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April 1937

# WHEAT IN THE UNITED STATES



U. S. DEPARTMENT  
OF AGRICULTURE  
AGRICULTURAL ADJUSTMENT  
ADMINISTRATION  
WASHINGTON, D. C.

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# WHEAT IN THE UNITED STATES

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## I. THE BACKGROUND

Agriculture attained its present importance in the United States because of the existence of a substantial export market in addition to a steady expansion of the domestic population. When the export market began to fall, agricultural distress in this country became increasingly evident. Because the welfare of the entire Nation is so closely interwoven with that of agriculture, the problems of our farmers are of great national concern. As wheat farmers plan their future national policy, careful appraisal of the facts is necessary.

### WHEAT MOVES WESTWARD—1861-1914

From the time the Constitution of the United States was ratified it has been generally recognized that development of the land resources of the Nation is of paramount importance to the general welfare. Before the passage of the Homestead Act, settlement was confined largely to the lands east of the Mississippi River. In 1861 the Homestead Act was passed, and for more than half a century settlers were encouraged to acquire lands and build homes on the public domain west of the Mississippi River. Many of these settlers, with insufficient funds and experience in dealing with the conditions on the western Great Plains, suffered severe hardships before they learned how the land could best be managed. The Federal Government, in its endeavor to encourage settlement, gave grants of land and of money to railroads to induce them to construct transcontinental lines to bind the Nation together. One railroad was built across

Nebraska between 1864 and 1869, and across Kansas between 1865 and 1869. Another road was extended across Nebraska in the 1870's.

The first railroads entered South Dakota during the 1880's, and North Dakota in the 1870's.

Because the United States, during the reconstruction period following the War between the States, was not capable of financing this development, railroads borrowed money from foreign investors. In order to repay these debts to European investors the United States exported wheat, cotton, and lard for more than half a century.

The agriculture of the West was developed around the wheat industry, and exportation of wheat financed much of the development of the transportation and other industries in the West. Except for one year (1836-37) the United States was a net exporter of wheat during the entire period from 1789 to 1934-35. (See fig. 1.)

In 1866 Iowa was an important wheat-producing State. Wheat acreage in Iowa increased from 1,190,000 acres in 1866 to 3,420,000 acres in 1874. But as wheat lands opened up farther west, Iowa farmers shifted from wheat to corn, and since 1902 the wheat acreage of Iowa has been less than 1,000,000 acres in each year except 1918 and 1919. Nebraska, on the other hand, had less than 1,000,000 acres of wheat until 1878, but since 1897 farmers in that State have harvested more than 2,000,000 acres each year except in 1917, when winterkilling and drought damage were heavy. Kansas harvested 1,000,000 acres for the first time in 1876 and the acreage in that State steadily increased until 1919 when 11,624,000 acres were harvested. South Dakota first harvested 1,000,000 acres of wheat in 1885, and North Dakota exceeded 1,000,000 acres for the first time in the same year. Table 1 shows acreage and production in the Great Plains States from 1866 to 1936.<sup>1</sup>

During the period of western settlement, the settlers, who were limited both in funds and in experience in the new conditions they encountered in the West, found general

<sup>1</sup> Tables appear in the appendix, pp. 30 to 38.

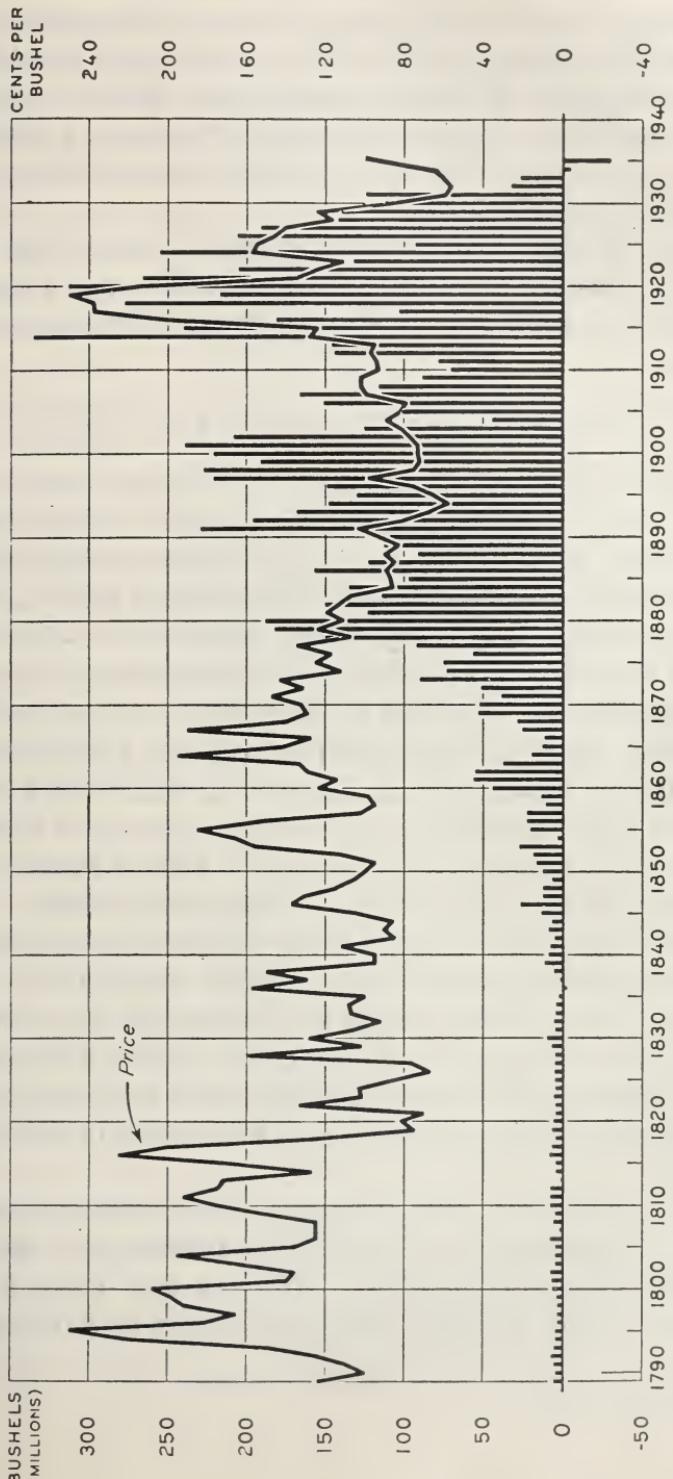


FIGURE 1.—Net exports and export price of wheat from the United States, 1789-1935, including flour in terms of wheat. Figures are for domestic exports from 1789-1822 because no imports were reported previous to 1823. Years begin in October, from 1789 through 1939; from 1842 through 1935, years begin in July.

encouragement in the production of wheat. Throughout this period of half a century, 1870-1920, there naturally developed, under the stimulus of foreign demand for American wheat plus the urge of the Nation to expand westward, a national belief that there would always be a good foreign demand for American wheat.

With the World War came the slogan "Wheat Will Win the War." Farmers were urged to plant still more wheat to replace the acreage taken out of production in Europe because of the war.

### THE UNITED STATES AS A WHEAT EXPORTER

Throughout the period 1860-1930 the United States was one of the principal wheat-exporting countries of the world. Table 2 shows wheat exports from principal exporting countries for specified crop years from 1885 through 1936, according to data compiled by the Food Research Institute of Stanford University and reports of the United States Department of Agriculture. In 1885 world trade <sup>2</sup> in wheat totaled 270,000,000 bushels, and net exports from the United States were 97,000,000 bushels, or 36 percent, of that world total. In the year 1898-99 world trade in wheat amounted to 444,000,000 bushels, and net exports from the United States were 227,000,000 bushels, or 51 percent, of the world total.

Because of the needs of its rapidly expanding population, the United States exported less and less wheat from 1901 until 1910. In the 5-year period just before the World War, the net exports of wheat from principal exporting countries averaged 663,000,000 bushels annually, with the net exports from the United States amounting to 105,000,000 bushels, or 16 percent.

During the war net exports from the United States increased materially, amounting to 335,162,000 bushels for the 12 months beginning July 1, 1914. After the war, while European nations were restoring their interrupted and disrupted

<sup>2</sup> In this publication the term "world trade" means net exports of exporting countries, and "net exports" means total exports less total imports.

agriculture, exports from the United States continued at a relatively high level. For the 5-year period beginning August 1, 1922, the total trade in wheat averaged 776,000,000 bushels per year, of which 180,000,000 bushels, or 23 percent, were furnished by the United States.

Other exporting countries likewise increased their exports in this period. During the 5 years 1922-23 to 1926-27, Canada exported an average of 287,000,000 bushels as compared with 94,000,000 bushels in the pre-war period. Argentina exported 136,000,000 bushels on the average in the 5 years beginning August 1, 1922, as compared with an average of 85,000,000 bushels in the 5 years beginning July 1, 1909. Exports from Australia increased from an annual average of 50,000,000 bushels in the pre-war period to an average of 88,000,000 bushels for the 5 years beginning August 1, 1922. The total exports from principal exporting countries continued to expand during the 1920's and reached their peak in the year beginning August 1, 1928, when the total world trade in wheat amounted to 947,000,000 bushels. A large part of this enormous world trade was made possible by loans which the United States made to European countries in this period.

After the war the United States continued to restrict importation of manufactured articles. New and higher tariffs barred goods from European countries, which had been the principal customers for United States wheat, pork, and cotton. Foreign nations were unable to buy what the American farmer had to sell. At the same time, the high tariff enabled manufacturers to maintain artificially high prices for the things which the farmer had to buy. When the United States ceased making loans and attempted to collect money already loaned world trade in wheat and other agricultural commodities fell rapidly. Net exports from the principal exporting countries declined from 947,000,000 bushels in 1928-29 to 630,000,000 bushels in 1932-33. The United States' share of the world trade also declined.

## CHANGES IN INTERNATIONAL POLICY

During the late 1920's, with United States markets practically closed to their goods and with short war rations still vividly in mind, European countries began to erect tariff barriers against the importation of wheat and to place restrictions upon the use of foreign wheat and flour by their millers and bakers. The extent of trade restrictions upon the importation of wheat by the principal importing nations in January 1937 is illustrated in table 3.

Showing the effect of the trade policies of European nations upon the United States' export trade in wheat, tables 4, 5, 6, and 7 have been compiled giving the acreage and production of wheat in the United Kingdom, Italy, France, and Germany; the imports of wheat, including flour, from the United States by each of those countries; and the tariffs upon wheat and flour imposed by these countries.

