage and output is in the northern province; this is especially true of oats. North Kankyo,

1/ Lee, Hoon K., op. cit. p. 277.

Table 34- Acreage, yield and production of millets in Korea, average 1916-20, 1921-25, annual 1911, 1927-38

Period	Acreage	Yield	Production
	1,000 acres	Bushels	1,000 bushels
1911	1,664	13.2	22,040
Average 1916-20 1/	1,835	13.8	25,314
" 1921-25 1/	1,915	13.5	25,924
1927	2,225	13.9	30,940
1928	2,261	14.2	32,120
1929	2,200	14.6	32,140
1930	2,189	15.5	33,980
1931	2,180	12.8	27,920
1932	2,205	15.1	33,320
1933	2,172	14.3	31,040
1934	2,166	10.6	22,860
1935	2,160	13.5	29,200
1936	2,135	14.3	30,480
1937			2/ 32,840
1938			2/ 29,440

Office of Foreign Agricultural Relations. Compiled from official sources.

1/ Foxtail millet only - Source: Lee, Hoon K., op. cit., p. 64.
2/ Foxtail millet only.

Table 35 - Per capita disappearance of millets in Korea

Period	Production	Net Imports	Available supply	Population	Per capita disappearance
	1,000 bushels	1,000 bushels	1,000 bushels	Thousands	Pounds
1911	22,040				
Average:					
1916-20	1/ 25,314	2,550	27,864	16,963	82.1
1921-25	1/ 25,924	5,548	31,472	18,010	87.3
1927	30,940	10,647	41,587	19,138	108.6
1928	32,120	8,432	40,552	19,190	105.6
1929	32,140	8,432	40,572	19,311	105.0
1930	33,980	8,888	42,868	20,257	105.8
1931	27,920			20,268	
1932	33,320			20,599	
1933	31,040			20,791	
1934	22,860			21,126	
1935	29,200	6,640	35,840	21,891	81.9
1936	30,480	8,140	38,620	22,048	87.6
1937	1/ 32,840	5,060	37,900	22,355	84.8
1938	1/ 29,440	4,820	34,260	22,634	75.7

Office of Foreign Agricultural Relations
1/ Foxtail millet only.

Table 36- Acreage and production of oats, buckwheat, and corn in Korea, Annual 1927-1936

Period	Oats		Buckwheat		Indian corn		Broom corn	
	Acreage	Production	Acreage	Production	Acreage	Production	Acreage	Production
	1,000 acres	1,000 bushels	1,000 acres	1,000 bushels	1,000 acres	1,000 bushels	1,000 acres	1,000 bushels
1927	272	4,178	266	3,196	251	2,827	237	3,492
1928	265	4,060	338	3,268	255	3,161	237	3,474
1929	270	4,370	269	3,028	260	3,207	233	3,440
1930	270	4,313	264	3,148	264	3,357	229	3,474
1931	305	5,136	255	2,759	265	3,082	222	2,974
1932	289	4,858	301	3,485	270	3,399	215	3,158
1933	292	2,633	263	2,898	276	3,492	212	3,119
1934	293	2,456	285	2,506	288	2,642	208	2,515
1935	287	2,270	310	3,238	292	3,662	202	2,853
1936	260	2,794	298	2,833	316	4,376	193	2,888

Office of Foreign Agricultural Relations. Compiled from official sources

the northernmost province of Korea, has 77 percent of the total acreage under oats. The acreage, output and per capita disappearance of the four crops is shown in tables 36 and 37.

Table 37 - Per capita disappearance of oats, buckwheat, Indian corn, and broom corn in Korea, annual 1927-1937

Period	Per capita disappearance			
	Oats	Buckwheat	Indian corn	Broom corn
	Pounds	Pounds	Pounds	Pounds
1927	7.0	8.0	8.3	9.1
1928	6.8	8.2	9.2	9.0
1929	7.2	7.5	9.3	8.9
1930	6.8	7.4	9.3	8.6
1931	8.1	6.5	8.5	7.3
1932	7.5	8.1	9.2	7.7
1933	4.0	6.7	9.4	7.5
1934	3.7	5.7	7.0	6.0
1935	3.3	7.1	9.4	6.5
1936	4.0	6.2	11.1	6.5
1937	4.4	7.1	-	-

Office of Foreign Agricultural Relations.

Potatoes and vegetables

The total area under these crops was 782,000 acres in 1936, or 5.3 percent of the total crop area. By far the greatest area is given to potatoes, namely, 353,000 acres. Of this acreage, 288,000 is under Irish and the remainder under sweet. The principal habitat of sweet potatoes is in the south, while that of Irish is in the north of the peninsula. Thus the province South of Kankyo has 50 percent of the Korean acreage under Irish potatoes, with a similar share of the total output. The trend in acreage and production, as well as the per capita disappearance is shown in tables 38 and 48.

Korea is a fairly large producer and consumer of vegetables. The principal items are given in table 38.

Leguminous crops

The principal legume crops are soybeans and other beans. The acreage under peas and peanuts is very small. Soybeans are by far the most important item among legumes, and is next to rice in importance as an article of export. The acreage under all legumes represents

Table 38 - Acreage and production of vegetables in Korea, (Specified years)

Commodity	1929		1933		1934		1935		1936	
	Acreage	Production	Acreage	Production	Acreage	Production	Acreage	Production	Acreage	Production
	1,000 acres	Million pounds	1,000 acres	Million pounds	1,000 acres	Million pounds	1,000 acres	Million pounds	1,000 acres	Million pounds
Sweet potatoes	32	226	46	358	53	367	60	467	65	439
Irish "	224	1,195	242	1,238	241	940	269	1,327	288	1,611
Turnips	143	1,366	150	1,297	155	1,329	153	1,354	154	1,176
Cabbage	106	862	114	877	118	897	119	868	122	829
Other cabbage	-	-	2	21	2	13	2	15	2	17
Onions	-	-	6	44	8	51	8	52	9	54
Eggplants	-	-	5	37	5	39	6	42	6	41
Cucumbers	-	-	18	150	19	160	19	150	20	159
Pumpkins	-	-	9	92	10	90	11	95	11	94
Cantaloupes	38	297	35	293	35	282	33	274	33	269
Watermelons	-	-	6	51	7	57	6	64	7	64
Dry onions	-	-	19	79	20	81	21	95	22	92
Starchy	-	-	32	84	35	83	38	92	40	100
Celery	-	-	2	27	2	28	2	25	2	23
Total			648		417		920		968	

Office of Foreign Agricultural Relations.
Chosen Sotokufu Tokei, Nempo, 1936.

18 percent of the total crop area, and that of soybeans alone 13 percent. The soybean acreage showed but little change from 1925 to 1938 (Table 39); and in comparison with the grain crops, it is more or less evenly distributed by provinces (Table 40), the most important one being the Province of Kokai.

Table 39 - Acreage, yield and production of soybeans in Korea, (Specified years)

Period	Acreage	Yield	Production
	1,000 Acres	Bushels	1,000 bushels
Average 1925-29	1,952	10.4	20,313
1930-34	1,958	10.4	20,286
1935	1,941	10.7	20,738
1936	1,930	9.3	17,937
1937	1,925	10.5	20,205
1938	1,888	9.7	18,333