The data in these tables show that the acreage of wheat in importing countries immediately after the war was lower than it had been before the war. As these nations increased their trade barriers, their acreage increased and their consumption of wheat tended to decline. A series of favorable seasons during the late 1920's and early 1930's materially increased their production. As production increased in importing countries they required less and less wheat from the United States and other exporters.

## THE SITUATION DURING THE DEPRESSION

By 1932, burdensome wheat surpluses had accumulated in the United States in farmers' bins, at country elevators, in terminal elevators, and at the mills. Producers could not dispose of their crop at prices which enabled them to pay interest on farm indebtedness, taxes on their farms, and the other costs of farm operation. Merchants selling goods to farmers were unable to collect their bills or to make further sales. Factories manufacturing articles which farmers bought were forced to shut down and turn their laborers into the streets.

## II. FIRST ATTEMPTS AT WHEAT ADJUSTMENT

The necessity for a change in the national policy with respect to wheat first became evident immediately after the World War. When the wartime price restrictions were removed, the first reaction was for the price of wheat in the United States to skyrocket to unprecedently high levels. Immediately following this extremely high price came the post-war depression bringing low prices for wheat and other agricultural products, and general distress in the agricultural regions of the United States.

### COOPERATIVE MARKETING

The first approach toward changing the policy with respect to wheat was the establishment of large-scale cooperative marketing associations. The wheat-pool movement and the acceleration in the development of terminal cooperative grain sales agencies characterized the early 1920's.

### MCNARY-HAUGEN PLAN

It soon became evident to many agricultural leaders, however, that cooperative marketing alone would not correct the situation, although many benefits could be derived from cooperation. Accordingly, such plans as the McNary-Haugen plan and the export-debenture plan were advocated. The McNary-Haugen plan provided for maintaining domestic prices above world levels and exporting the surplus at the world price. It seemed well suited to the situation which prevailed during the 1920's. In this period a relatively prosperous urban population in the United States was capable of purchasing food at prices remunerative to American farmers. At the same time, the large export demand for wheat would have absorbed the surplus from the United States. Neither the McNary-Haugen plan nor the export-debenture plan was put into operation.

## FEDERAL FARM BOARD

In 1929 the Federal Farm Board was created, under the Agricultural Marketing Act. This legislation provided for assisting the development of large-scale cooperative marketing organizations and also for stabilization operations. The Farm Board urged wheat producers to curtail their acreage because export demand was declining. At the same time large quantities of wheat were purchased with Government funds and stored for relatively short periods. Funds were not sufficient, however, to maintain the so-called "pegged" prices over a long period of time when wheat production was not diminished. When the Stabilization Corporation ceased buying, prices again resumed their downward trend.

The experiences of the Federal Farm Board indicated that stabilization purchasing and storage would not correct the wheat situation without some form of control of acreage and production available at the same time.

## AGRICULTURAL ADJUSTMENT PROGRAM

In 1933, at the instance of farmers and their representatives, the Agricultural Adjustment Act was enacted. This act provided for the voluntary cooperation of farmers with the Government in an effort to correct the situation which had created a great national emergency. After the passage of the Agricultural Adjustment Act, representatives of leading general farm organizations and farmers' cooperative marketing associations were called together by the Secretary of Agriculture to draw up a plan for applying the provisions of the act to wheat. Out of this conference came a plan for a production-adjustment program, which was operated for 3 years. The main features of that program for wheat were:

A financial return to the producer on the portion of the crop needed for domestic human consumption which would give that portion the exchange value it had in the pre-war period 1909-14. That portion was determined to be 54 percent of the average production for the 5-year base period 1928-32.

Agreement of cooperating growers to regulate plantings within limits determined by the Secretary of Agriculture. These

limits were designed to provide for domestic needs, adequate reserves, and any likely export demands.

Provision that each cooperating grower should plant at least 54 percent of his average past acreage, this amount being deemed necessary, with average yields, to meet domestic food requirements.

Financing of the program through a processing tax on wheat milled for domestic consumption.

Voluntary acceptance of the plan by farmers.

Adjustment payments made to cooperating farmers independent of the market proceeds from the sale of their crop, thus providing partial crop-income insurance.

Decentralized administration through county associations of wheat growers.

Coordination of the domestic program so far as possible with the International Wheat Agreement.

When this voluntary program was offered to farmers about 580,000 contracts were signed by approximately 800,000 farm operators and landlords. About 51,469,000 acres, or 78 percent, of the wheat acreage in the United States during the base period was brought under contract. Growers received payments equal to the difference between the farm price and the parity price on the domestically consumed portion of their crop. These payments amounted to \$98,600,000 for the 1933 crop, \$101,465,000 for the 1934 crop, and \$115,368,000 for the 1935 crop.

#### **ACCOMPLISHMENTS OF THE WHEAT ADJUSTMENT PROGRAM**

Partly as a result of this program and partly as a result of the drought, seedings of wheat for the 1934 crop were reduced to 63,562,000 acres as compared with an annual average of 66,313,000 acres for the 3 years 1930, 1931, and 1932 and 68,485,000 acres in 1933. The cash income from wheat production, including adjustment payments, amounted to \$468,652,000 for the 1935 crop, which was more than twice as much as wheat farmers had received for the 1932 crop. Table 8 shows how the income to wheat farmers declined from \$1,751,420,000 in 1919 to \$195,860,000 in 1932 and then increased as supplies were reduced by drought and the

adjustment program and as business conditions began to improve.

This increase in the income of the wheat farmers enabled merchants to collect old bills and to sell new supplies which farmers had not been able to buy in the depression years. Adjustment payments to growers whose crops had been destroyed by drought, grasshoppers, and rust served as a measure of crop insurance and enabled these growers again to purchase manufactured articles.

Another accomplishment of the wheat-adjustment and other Agricultural Adjustment Administration programs was to bring farmers together as they had never been brought together before. The programs developed leadership in rural communities. It is estimated that over 100,000 community committeemen and probably 20,000 members of county allotment committees participated in local administrative work of the various Agricultural Adjustment Administration programs. The farmers themselves selected these local leaders.

While the wheat program was in effect the United States suffered the worst drought in its history, which caused a shortage of some commodities. In order to meet the drought situation, modifications were made in the program as originally announced. Seeding requirements were modified and producers were permitted to grow emergency forage crops on land taken out of wheat. In no year was the wheat acreage reduced to an unduly low level. More than 63,500,000 acres were seeded to wheat for the 1934 crop. The acreage for 1935 was approximately 69,000,000 acres, and that for 1936 was 73,600,000 acres. With average yields only, 55,000,000 acres are needed for domestic requirements. That 55,000,000 acres required to produce the food of the United States, and more, remained intact under the wheat adjustment program.

### III. PRESENT WORLD SITUATION

#### ACREAGE AND PRODUCTION

As farmers approach the wheat problem they find that the world acreage of wheat is still as large as ever. Because of dry weather in the United States and Canada in 1934 and 1936, the rust epidemic in 1935, and other factors, the world production of wheat was reduced to about 3,500,000,000 bushels in 1934, 1935, and 1936, as compared with 4,000,-000,000 bushels during 1928-29. Acreage, however, has been maintained, and with normal yields and continued restrictions upon international trade another wheat surplus is likely. Table 9 shows the production, supply, disappearance, and price of wheat in the world since 1922. Production in the exporting countries, the United States, Canada, Argentina, and Australia, tends to fluctuate much more widely from year to year than does production in the European importing countries.

The wheat-growing regions in the exporting countries are characterized by continental climate, with semi-arid conditions and wide fluctuations in temperatures and rainfall from season to season. Importing European nations, on the other hand, have a relatively moist climate and much more stable yields and production from year to year. The expanding acreage in European countries, together with high yields, caused production in Europe to increase from 1,045,000,000 bushels in 1922 to 1,746,000,000 in 1933. During the 3 years 1934, 1935, and 1936, annual production in Europe was approximately 1,500,000,000 bushels. The relatively low production in the United States during the 4 years 1933, 1934, 1935, and 1936, was due to unfavorable weather conditions. Acreage during this period was not materially reduced.

#### CARRY-OVER

Figure 2 shows carry-over of wheat in the principal exporting countries and afloat on July 1, in the years 1922 to 1936,

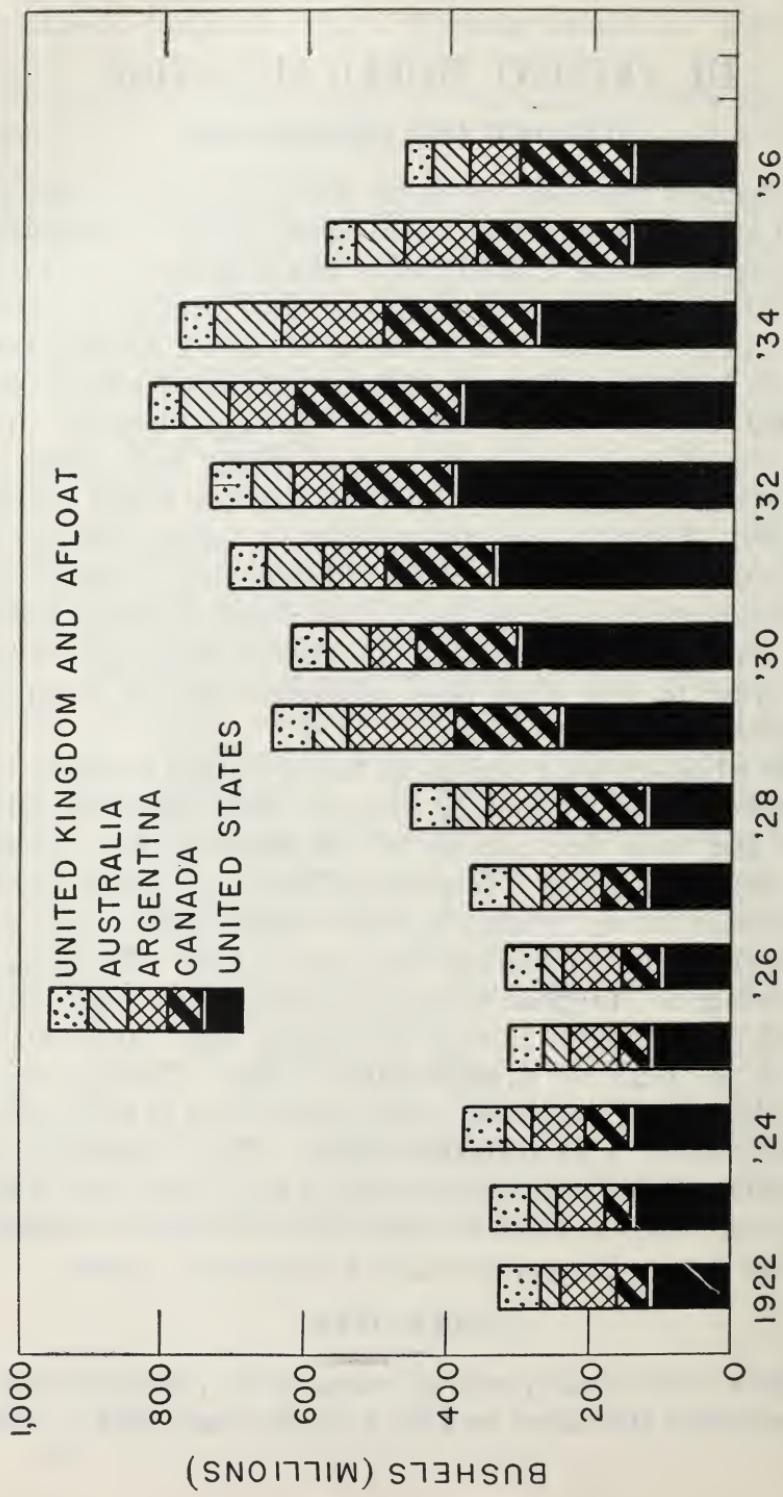


FIGURE 2.—Wheat stocks in major exporting countries and afloat on July 1, from 1922 to 1936, by years.

inclusive. It will be noted that the carry-over was less than 400,000,000 bushels until July 1, 1928. The chart shows how the carry-over began to pile up that year and continued to increase until, on July 1, 1933, it amounted to 831,000,000 bushels. Since 1933, primarily because of weather conditions the carry-over has been reduced and will be down to normal proportions by July 1, 1937.

### INTERNATIONAL POLICY

The tendency to maintain high tariff and other import barriers still persists in most of the importing nations of the world, although some countries made marked reductions during the first 3 months of 1937. As a result of these restrictions, the total world trade in wheat during 1935-36 amounted to only 524,000,000 bushels and net exports of exporting countries may not exceed 600,000,000 bushels in 1936-37. (See table 2.) This volume is much less than the 947,000,000 bushels exported during 1928-29 and a 5-year average, 1922 to 1926, of 776,000,000 bushels. Furthermore, much of the wheat which moves in international commerce today is affected by trade agreements or other commercial relationships whereby the exporting country imports other commodities in return for the wheat which it exports. Only by maintaining a volume of imports can an exporting country hope to maintain a volume of exports.

In order to protect their farmers from the effects of the world situation, exporting nations have granted subsidies or other assistance to wheat growers. Canada has a wheat board which fixed a minimum price on wheat for the 1935-36 season. Argentina fixed minimum prices in 1933-34 and 1935-36 when such action appeared likely to benefit wheat growers in that country. Australia has had various relief devices in effect in recent years. The United States has had its adjustment program and has financed exports of Pacific Northwest wheat.

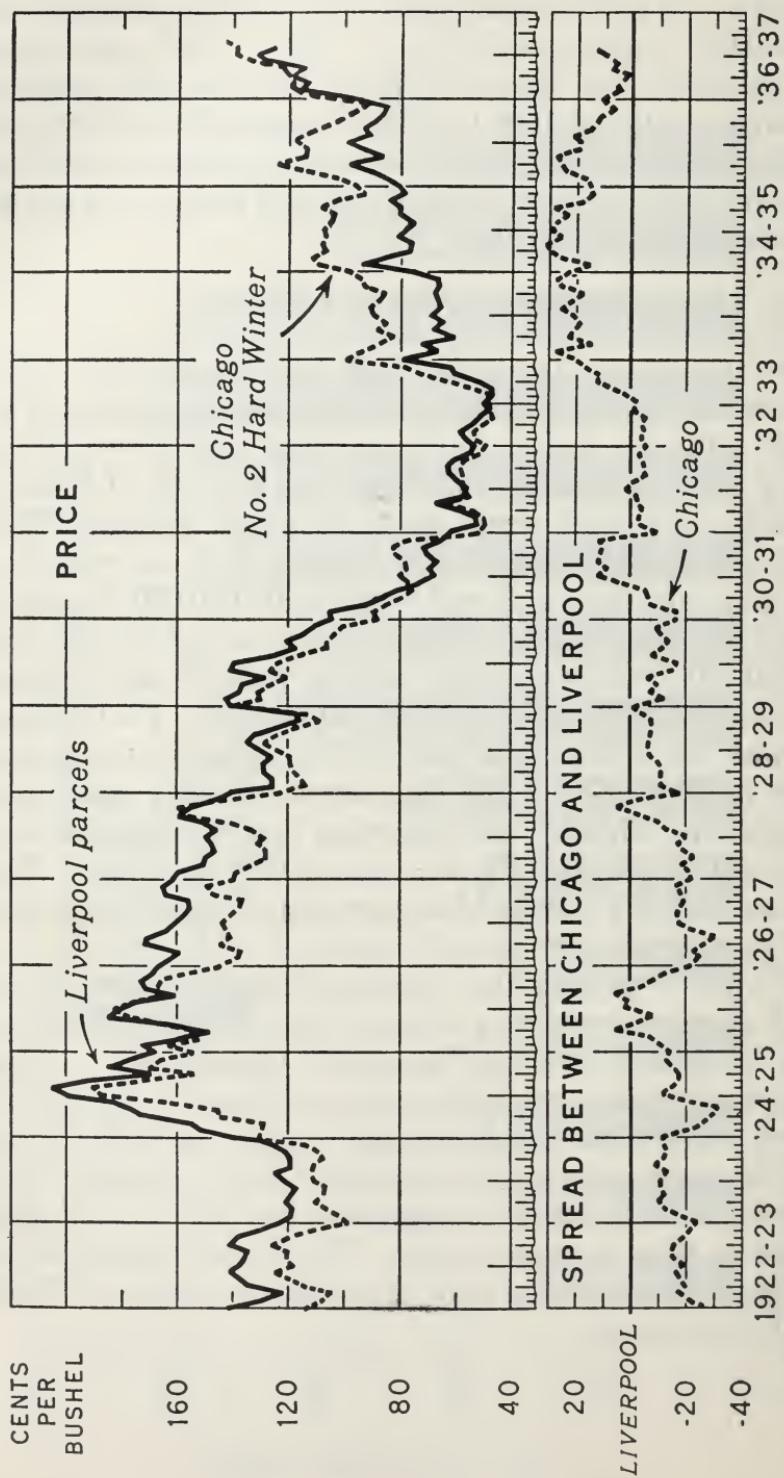


FIGURE 3.—Average prices of wheat at Chicago and at Liverpool, for years beginning July 1, from 1922-23 to 1936-37.

**PRICES**

As a result of the restrictions upon the volume of world trade and the relatively high level of production, the long-time outlook for world wheat prices is uncertain. During the past 4 years, as shown by figure 3, prices at Chicago have prevailed at levels above that at Liverpool, primarily because of short crops resulting from drought and wheat-adjustment programs. Short crops in Canada and, in 1935 in Argentina, have tended to strengthen world prices. The return of normal weather conditions, with the present United States acreage in wheat, would find Chicago prices falling back to their normal relationship below the Liverpool quotations.

## IV. PRESENT UNITED STATES SITUATION

The situation in the United States during the marketing year 1936-37 has been characterized by a shortage of milling wheats and a surplus of soft wheats. The carry-over of all wheat will be down to normal levels, or below, on July 1, 1937, but the carry-over of milling wheats will probably be lower in proportion to the carry-over of soft wheats. The acreage seeded for the 1937 crop, however, will probably be the largest in the history of the country with the possible exception of 1919. Normal yields on such an acreage would result in a production far in excess of domestic requirements and would tend to depress prices not only in the United States but also in the rest of the world.

### SUPPLIES

Table 10 shows the acreage, supply, and disappearance of wheat in the United States from 1923-24 to 1936-37, inclusive. The acreage planted has fluctuated from 55,706,000 acres in 1924 to 73,600,000 acres for the crop of 1936. (For the 1919 crop, 77,400,000 acres were seeded.) The data in table 10 also show that the acreage planted to wheat in the United States has been somewhat higher during the past 5 years (except in 1934) than it was during the 1920's. The yield per planted acre, however, has been considerably lower during the past 4 years than during any of the other years for which yield data on all wheat per planted acre are available. Because of the low yields of 1933, 1934, 1935, and 1936, the total supply of wheat has been considerably lower than it was during the period 1928-32.

### CONSUMPTION

Figure 4 shows the distribution of wheat in the United States for the years 1923-24 to 1935-36. The black portion of each bar in this chart shows the amount of wheat used for