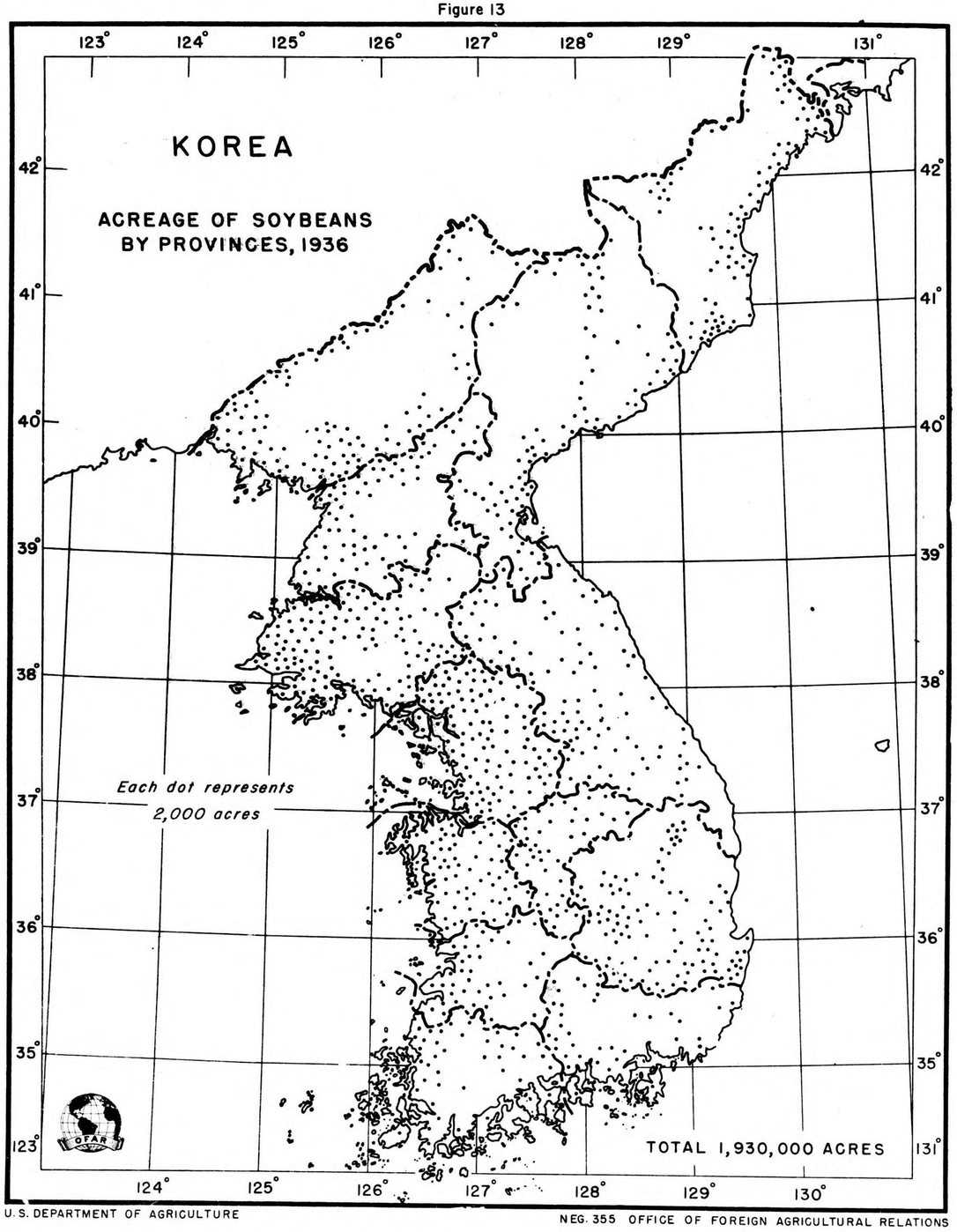
Office of Foreign Agricultural Relations. Compiled from official sources.

Table 40- Soybeans: Acreage by prefecture in Korea, 1936

Prefecture	Soybeans	
	Acreage	Percent acreage in each prefecture is of total soybean acreage
	Acres	Percent
Keiki	204,003	10.6
North Chusei	81,629	4.2
South "	105,484	5.5
North Zenra	82,651	4.3
South "	78,539	4.1
North Keisho	211,641	11.0
South "	75,488	3.9
Kokai	234,780	12.1
South Heian	132,394	6.9
North "	194,899	10.1
Kogen	188,735	9.8
South Kankyo	168,606	8.7
North "	170,846	8.8
Total	1,929,695	100.0

Office of Foreign Agricultural Relations. Chosen Sotokufu, Tokei Nempo, 1936.

Figure 13



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Yields, too, have remained practically unchanged, and as in the case with most all other crops, on a low level. They are approximately only half of Japanese or Manchurian soybean yields. With acreage and yield hardly changed, output followed suit (Table 41). The per capita disappearance of soybeans in Korea is about 43 pounds and remained practically the same.

Because of poor methods of preparation, such as drying and sorting, Korean soybeans were at one time unable to gain any extensive foreign markets. The picture changed with the improvement in the quality of the bean; and barring the year 1937, net exports range from a minimum of 19 percent to a maximum of 30 percent of the output. Japan is the principal destination of these exports.

In addition to soybeans, Korea has also 564,000 acres (1936) under such types of beans as adzuki (red beans) and mung (green beans) with an output of 3.8 million bushels; while all other legume crops cover an area of 139,000 acres, the output of these crops being 1.2 million bushels in 1936. The per capita disappearance of legumes, other than soybeans, was approximately 14 pounds in 1936.

Table 41- Per capita disappearance of soybeans in Korea
(Specified years)

Period	Production	Net Exports 1/	Available supply	Population	Per capita disappearance
	1000 bushels	1000 bushels	1000 bushels	Thousands	Pounds
Average					
1925-29	20,313	5,539	14,774	19,151	46
1930-34	20,286	6,011	14,275	20,607	42
1935	20,738	3,796	16,942	21,891	46
1936	17,937	4,169	13,768	22,048	37
1937	20,205	1,835	18,370	22,355	49
1938	18,333	3,439	14,894	22,634	39

Office of Foreign Agricultural Relations. Compiled from official sources.
1/ International yearbook of Agricultural Statistics, 1934-34, table 139 and 1940-41, table 88.

Fruit

Fruit growing in Korea is widely practiced. Numerous fruit trees, except those of the citrus group, are found there. The principal ones are apple, pear, peach, persimmon and grape. Of considerable importance also as a source of farm income is a variety of nuts, such as walnuts, chestnuts and pinenut. Data for these latter items are not available, while the number of trees and output of the first mentioned group are shown in table 42. The provinces of Kokai and South Heian are the two main fruit-growing regions of Korea. The country's fruit has a wide market in the Far East; but judging by trade statistics (Table 43), Korea has been a net importer of fruit and nuts.

Table 42- Number of fruit trees and fruit output in Korea
Average 1932-36

Kind of fruit	Number of trees	Production
	1,000	1,000 lbs.
Apple	2,097	117,204
Pear	905	30,779
Peach	270	8,441
Persimmon	925	48,958
Grape	237	4,613

Office of Foreign Agricultural Relations. Chosen Sotokufu Tokei Nenpo, 1936

Table 43 - Exports 1/ (+) and imports 1/ (-) of fruit and nuts of Korea
(Specified years)

Trade	1935	1936	1937	1938	1939
	1,000 lbs.	1,000 lbs.	1,000 lbs.	1,000 lbs.	1,000 lbs.
Exports	63,172	66,298	68,862	81,334	127,922
Imports	87,551	94,965	86,534	105,994	127,663
Balance	- 24,379	-28,667	-17,672	-24,660	+ 329

Office of Foreign Agricultural Relations.
1/ Henning, Charles N. Preliminary Economic Survey of Korea, Far Eastern Unit, Bureau of Foreign and Domestic Commerce, 1943, pp. 94-95.

Fish, meat and dairy products

Technically foodstuffs of animal origin are not crops, but inasmuch as fish, meat and dairy products make up part of Korea's diet, they are discussed in this section dealing with food crops and food supply.

Korea has good fishing grounds and 172,000 families are engaged in fishing. The capital invested in the industry is estimated at 40 million yen. The Japanese, as is their custom in Korea, have a lion's share in the industry, despite the fact that they are small numerically compared with the Korean fishermen. For the want of more recent data, information available for 1932 will illustrate the point. In that year there were close to 16,000 Japanese fishermen as against 480,000 Korean. The average value of the catch per fisherman of the first group was valued at 1,910 yen, whereas that of the Korean was valued at 102 yen. The respective figures relating to the value of equipment were 265 and 15 yen. This largely explains why the value of the average Japanese catch is nineteen times larger than that of a Korean.

Under Japanese auspices the industry developed rapidly. Between 1919 and 1938 the quantity of the catch quadrupled. If the annual catch (Table 44) were consumed domestically, the Koreans would have been the largest fish-consuming people in the world. Actually, much of it is exported (Table 45), while a considerable quantity is processed into fertilizer and into other non-food products. The result is that "less than one-fourth of the fish catch and less than one-half of the manufactured sea products is used for food purposes directly; this leaves less than 450,000 tons for food purposes." 1/

Assuming that the figure cited is correct, the per capita fish consumption in Korea in 1938 was 48 pounds. This is Korea's practically sole source of animal protein, the consumption of meat and dairy products being insignificant. In Japan, where meat and dairy consumption is also low, fish consumption is twice as large as that in Korea.

As already indicated, meat consumption in Korea, next to dairy products, is the least important food item. In 1936 it was approximately 6 pounds per capita. In the same year Korea's 1,539 milch cows and 3,022 milch goats produced 7.8 million and 800,000 pounds of milk respectively, or only over one-third of a pound per capita.

1/ Grajdanzev, Andrew J., op. cit.

Table 44- Fish catch in Korea, 1938

Type of fish	Quantity	Value
	1,000 m. tons	Million yen
Sardines	975.5	22.9
Mintal	203.4	10.2
Mackeral	68.8	5.8
Otners	348.3	38.1
Total fish	1,596.0	77.0
Shell fish	26.3	2.2
Other animals	61.5	5.1
Seaweed	75.3	2.8
Grand total	1,759.1	87.1

Office of Foreign Agricultural Relations. Grajdanzev, Andrew J. op. cit., p. 47. Quoted from Takumu Tokei, 1938.