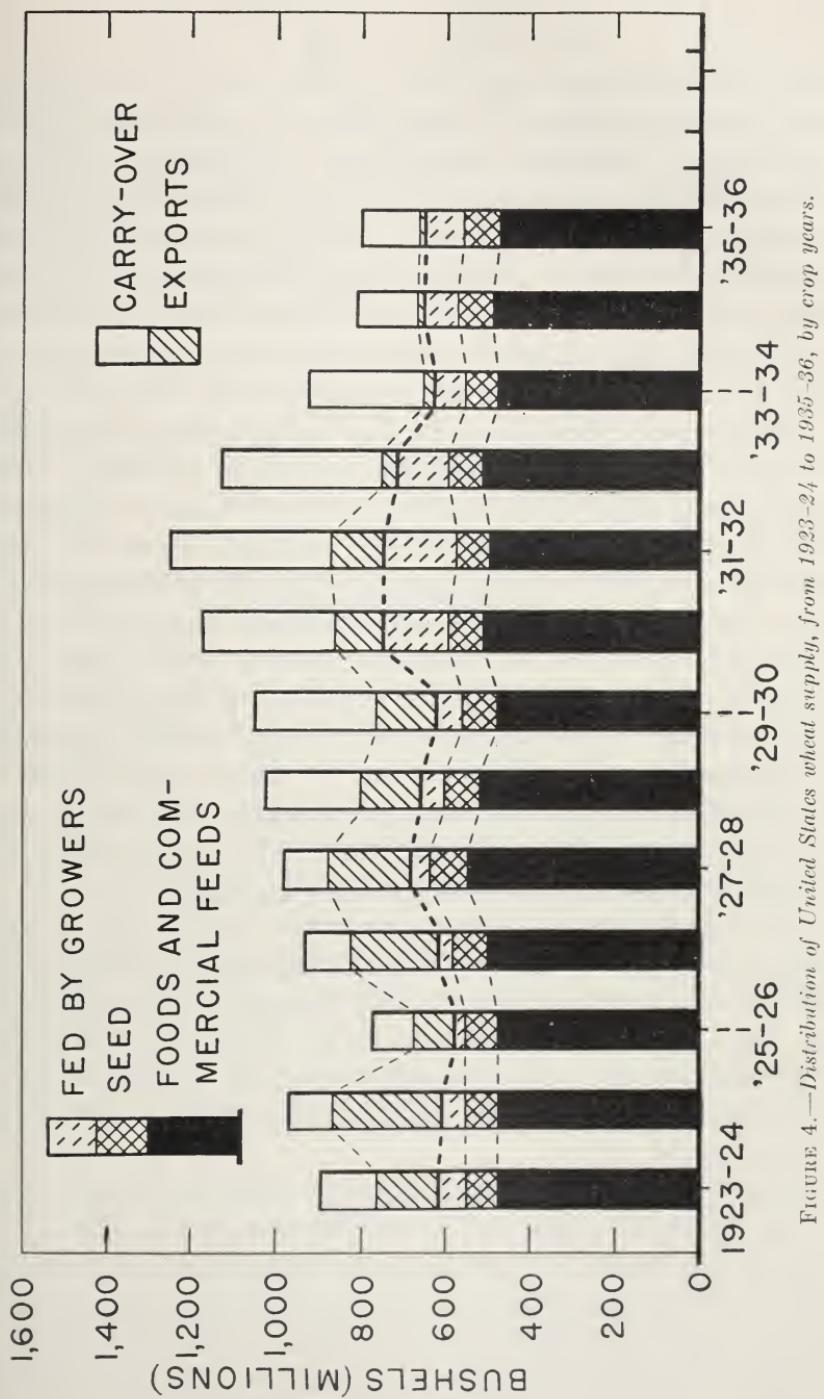


FIGURE 4.—Distribution of United States wheat supply, from 1923-24 to 1935-36, by crop years.

food and commercial feeds. It will be noted that since 1929 the amount of wheat milled annually for human consumption and commercial feeds has varied within the comparatively narrow range of 474,000,000 to 513,000,000 bushels. Although the per-capita consumption of wheat in the United States has been decreasing since the pre-war period, increases in the population have tended to offset the decline in per-capita consumption. Further marked decreases in the per-capita consumption are not anticipated now, and it is probable that the domestic human consumption will increase somewhat as the population grows, at least for the next few years.

The amount used for seed has ranged from 74,103,000 bushels in 1923-24 to 89,879,000 bushels in 1927-28. Ordinarily about 50,000,000 bushels of wheat is fed to livestock. During the 3 years 1930-31 to 1932-33, however, more than 100,000,000 bushels annually was fed to livestock because the price was low. An unusually large amount of wheat was also fed to livestock during 1935 when rust damaged the hard red spring wheat crop and rendered a large portion of this crop unfit for milling. Normal domestic requirements for the future may be about 625,000,000 to 650,000,000 bushels, including 500,000,000 bushels for food and commercial feeds, 75,000,000 bushels for seed, and 50,000,000 to 75,000,000 bushels for livestock feed.

Any adjustment in wheat production within the United States must take into account the production of wheat of the different commercial classes. This necessity was particularly well demonstrated in 1935 and 1936, when hard red spring and durum wheats were imported into the United States in spite of the fact that there was a surplus of white wheat and soft red winter wheat.

Table 11 shows estimated supplies (crop plus carry-over) of the different classes of wheat for the years 1930-31 to 1936-37, inclusive. It will be noted that in recent years the supplies of hard red winter wheat, hard red spring wheat, and durum wheat have been below the 1930-32 average, and that supplies of soft red winter wheat have been above the 3-year average.

## EXPORT POSSIBILITIES

The effect of increased production of wheat in Europe upon the exports to Europe by the United States is shown in figure 5. Wheat production in Europe increased from about 1,045,000,000 bushels in 1922 to over 1,500,000,000 bushels annually during recent years. Exports of wheat from the United States to Europe declined from 170,000,000 bushels in 1924-25 to about 70,000,000 bushels in 1931-32. Since

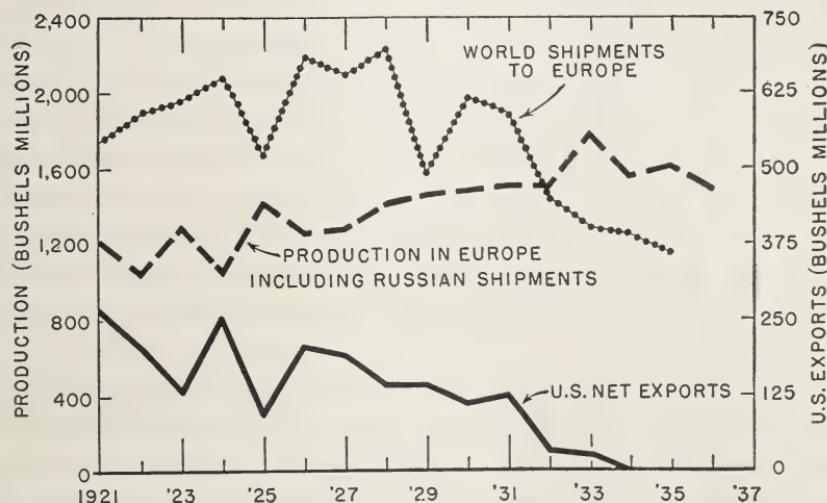


FIGURE 5.—*United States exports of wheat including flour, world shipments to Europe, and production in Europe, years beginning July 1, from 1921 to 1936.*

1931 United States wheat exports to Europe have been negligible, partly because of low yields caused by drought and rust. (See table 12.)

When seasons are more favorable and the United States has wheat to sell abroad, in what countries might the wheat be sold?

To indicate possible answers to this question, the data in table 12 have been compiled. They show the countries to which wheat and flour have been exported from the United States over a period of years. These data go back to 1900. Throughout this period the United Kingdom received more United States wheat exports than did any other nation. Other large importers were The Netherlands, Italy, France, Germany, and Greece. China and Japan, Central and South

America, and the Philippine Islands have also provided important outlets for United States wheat.

France, which had imported only a few million bushels of wheat from the United States before 1913, imported nearly 60,000,000 bushels of wheat and flour from the United States in 1914-15 and continued to receive large quantities of United States wheat until 1920-21. After that exports to that country fell off materially until during the past 3 years they have been negligible.

Germany, except during the war, was a very good wheat customer until the end of the 1920's. The internal policy of that country during recent years, however, has practically eliminated Germany as an outlet for United States wheat.

Exports from the United States to Greece were very small until the World War, but from the beginning of the war until 1931-32 Greece took substantial quantities of United States wheat and flour. She probably will resume buying hard red winter wheat from this country whenever prices are on a competitive basis.

Italy was another good customer of United States wheat producers until the last few years. From 1933 until the present season, Italy has produced about enough wheat for her domestic requirements, but in years of poor weather will be in the market for considerable quantities of wheat, chiefly durum.

Before the war, The Netherlands imported more wheat and flour from the United States than did any other European country except the United Kingdom, and since the war exports to that country have been maintained at satisfactory levels except during the past 3 or 4 years. It is hoped that the recent trade agreement entered into by the United States and The Netherlands will enable the United States to regain a portion of its former trade with The Netherlands.

Exports from the United States to the United Kingdom have been smaller since 1931 than during any other period since 1900. This decline has been due in part to the short crops in the United States and in part to the empire preference policy followed by Great Britain. In the future it will

probably be more difficult for the United States to make sales to Great Britain in competition with Canada and Australia.

Central and South American countries, China and Japan, and the Philippine Islands have reduced their imports from the United States less than have European countries, and reciprocal trade arrangements with these nations might make it possible to obtain a reasonable volume of export trade with them.

At present most of the nations which formerly bought wheat from the United States have trade barriers which prevent this country from selling wheat to them. Furthermore, these nations have increased their domestic production so that they do not need so much wheat as they did in former years. It is possible that some wheat might be sold to Central and South American countries at a reduced price. China, Japan, and the Philippine Islands might take a little wheat, if prices offered by our exporters are in line with the prices asked by other nations.

Much of the commerce in wheat between nations today is under direct barter arrangements between the importing and the exporting countries. While such direct barter may not be necessary or desirable for this country, yet if the United States is to export any quantity of wheat, it must be prepared to take more goods manufactured by the wheat-importing nations. Because the United States will, with normal weather conditions, continue to produce a surplus of wheat in excess of its domestic needs, wheat growers must necessarily look to a revived export market. The size of that market will be determined in part by the success of the United States in breaking down trade barriers abroad and in convincing Americans themselves that their welfare depends upon being willing to accept goods from European and Asiatic customers of the wheat grower. Development of an export market for American wheat may necessitate rather fundamental changes in the attitude of the American people toward international policy.

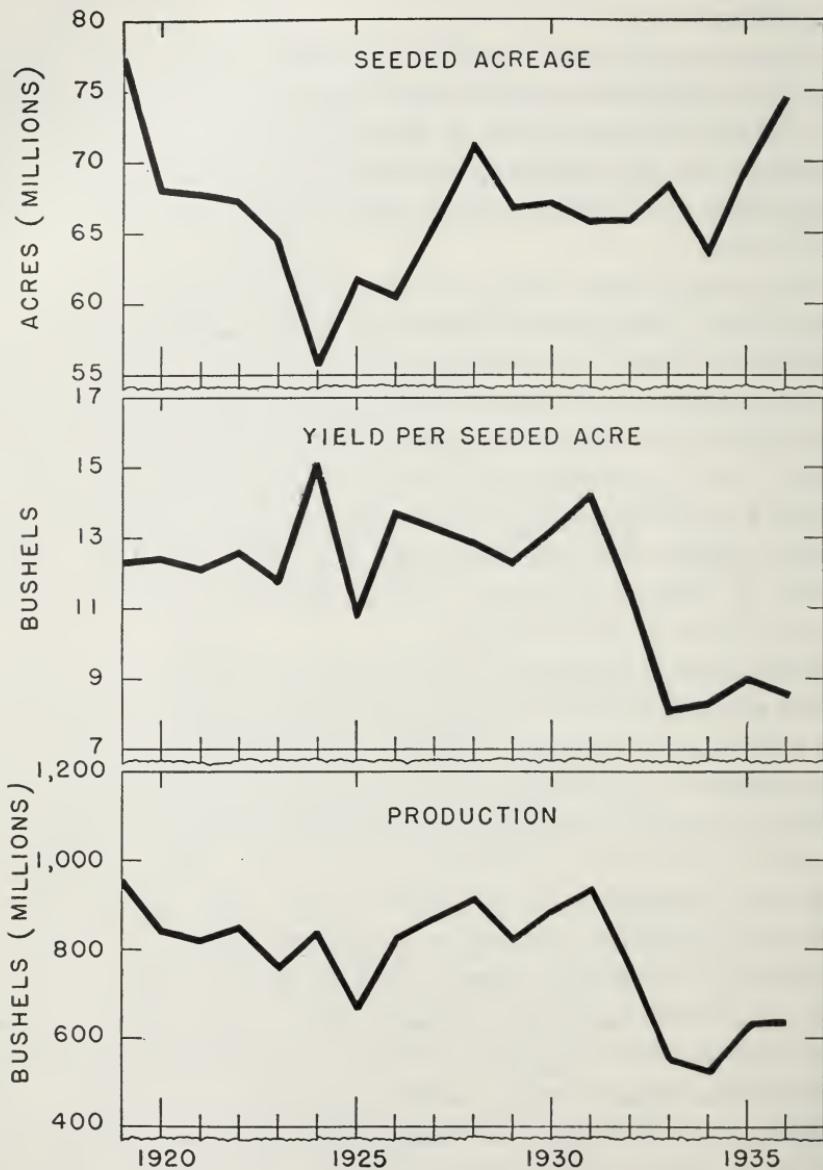


FIGURE 6.—Acreage of all wheat seeded in the United States, yield per acre, and production, from 1919 to 1936. A preliminary estimate is shown for 1936.

**TRENDS IN ACREAGE**

The area of land available for wheat raising in the United States is as large as ever. In the fall of 1935, after the Agricultural Adjustment Administration had announced that reductions in seedings by cooperating growers would be only 5 percent of the base acreage, seedings of winter wheat were 49,688,000 acres as compared with 47,067,000 acres in 1934 and 44,585,000 acres in the fall of 1933. Seedings in the spring of 1936 amounted to 23,912,000 acres. Thus the area sown for the 1936 crop, including both spring and winter wheat, was 73,600,000 acres, which is the largest area ever sown except in 1919 and is about 20,000,000 acres in excess of our domestic needs. (See fig. 6.)

## V. REQUIREMENTS FOR THE FUTURE

Past experience makes it apparent that the American wheat industry needs stability more than anything else. The consumer wants a uniform supply of bread at a uniform fair price. The farmer needs a uniform income from year to year. In order to supply a uniform volume of their product to the consumer, the baker and the miller must have stable supplies of milling wheat from season to season. During the exploitative stages of agricultural development in the United States, wheat growing has been a highly speculative undertaking. The producer gambled with weather, insect pests, plant diseases, and world prices. If wheat growing in the United States is to maintain its importance as a basic national industry, it is necessary that the business of producing and marketing wheat have a more stable basis than it has had in past years.

Wheat farmers and wheat consumers need: (1) Stability of acreage, (2) more uniform yields, (3) stability of supplies, and (4) stability of income.

### STABILITY OF ACREAGE

A study of the wheat acreage planted in the United States since the World War shows that acreage to be subject to wide variations from year to year. When prices are high or when a large number of growers anticipate higher prices, rapid increases in wheat acreage frequently occur. On the other hand, when wheat growing becomes relatively unprofitable, many growers who are able to shift to other crops go out of wheat production. Wheat acreage, however, can expand more rapidly than it can contract, because investment in land and equipment leads farmers to continue to produce the crop even after it has become unprofitable.

The experience of the past 5 years has shown that an excessively large acreage, particularly in the Great Plains area, does not necessarily mean large production. On the other

hand, continuous growing of wheat on lands with insufficient rainfall, or growing too large an acreage of wheat on individual farms, tends to deplete the fertility of the soil and render supplies more uncertain.

Excessively large acreages of wheat are of no benefit to producers when adverse weather conditions leave farmers little to show for their seed, labor, and other costs of putting in the crop. On the other hand, if normal yields are obtained on the expanded acreage, there is a surplus for which producers cannot find a market. Therefore, too large an acreage of wheat is of no benefit either to the farmer or to the consumer. A more uniform acreage from year to year, in connection with a balanced system of farming, is far better. Under such a system, wheat production over a period of years will be more uniform than if growers plant unlimited areas. Often it is impossible for the individual producer with debts and taxes to pay, to make the necessary adjustments in his farming operations so as to bring about stability in the acreage of wheat. A national program, such as the agricultural conservation program, is necessary in order to bring about stability of wheat acreage.

### MORE UNIFORM YIELDS

Over much of the area in which the milling wheat of the United States is produced the climate varies widely from year to year. Stability of yields in the Great Plains area will be impossible, no matter what kind of farming practice is adopted. On the other hand, experience has pointed out that farming practices designed to control wind and water erosion and to conserve the moisture which falls, will tend to even out some of the fluctuation in yields which is characteristic of the Great Plains region. Furthermore, a balanced system of farming in which the acreage of wheat is correlated with the acreage of fallow and soil-conserving crops will tend to stabilize not only the acreage of wheat, but also the yield from year to year.

Experiments at the dry land substations throughout the Great Plains have shown that the proper kind of summer

fallow will result in much more uniformity in the yield of wheat from season to season. During years of bumper crops, yields on summer-fallowed land are little higher than the yields from continuous cropping. In dry years, however, summer-fallowed land usually produces some wheat whereas frequent failures occur where other methods are used. Furthermore, contour listing, strip cropping, and growing of forage crops tend to control wind erosion and to enable farmers to adopt systems of farming better balanced than where wheat is the only source of income and is raised on all of the cropland every year. Experience points the necessity for reducing the acreage of wheat, increasing the acreage of soil-conserving crops, and adopting more soil-conserving practices in order to maintain yields of wheat in the areas where the bulk of the milling wheat is produced.

### STABILITY OF SUPPLIES

Even with a stable acreage and more uniform yields there will still be periods during which surpluses will accumulate and other periods in which deficits will occur.

It has been proposed that in order to provide reserves from years of good crops to be used when crops are short, the Nation establish a reserve of milling wheat to insure stability of supplies from season to season. The experience of the Farm Board is frequently pointed to as an example of how such reserves depress prices. On the other hand, if the acreage of wheat is held at a level sufficient to prevent accumulation of burdensome surpluses, there may be years in which the current crop of milling wheat would be insufficient for domestic requirements. A storage program might be limited to supplies of the hard red spring and hard red winter wheats that are needed for milling. Most of the wheat of these classes is produced in the Great Plains region where yields fluctuate more than in any other part of the United States. Such reserves would undoubtedly exert a depressing effect upon the market unless they were accompanied by provisions for control of acreage when a series of favorable years follows the accumulation of the reserve stocks.

## STABILITY OF INCOME

The experience of the past 4 years has demonstrated that high prices are meaningless when the farmer has lost his crop. It has been proposed that a crop-insurance program be offered to the wheat grower in conjunction with a program involving stability of acreage, more uniform yields, and holding of reserve supplies. Under such a program, growers would pay premiums in years when their crops are normal or above normal and a crop-insurance corporation would hold these reserves for the account of the insured growers. Payment to producers under the plan would be made in years when the yield was less than a given percentage of the average yield for the farm. Such a program would not be a substitute for measures for conservation of the soil or maintenance of a stable acreage. In conjunction with the conservation program, however, a crop-insurance program would give wheat producers some wheat to sell in years of crop failure and would at the same time give them an additional outlet for wheat which they would deposit in the form of premiums during years of excessive supplies.

## EXPORT POLICY

A study of the shifts in acreage in the United States indicates that even with a conservation program or the adjustments in acreage which might be effected under a national program for wheat, there would still be within the United States a surplus of wheat which would need a market abroad. Any program for wheat, therefore, must take into account the export situation and the foreign policy of the United States. If the United States demonstrates a willingness to increase its imports from other nations, there will probably be an export outlet for a limited amount of surplus wheat and flour. In looking forward to a possible revival of export trade in wheat, farmers must keep in mind that the period of the 1920's was one of unusually large world exports and unusually favorable conditions for exporting wheat from the United States. It does not seem likely that the total volume of international trade in wheat will again become as large as it was during the

1920's, nor that the amount of wheat exported from the United States will be as large as it was during that period. On the other hand, there is no reason to believe that the United States has permanently lost all of its export wheat market.

### A PROGRAM FOR THE WHEAT GROWER

In cooperation with the Federal Government, wheat growers are developing their national policy. As they study their problem they discover that there is no single remedy or expedient which can deal with all its different aspects. Coping with the wheat problem requires an attack along many fronts, and each new venture must be based upon the experience gained from previous attempts.

A continuation of the agricultural conservation program, with, perhaps, the inclusion of a wheat base, will bring about greater stability in acreage from year to year. Increasing the acreage devoted to soil-conserving crops and soil-building practices will tend to stabilize wheat yields and production. Loans on wheat in conjunction with an ever-normal-granary plan will tend to prevent undue price declines in years of surpluses, and also help to protect consumers against shortages in years of crop failure. Along with a program of agricultural conservation and storage of wheat reserves, a crop-insurance program will do much toward bringing about stability of the wheat grower's income.

All these measures taken together, however, may not be sufficient to keep the wheat-growing industry on an even keel in a series of bumper-crop years. In that event, commodity control of a positive nature may be needed.

With the experience of the past few years to guide them, wheat growers have an opportunity to help in shaping a long-time national farm program that will guard agriculture against the twin hazards of crop failure and price collapse.

### COOPERATION AND FARMER CONTROL

The national policy for wheat will be effective only to the extent that farmers themselves make it effective. The prob-

lem that wheat growers face cannot be solved by Government action without complete cooperation on the part of producers themselves. Successful administration of a broad program for the wheat growers will depend upon successful operation of community and county associations of growers. The Federal Government can lend its assistance in helping the wheat growers to organize for control of the many economic and physical forces with which they have to contend, but final success of the undertaking will depend upon the ability of growers to work through cooperative associations in carrying out the principles of economic democracy.