Table 45- Foreign trade in sea products in Korea
(Specified years)

Year	Imports		Exports	
	Quantity	Value	Quantity	Value
	1,000 m. tons	Million yen	1,000 m. tons	Million yen
1926	11	1,895	103	23,777
1929	12	2,994	159	33,410
1932	13	2,870	161	19,146
1935	14	2,951	248	39,264
1938	21	5,519	510	76,343

Office of Foreign Agricultural Relations. Grajdanzev, Andrew J. op. cit., p. 48. Quoted from Chosen Nenkan, 1941

Industrial Crops

With most of the land under food crops, very little land is available for industrial crops. In 1936 the area under all such crops was 854,000 acres, or only 6 percent of the total crop area. Except for sericulture, there has been no increase in acreage under industrial crops in the past decade or more.

Cotton

Cotton is easily the most important of Korea's industrial crops, for its acreage represents about two-thirds of the total area under this crop group. The cultivation of cotton here has been carried on since early times, but until quite recently production was barely sufficient to satisfy the relatively small domestic needs. While the soil of southern Korea is suitable for cotton growing, the methods of cultivation remained primitive for a long time and the varieties grown were of low grade.

The climate has both favorable and unfavorable aspects for cotton growing. Among the favorable conditions are a great deal of sunshine and high temperatures in the summer, ample rain during the growing stage, dry weather when the bolls open in autumn, and a severe winter, which kills injurious insects. On the other hand, draughts sometimes occur in April and May, which delay or prevent planting; early frost at times kills the plant; there is occasional excessive precipitation during the rainy season; and damage from pink bollworm is frequent.

With a view of providing a source of supply for Japan's textile industry, the Government General of Korea ever since the annexation of the country has been encouraging the cultivation of cotton and of American upland species. The Government proceeded to carry out these aims through a number of long range plans. In 1912, a 6-year program was introduced in order to enlarge the cotton area to 245,000 acres. This was followed up with a 10-year program, beginning in 1919, with a view to raising the total cotton area to 613,000 acres and production to approximately 230,000 bales. Cotton experts were sent to principal cotton districts; cotton cultivation guilds were formed; improved cotton seeds were distributed free; and purchases of fertilizers for application on cotton fields were subsidized by the Government.

In consequence of these measures, both acreage and output have shown a marked increase, even though the actual results, particularly with respect to output, were below expectation. Both acreage expansion and increase in yields were responsible for the larger output. (Table 46). In 1910 the bulk of the cotton consisted of native species, but by 1930 three-fourths of it was made up of improved upland varieties. In quality the latter correspond to low-grade American, and are considered fit only for spinning low counts of yarn.

Table 46.- Acreage, yield and production of cotton in Korea
(Specified years)

Period Average	Acreage	Yield per Acre	Production
	1,000 acres	Pounds	1,000 bales 1/
1920-24	370	134	104
1925-29	495	133	138
1930-34	450	139	131
1935	514	175	188
1936	561	178	209
1937	547	187	214
1938	577	155	187
1939	620	145	189
1940	713	130	194

Office of Foreign Agricultural Relations. Compiled from Official Sources.
1/ Of 478 pounds.

Early in the thirties Japan decided to inaugurate the third and most ambitious plan to expand Korean production. A number of factors were responsible for this move. The volume of Korean cotton production in the late twenties was such that only a small quantity could be exported to Japan. At this very time, however, Japanese needs for cotton were mounting, and its dependence upon American and Indian cotton was growing rapidly. Hence the desire to lessen the dependence and to get some cotton from a source near at hand came into play. The need for "rationalizing" Korea's agriculture to prevent overproduction of rice in order to insure higher rice prices for

the Japanese farmers was also one of the factors that brought about the emphasis upon cotton expansion. In the words of the Vice Governor of Korea, "... conditions abroad make self-sufficiency of raw cotton [in Japan] a matter of national urgency, while there is pressing need of increased planting in order to carry out the national policy of reducing the oversupply of rice [in Korea]." 1/

As a partial solution of these problems, a 20-year cotton program was inaugurated in Korea in 1933. By 1953 the total area under cotton was to range from 1,225,000 to 1,470,000 acres, yielding a crop of between 645,000 to 807,000 bales. This was to provide an exportable surplus of from 400,000 to 600,000 bales for the Japanese spinning industry.

In the years since the cotton plan was inaugurated the average has increased from an annual average of 450,000 to 603,000 acres, (average 1936-40) while the 1941 cotton area of 800,000 acres was the highest on record. Considering the scarcity of land in Korea, it is questionable whether this rate of increase could have been maintained in the years to come. This is all the more true when the annual increase of 10,000 bales (1936-40 as against 1930-34) is taken into consideration. At such a rate of increase Korea would have about 350,000 bales of cotton, or roughly half of the planned volume. Moreover, the agricultural economy of Korea is attuned to the production of rice, whereas cotton cultivation requires greater effort and is more hazardous than rice growing. Practically the entire arable land of Korea is already under cultivation, and any shift to cotton leads to a corresponding decrease of food crops, chiefly rice. Since in planting crops the farmer seeks the greatest economic advantage, cotton prices would have to be high indeed to induce him to cultivate an uncertain cotton crop in place of rice and other food crops with their greater cash certainty.

Sericulture

Sericulture in Korea is the leading subsidiary industry in which the farmers engage. The raising of cocoons constitutes the principal cash crop for many farmers. The climate and soil of Chosen are well adapted for the raising of cocoons. In addition, Korea has an abundant supply of cheap and industrious labor. As is the case in Japan, mulberry trees are planted where rice can't be grown, that is, in upland fields.

1/ From an address before the provincial governors on April 17,1934.

Sometimes mulberry trees or bushes are planted in footpaths between rice fields, on narrow ridges or earth separating one rice field from another, and even in gardens. It is mainly on the abundant sloping land, which is unsuited for irrigated and unirrigated food crops, however, that the mulberry tree is found.

Before the Japanese annexation of Korea not much progress was made in sericulture, because the species of silkworms reared were of inferior kinds; the methods of rearing them were primitive; and the cultivation of mulberry trees (on the leaves of which they feed) received little attention. As a result, the cocoons were poor in quality and small in quantity.

Since the annexation, Japan has been introducing silkworm eggs of a superior kind, distributing mulberry seedlings, giving instructions in the care of silkworms and such advice concerning every other phase of sericulture as was likely to improve both the quality and quantity of cocoons. This encouragement has brought about marked progress in the industry's development during the past two decades. Whereas in 1911 the number of farm families engaged in raising silk cocoons was estimated at 76,000, the acreage at between 5,000 to 6,000, and the cocoon output at about 1 million pounds, the respective figures for 1936 were 826,000 farm families, estimated area at 132,000 acres, and an output of 50 million pounds. The value of the cocoon crop amounted to 21 million yen.

Tobacco

The soil and climate of Korea are in general well adapted for the growing of tobacco, the exception being three provinces of North Kankyo, South Kankyo, and North Heian, where it is not grown at all and Keiki and South Zenra where in each case the area under tobacco is less than 1,000 acres. The area per individual grower is small, averaging about one-fourth of an acre.

Until early in the century Korea produced only native types of tobacco. Measures for improving the tobacco were undertaken on a number of model farms in 1905 through the experimental growing of Japanese and other foreign strains. After the successful completion of this work, experts were dispatched to the main producing regions to introduce the cultivation of new species of tobacco. In recent years tobacco produced in Korea includes American-type flue-cured, two light types that originated

in Japan, and a number of medium-light native types of which all but one are somewhat comparable with Turkish leaf. Flue-cured production represents nearly 20 percent of the total.

The trend in acreage, yield, and output of tobacco is shown in Table 47. In the past few years both rising acreage and yield have contributed to the considerable expansion of output. Despite the increase in output, Korea is a net importer of tobacco which in the decade prior to 1940 ranged from over one million to 17 million pounds.

Table 47.- Area, yield and production of tobacco in Korea (Specified years)

Year	Area	Yield	Production
		Pounds per	
	Acres	Acre	1,000 pounds
1927	46,670	898	41,892
1928	53,594	930	49,844
1929	48,063	1,190	57,180
1930	34,868	955	33,292
1931	37,329	971	36,245
1932	33,420	1,314	43,898
1933	33,225	1,098	36,494
1934	36,007	943	33,960
1935	40,110	1,205	48,327
1936	42,966	1,058	45,474
1937	45,755	1,286	58,838
1938	48,275	1,337	64,540
1939	51,666	1,342	69,339
1940	54,889	1,168	64,483

Office of Foreign Agricultural Relations. Compiled from J. Barnard Gibbs' Tobacco Production and Consumption in the Japanese Empire. United States Department of Agriculture, F.S.-80.

Japan has had much to do with the development of the tobacco industry in Korea; it was part of a program to achieve self-sufficiency and dispense with tobacco imports. The scarcity of arable land in Japan proper and strong competition of food crops for the land precluded a large increase in tobacco acreage. Hence a recent and more active policy to have Korea plant a

larger tobacco acreage. In line with this was the 10-year program inaugurated in 1937 that called for an increase of the tobacco area to 147,000 acres and production to 198 million pounds by 1917. This ambitious program was drastically revised in 1939, and the planned area under tobacco reduced to 65,000 acres, the production of flue-cured being emphasized. The surplus of the Korean crop was to go to Japan.

Even a brief account of Korean tobacco would not be complete without touching upon the country's tobacco monopoly, organized by the Japanese, because of its all-important effects upon the development of the industry. When the monopoly was first organized in 1921, Government control extended to commercial production of leaf and manufacture of cigarettes, while farmers were permitted to grow tobacco for their own use and private concerns had the right to manufacture cut tobacco. In the course of years, however, the monopoly assumed complete control of every phase of the industry.

According to an American tobacco specialist:

"They [tobacco monopoly bureaus] operated on the principle that the tobacco farmer is a member of the monopoly organization. The farmer is required to spend a definite amount of money and time in producing tobacco for which the monopoly has prescribed prices. Each monopoly also guarantees a fixed payment per acre in the event of total or partial crop failure resulting from storms, floods, etc... Each year the monopoly determines the total acreage to be planted to tobacco of different types. The acreage for each type is then prorated among the different tobacco associations in accordance with their previous allotted acreage and the amount of land owned by members of the association that is suitable for production of the type. The allotted acreage of an association is subdivided among its members in proportion to their previous allotment and the amount of suitable land they own. Each producer is given a license, which permits him to grow a fixed acreage of tobacco on a certain farm... Seed of the type of tobacco desired for production is furnished to the farmer by the monopoly. Dates when seed beds are to be planted, when plants are to be transplanted to fields, when they must be topped, and when harvesting should be begun, are all fixed by the monopoly. Cultural, harvesting, and curing practices are established by the monopoly." 1/

1/ Gibbs, J. Barnard. Tobacco Production and Consumption in the Japanese Empire. F.S. - 80. Office of Foreign Agricultural Relations, January 1940, pp 6-7.

The monopoly has succeeded in improving the quality of domestic flue-cured tobacco, but it is inferior to the American product. In Korea, as in Japan proper, consumers prefer the better quality, imported tobacco; but with strict regulations imposed by the monopoly, they have no choice but to smoke the kinds made available by this institution.

Other Industrial Crops

Cotton, sericulture and tobacco covered an area of 735,000 acres, or 82 percent of the total acreage under industrial crops (1936). The remainder is under hemp (65,000 acres), sesame (25,000 acres), and in a variety of other crops, of which the more familiar are pyrethrum and ginseng.

PART IV. FOOD SUPPLY AND FOOD CONSUMPTION

Pre-war

In Korea the agricultural output and fish catch determine the diet of the people. Cereals are the mainstay of the diet, followed by legumes and vegetables. Fruit is consumed in small quantities. Food of animal origin is represented by fish, while meat and dairy products play an insignificant role in the diet of the great majority of the people.

In the 5-year period 1932-36 the average annual food disappearance 1/ amounted to over 16 billion pounds. While, as indicated in table 48 , Korea was a net importer of some foodstuffs such as sugar and millet, on the whole it is a fairly large net exporter of foodstuffs. On the surface, then, one might assume that the country is self-sufficient in food. In reality, however, self-sufficiency in foodstuffs is not always synonymous with adequacy of food supply or a rise in standard of living. Most of the industrial countries that depend heavily upon imports of foodstuffs have a larger consumption and much higher standard of nutrition than many a self-sufficient country. In other words, underconsumption is sometimes the basis of a country's self-sufficiency. Korea is a case in point.

Per capita disappearance of individual grains over a period of years has been declining in most cases 2/, with the exception of barley. The opposite is true of Japan. 3/ There the per capita disappearance of practically all food items has risen, and in some instances very sharply. Rice is the exception. But even in this respect the situation is much less favorable in Korea than in Japan. While the total per capita disappearance of cereals in Japan was only about 75 to 100 pounds more than in Korea, the per capita disappearance of rice in Japan was 352 pounds (1932-36) as compared with 132 pounds in Korea. Perhaps even more significant is the trend in the disappearance of this most important food staple, a high share of which in total cereal consumption may be associated with a high standard of living in the Far East. Between the period 1916-20 and that of 1920-36, the per capita rice disappearance in Japan declined from 365 to 352 pounds or 4 percent, while in Korea the respective figures for the same period was 226 and 134, or a decline of 41 percent.

1/ "Disappearance" is here defined as food produced domestically during a given period, plus stocks at the beginning and minus stocks at the end of the period, plus imports less exports; "consumption" as food that passes over the thresholds of houses and eating places.
2/ See columns on per capita disappearance in tables attached to section on agricultural production.
3/ See pp. 138 - 139 of Civil Affairs Handbook on Japanese Agriculture.

Table 48 - Production, Foreign Trade, and Apparent Disappearance of Foodstuffs, average 1932-36.

Commodity	Production	Foreign Trade: Exports	Foreign Trade: Imports	Apparent disappearance	Per-capita disappearance
	Mil. lbs.	Mil.lbs.	Mil.lbs.	Mil.lbs.	Pounds
Rice	5,710	2,696	51	3,065	145
Wheat	539	1/ 31	1/162	670	31
Barley	2,251	-	-	2,251	106
Millet	1,617	-	2/414	2,031	95
Other grains	600	-	-	600	28
Soybeans	1,278	400	83	961	45
Other beans	259	-	-	259	12
All other legumes	72	-	-	72	3
Potatoes	1,712	-	-	1,712	80
Vegetables	3,041	5	81	3,117	146
Fruits and nuts	210	53	70	227	11
Sugar	-	3/ 56	3/131	4/ 75	3
Fish	5/ 992	-	-	5/992	6/ 48
Total meat	129	-	-	129	5
Eggs (number)	221	-	-	221	10
Total					768

1/ Four year average. No data for 1934.
2/ Average 1935-36. No data for 1932-34.
3/ Average 1935-39. Source: Henning, C. N., Preliminary Economic Survey of Korea, Table 29-30, pp. 94-95.
4/ Average 1935-39 population used - 22,346,000.
5/ 1938 only.
6/ Per-capita consumption. Source: Grajdenzev, Andrew J., Memorandum on Korean Agriculture and Resources, Institute of Pacific Relations, 1942, p. 47.

Rice, of course, is the more desirable cereal as far as the Korean people are concerned, but the decline in per capita rice consumption could have been mitigated if the consumption of other grain substitutes had been proportionately increased. There is no sufficient evidence that such was the case. Only the per capita consumption of barley has increased by over 20 pounds between the periods 1925-29 and 1935-39, but within the same period of time per capita rice consumption declined some 35 pounds. To this may be added a 23 pound decline in millet consumption and a smaller reduction in the per capita consumption of oats, buckwheat and broom corn.

The total annual per capita apparent food disappearance in Korea amounted to 768 pounds (1932-36), and at best perhaps not more than 800 pounds; in Japan it was closer to 1,100 pounds. This was caused by a downward trend in Korea's food consumption, whereas in Japan it was in the opposite direction. One may conclude that, unlike in Japan, the increase in population in Korea has been accompanied by a lowering of the standard of living, and that Korea's food self-sufficiency has been achieved at the cost of lower levels of food disappearance.

A better appreciation of Korea's food situation may be had by estimating its per capita consumption, as distinct from disappearance, in terms of caloric intake. The average 1932-36 per capita consumption amounted apparently to 2,077 calories (Table 49). This is a low intake even for some of the Far Eastern countries, and some 200 calories below the minimum requirement in Japan before the war. To this must be added the poor composition of the food supply as distinguished from an insufficient quantity. An analysis of the items that make up the daily food supply of a Korean reveals glaring deficiencies, because food of vegetable origin, rather than animal, heavily predominates. The level of animal foods disappearance by weight is approximately 6 or 7 percent of the total, as against 11 percent in Japan, where it is also low. In Western Europe the caloric intake of animal origin accounts for 30 to 40 percent of the total.

Before the war the quantity of food consumed in Japan was in accordance with its basic requirements. Its quality, however, was so poor that one was moved to make the following comment on the quality of the Japanese food:

"The consumption of quantity without quality is in some respects more dangerous than starvation, for the latter is obvious and a remedy is sought; the former may remain a hidden source of evil, gradually reducing the vitality of the people, this appears the great danger of Japan ... As a result of artificial interference with the natural food supply of Japan [rice polishing, salting and drying of fish, etc.], it would appear that, calculated in terms of solid edible materials, 90 percent of food has been deprived partially or wholly of its vitamins before it reaches the consumer." 1/

1/ Grey, Egerton Charles, Food of Japan, League of Nations, 1928, p. 40.