## VI. APPENDIX

TABLE 1.—Harvested acreage and production of wheat in the Great Plains States,<sup>1</sup> 1866–1936, by years

Year	Acreage harvested	Production	Year	Acreage harvested	Production
	1,000 acres	1,000 bushels		1,000 acres	1,000 bushels
1866	186	2,644	1902	17,382	239,296
1867	242	2,474	1903	20,289	304,174
1868	287	3,302	1904	19,623	239,738
1869	407	5,739	1905	20,770	304,939
1870	433	5,645	1906	21,056	324,866
1871	507	5,980	1907	20,521	247,920
1872	600	7,702	1908	22,031	293,403
1873	986	14,692	1909	22,211	320,988
1874	1,559	19,476	1910	22,163	251,133
1875	1,818	24,738	1911	24,823	233,619
1876	2,237	28,026	1912	26,878	415,856
1877	2,274	32,213	1913	28,524	346,295
1878	3,401	49,598	1914	30,975	471,954
1879	4,030	38,697	1915	33,373	536,596
1880	4,604	44,498	1916	31,229	340,736
1881	4,520	42,956	1917	24,408	257,971
1882	4,357	72,514	1918	32,469	415,830
1883	4,381	70,028	1919	39,524	438,545
1884	6,120	104,830	1920	36,326	467,919
1885	5,912	83,489	1921	39,899	455,200
1886	6,223	76,849	1922	36,925	474,532
1887	6,962	92,973	1923	33,355	340,880
1888	7,049	83,642	1924	33,817	531,722
1889	8,468	101,305	1925	32,937	350,109
1890	9,883	109,140	1926	37,145	472,638
1891	12,475	210,344	1927	39,485	532,598
1892	13,066	184,647	1928	42,339	631,872
1893	13,158	123,725	1929	44,538	510,548
1894	13,355	131,384	1930	44,542	551,520
1895	12,104	167,222	1931	39,367	553,332
1896	12,236	156,441	1932	39,857	455,603
1897	14,486	183,812	1933	30,804	255,552
1898	17,407	256,153	1934	24,506	222,706
1899	17,778	206,572	1935	30,301	274,485
1900	17,467	211,832	1936	27,596	264,081
1901	18,909	267,383			

<sup>1</sup>Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming.

Compiled from Reports of the Bureau of Agricultural Economics, U. S. D. A.—“Revised Estimates of Wheat Acreage, Yield and Production, 1866–1929”, September 1934; “General Crop Revisions, Crop Years 1924–35”, June 1936, and “General Crop Report”, December 1936.

TABLE 2.—Net exports of wheat, including flour, from net-exporting countries, by specified crop years<sup>1</sup>

Year: August-July—	Total <sup>2</sup>	United States	United States per- centage of total produc- tion	Canada	Aus- tralia	Argen- tina	Lower Dan- ube	U. S. S. R.	India	Others
	<i>Million bushels</i>	<i>Million bushels</i>	<i>Percent</i>	<i>Million bushels</i>						
1890-86...	270	97	35.9	4	—	2	55	64	41	7
1896-87...	329	157	47.7	7	—	7	59	60	35	5
1897-88...	373	122	32.7	3	—	8	78	128	30	4
1898-89...	354	91	25.7	3.1	—	5	3	134	30	3
1899-90...	356	113	31.7	3.0	—	10	9	94	109	27
1890-91...	372	109	29.3	3	—	10	12	91	112	41
1891-92...	438	229	52.3	10	—	5	18	83	50	45
1892-93...	437	196	44.9	11	—	9	31	83	87	27
1893-94...	460	168	36.5	11	—	9	52	84	120	20
1894-95...	480	148	30.8	9	—	7	56	90	153	17
1895-96...	432	130	30.1	10	—	—	24	115	134	13
1896-97...	407	149	36.6	10	—	—	9	105	128	4
1897-98...	472	221	46.8	24	—	—	24	47	132	20
1898-99...	444	227	51.1	14	—	9	40	57	73	29
1899-1900...	445	191	42.9	20	—	7	80	71	68	10
Average 1909-10 to 1913-14 <sup>4</sup> ...	663	105	15.8	94	—	50	85	108	164	50
1920-21...	653	310	47.5	166	—	89	64	7	—	15
1921-22...	701	254	36.2	185	—	115	118	21	—	3 14
1922-23...	715	203	28.4	279	—	50	139	12	1	29
1923-24...	833	130	15.6	346	—	86	173	34	22	22
1924-25...	776	259	33.4	192	—	124	125	26	3 17	38
1925-26...	702	106	15.1	324	—	77	97	45	27	8
1926-27...	853	202	23.7	292	—	103	144	45	50	12
1927-28...	823	187	22.7	332	—	71	178	32	2	8
1928-29...	947	154	16.3	406	—	109	222	37	3 6	3 25
1929-30...	629	115	23.1	185	—	63	151	56	9	1
1930-31...	839	116	13.9	258	—	152	125	46	114	3 5
1931-32...	795	115	14.5	207	—	156	140	82	65	2
1932-33...	630	33	5.2	264	—	150	132	12	17	3 1
1933-34...	557	29	5.2	194	—	86	147	35	34	32
1934-35...	538	3 4	—	165	—	109	182	22	2	1
1935-36...	524	3 31	—	254	—	103	70	24	29	1

<sup>1</sup> From Food Research Institute of Stanford University, Wheat Studies, Vol. XIII, No. 4, p. 220; Vol. X, Nos. 8 and 9, p. 348.<sup>2</sup> Australian exports not included in these totals, 1885-1900, inclusive, because satisfactory data for Australia are lacking.<sup>3</sup> Net imports.<sup>4</sup> From U. S. Department of Agriculture Yearbook, 1928, p. 685 (years beginning July 1).

TABLE 3.—Import duties and restrictions on wheat in principal wheat-importing countries, in effect in January 1937

Country	Import duties		Milling restrictions (domestic) currency <sup>1</sup>	Licenses and monopolies currency <sup>1</sup>	Other measures <sup>2</sup>
	In original units	In United States currency <sup>1</sup>			
Austria	Per 100 kilos 16.00 gold crowns <sup>3</sup>	Cents per bushel 3.149	Percent Free	Import license <sup>4</sup>	Reciprocal agreements. Proceeds from license tax, 10 francs per 100 kilos (9 cents per bushel), used to pay a bounty to wheat growers; transmission (sales) tax 2.5 percent of the c. i. f. price.
Belgium	Per 100 kilos 16.00 gold crowns <sup>3</sup>	Cents per bushel 3.149	Percent Free	Import license <sup>4</sup>	Import duty refunded when wheat is milled and exported as flour.
Brazil	68 \$31 milreis <sup>3</sup>	3.16	Percent Free	Import license <sup>4</sup>	Import permit fee, 1 percent ad valorem; fixed prices through grain monopoly; various clearing and compensation agreements.
China	0.55 gold unit <sup>3</sup>	3.10	Percent Free	Import license <sup>4</sup>	Proceeds of duties go into a fund distributed to owners of small farms; exchange certificates required.
Cuba	\$0.32 <sup>5</sup>	5.9	Percent Free	Import license <sup>4</sup>	Quay tax, 10 percent of duty, and a surtax of 1 percent ad valorem.
Czechoslovakia	75 crowns <sup>3</sup>	3.71	Percent Free	Import license <sup>4</sup>	When cotton area is limited by Government decree, there is a tendency to shift to wheat. In years of short crops the Government purchases foreign wheat to avoid speculation.
Denmark	3.00 crowns	18	Percent Free	Import license <sup>4</sup>	Government purchases for export; fixed prices; reciprocal agreements.
Unmilled hard wheat	740 to 1205 millions <sup>6</sup>	6.101 to 165	Percent Free	Import license <sup>4</sup>	Reciprocal agreements. National Wheat Board fixes wheat price; dealings in futures prohibited; production, milling, and sales taxes.
Soft wheat	740 to 1205 millions <sup>6</sup>	6.101 to 165	Percent Free	Import license <sup>4</sup>	Fixed producers' prices and fixed margins for traders; monthly quotas for delivery by producers of bread grain for human consumption; monthly quotas for mills; compulsory storage.
Egypt					Purchase of domestic wheat by Government at prices above world quotation.
El Salvador	11 crowns	82	Percent Free	Import license <sup>4</sup>	Importers must be licensed and registered; registered wheat millers pay fixed minimum price to growers.
Finland	125 Finnish marks <sup>7</sup>	7.74	Percent Free	Import license <sup>4</sup>	Government controls foreign trade.
France	85.30 francs <sup>8</sup>	8.108	Percent Free	Import license <sup>4</sup>	General rate
Germany	35 reichsmarks	383	Percent Free	Import control through exchange permit	General rate
General rate					General rate
Special rate	1 reichsmark <sup>10</sup>	10.11	Percent Free	General rate	Special rate
Greece	10.5 metallic drachmas <sup>3</sup>	3.39	Percent Free	General rate	Greece
Irish Free State	6d. per 112 pounds	7	Percent Free	Import permit	Irish Free State
Italy	18 paper lire <sup>11</sup>	11.26	Percent Free	Monopoly	Italy

Japan.....	2.5 yen.....	Per 100 kin	32.....	
Latvia.....	Free.....	Per 100 kilos	138.....	State grain monopoly <sup>12</sup> .....
Lithuania.....	30 lits.....		35.....	Monopoly.....
Netherlands.....	Free.....		35.....	Import monopoly.....
Norway.....	Free.....		35.....	State grain monopoly.....
Portugal.....	do.....		35.....	Import monopoly.....
Spain.....	Fixed at time imports are permitted.....		(14).....	State grain monopoly.....
Sweden.....	22.4 gold pesetas 3.....		3 199.....	Import monopoly.....
	3.7 crowns.....		25.....	Monopoly tax, 5 crowns per 100 kilos (34 cents per bushel); import tax on wheat intended for production of flour, 2.5 crowns per 100 kilos (17 cents per bushel); fixed price; export prohibited except under license.
Switzerland.....	0.6 franc.....		4.....	Growers deliver wheat to Government agency at fixed prices. This agency sells to millers. Imports regulated by quotas; trade agreement with United States.
Turkey.....	6.93 Turkish paper pounds <sup>2</sup> .....		3 151.....	Consumption tax, 10 percent of c. i. f. duty-paid value.
Union of South Africa.....	Difference between import cost and fixed price.		6.....	Levy on wheat ground; Government storage; preferential treaty with Canada.
United Kingdom.....	2s. per quarter of 480 pounds (on non-Emire)......		6.....	Empire wheat quota; Imperial preference exempt from duty under Ottawa Agreements. Domestic production subsidized.