Table 49 - Utilization and per-capita consumption of individual food products in Korea, average 1932-36

Commodity	Apparent disappearance	Seed	Milling and waste	Apparent consumption	Per-capita consumption	Calories per pound	Total calories
	Mil.lbs.	Mil. lbs.	Mil. lbs.	Mil. lbs.	lbs.	Calories	Calories
Rice	3,065	1/307	2/150	2,608	123	1,590	195,570
Wheat	670	3/ 88	4/ 87	495	23	1,615	37,145
Barley	2,251	5/194	6/206	1,851	87	1,650	143,550
Millet	2,031	7/ 54	8/198	1,779	84	1,680	141,120
Other grains	600	-	-	9/510	24	1,680	40,320
Soybeans	961	-	-	10/817	38	1,590	60,420
Other legumes	331	-	-	11/298	14	1,590	22,260
Sweet potatoes	384	12/21	-	363	17	490	8,330
Irish potatoes	1,327	13/205	-	1,122	53	325	17,225
Vegetables	3,117	14/ 62	-	3,055	143	140	20,020
Fruit	227	-	-	227	11	300	3,300
Sugar	75	-	-	75	4	1,805	7,220
Fish	992	-	-	992	47	816	38,352
Meat	129	-	-	129	6	15/	7,453
Eggs	221	-	-	221	10	79	790
Oil (sesame)	7.5	-	-	7.5	.4	2,765	1,106
Miscellaneous	-	-	-	-	-	-	14,000
Total							758,181
Average calories available per day							2,077

1/ At the rate of 75 pounds per acre.
2/ Brown rice reduced by 670 to milled rice.
3/ At the rate of 110 pounds per acre.
4/ 15 percent allowed for milling and waste.
5/ At the rate of 80 pounds per acre.
6/ 10 percent allowed for milling and waste.
7/ At the rate of 25 pounds per acre.
8/ 10 percent allowed for milling and waste.
9/ Apparent disappearance minus 15 percent for seed and waste.
10/ Apparent disappearance minus 15 percent for seed, feed, and waste.
11/ Apparent disappearance minus 10 percent for seed and waste.
12/ At the rate of 400 pounds per acre.
13/ At the rate of 800 pounds per acre.
14/ 2 percent allowed for seed and waste.
15/ Estimated on the basis of 77 million pounds of beef at 1,020 calories per pound; 41 million pounds of pork at 1,810 calories per pound; and 11 million pounds of poultry at 540 calories per pound.

What was true of Japan before the war was even more true of Korea where the quality is poorer and the quantity of the food intake is smaller than in Japan. On the assumption that the data on food available for consumption in Korea are valid, how do the Korean people manage to subsist on so meager a diet? The answer, as supplied by official and private observations, is that a large number of people, who get much less than the estimated average food intake, starve, or subsist on "food" that doesn't lend itself to a qualitative or quantitative evaluation.

According to the report of the Government General of Korea for 1937-38: 1/

"Of the Farming Population in Toysen [Korea], with 2,900,000 households engaged, 80 percent - 2,300,000 families - are tenants or part owners, cultivators. Most of these in spring every year have been short of food and had to maintain life by searching for edible weeds, roots and barks on the hillsides, a condition without hope that led to indolence and lack of interest in work."

A more complete account, and equally non-statistical, may be gleaned from a Japanese observer who visited Korea in 1934. 2/

"The Shunkyu", which practically means spring suffering, is one of the popular phrases spoken of by Japanese social workers in Korea as applied to the season of starvation which poverty stricken farmers face every spring. The Korean farmer harvests his [main] crop [rice] in the fall, but he has to pay his rent with half his crop. He also has to pay the interest on his debt out of his crop. The surplus of his crop after fixed annual expenses are paid is too small for the upkeep of his family until the next harvest. The spring suffering begins to set in about March when he begins to feel the shortage of food and continues until about June. It is during this period that the poor farmers hunt roots and barks of trees to eat. While I was visiting the central agricultural experimental station in Suigen, not far from Keijo, I observed that trunks of trees in the neighborhood of the station were gnarled in various places. Dr. Isaburo Nagai, an agricultural expert at the experimental station told me that this was caused by housewives on the farms as they strike the trunks with large stones to shake down acorns from the trees. When the spring suffering sets in, housewives on the starvation line are forced to practice this method of getting acorns for food to keep soul and body together."

In the spring of 1930 the number of such families affected was estimated to be 1,253,000. Writing as late as September 1941 on the rapid progress of industrialization of Korea, a Japanese noted that during the spring poverty a large number of farmers carry on:

1/ P. 218
2/ Uenda, Setsuo, "Korean Administration Teaches Farm Hands to Help Themselves." Trans-Pacific, April 26, 1934.

"By roaming over-hills and plains in search of buds and roots, which they boil out and eat. The trees on the hillsides have all been cut down to fuel, and with all the buds and grasses gathered for food, the hills and mountains appear naked and barren, affording eloquent testimony to the dire poverty of the peasants." 1/

The years in which the statements were made were not years of crop failures (with the exception of 1939) or of internal disturbances that might have brought about famine conditions. The statements refer to spring hunger as a normal phenomenon, and at a time when rice exports from Korea to Japan have been the largest on record, and when industrially Korea has made definite strides forward. It would seem that as far as the economic welfare of the majority of the Korean farmers is concerned, when measured in terms of available food supplies - neither one of the developments has benefited the farmers.

War Period

Information relating to food production and food consumption in Korea in wartime is too meager and unreliable to permit a sound analysis of the situation. The factors that tend to reduce food production and consumption in Japan, however, operate in the same direction in Korea.

Chief among them is the shortage of fertilizer. Even before the war (in 1940 and 1941) only about 75 percent of the customary amount of fertilizer is reported to have been available. With the outbreak of the war the supply of commercial chemical fertilizers, upon which the Korean farmers have come to depend greatly, undoubtedly decreased still further. Both official and unofficial estimates of reduced rice production in 1942 and 1943 (Table 21), seem to substantiate this. Data on production of other food crops are even less revealing than those dealing with rice, but it may be assumed that the output of such crops will hardly exceed pre-war volumes. If anything, they will be smaller.

The availability of food supplies in Korea is closely related to the food situation in Japan. 2/ A reduction of the food supply in the latter country similarly affects the food position of the former by virtue of the food demands made by Japan upon Korea. With a view of stretching the food supply over a longer period of time than normally is the case, the restrictions in the use of rice that apply in Japan apply in Korea too. 3/

1/ Ishiyama, Kenkichi, "Industrialization of Korea." Contemporary Japan, September 1941, p. 1162.
2/ See pp. 134-154 of Civil Affairs Handbook in Japanese Agriculture.
3/ Ibid.

According to one eye-witness account, the Korean farmers are forced to sell to the Government agencies all of the cereals and sweet potatoes produced on the farm. They are allowed to buy back from the Government the amounts allowed under the rationing system. Barley and other grains are often used as substitutes for rice; but in spite of this substitution, only three-fourths of the quantity of the mixture is issued as compared with the former rice ration. In Korea the rice distribution system was brought under official control upon the failure of the 1939 rice crop. Late that year the Government General enacted a number of measures in order to prevent an acute shortage of cereals in Korea, as well as to make possible the exportation of rice to Japan. The measures aimed: (1) to change the former system of rice distribution so as to bring it under direct official control, and to force owners of rice to sell their stocks; (2) to force the consumption of substitute cereals; (3) to curtail the amount of rice used in the production of sake or rice wine; (4) to limit the degree to which rice may be polished; (5) to forbid the hoarding of rice by consumers; and (6) to bring under official control the importation of substitute cereals.

Prior to 1939 rice distribution had been largely uncontrolled except for the setting of maximum and minimum prices. This gave way to a complete official control of all phases of distribution. The control mechanism is made up of semi-official guilds and of a semi-official company; their purpose is, in the words of the Director of the Bureau of Agriculture and Forestry of the Government General, "the further strengthening of the control of rice in Chosen so as to make it a semi-state business". Local rice dealers are now required to obtain licenses from the Government and to join rice distribution associations or guilds, which are being organized in each province. The guilds are operated under the close supervision of governmental authorities, under whose direction they purchase rice in their province to be held in stock subject to the orders of the Government General. Under the order of the latter, such rice held in stock by the guilds must be sold to similar associations or guilds in provinces where there is a shortage of rice.

The former rice exchanges have been closed and replaced by a semi-official Chosen Rice Market Company. Its function is to purchase rice for export from the provincial guilds, in amounts determined by the Government General. It is the responsibility of the provincial governors to see that the assigned amounts are made available to the company; and if they are not, that orders for the compulsory purchase of rice be issued. The latter is to check hoarding.