<sup>1</sup> Conversions into United States currency made on the basis of average exchange for January 1937.

<sup>2</sup> Exchange regulations are in use in most of the countries listed.

<sup>3</sup> Includes surtax.

<sup>4</sup> Import licenses granted on unlimited quantities.

<sup>5</sup> The general rate is \$0.40 per 100 kilos (11 cents per bushel); United States enjoys 20 percent preference.

<sup>6</sup> Sliding scale, based on London quotations of Australian wheat, c. i. f. Egyptian ports.

<sup>7</sup> Millers using domestic wheat are entitled to import at a lower rate of duty a quantity of foreign wheat equivalent to the amount of domestic wheat milled. This lower duty has now been fixed at 0.90 Finnish marks per kilo (53 cents per bushel).  
<sup>8</sup> A return of 30 francs per 100 kilos (38 cents per bushel) will be made on the customs duties paid on all foreign durum wheat imported for consumption in France.

<sup>9</sup> Foreign wheat may be imported only when French wheat is not available in the necessary quantities or qualities. In case of short crops the National Wheat Board fixes the amount of wheat to be imported, as well as the sale price of that wheat on the domestic market.  
<sup>10</sup> Special reduced rate, 1 Reichsmark per 100 kilos (11 cents per bushel), providing the grain is imported through a designated institution under permit from the Minister of Finance. The import duty on wheat for manufacture of starch, under customs control, is 3.50 reichsmarks per 100 kilos (38 cents per bushel) when imports are made in compliance with contingent restrictions.

<sup>11</sup> Subject to a special license tax of 3 percent ad valorem.

<sup>12</sup> Grain for bread making may be imported into Latvia only by the State acting through the Ministry of Agriculture. The measure affects imports of wheat and rye only.

<sup>13</sup> Amount of domestic and imported wheat milled regulated by Government.

<sup>14</sup> Millers may use as high as 20 percent of foreign wheat in certain mixtures, provided the average mixture of their products for the period does not exceed 10 percent foreign wheat.

TABLE 4.—UNITED KINGDOM; national production of wheat and imports from United States, and import duties, for specified calendar years

Calendar year	Acreage sown	Total production	Total imports	Imports <sup>1</sup> from United States	Import duties <sup>2</sup>	
					Wheat <sup>3</sup>	Flour <sup>4</sup>
Average:	1,000 acres	1,000 bu.	1,000 bu.	1,000 bu.	Cents per bu.	
1909-13	1,852	58,330	219,155	49,045	Free	Free.
1922-26	1,730	56,285	218,227	67,523	Free	Do.
Annual:						
1927	1,709	55,764	234,332	73,986	Free	Do.
1928	1,459	49,762	216,299	49,091	Free	Do.
1929	1,385	49,758	233,584	48,086	Free	Do.
1930	1,405	42,246	225,738	47,433	Free	Do.
1931	1,250	37,813	250,550	26,327	Free	Do.
1932	1,343	43,614	219,122	9,841	4	10 percent ad valorem.
1933	1,745	62,424	235,078	315	5	Do.
1934	1,866	69,766	215,860	576	6	Do.
1935	1,882	65,434	209,479	1,337	6	Do.
1936	1,805	55,265	209,692	284	6	Do.

<sup>1</sup> Import figures include wheat flour converted into terms of bushels.<sup>2</sup> Conversions from original units into United States currency made at average annual exchange.<sup>3</sup> Effective Nov. 17, 1932, under Ottawa Agreements Act (2 shillings per quarter of 480 pounds).<sup>4</sup> Effective Mar. 1, 1932 (10 percent ad valorem).

Compiled from data furnished by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

TABLE 5.—ITALY; National production of wheat and imports from United States, and import duties for specified calendar years.

Calendar year	Acreage planted	Total production	Total imports	Imports <sup>1</sup> from United States	Import duties <sup>2</sup>	
					Wheat	Flour
Average:	1,000 acres	1,000 bu.	1,000 bu.	1,000 bu.	Cents per bu.	Cents per 100 lb.
1909-13	11,793	184,393	57,158	3,140	39	101
1922-26	11,590	203,622	88,305	50,196	(3)	(3)
Annual:						
1927	11,295	195,809	84,901	36,411	39	101
1928	12,263	228,598	101,038	32,456	45	112
1929	11,794	260,125	65,036	15,527	67	165
1930	11,917	210,071	71,439	12,882	82	195
1931	11,883	244,415	55,213	10,526	94	234
1932	12,185	276,922	39,402	7,546	107	268
1933	12,587	298,548	17,973	8,008	137	350
1934	12,274	233,064	17,668	7,624	175	447
1935	12,432	282,758	—	—	168	430
1936	12,683	224,273	—	—	4 130	4 332

<sup>1</sup> Import figures include wheat flour converted into terms of bushels.<sup>2</sup> Conversions from original units into United States currency made at par or average annual exchange (whichever is applicable). Where changes in duty have occurred during a year, rates have been averaged.<sup>3</sup> Duty on wheat suspended from Jan. 31, 1915, to July 23, 1925; effective July 24, 1925, import duty on wheat 39 cents per bushel and import duty on wheat flour 101 cents per 100 lbs.<sup>4</sup> Import duty reduced twice during the last 3 months of 1936.

Compiled from data furnished by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

TABLE 6.—FRANCE; National production of wheat and imports from United States, and import duties, for specified calendar years

Calendar year	Acreage harvested	Total production	Total imports	Imports from United States <sup>1</sup>	Import duties <sup>2</sup>		
					Wheat	Flour—cents per 100 lb.	
Average:		1,000 acres	1,000 bu.	1,000 bu.	Cents per bu.	( <sup>3</sup> )	( <sup>4</sup> )
1909-13	16,500	325,644	38,698	2,519	37	96	118
1922-26	13,441	272,434	38,972	6,610	22	61	74
Annual:							
1927	13,065	276,128	80,054	25,031	23	67	80
1928	12,956	281,285	38,388	5,625	37	107	128
1929	13,482	347,670	52,616	4,255	47	127	157
1930	13,279	228,105	39,358	5,416	85	192	240
1931	12,840	264,117	87,771	11,679	85	227	284
1932	13,428	333,524	75,816	7,890	85	227	284
1933	13,503	362,330	32,399	538	109	292	365
1934	13,354	338,513	30,046	134	145	387	484
1935	13,251	284,950	28,793	84	149	399	498
1936	12,711	244,351	22,015	78	138	369	461

<sup>1</sup> Import figures include wheat flour converted into terms of bushels.<sup>2</sup> Conversions from original units into United States currency made at par or average annual exchange (whichever is applicable). Where changes in duties have occurred during a year rates have been averaged.<sup>3</sup> Flour bolting 70 percent or more, gross weight.<sup>4</sup> Flour bolting between 60 percent and 70 percent, net weight.<sup>5</sup> Flour bolting 60 percent or less, net weight.

Compiled from data furnished by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

TABLE 7.—GERMANY; National production of wheat and imports from United States, and import duties, for specified calendar years

Calendar year	Acreage harvested	Total production	Total imports	Imports <sup>1</sup> from United States	Import duties <sup>2</sup>	
					Wheat	Flour
Average:	1,000 acres	1,000 bu.	1,000 bu.	1,000 bu.	Cents per bu.	Cents per 100 lb.
1909-13	4,029	131,274	89,755	16,600	36	110
1922-26	3,693	96,243	60,127	29,184	( <sup>3</sup> )	( <sup>3</sup> )
Annual:						
1927	4,321	120,522	98,989	27,154	32	126
1928	4,269	141,593	92,810	19,473	32	135
1929	3,955	123,062	80,195	9,143	37	146
1930	4,401	139,217	45,112	6,891	90	341
1931	5,355	155,546	29,850	2,502	162	504
1932	5,635	183,830	37,947	7,539	162	466
1933	5,727	205,920	28,471	754	<sup>4</sup> 207	598
1934	5,430	166,547	23,897	586	<sup>4</sup> 286	821
1935	5,205	171,481	5,976	3	<sup>4</sup> 384	1,094
1936	5,126	169,387	2,752	80	<sup>4</sup> 384	1,094

<sup>1</sup> Import figures include wheat flour converted into terms of bushels.<sup>2</sup> Conversions from original units into United States currency made at par or average annual exchange (whichever is applicable). Where changes in duty have occurred during a year, rates have been averaged.<sup>3</sup> Temporarily duty-free for 10-year period ending Aug. 31, 1925; effective Sept. 1, 1925, reduced general rate on wheat equivalent to 23 cents per bushel and wheat flour 86 cents per 100 pounds.<sup>4</sup> General rate; special reduced rate when wheat is imported through a designated institution under permit from the Minister of Finance.

Compiled from data furnished by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

TABLE 8.—Cash income from United States farm production of wheat, 1919 to 1935, by years

Year beginning July 1	Wheat sold or for sale <sup>1</sup>	Cash income <sup>2</sup>	Adjustment payments	Cash income plus adjustment payments	
	1,000 bushels	1,000 dollars	1,000 dollars	1,000 dollars	
1919	811,953	1,751,420		1,751,420	
1920	723,206	1,317,548		1,317,548	
1921	687,017	704,037		704,037	
1922	702,698	675,427		675,427	
1923	609,979	562,734		562,734	
1924	693,290	859,243		859,243	
1925	554,782	794,908		794,908	
1926	705,846	857,439		857,439	
1927	732,108	867,605		867,605	
1928	767,231	758,114		758,114	
1929	672,811	692,458		692,458	
1930	641,329	424,431		424,431	
1931	668,754	254,129		254,129	
1932	528,159	195,860		195,860	
1933	375,694	275,360	98,600	373,960	
1934		355,446	298,155	101,465	399,620
1935		427,699	353,284	115,368	408,652

<sup>1</sup> Yearbook of Agriculture, 1935, p. 359—Table (11).<sup>2</sup> "Farm value, gross income, cash income", Bureau of Agricultural Economics, March 1934.

Compiled from data furnished by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

TABLE 9.—World Production, Supply, Disappearance, and Price of Wheat, 1922-23 to 1936-37, by years.

Year	Production					Net exports from Russia	Stocks about July 1	Total supply <sup>1</sup>	Total disappearance	British parcels, average price per bushel <sup>2</sup>
	United States	Canada, Argentina, and Australia	Europe	All other	World production					
1922-23	847	705	1,045	606	3,203	1	588	3,792	3,216	92
1923-24	759	847	1,257	656	3,519	21	576	4,116	3,397	83
1924-25	842	618	1,058	609	3,127		719	3,846	3,280	109
1925-26	669	701	1,397	613	3,380	27	566	3,973	3,318	108
1926-27	832	798	1,216	648	3,494	49	655	4,198	3,511	108
1927-28	875	880	1,274	644	3,673	5	687	4,365	3,612	104
1928-29	914	1,076	1,410	596	3,996		753	4,749	3,722	91
1929-30	823	595	1,451	705	3,574	7	1,027	4,608	3,665	101
1930-31	886	867	1,360	734	3,847	112	943	4,902	3,848	76
1931-32	937	732	1,436	755	3,860	70	1,054	4,984	3,943	76
1932-33	757	898	1,490	718	3,863	17	1,041	4,921	3,779	78
1933-34	552	745	1,746	795	3,838	34	1,142	5,014	3,847	70
1934-35 <sup>3</sup>	526	650	1,548	794	3,518	2	1,167	4,687	3,767	79
1935-36 <sup>3</sup>	626	566	1,577	797	3,566	29	920	4,515	3,759	84
1936-37 <sup>3</sup>	626	611	1,483	744	3,464		756	4,220		91

<sup>1</sup> Excludes production and stocks in Russia and China.<sup>2</sup> Deflated by Statist Index (1910-14=100) and converted at par.<sup>3</sup> Preliminary.

Compiled by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

TABLE 10.—Acreage, yield, supplies, disappearance, and farm prices of wheat in the United States, 1923-24 to 1936-37, by crop years

Crop year	Acreage planted	Yield per acre planted	Supply				Domestic disappearance	Exports and ship-ments (flour included)	Domestic disappearance plus exports and ship-ments	Farm price
			Production	Stocks on July 1	Imports (flour included)	Total				
	1,000 acres	Bush.	Million bu.	Million bu.	Million bu.	Million bu.	Million bu.	Million bu.	Million bu.	Cents per bu.
1923-24	64,510	11.8	759	132	15	906	620	149	769	92.6
1924-25	55,706	15.1	842	137	(1)	979	613	258	871	124.7
1925-26	61,738	10.8	669	108	2	779	582	97	679	143.7
1926-27	60,712	13.6	832	100	(1)	932	613	209	822	121.7
1927-28	65,661	13.3	875	110	(1)	985	679	194	873	119.0
1928-29	71,152	12.9	915	112	(1)	1,027	654	144	798	99.8
1929-30	66,840	12.3	823	229	(1)	1,052	620	143	763	103.6
1930-31	67,150	13.2	887	289	(1)	1,176	748	115	863	67.1
1931-32	65,876	14.2	937	313	(1)	1,250	749	126	875	39.1
1932-33	65,913	11.5	757	375	(1)	1,132	719	35	754	38.2
1933-34	68,485	8.1	552	378	(1)	930	628	28	656	74.4
1934-35	63,562	8.3	526	274	16	816	657	13	670	84.8
1935-36	69,210	9.0	626	146	35	807	664	7	671	83.2
1936-37 <sup>2</sup>	73,600	8.5	626	136						99.7

<sup>1</sup> Imports less than 500,000 bushels.<sup>2</sup> Preliminary.

Compiled by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

TABLE 11.—Estimated supplies,<sup>1</sup> by classes of United States wheat 1930-31 to 1932-33 and 1933-34 to 1936-37

Class	1930-31	1931-32	1932-33	Average 1930-31 to 1932-33	1933-34	1934-35	1935-36	1936-37
Hard red winter.....	524	662	519	568	377	334	270	311
Soft red winter.....	206	285	218	236	193	224	236	234
Hard red spring.....	246	158	239	214	206	127	134	86
Durum.....	92	52	56	67	34	15	31	17
White.....	108	93	100	100	120	100	101	115
Total.....	1,176	1,250	1,132	1,185	930	800	772	763

<sup>1</sup> "Supplies" include crop plus carry-over.

Compiled by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

TABLE 12.—Exports of wheat, including flour, from the United States, by countries of destination, 1899-1900 to 1935-36

Year beginning July—	Total exports <sup>1</sup>	France	Germany	Greece	Italy	Nether-lands	United Kingdom
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels
1899-1900.....							
1900-1901.....	190,772	1,264	12,352	0	468	15,444	111,496
1901-2.....	220,653	1,194	12,657	0	949	17,332	130,134
1902-3.....	239,212	3,344	23,067	0	479	23,640	120,578
1903-4.....	207,835	3,103	18,981	0	286	18,342	94,308
1904-5.....	124,977	777	10,077	0	2	7,152	64,791
1905-6.....	46,319	32	742	0	8	2,357	15,572
1906-7.....	101,089	3,809	5,130	0	1,687	6,682	40,949
1907-8.....	150,597	3,876	11,336	1,695	8,835	11,694	51,570
1908-9.....	166,525	2,272	15,340	849	5,186	12,692	71,208
1909-10.....	116,373	3,753	11,059	839	5,929	11,071	43,378
1910-11.....	89,173	859	6,467	14	2,002	6,169	37,252
1911-12.....	71,338	3,669	1,785	1	349	4,935	24,416
	81,891	68	2,201	11	550	6,561	26,918

See footnotes at end of table.

TABLE 12.—Exports of wheat, including flour, from the United States, by countries of destination, 1899-1900 to 1935-36—Continued

Year beginning July—	Total exports	France	Germany	Greece	Italy	Netherlands	United Kingdom
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels
1912-13	145,159	4,976	12,913	310	7,271	18,874	42,961
1913-14	147,955	5,599	11,813	1	1,929	24,452	41,231
1914-15	335,702	59,979	2,691	10,461	47,649	39,663	85,445
1915-16	246,221	35,371	0	13,818	36,491	22,103	68,332
1916-17	205,962	22,970	0	6,638	18,389	21,906	82,149
1917-18	132,579	25,642	0	216	21,992	467	60,381
1918-19	287,402	31,227	0	681	43,463	8,931	115,183
1919-20	222,030	40,150	1,582	1,419	38,666	726	61,607
1920-21	369,313	24,448	34,871	6,799	58,605	27,317	103,308
1921-22	282,566	5,742	28,910	308	35,892	23,570	63,895
1922-23	224,900	14,805	13,487	2,392	34,027	16,866	37,232
1923-24	159,880	2,482	8,914	1,837	8,535	12,862	23,633
1924-25	260,803	14,298	17,337	8,451	26,067	25,100	50,169
1925-26	108,035	620	3,301	2,474	2,966	7,356	20,376
1926-27	219,160	16,156	11,208	6,143	10,481	24,502	47,488
1927-28	206,259	5,144	8,090	3,348	10,555	18,750	42,326
1928-29	163,687	2,243	3,143	3,823	5,144	10,241	20,439
1929-30	153,245	2,232	6,892	7,153	1,088	11,043	31,265
1930-31	131,475	7,888	2,865	3,437	3,960	13,039	24,341
1931-32	135,797	6,178	4,211	11,181	1,666	9,507	18,753
1932-33	41,211	1,130	380	3,153	679	1,350	1,984
1933-34	37,002	59	71	24	290	490	1,327
1934-35	21,532	83	128	65	141	456	594
1935-36 <sup>4</sup>	15,929	68	85	82	8	805	216
Year beginning July—	Other Europe	Total Europe	Central and South America <sup>2</sup>	China and Japan <sup>3</sup>	Philippine Islands	Other countries	
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels
1899-1900	16,135	157,159	7,226	10,055	16	16,316	
1900-1	19,795	182,061	9,214	8,464	32	20,882	
1901-2	25,469	196,517	8,365	9,249	65	25,016	
1902-3	18,982	154,002	7,493	10,776	50	35,514	
1903-4	7,484	90,283	6,503	14,501	42	13,648	
1904-5	1,563	20,274	5,549	11,855	102	8,539	
1905-6	6,830	65,087	9,764	13,137	188	12,913	
1906-7	16,915	105,921	9,526	22,803	236	12,111	
1907-8	20,185	127,732	7,003	13,519	323	17,948	
1908-9	14,992	91,021	7,858	5,896	376	11,222	
1909-10	9,953	62,716	10,678	4,397	1,177	10,205	
1910-11	6,124	41,279	9,212	10,354	1,065	9,428	
1911-12	8,707	45,016	10,718	14,612	1,451	10,094	
1912-13	17,328	104,633	11,247	15,036	1,743	12,500	
1913-14	21,985	107,010	11,037	15,115	1,113	13,680	
1914-15	37,607	283,495	14,277	4,118	1,428	32,384	
1915-16	29,018	205,133	20,249	1,998	1,811	17,030	
1916-17	27,050	179,102	13,823	356	358	12,323	
1917-18	14,205	122,903	5,929	7	2	3,738	
1918-19	50,610	250,095	7,305	7	27	29,968	
1919-20	42,397	186,547	11,683	1,315	454	22,031	
1920-21	65,459	320,507	16,744	2,013	932	28,817	
1921-22	42,647	200,874	14,541	23,426	1,565	42,160	
1922-23	27,285	146,094	12,354	20,275	2,208	43,969	
1923-24	11,570	69,833	14,360	44,089	2,751	28,847	
1924-25	28,843	170,265	14,333	7,657	2,766	65,782	
1925-26	11,471	48,564	15,212	10,587	2,802	30,870	
1926-27	23,717	139,695	20,335	14,329	3,163	41,638	
1927-28	24,927	113,140	16,678	15,240	3,419	57,782	
1928-29	19,038	64,071	21,341	17,976	3,770	56,529	
1929-30	19,284	78,957	20,595	20,325	3,429	29,939	
1930-31	17,598	73,128	16,291	15,583	3,009	23,464	
1931-32	16,312	67,808	23,645	27,980	2,962	13,402	
1932-33	5,244	13,920	15,005	2,910	2,641	6,735	
1933-34	3,836	6,097	7,163	16,066	2,308	5,368	
1934-35	2,357	3,824	6,913	3,399	1,677	5,719	
1935-36	746	2,010	7,420	224	1,174	5,101	

<sup>1</sup>Includes flour milled from Canadian wheat.<sup>2</sup>Includes Mexico, Panama, Cuba, Brazil, Chile, Peru, and Venezuela for all years, and Haiti and Colombia from 1931-32 to 1935-36.<sup>3</sup>Includes Hong Kong, Kwantung, and Chosen.<sup>4</sup>Preliminary.

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