The rice mills at the same time were organized into a semi-official company, the Chosen Cereal Receiving Guild, which issued all purchases of rice on behalf of the mills and allots all supplies. Permits from the provincial authorities are required for shipments of rice from the interior to consuming centers or for export. In order to take care of the importation of substitute cereals (millet and barley), the Chosen Cereal Guild for Distribution of Imported Secondary Cereals, was organized.

More recently (October, 1943), the Korean Government issued a new law for controlling foodstuffs. Each of the 13 provinces was to have a food office controlled by the provinicial government. Its function is the collection and distribution of foodstuffs, while the Korean Foodstuffs Management Corporation is to act as a supervisory agency.

PART V. ECONOMIC POSITION OF THE KOREAN FARMERS

If one were to summarize any or all of the preceding sections as they relate to the welfare of the Korean farmers, it could be said without fear of contradiction that their lot is not a happy one. An examination of the country's topography, the limited arable land, the widespread tenancy, the low yields and low levels of food consumption attest to this state of affairs. Even the Japanese, both official representatives and private observers, who are none too eager to publicize the poverty of the Korean countryside, are obliged to recognize the situation.

While there is a general agreement among all students of Korean agriculture that the economic status of the farmers is one of extreme poverty, to define it in quantitative terms or measure it statistically is not easy. There is a lack of detailed budgetary studies that reveal the income and expenditures of the Korean farmers. Many farmers keep no business records, particularly records relating to their cost of living. Data that are available are not complete, not always reliable and not recent. On the other hand, under the slowly changing agricultural conditions of Korea, the time element is not of paramount importance, while even incomplete data show what the agricultural situation means to the farmers in terms of earning a livelihood. With these limitations in mind, the following may be presented in explanation of the inability of the average farmer to make both ends meet.

Farm income and standard of living

An investigation of an agricultural section of the province of South Keisho carried out in 1922, revealed that only 30 percent of the cultivator-owners made a profit at the close of the agricultural year, while the remaining 70 percent broke about even. Only 4 percent of the part-tenants and 3 percent of the full tenants closed the year with a profit; 96 percent of the farmers and 97 percent of the latter wound up with a loss. 1/ A fairly large survey of farm income was carried out in 1925 by the Social Section of the Home Bureau of the Government General in Korea. The findings of the report concerning farm income and farm expenditures are worth quoting. 2/

"It is difficult to make a summary generalization regarding the balance of income over expenditure of these farmers, because it varies according to locality and class of farmers. But the total average of the income and expenditure of these farmer classes showed that the balance per household of landlords was 545 yen, that of the owners 87 yen, and that of the part-owners 25 yen; the balance per household of tenants was 11 yen short, and that of the impoverished peasants was 4 yen short. At the present time, the balance of income over expenses is somewhat better for the majority of farmers, but that for the medium farmers is very bad. Particularly, the smallest part-owners, the medium, small, and smallest tenants, and the impoverished peasants are suffering from lack of income over expenses. These farmers' groups make up 38.4 percent of the total, and they are placed in a miserable position."

The official survey referred to revealed that in consequence of the low income, 150,102 farmers lost all connection with the land; they could not maintain themselves even in the lowly status of tenants. Thus, of this number, 69,644 became farm laborers, 25,308 migrated to Japan, and 4,123 to Manchuria and Siberia, 23,725 turned to small peddling, 20,336 became laborers of a non-agricultural character; while the remainder became beggars and wanderers roaming over the countryside.

This is just one aspect of the pauperization of the Korean village that has gone on uninterruptedly for some three decades. It is the ultimate expression of the social stratification of the country's agricultural society with its enormous increase of tenants on the one hand and large landlords on the other.

1/ Brunner, Edward de Schweinitz, op. cit., p. 109.
2/ Government General of Korea, Tenant Customs, pp. 31-38. Quoted by Lee, Hoon K., op. cit., p. 268.

Table 50 - Income and expenditures of sample farm families of owners and tenants in Korea, 1930

Classification of income and expenditures	Owners	Tenants
	Yen	Yen
Gross agricultural income	748	833
Income for rice	416	452
Income for livestock	120	141
Other agricultural income	212	240
Non-agricultural income	36	68
Total income	784	901
Production expenditures	304	501
Cost of living	507	428
Total expenditures	811	929
Net income (+) or deficit (-)	-27	-28

Office of Foreign Agricultural Relations. Quoted by Nasu, Shiroshi, op. cit., pp. 148-149.

Two more recent surveys (1931) of two provinces, point in the same direction. All farmers closed the year with a deficit except the part-owners in one province, who enjoyed a net income of 17 yen. The average income of all types of farms, however, compared with the average outgo of the small farms was short by 44 yen in one case and by 14 in the other. An investigation dealing with the agricultural economy of Korea's most typical agricultural province, South Zenra, reveals similar results.

Another factor that places the Korean farmers in a bad position is the very small income from non-agricultural sources, while in Japan, subsidiary occupations yield an important part of the income of the majority of farmers. Over a long period of years (1913-1934) such occupations accounted for 23 to 31 percent of farmers' total income. Comparable figures for Korea are not available, but the data that are available show that in Korea this source of income ranged from 5 to 8 percent of the total. The general character of the country's economy offers the Korean farmer little opportunity for raising his income from non-agricultural sources.

Indebtedness

Since the income of many farmers is smaller than their expenditures, the question arises as to how they manage to continue farming. Part of the answer is in the loss of land

and in the growth of tenancy, and in further reduction of the notoriously low standard of living; but perhaps the real answer is supplied by the loan broker. The only way in which the majority of farmers can cover the disparity between income and expenditure is by contracting a debt; hence, approximately 75 percent of all the farmers are in debt. Estimates of the total indebtedness vary. Before the agricultural depression of the thirties had set in, the debt, according to an official report, amounted to no less than 500,000,000 yen ($144,000,000). No figures are available for subsequent years, but it is safe to assume that indebtedness rose considerably during the years of depression. The average debt per farm household ranged from 170 to over 200 yen. It is considerably smaller than the 1,000 yen per farm family in Japan; however, it is by no means small when one considers that the majority of Korean farmers operate on a deficit basis.

The burden of the debt is made heavier by the exceedingly high rate of interest at which it is carried. Incomplete information, covering loans totalling 54 million yen extended to its members by the rural credit societies, shows that 14 percent of all the loans was at 15 percent, while 40 percent carried an interest rate of over 30 percent per annum. Another investigation revealed that the minimum rate for personal loans was 7 percent and the highest 70 percent, the respective figures for mortgage credits being 7 and 40 percent. The average for all types of loans is about 30 percent per annum. The poorest section of the rural population pays the highest rates because it has little or no property to offer as security. Before the Japanese became firmly entrenched in Korea, "the creditor rarely, if ever, foreclosed. He was willing to allow his debtor to live on in practical slavery for the sake of the high rate of interest on the money. But the Japanese, while frequently charging less interest, exact the penalty of the law if the easy-going Korean fails to pay on time." 1/ More concretely, it means taking away the farmers' land.

Having contracted a debt at exorbitant charges, many a farmer would find it difficult to extricate himself from the debt entanglement even it the money were utilized for productive purposes. Actually, a great many of these loans are unproductive, being largely devoted to expenditures other than agricultural. For many Korean farmers indebtedness, therefore, spells "loss of land, discouragement, tenancy, greater debts, conditions approaching serfdom, then utter despair and barren stolidity." 2/

1/ Brunner, Edmund de Schweinitz, op. cit., p. 111.
2/ Uenoda, Setsuo, op. cit.,

The Government General of Korea has undertaken readjustment of farmers' debts by providing them with funds at low interest. "The number thus assisted," an official report stated, "increased six-fold and the amount of funds seven-fold over the figures previous to this movement [Self-Help Movement inaugurated in 1932]".1/ The report doesn't reveal, however, the size of the special fund, the interest rates at which loans are made, or the number of farmers actually benefited by it.

Price and farm welfare

The fall of prices in the late twenties and early thirties added to the heavy burdens shouldered by farmers. As a Japanese colony, Korea reacts immediately to the economic conditions prevailing in Japan. This is particularly true in the matter of agricultural prices. The price of Korean rice, for instance, is determined by the Osaka market quotations. There is this difference to be observed, however: low rice prices in Japan cause a still greater decline in Korean prices because of the urgency with which the farmers must sell their crop at the earliest possible date. The same conditions apply to Korean cocoons.

Approximately half of the rice destined for Japan is exported within the four months after the harvest. This is done in order to defray the most pressing expenditures. The farmer doesn't benefit by this haste. "The disadvantage inflicted by such a sale is fully reflected in the difference between the farm price and the current market price of rice which, while amounting to 7.4 percent in Japan proper reaches 35 percent in Korea, giving the middleman the lion's share of the agricultural income." 2/

When prices of agricultural production in Japan began their downward trend in the middle of the 1920's, prices of Korean products followed suit. By the middle of the 1930's, the price of all Korean grain crops had declined 20 percent, and those of polished rice 28 percent; by October 1932 the respective figures were 39 and 43 percent. The total value of the principal agricultural products declined from 709 million yen in 1928 to 494 million yen in 1931, a reduction of 30 percent. These developments played havoc with Korean farmers. But conditions did not improve much even when the gross value of agricultural production in 1938 was almost double that of 1928, namely, 1,398 million yen. This is partly explained by the fact that the share of the majority of the farmers in this total is small, and partly by the disparity between manufactured and agricultural products.

1/ Annual Report on Administration of Korea, 1933-34, p. 196.
2/ Nasu, Shiroshi, op. cit., p. 149.

The latter is a phenomenon characteristic of many countries, and especially of Korea where commerce and industry is controlled by the Japanese. The general price level of agricultural prices in Korea trailed well behind the price level of manufactured and consumer goods purchased by the farmers. The prices of such indispensable farm items as chemical fertilizers not only failed to decline when rice prices were at record lows, but registered a new high. The situation may well be summed up in the following words: 1/

Whatsoever the discrepancy may be, the fact that the price level of the farm products, especially grains and rice, is always below the price level of general commodities has a significant effect on the economic life of the farmers: the goods which farmers buy are higher in price than the goods which they sell. Grains and rice are produced and sold by farmers, while most of the general commodities are produced in Japanese factories and sold to farmers, accordingly, the farmers in Korea have been in a disadvantageous position. They have been paying more and receiving less; their conditions of life are becoming harder.

Farm relief

The plight of the farmers goes back to pre-depression years. The late twenties and early thirties only served to accentuate a notoriously bad situation. Prior to 1932 the Japanese administration of Korea took little or no notice of farmers' difficulties, but by 1932 it became evident even to the powers-that-be that something, other than encouragement to produce larger crops in which Japan was particularly interested, had to be given to the farmers to relieve their distress. It is of interest in this connection to note the causes, as seen in official quarters, underlying the difficulties.

The Government General of Korea stated that "this miserable condition of affairs was due partly to the unconscious indifference of the farmers themselves and largely to the absence of governmental economic and educational provisions, as well as to the defective social organization, environment and lack of guidance." 2/ In fact, the Government General insisted throughout that the farmers, more than any other element, must shoulder the blame for whatever ills have befallen them. Such was the case, according to the official version, because "in more recent years the farmers, carried away by the rush of material civil-

1/ Lee, Hoon K., op. cit., p. 266.
2/ Annual Report of Administration of Chosen, 1933-34, p. 191.

ization, have lost any idea of self-reliance and have forgotten the real character and true pride of farming communities, in joining the ill-advised pursuit of money economy; deluded by the current idea of capitalism, worship of all powerful cash, and the supremacy of city life. Thus they have urged on their impoverishment." 1/

These views played a decisive role in the remedial measures adopted by the Korean authorities. Assistance through work-relief projects was considered, and expenditures for public-works programs increased from 7 million yen in 1931-32 to 13 million yen in 1936-37. The budget figure for 1937-38 shows a high of 32 million yen, declining to 19 million yen in 1938-39. In the main, however, the emphasis was upon a cure through the farmers' own efforts. "To rescue the rural villages definitely," the official report continued, "and to see the farmers emerge with vigorous energy there remains the sole means - the Self-Help Movement - by which the farmers are urged to plan and work out their own salvation. Believing this an infallible and popular plan for the regeneration of Chosen, the Government General, since 1932, has been encouraging and guiding the farmers in its practice."2/

An attempt to clarify the nature of this vague statement was made in 1933, when the Government-General issued instructions to the regional officials "for the practical guidance and operations of the 'Self-Help' Plan." 3/ From these one learns that:

"(1) Guidance should stress the mental awakening and self-reliance of the farmers, in preference to urging them to material progress... (2) Every year in each 'Yu' and 'Men' [Small administrative units] one or more villages should be selected in which the living conditions of each family should be investigated and guidance given toward a new practical plan of family life, material as well as mental, covering a period of five years (3) The intent of this plan will be a) to meet the usual shortage of food and to rescue the farmers from 'spring famine', b) to maintain a balance between the annual cash income and disbursements, c) to readjust and repay the harrowing debts." 4/ But how could all this be accomplished in the light of the meager resources of the Korean farmers? The answer was that "a government subsidy should be granted dependent on the progress of the mental awakening of the farmers and the development of their new life plans." 5/

1/ Ibid, p. 193.
2/ Ibid, p. 193.
3/ Ibid, p. 194.
4/ Ibid, p. 194.
5/ Ibid, p. 194.

According to the same official source, the actual working of the self-help movement brought some benefits to the farmers. Between April 1, 1935 and March 1936, a total of 78,472 farm families were under "guidance". Of these 47,986 suffered from food shortage; 62,427 were in debt and 42,962 closed the year with a deficit. 1/ By the end of the year 22 percent of the starving were provided with food; 16 percent of the debtors repaid the loans and 36 percent of all those whose expenditures exceeded the income balanced their budgets. 2/

An earlier report cites gains such as the following: the rate of tax collection increased by 2 percent; savings deposited in local credit associations by 20 percent, while arrears of payments decreased by 20 percent; postal savings increased by 10 percent in number of depositors and by 22 percent in amount. The actual increase both in savings and in deposits is not given and is not likely to be substantial, just as the number relieved from the usual "spring famine" is all too small in comparison with those in need of food. But whatever the size of the increased deposits or the number of families relieved from starvation, the extent to which the policy of self-help was responsible for the results is not clear. Even the so-called practical, detailed instructions on how to promote the Self-Help Movement are only vague generalizations against which results can hardly be checked.

Furthermore, the official claims deserve careful scrutiny because of the tendency to see beneficial results where few are in evidence. The following instance illustrates the point. From an official point of view a cause for gratification was that "the consumption of rubber shoes decreased by 5.9 percent." 3/ Decreased consumption of this commodity doesn't mean that farmers shifted to better quality leather shoes; on the contrary, it indicates a shift to the poorest quality shoes - straw shoes produced by the farmers themselves. This is characteristic of a type of self-sufficiency, advocated by the Japanese, that feeds on a lower rather than a higher standard of living.

The kind of assistance exemplified by the Self-Help Movement proceeds from the assumption that, basically, there was little the matter with Korea's agriculture. "The future of these communities," the official report stated, "should not be regarded with pessimism. Agriculture [of Korea] is favored with good soil, good climate, and abundant labor. With the study of land productivity and the adaptation of farming methods, the yields can readily be doubled." 4/ In reality, of course, the plentiful supply of labor

1/ Annual Report of Administration of Toysen, 1937-38, p. 220.
2/ Ibid, p. 221.
3/ Annual Report of Administration of Chosen, 1933-34, p. 195.
4/ Ibid, p. 192.

was synonymous with a surplus farm population, finding no alternative employment; the fertility of the soil is inferior to that of Japan, and while yields could be raised, there is no evidence that they could "readily be doubled."

The Self-Help Movement, as the name implies, was an attempt on the part of the Japanese administration to ease some of the worst burdens of the Korean farmers at a minimum cost to itself. The main job of the Japanese was to provide the "guidance," to exhort and to admonish. To be sure, it did adopt such projects as the enforcement of a "Farmland Act," the nature of which is not revealed at all, the reduction of land tenancy, readjustment of farm indebtedness, conversion of forest land into arable land, encouragement of cotton growing and sheep raising, agricultural extension work and migration into other parts of the Japanese Empire. 1/ These are measures, which, if carried out with an eye upon the welfare of Korea rather than that of Japan, would have raised the standard of living of the farmers. However, neither official nor private sources reveal that anything very substantial was achieved along these lines. The exception is the treatment of the most serious of Korea's agrarian problems - the tenancy problem. While recent information pertaining to such items as the so-called "Farmland Act," indebtedness, and extension of the area under cultivation is practically unavailable, enough has been published to show how the Japanese have tried to deal with tenancy in Korea.

Tenancy adjustment

The Korean tenants were never satisfied with their lot, but until the early twenties customs and traditions regulating the landlord-tenant relations were sufficient to prevent open conflicts and insure relative peace in the village. Since then, however, the life and work of the tenants have become increasingly conducive to discontent. The growing agricultural distress has brought about a sharp change in the attitude of the tenants toward the landlords. The number of disputes has increased by leaps and bounds, namely, from 15 in 1920 to 6,886 in the first half of 1935. 2/ The causes underlying them were numerous, but the principal ones, in order of importance, were termination of leases, excessive rents, and attempts to raise rents still higher.

Faced with the growing bitterness in the relations between landlords and tenants, the Government-General of Korea was compelled to take official notice of the situation. It did so by the enactment of the Korean Tenants Arbitration Ordinance of December 10, 1932.

1/ Ibid. pp. 194-195.
2/ Tikhii Okean, (Pacific Ocean), No. 3-4, 1937, Footnote 5, p. 139.

The law aimed to provide a system for the arbitration of disputes between tenants and landlords. They enable the tenant, as well as the landlord, to request arbitration of a dispute at the local court. Refusal of one of the disputants to appear before the court without proper reasons is punishable with a fine of not more than 50 yen. The decision of the court is binding. In addition, permanent regional tenant committees are created with the power to hear and arbitrate disputes over tenant rents and other matters of tenancy.

This measure helped to settle disputes, but it didn't touch upon the causes underlying the conflicts and discontent. The first attempt along this line was the enactment of the Korean Agricultural Land Ordinance of April 11, 1934. The basic features of this measure were expressed in two provisions: First, the term of lease to a tenant shall be 3 years, instead of the usual 1 year, and 7 years in case of perennial crops, such as ginseng and mulberry (Art. 7); Second, restrictions are placed upon the arbitrary actions of the managers of tenant lands (Art. 4). It provides also that agreements in which a tenant waives certain of his rights are illegal (Art. 6); that renewals of tenant leases shall be for a similar term as the original leases; that a tenant may propose a reduction of or remission of the rental in case of crop failure (Art. 16), and that a landlord has no right to refuse renewal of the lease, unless the tenant failed to live up to conditions agreed upon in the original lease (Art. 19).

Judging by an official report of the Government-General of Korea, which shows an increased number of disputes presented for court settlement, one gathers that causes for disputes were great indeed and that the tenants have taken advantage of the enacted legislation. According to the report, 732 cases were presented for arbitration in 1933 and 1,707 in 1934, but the enactment of the Land Ordinance was followed by a steep rise in the number of disputes brought for settlement; they jumped to 7,444 in 1935 and to 9,370 in 1936. In the latter year only 386 cases were due to complaints lodged by landlords; in 8,984 instances the complainants were tenants.

Aside from this measure, the Government General of Korea has been engaged in feeble attempts to cure the tenancy problem by assisting tenants to become farmer-owners. A 10-year program was launched in 1932, aiming to create 2,000 farmer-owners yearly. Every tenant selected for this purpose receives a Government loan of 1,000 yen at 4.8 percent interest, to be repaid in 25 yearly installments. The effectiveness of the scheme is questionable for two reasons. First, under the prevailing price of land in Korea,

a tenant could not acquire more than 1.2 acres. The net income derived from the cultivation of so small a holding, if any, is not sufficient to provide the farmer with his meager needs at any time, let alone when the land is encumbered with debt. Second, even if 2,000 farmer-owners could be created every year, it would be equal to no more than 8 percent of the yearly rise in tenant numbers. To be effective, therefore, the Government plan would have to be on a much larger scale.

On the whole, what the Government has done is to help settle disputes; the enacted measures do not touch upon the causes underlying the conflicts and the unrest. The institution of tenancy with all that it stands for in Korea is taken for granted. There is no attempt to rehabilitate and ultimately liberate from tenancy the mass of the farmers; the social and economic structure of the village remains the same, and the land, which is the Korean's sole idea of wealth and investment, outside the reach of the majority of Korean farmers.

CONCLUSION

Reviewing Korea's agricultural development since the country's occupation by Japan, one observes, on the one hand, some expansion of production by virtue of improved agricultural techniques and, on the other hand, the worsening of the economic conditions of the masses of Korean farmers. The benefits of increased output seem to have eluded the very people whose efforts made them possible.

The salient features of the seemingly paradoxical situation in Korea are as follows: An income that in a great many cases doesn't cover the cost of living; an insufficient food supply that spells hunger for millions of farmers, coincidental with large exports of food products to Japan; indebtedness at usurious rates, by which four-fifths of the farmers are harassed; ever-increasing decline in landownership and consequent swelling of the ranks of tenants. All this was well epitomized by a Japanese writer, who stated that "the lot of the Korean farmer is as miserable as ever it was, a fact that explains why the Government General, despite all its efforts on behalf of Korea, is not unqualifiedly popular." 1/

In Korea, the inherent problem of a growing population pressing upon a limited arable acreage is responsible in a large measure for many of the difficulties mentioned above. They were accentuated, however, by Japanese economic policies relating to Korea. Japan succeeded in transforming Korea into an ample source of raw materials, primarily foodstuffs, the need for which is most acutely felt by the Koreans themselves. In return Japan was supplying

1/ Muto, Yoichi, "New Economic Trends in Korea," Contemporary Japan. Sept. 1936, p. 210.

Korea with manufactured products. This was a familiar colonial policy motivated mainly by the specific needs of the "mother country", in this case Japan, rather than by those of the colony. The more recent (pre-war) ambitious cotton-producing plan is yet another illustration of this policy. There is no denying the possibility that the cotton program might benefit the farmers, but it should be stressed that the expansion of the cotton acreage springs from Japan's desire to lessen the dependence of its textile industry upon foreign cotton. Any benefit the farmers of Korea might have derived from such development would be purely incidental to the main aim.

In the efforts on the part of the Japanese administrators of Korea to increase agricultural output, the immediate problems affecting the lives of the farmers were lost sight of until it became evident "to all those interested that it is of vital necessity to retrieve the rural communities from entire collapse." 1/ The measures to combat this situation were not commensurate with its gravity. The attempts to scale down indebtedness, to arrest the growth of landless farmers, to prevent the concentration of land in fewer hands, and to create a strong group of owner-cultivators were quite ineffective.

When one compares the reality of Korea's agriculture since 1932 with the plans for its rehabilitation, outlined by the government in that and subsequent years, the conclusion is warranted that for the most part the plans were merely paper schemes. A counterpart of a somewhat similar situation is found in Japan proper. 2/ The Japanese Government recognized the grave problems that confronted agriculture in Japan proper, but at no time were measures taken to accomplish even a partial fulfillment of the task at hand. It called for capital outlays which the farmers were in no position to furnish. The Government on the other hand, preferred to spend lavishly on military ventures, both near and far. And what it refused to do for its own people, it surely would not grant its colonials, who, in the Japanese scheme of things, were little more than "beasts of burden." All it offered them was only little more than admonitions on the virtues of self-help and mental regeneration, and that the "soundest way by which agriculturists may attain a secure living is through their own thrift and their own hard work." 3/

Both are good precepts, to be sure; however, in the existing conditions prevailing in the Korean village under the Japanese rule, thrift and hard work are not the only ingredients required in

1/ Annual Report on Administration of Chosen, 1933-34, p. 192.
2/ See pp. 155-179 of Handbook of Japanese Agriculture.
3/ Annual Report of Administration of Chosen, 1933-1934, p. 201.

order to change those conditions. The Japanese domination would have to be abolished, and along with it, its treatment of Korean agriculture as an adjunct to the Japanese food supply problem. Having achieved this basic prerequisite, there will still remain numerous and formidable problems to deal with, problems outlined in the preceding pages. Their solution or even a serious attempt in that direction should be the first test of a liberated Korea.

Korea is confronted with admittedly difficult problems to solve; but their solution was not brought nearer when, as the Japanese authorities maintained, the real cure was in spiritual regeneration, self-reliance, mental awakening and the like. At best such measures could have alleviated but slightly the plight of Korean farmers. Even the Japanese farmers who have the qualities that the Koreans supposedly lack, failed to escape a goodly share of the ailments besetting the Korean farmers. The Japanese rulers in Korea were even less concerned with the welfare of the native population. The time is rapidly approaching, however, for a free Korea to deal in a positive manner with the problems already described. It is a test from which the country couldn't shrink - if the "spring hunger" and at least some of the factors that have given rise to it are to be done away with.

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Approximate dates of planting and harvesting seasons in the Province of South Heian

Rice -	planted April 15 and transplanted June 1 - June 15; harvested September - early October
Wheat -	planted in October, harvested July 1 - 10
Barley -	planted in April, harvested late in June
Millet -	planted May 1, harvested late August and September
Soybeans -	planted late in May, harvested September and October
Potatoes, Irish -	planted in April, harvested July 1 - 10
Potatoes, sweet -	planted late May or June, harvested October
Grain sorghum -	planted late in April, harvested in September or October
Corn -	planted in May, harvested September - October
Buckwheat -	planted July 15, harvested October
Mung and Adjuki bean -	planted July 10, harvested September
Radish and Chinese cabbage -	planted July 15 to August 1, harvested early November
Carrots -	planted April, harvested July
Tomatoes	planted in late March and April and transplanted in May; harvested in July

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